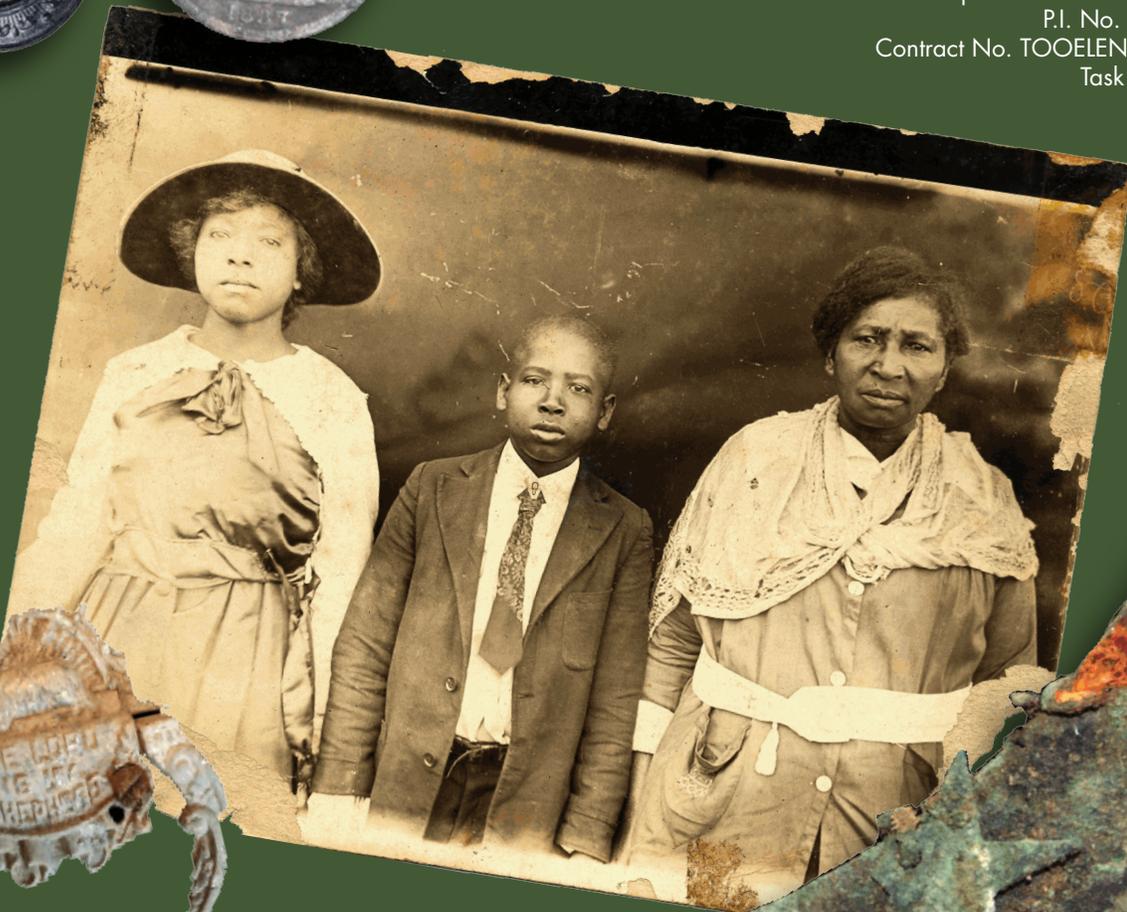


# Hold Your Light on Canaan's Shore:

A Historical and Archaeological Investigation of the  
Avondale Burial Place (9BI164)

Volume I: Report of Investigation  
Bibb County, Georgia

Project No. STP-000-00(566)  
P.I. No. 0000566  
Contract No. TOOELNV060077  
Task Order 25



New South Associates, Inc.



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Report submitted to:

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# ABSTRACT

The identification of an unrecognized burial area within the construction right-of-way for improvements to be made to Sardis Church Road, in Bibb County, Georgia prompted the survey and relocation of human remains in accordance with the Georgia Department of Transportation (GDOT) Scope of Work entitled *Historic Cemetery Disinterment and Relocation, Project STP-0000-00(566), Bibb County, Georgia*, issued on November 21, 2008. New South Associates, Inc. conducted survey and fieldwork for this project between April 9, 2009 and June 30, 2010, under a contract with PBS&J (now Atkins Global), for GDOT. The features, artifacts, and human remains from this cemetery are summarized in this two-volume report. The cemetery was unmarked and unknown at the time the road extension was designed and was discovered by GDOT when a local landowner informed Historian Sharman Southall that he had been told a cemetery was located in the project area. Ground penetrating radar, search and rescue dogs, and exploratory trenching identified a number of potential graves. Subsequent excavation revealed 106 features containing 101 human mortuary features. The remaining features were identified as tree or bush molds, a post mold, a buried dog, and the partial remains of a cow. The results indicate that this cemetery, referred to herein as the Avondale Burial Place, contained the remains of an African American community from the nineteenth and early twentieth centuries. Graves dating to the 1870s can be positively identified and inferential evidence suggests that a pre-Emancipation component may also be present. These burials probably represent slaves, ex-slaves, and slave descendants who worked on antebellum and postbellum plantations and farms of the area. Skeletal evidence provided details that were consistent with African American health conditions recorded in Central Georgia. An examination of the material remains demonstrated that 9B1164 was a southern folk cemetery with a mix of lowland/coastal African American and upland-like funeral traditions. All mortuary-related materials and human remains recovered from the project area were re-interred at the Bethel AME Church in Byron, Georgia.



# ACKNOWLEDGEMENTS

Cemetery investigations are impossible to complete without support from a variety of specialists. The project drew considerable support and involvement from within the GDOT and the names of all the GDOT personnel who provided their input would fill a volume in itself. The project was administered through GDOT's Office of Environmental Services (OES) Cultural Resource Program. Many thought provoking conversations came from the staff of OES. In particular, we thank GDOT Archaeologist and Project Manager, Sara Gale, whose tireless efforts to keep all the diverse parts of the project running (website, video, public outreach, descendant community reunion, etc.), was an important part of the project's success. Sara's interest and enthusiasm was contagious and all of the project's personnel benefited from her direction. Sharman Southall, GDOT Historian, provided important insights on genealogical connections and site history, and was a wonderful sounding board for the project's history staff when working their way through the history of a site about which nothing was written. Video documentation was coordinated through GDOT Historian Chad Carlson working with the personnel of Georgia Public Broadcasting, and Chad's efforts in visually documenting the project are gratefully acknowledged. GDOT District 5 Macon Area Maintenance Crew did the initial ground clearing and we also thank GDOT Project Engineer Clinton Ford for his interest and support of our efforts.

Wendy Dyson of Post, Buckley, Schuh, & Jernigan (now Atkins Global) served as the overall project manager and reviewed the scheduling and conduct of this subcontract. Our thanks extend to Wendy for her interest in the project as well as for her support and assistance in negotiating sometimes complicated contract hoops. We also thank Henry Borovich of Atkins for his support with project logistics.

We appreciate the efforts put forth by Mike Hilton and the folks at Circle H Environmental Services in providing heavy equipment services at the site. Circle H's Chad Smith, Brad Houston, and Colt Rogers accomplished most of the backhoe work and coordination was handled by Susan Hilton. We are very much indebted to their enthusiasm and ability to jump to the task when needed. Rayfield Tree Care successfully removed several other very large and dangerous trees without incident.

Establishing the extent of the cemetery was a challenge. Stratigraphic test pits and steel probe testing was accomplished by Hugh Matternes, Valerie Davis, and Carla de la Rosa. Ground Penetrating Radar surveys were done by Shawn Patch and Sarah Lowry. Search and Rescue (Cadaver Dog) Survey was conducted by members of the Alpha Team K9 Search and Rescue. Paula Chambers and Stuart Samples were responsible for coordinating these efforts. We greatly appreciate the willingness of Alpha Team to volunteer the services of their personnel and dogs, and seeing the success of the burial detection dogs in action was a revelation for all of the project's archaeologists. Michael McCaffery, Valerie Davis, and Shawn Patch provided total station mapping support.

Archaeological field investigations were conducted under the direction of Hugh (Matt) Matternes with Valerie Davis serving as the field supervisor and senior osteologist. She was assisted in 2009 by Rachel Black and Carla de La Rosa. In 2010, the field crew consisted of Sarah McIntyre, Rachel Black, Jeremy Pye, Juliette Vogel, Lain Graham, Megan Teague-Tucker, and Cathy Blanford. Emily Vanderpool from Georgia State University served as a project intern. Despite searing heat and catastrophic flooding, these professionals efficiently and respectfully recovered the cemetery's contents; the high quality data generated by their efforts is a testament to their abilities as mortuary specialists.

In the laboratory, Hugh Matternes examined coffin hardware and personal artifacts. Valerie Davis examined the skeletal materials. Processing assistance by Lain Graham, Justin Arrington, and Emily Vanderpool was greatly appreciated. Conservator Katherine Singley professionally cleaned the Harrison Campaign Token.

Historical research into the Avondale community was a monumental task, the majority of which was accomplished by Julie Coco and Staci Richey. Mary Beth Reed and Mark Swanson conducted descendant interviews, while Meg Hammock assisted with genealogical and archival research. At the Middle Georgia Archives, Washington Memorial Library Genealogy and History Room, Head Archivist Muriel McDowell Jackson not only provided many useful references, but also valuable advice, contacts, and encouragement.

Project outreach was accomplished through the creation of a website ([www.avondaleburialplace.org](http://www.avondaleburialplace.org)); its development was also a collaborative effort. Tracey Fedor designed the layout with valuable assistance from David Diener and Tom Quinn. Project Manager J.W. Joseph, Ph.D. composed the website text. We are indebted to the Library of Congress and Georgia State Archives for allowing us to use images in their collections. The project has also been documented on video by both GDOT and Georgia Public Broadcasting (GPB). Chad Carlson shot video for GDOT while GPB's efforts were directed by Amy Cooper and completed, compiled, and edited into an educational documentary by Carey Harrison. Wayne Petty and Jeff Shipman served as GPB and GDOT photographers, respectfully.

Report production was supervised by Jennifer Wilson, who also edited the report. David Diener, Tom Quinn, and Lis Cap generated illustrations, with map assistance provided by Matt Tankersley and Diana Valk. Becca Brown compiled, collated, and bound the report.

Hugh Matternes authored several chapters, including I. Introduction; IV. Folk Cemeteries and Funeral Rituals; V. Industry, Organization, and the Coffin in Central Georgia; VII. Cemetery Population Structures; X. Artifacts; XI. Temporal Affiliation; XII. Conclusions; and XIII. Avondale's Second Funeral: Reinterment at Bethel AME Church, Byron Georgia. Julie Coco authored II. Avondale Burial Place in Geographic and Historic Contexts chapter. She also co-authored along with Staci Richey for III. People in Communities Surrounding the Avondale Burial Place chapter. Valerie Davis wrote VIII. Cruel Backbone: Health and Quality of Life in the Avondale Assemblage; and IX. The Enamel Tapestry: A View of Health from the Oral Cavity. Both Matternes and Davis authored Volume II of this report.

The cemetery would not have been discovered and the project begun if not for Mr. Harry Lucas. Although his family never owned the property, his childhood interest in the area's history gave us three important clues: the existence and approximate location of the cemetery, the McArthur and Moore surnames which led to the early identification of a potential descendant community, and that the burials were African-American, possibly dating to slavery. These clues would form the starting point of our investigation and prove once again the strength of oral tradition.

Last and certainly not least, we are deeply grateful for the support received from descendants of the local community. We spent countless hours in consultation with these family members, who recognized this investigation as an opportunity to gain valuable insight into their own past, a past that had otherwise been lost to time. Their enthusiasm knew no boundaries. Genealogical research by Talerie Boyd, Amma Crum, Reverend Herman (Skip) Mason, and Sherry Wilder provided critical clues leading us down the trail to identifying aspects of this lost community. The Barton and Thomas "Two Sisters" Family reunion in Macon on Memorial Day 2010 brought us in touch with a host of family members and exposed our team to their questions and concerns about their family's past. Much of the research direction reflected in this volume is in response to questions raised by these interactions. It is our hope that this work contributes as much to understanding their personal heritage as it does to Georgia's rural African American communities.

HOLD YOUR LIGHT

Hold your light, Brudder Robert,-  
Hold your light,  
Hold your light on Canaan's shore.

What make ole Satan for follow me so?  
Satan ain't got notin' for do wid me.  
Hold your light,  
Hold your light,  
Hold your light on Canaan's shore.

Hold your light, Brudder Robert,-  
Hold your light,  
Hold your light on Canaan's shore.

- Traditional Spiritual

Reported by Thomas Wentworth Higgins  
*Atlantic Monthly*, June 1867

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# I. INTRODUCTION

A potential unrecognized burial area within the construction right-of-way for improvements to be made to Sardis Church Road, in Bibb County, Georgia was brought to the attention of the Georgia Department of Transportation (GDOT) by local landowner, Harry Lucas. According to Mr. Lucas, whose father owned the adjoining property in the 1940s, local oral tradition held that a small wooded area adjacent to the former McArthur land holdings had been used as an African American cemetery from the antebellum era to perhaps as late as the early 1950s (a:Appendix C). The property in question had been previously surveyed for archaeological resources by Chad Braley of Southeastern Archaeological Services (Braley 1999); however, no evidence of a burial ground was found, and Braley was unaware of the oral history reports of a cemetery. The area was re-examined by GDOT personnel in April 2008. Mr. Lucas able to show GDOT where in the landscape he believed the cemetery was located. GDOT performed a surface survey, soil density testing (i.e. probing) of the area Mr. Lucas had indicated, and shovel test pit examinations to examine subsurface soil structure. Glass and ceramic artifacts consistent with nineteenth- and early twentieth-century farmsteads and with Southern folk cemetery traditions were found near the surface. Based on these materials GDOT was able to establish that archaeological deposits were present, but they were unable to confirm or dismiss the possibility that they were associated with a cemetery. In August 2008, GDOT archaeologists returned and conducted a limited subsurface stripping and trenching query to learn whether archeological evidence of a burial ground was at the site (Gale 2008a). GDOT located eight rectangular human-sized subsurface stains (Features 1 through 8) that were consistent with the archaeological signature of nineteenth-century graves. The contents of these features were not exposed and the excavations were backfilled. The cemetery was registered as 9B1164 in the Georgia Archaeological Site Files in September of 2008. Details of GDOT's investigation are outlined in Gale (2008), Appendix C.

Once the potential of graves was confirmed, GDOT searched property and deed records, historic maps, and other sources to attempt to learn who was buried there and possibly determine the historic name for the cemetery. The current property owner, nearby residents, and African American churches were also contacted during this period. It appeared that no written record of the cemetery had been made. When these efforts failed, GDOT turned to the public with the hope that someone would come forward with information about the burials in the area. In order to communicate this discovery with the public, a name was developed that was based on the closest land feature, which was Avondale Mill Road. Since most people associate the term cemetery with grave markers, field stones, border coping, terracing, ornamental plantings, or other features, and since this site had no such features, the term burial place was used. In 2009, Avondale Burial Place became the public name for 9B1164.

Following identification of 9B1164, GDOT looked at avoidance alternatives to shift the proposed project to extend Sardis Church Road. To the north of the proposed road alignment was a lake associated with the regional airport and to the south there was an established cemetery. These other two environmental resources prevented shifting the proposed road to either the north or the south off of 9B1164. Based upon these constraints and in accordance with a 2008 Memoranda of

Agreement (Gale 2008a:Appendix C), GDOT developed a scope of services and contract for the removal and relocation of the Avondale Burial Place. New South Associates was selected to perform this work and fieldwork was conducted between April 9, 2009 and June 30, 2010. In accordance with the Scope of Work entitled *Historic Cemetery Disinterment and Relocation, Project STP-0000-00(566), Bibb County, Georgia*, issued November 24, 2008, this report presents the results of the excavation and relocation of the 9B1164 cemetery, also referred to as the Avondale Burial Place, by New South Associates. New South Associates performed this cemetery disinterment and relocation as a subcontractor to Atkins Global (formerly, PBS&J). The human remains recovered from this cemetery are summarized in Table 1.1. The cemetery survey and relocation was accomplished in accordance with the provisions of the National Historic Preservation Act (NHPA) as codified in 36CFR800, the Advisory Council on Historic Preservation (2006) draft policy statement regarding burial sites, human remains and funerary objects. GDOT and New South Associates worked in close conjunction with representatives of the community to insure that all parties were comfortable with the way that the relocation was handled. Various other efforts were completed in support of this project, including public and professional conference presentations on the study, lectures provided in Macon as part of Black History Month (February) 2012, and the filming of the entire process by Georgia Public Television and the preparation of a documentary video on this work. The course of the project has been made available to the public through a variety of news reports and on a project website accessible at [www.avondaleburialplace.org](http://www.avondaleburialplace.org).

This report is divided into two volumes. Volume I presents the project's field methodology, findings and interpretations, while Volume II contains a descriptive narrative of the cemetery's features. In Volume I, Chapter I introduces the project, describes the project area, and outlines previous relevant historical archaeological work with an emphasis on other mortuary projects. Chapter II presents the results of historical research on the cemetery and surrounding community. Chapter III examined the cultural context of the southern folk cemetery and regional funerary behavior. Chapter IV defines the local funeral industry available to Macon and southern Bibb County. Chapter V outlines how the investigations were carried out and its general results. Chapter VI describes the cemetery populations, while Chapter VII explored the state of health in southern Bibb County. Chapter VIII described life features presented in the teeth and Chapter IX details the mortuary artifacts recovered. Chapter X overviews how temporal assignments were made to graves and the cemetery. Chapter XI provides the conclusions for the Avondale Burial Place and finally, Chapter XII describes the reburial. Volume II provides a narrative description of each mortuary feature encountered during the course of the investigation. The appendices follow Volume II. Appendix A provides the reburial location at the Bethel AME Church. Appendix B contains a catalog of coffin hardware encountered during the project, and Appendix C provides copies of the site's Georgia Archaeological Site Form. Appendix D provides a copy of the health registry.

*Table 1.1. Summary of Burial Features from 9B1164*

Feature No.	Status	Sex	Age	Grave Shaft Form	Wooden Vault Liner Present?	Burial Case Form	Notable Artifacts
1	Grave		9.5-14.5y	Vaulted	No	Taper to Foot	
2	Grave		Birth +/-2m	Vaulted	No	Casket	

Table 1.1. Summary of Burial Features from 9B1164

Feature No.	Status	Sex	Age	Grave Shaft Form	Wooden Vault Liner Present?	Burial Case Form	Notable Artifacts
3	Grave	Female	14-16y	Vaulted	Yes	Coffin	
4	Grave		Birth +/- 6m	Vaulted	No	Casket	
5	Grave	Male	35-40y	Simple	Yes	Casket	
6	Grave		6m +/-2m	Indet.	No	Indet.	
7	Grave		Birth +/-2m	Vaulted	No	Casket	Copper Pendant
8	Grave		Birth +/-2m	Vaulted	No	Casket	
9	Post Mold						
10	Grave		3.5-6.5y	Simple	Yes?	Coffin	
11	Grave		3.5-6.5y	Simple	No	Coffin	
12	Grave	Male	50-59y	Vaulted	Yes	Coffin	
13	Grave		5-9y	Simple	No	Casket	
14	Grave		8-16m	Vaulted	No	Coffin	
15	Grave		8-16m	Vaulted	No	Casket	
16	Grave	Male	50-59y	Vaulted	No	Casket	
17	Grave		10-12y	Vaulted	No	Indet.	
18	Grave	Female	30-50y	Vaulted	No	Coffin	Wire Mass by Chin
19	Grave		Fetus	Vaulted	No	Casket	
20	Grave		2-4y	Vaulted	No	Coffin	
21	Grave	Female	35-45y	Vaulted	No	Coffin	
22	Grave	Male	30-34y	Vaulted	No	Coffin	
23	Grave	Female	25-35y	Vaulted	No	Coffin	
24	Grave	Male	45-49y	Vaulted	No	Coffin	
25	Grave		12.5-17.5	Vaulted	No	Coffin	Black Glass Button
26	Grave	Male	39-45y	Vaulted	No	Coffin	
27	Grave	Male	>60y	Vaulted	No	Coffin	
28	Tree						
29	Grave	Female	Adult (>17y)	Vaulted	No	Casket	20-Facet Black Glass Button
30	Grave		4-8y	Vaulted	No	Casket	
31	Grave	Male	20-30y	Indet.	No	Coffin	Wedding Band, Tobacco Pipe
32	Grave		2-4y	Simple	No	Casket	
33	Grave	Female	50-59y	Vaulted	Yes?	Casket	Wedding Band
34	Grave		2-4y	Vaulted	No	Casket	Porcelain Doll

Table 1.1. Summary of Burial Features from 9B1164

Feature No.	Status	Sex	Age	Grave Shaft Form	Wooden Vault Liner Present?	Burial Case Form	Notable Artifacts
35	Grave	Male	45-49y	Vaulted	No	Coffin	
36	Grave		Child (<~7y)*	Vaulted	No	Casket	
37	Grave		3-9m	Vaulted	No	Coffin	
38	Grave	Male	20-29y	Vaulted	No	Coffin	Bullet
39	Grave	Female	38-52y	Simple	No	Coffin	
40	Grave?		Child	Simple?	No	Indet.	
41	Non-human Grave			Simple	No	Casket	Dog buried in a wooden box.
42	Grave		Child (<~7y)*	Vaulted	No	Coffin	
43	Grave		Child (<~2y)*	Vaulted	No	Coffin	
44	Grave		Child (<~4y)*	Vaulted	No	Indet.	
45	Grave	Male	35-45y	Vaulted	Yes	Coffin	
46	Grave		Adult?	Vaulted	No	Casket	
47	Grave		Child (<~1y)*	Vaulted	No	Coffin	
48	Grave		Child (<~4y)*	Vaulted	No	Casket	
49	Grave		Adult?	Vaulted	No	Coffin	
50	Grave		Child (<~3y)*	Vaulted	Indet.	Indet.	
51	Grave	Female	<30y	Vaulted	No	Coffin	
52	Grave	Male	30-35y	Vaulted	No	Coffin	Brass Cuff Links
53	Grave		7-11y	Vaulted	No	Coffin	
54	Grave		Fetus	Vaulted	Yes?	Indet.	Seed Bead Necklace
55	Grave		Child (<~6m)*	Vaulted	No	Casket	Seed Bead Necklace
56	Grave		Fetus	Vaulted	No	Coffin	Green Glass Pestle
57	Grave		0-3m	Vaulted	No	Coffin	Seed Bead Necklace
58	Grave		6-12m	Vaulted	No	Coffin	
59	Grave		Child (<~2y)*	Vaulted	No	Coffin	Seed Bead Necklace
60	Grave		Child (<~3m)*	Vaulted	No	Coffin	
61	Grave		Child?	Indet.	Indet.	Indet.	
62	Grave	Female	Adult?	Vaulted	Yes?	Casket	Plastic Comb
63	Grave		3.5-6.5y	Vaulted	No	Coffin	
64	Grave		<2y	Vaulted	No	Coffin.	
65	Grave		Adult (Young)	Vaulted	No	Casket	
66	Grave	Male?	Adult	Simple	No	Casket	

Table 1.1. Summary of Burial Features from 9B1164

Feature No.	Status	Sex	Age	Grave Shaft Form	Wooden Vault Liner Present?	Burial Case Form	Notable Artifacts
67	Grave		Child (<~5y)*	Vaulted	No	Casket	Shield Nickels on Eyes
68	Grave		Child (<~9m)*	Vaulted	No	Casket	Indian Head Pennies on Eyes
69	Grave		4-8y	Vaulted	No	Coffin	Brooch
70	Grave		Adult?	Vaulted	Yes	Casket	
71	Grave		Child (<~10y)*	Vaulted	No	Coffin	
72	Grave		Child (<~2y)*	Vaulted	No	Coffin	
73	Grave	Female?	Adult?	Vaulted	No	Coffin	Black Glass Buttons
74	Grave		Child?	Simple	No	Indet.	
75	Grave		Child (<~2y)*	Simple	No	Coffin	
76	Grave		Child (<~3m)*	Simple	No	Coffin	
77	Grave		3.5-6.5y	Vaulted	Yes?	Coffin	
78	Grave		6-12m	Vaulted	No	Casket	
79	Grave		Fetus	Vaulted	No	Coffin	
80	Non-Human Grave						Cow buried in a slit trench.
81	Grave		Fetus-2m	Vaulted	No	Coffin	
82	Grave		Fetus-2m	Vaulted	No	Coffin	
83	Grave		3-9m	Vaulted	No	Casket	
84	Grave		Child (<~2y)*	Vaulted	No	Casket	
85	Grave		35-45y	Vaulted	No	Coffin	
86	Grave		45-50y	Vaulted	No	Coffin	Harrison Campaign Token
87	Grave		7.5-12.5y	Vaulted	No	Coffin	Shoes (On Top of Shins)
88	Grave		Child (<~2y)*	Vaulted	No	Coffin	
89	Grave		Child (<~7y)*	Vaulted	No	Coffin	
90	Grave		Adult (Middle Aged to Older)	Vaulted	No	Coffin	
91	Grave		8-16m	Simple	Yes	Casket	
92	Tree						
93	Grave		3-5y	Vaulted	No	Coffin	
94	Grave		3.5-6.5y	Vaulted	No	Coffin	
95	Grave		18m	Simple	No	Coffin	

Table 1.1. Summary of Burial Features from 9B1164

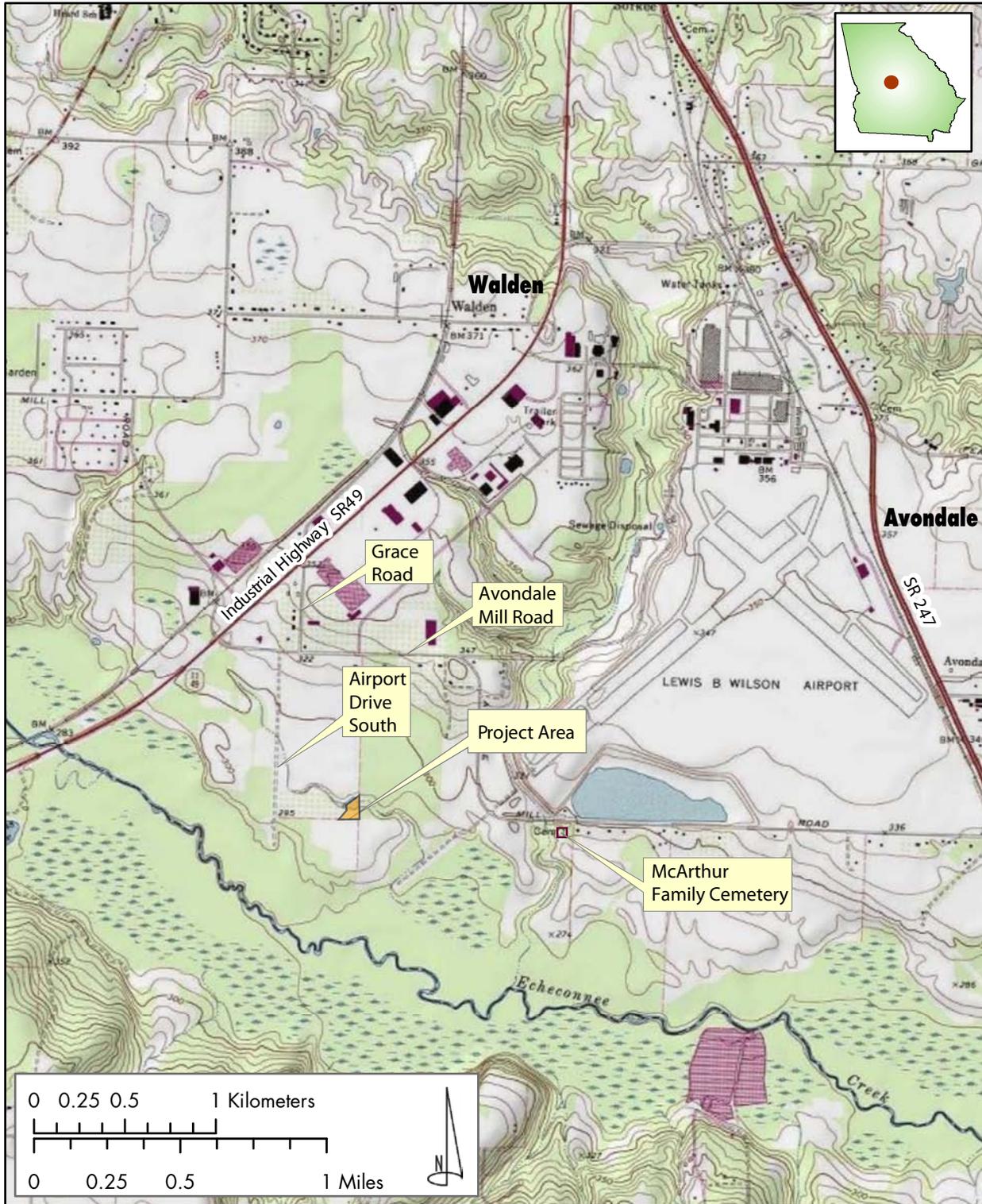
Feature No.	Status	Sex	Age	Grave Shaft Form	Wooden Vault Liner Present?	Burial Case Form	Notable Artifacts
96	Grave	Female	35-45	Vaulted	No	Coffin	Wedding and Engagement Bands, Shell Pendant/Button?
97	Grave		7.5-12.5y	Vaulted	No	Coffin	Black Glass Mourning Pendant
98	Grave		Child (<~1y)*	Vaulted	No	Casket	
99	Grave		Child (<~4y)*	Vaulted	No	Casket	
100	Grave		Adult?	Vaulted	No	Coffin	
101	Grave		Adult (Middle Aged to Older)	Vaulted	No	Coffin	
102	Grave		Adult	Vaulted	No	Coffin	
103	Grave		Child (<~5y)*	Vaulted	Yes	Coffin	
104	Grave	Male	Adult (Middle Aged to Older)	Vaulted	No	Casket	
105	Grave	Male	45-55y	Simple	No	Casket	
106	Grave	Male	>50y	Vaulted	No	Casket	

## GENERAL DESCRIPTION OF PROJECT AREA

The Avondale Burial Place (9B1164) was located in the area between Walden and Avondale, two small village communities south of Macon, Georgia. The site's coordinates are UTM Zone 17 N3619175 E249556. The cemetery was about 950 meters south and 475 meters east of the intersection of Avondale Mill Road and Airport Drive South (Figures 1.1 and 1.2). The burial ground was situated on a low rise in an undeveloped lot corner with large agricultural fields to its west and south, a pond to its north, and a wooded lot to its east. A farm road and overgrown fence line ran along the cemetery's southern margin. A modern, gated tractor trail passed over the eastern portion of site. Two overgrown traces and a fence, all positioned on a north-south axis, were immediately east of the site. The project area encompassing 9B1164 was estimated at about three-quarters of an acre (0.75 acre).

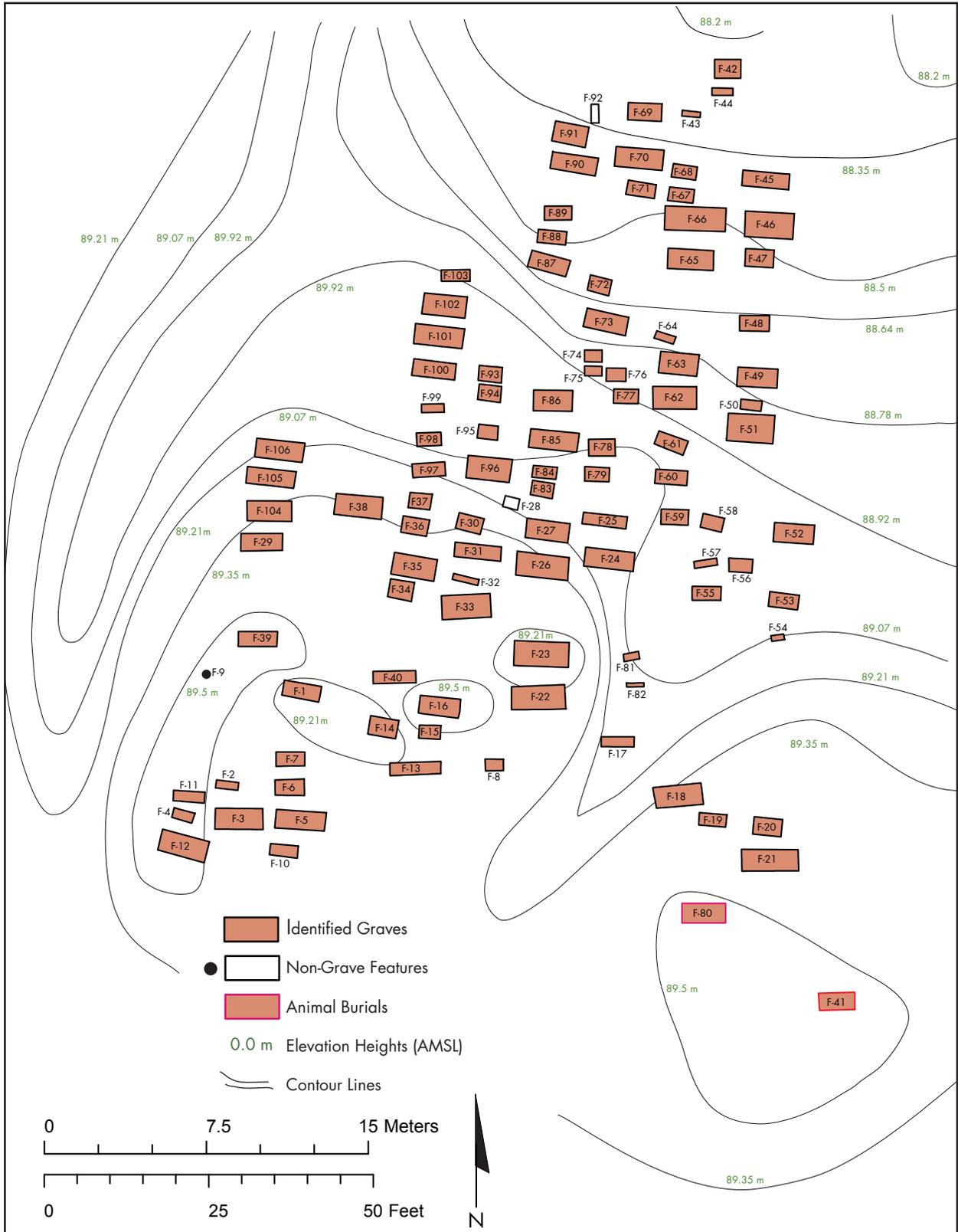
Properties around the cemetery were under a variety of uses (Figure 1.3). Seasonal crops including winter wheat, soy, sunflowers, corn, and silage were grown in field immediately around the burial area. Residential and heavy equipment storage buildings were found along the farm road. To the property's north, a wood fiber processing plant and modular construction industrial complex were in part of the Bibb County Industrial Park. Take-off runways for the Middle Georgia Regional Airport were within 1,000 meters of the site. The agricultural field immediately west of the site was not in use during the investigation period.

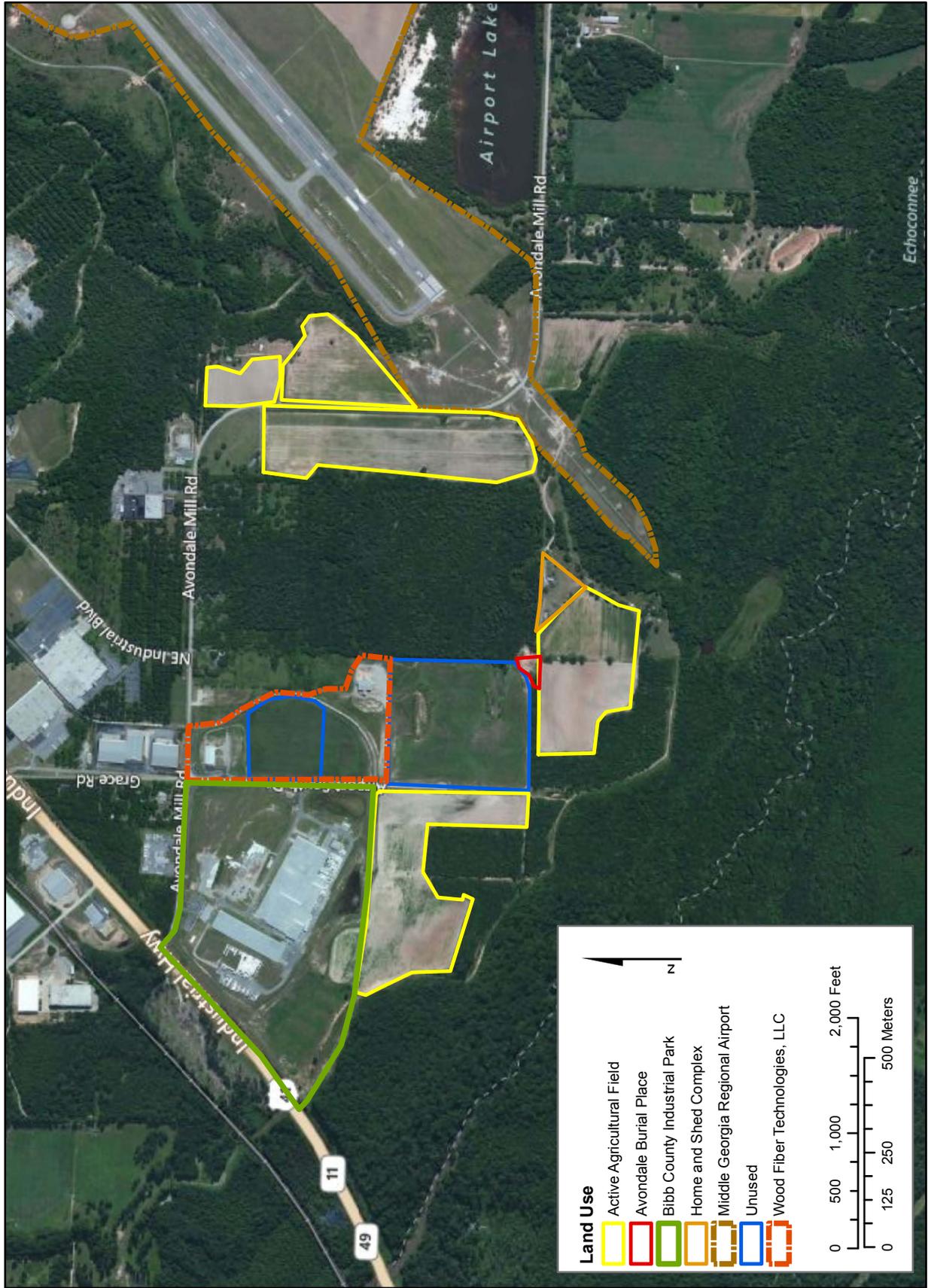
Figure 1.1.  
Location of Avondale Burial Place (9B1164)



Source: USGS Warner Robins NW, Georgia Quadrangle

Figure 1.2.  
Plan View of Avondale Burial Place (9BI164)





Source: ESRI Resource Data

Figure 1.3.  
Land Uses around Avondale Burial Place (9B1164)

The cemetery occurs in the general vicinity of the Fall Line, a fractal geological transition between the undulating Piedmont hills to the north and the rolling Coastal Plain sand hills to the south. With the exception of the low-lying and fairly level Echeconnee Creek drainage, forming the boundary between Bibb and Houston counties, the cemetery is surrounded by wide rolling hills that are part of the Southern Coastal Plain and Piedmont Uplands. Characteristics of both of these provinces can be observed in the immediate area around the cemetery.

Relative to specific locations on the landscape, the underlying geologic deposits in this area have one of two diverse origins. Geologically ancient crystalline igneous and metamorphic rocks (mainly biotite, gneiss, and granite) underlay Piedmont soils that have more or less formed in place. Younger sedimentary rocks, mainly from the Tuscaloosa Formation underlay the sandier Coastal Plain deposits. Clay, suitable for ceramic production, can be found in the immediate area. The cemetery falls within the Norfolk-Orangeburg Soil Series (Woods 1979). These soils are generally characterized by sandy loams. Dense red clay deposits, similar to those found underlying the Cecil-Davidson Soil Series are also present in the project area.

The site is drained by a series of dry creek beds that flow into an unnamed stream east of the site and eventually into Echeconnee Creek. This creek in turn flows into the Ocmulgee River east of the project area. Waterways in this area are wide and stream meanders increase as they flow off the Piedmont Uplands; this is a characteristic of water flow in the Coastal Plain (Clark and Zisa 1976). Rapid decreases in elevation between the Piedmont and Coastal Plain areas frequently result in flooding along the lower elevation waterways. The Echeconnee Creek flood plain around Walden is dominated by larger expanses of swamp and wetland. This environment provides a rich and varied habitat for fish and a variety of animals and plants (see Shapiro 1990).

The project area has a warm-temperate climate, with an average growing season of 220 days (Woods 1979). The average winter temperature is 46 degrees Fahrenheit, and the average summer temperature is 80 degrees Fahrenheit. Annual precipitation averages 46 inches. Most rain falls in the spring and summer. Snowfall is rare and occurs about every fourth winter. The prevailing wind is from the west-northwest. During late summer and fall, remnants of hurricanes from the Atlantic Ocean can introduce heavy rains over the course of one to three days.

At the time when late eighteenth-century European explorers, such as Bartram (1928), visited the Macon area, longleaf pines grew in the grassy meadows of the uplands, whereas hardwoods predominated in the bottomlands. A mixture of loblolly and short leaf pines, water oaks, red and white oaks, sweet gum, yellow poplar, sycamores, magnolias, azaleas, and bayberries can still be found growing in wooded areas around the project area. These wooded parcels provide habitat for deer, squirrel, raccoon, and songbirds. Quail, rabbits, and other game animals frequent the nearby cultivated fields. The vast swamps and wetlands attract significant numbers of waterfowl, turtles, and snakes. Major wild life actively observed at the site included wild turkeys, white tailed deer, wild pigs, red-tailed hawks, painted turtles, eastern and black king snakes, northern ring necked and water snakes, timber and diamond back rattlesnakes, coyotes, black racers and a wide variety of small rodents and insects. An active beehive was present on the northeastern side of the project area.

## PREVIOUS INVESTIGATIONS

There are tens of thousands of cemeteries in Georgia, of which several thousand can be reliably attributed directly to African American communities. Despite this occurrence, relatively little is known about them. Cemeteries have been relocated in Georgia since the eighteenth century, however, it has only been within the last 100 years that these projects have received more than cursory documentation and only in past few decades have they been viewed as archaeological ventures. Some of the largest cemetery relocation projects in the state were associated with reservoir construction, principally at lakes Allatoona, Clark Hill, Hartwell, Lanier, Russell, Seminole, and Walter F. George (Elliott et al. 2000). Sadly, the data collected from these projects are marginal at best. Among the more notable, better-documented archaeological-based cemetery relocations in Georgia have included the Mount Gilead Church Cemetery (Wood et al. 1986), Nancy Creek Primitive Baptist Church (Garrow et al. 1985), Big Laser Creek Cemetery (Garrow and Symes 1987), Redfield Cemetery (Braley and Moffat 1995), and the Area 1 and 2 cemeteries (Matternes et al. 2010).

In the American South, which includes Georgia, responses to death produced distinctive cultural features that help set this region apart from other portions of the nation. The Southern mortuary behaviors associated with historic period burial grounds have been the subject of documentation among a variety of anthropological, historical and folklore studies (Combs 1986; Crissman 1994; Crocker 1971; Georgia Writer's Project 1972; Little 1998; Montell 1975; Sisk 1959; Wigginton 1973). In general, social scientists now recognize that the South's penchant towards rural, semi-isolated communities, adherence to more traditional values and belief systems, and reliance on family bonds as a primary means of support created funerary rituals that strayed way from those followed by more mainstream American communities (Clauser 1994; Jeane 1978, 1992; Jordan 1982; Milbauer 1989). This pattern is especially apparent among African American funerary practices. Traditions and belief systems retained from those followed in West Africa survived, created distinctive rituals, and ultimately resulted in a rich varying array of mortuary symbolism (Fenn 1985; King 2010; McCarthy 1997; Morrow 2002; Nichols 1990; Richey et al. 2008; Thompson and Cornett 1981; Thompson 1984; Vlach 1990). Frequently, the material components of these symbols became part of the archaeological record, capable of recovery and interpretation as part of mortuary investigations (Davidson 2010; Dockall et al. 1996; Handler and Lange 1978; Hogue and Alvey 2006; Orser et al. 1987; Parrington et al. 1989; Perry et al. 2006; Peter et al. 2000; Rose 1985; Shogren et al. 1989).

Within Georgia, there have been only a few archaeological considerations of African American burial grounds. One of the more data collection intensive African American cemetery relocations in the state of Georgia was accomplished at the 9CH875 and 9CH1168 cemeteries on the outskirts of Savannah in Chatham County, Georgia (Matternes et al. 2010). An examination of these post-Emancipation to World War I period assemblages revealed 396 individuals whose mortuary features could be directly linked to mortuary practices recorded among local low country African American communities. From the coast, nineteenth-century African American cemeteries and graves have been recovered and addressed by Elliott and Harrington (1992), Elliott and Elliott (1989), Smith et al. (1986), and Thomas et al. (1977), among others. Excavations at the

Deepstep AME Church in Washington County have provided some insight into nineteenth- and early twentieth-century cemeteries that are closer to the fall line (Braley 1992). While not technically considered a cemetery assemblage, nineteenth- and early twentieth-century African American remains were also found during excavations in the basement of Augusta's Old Georgia Medical College. Despite the secondary nature of these deposits, obtained from grave robbing and subsequent anatomical dissection, these remains have proven to be an important source for biological information on local populations (Blakeley and Harrington 1997).

More locally, dilapidation of the Fish Vault, a circa-1840s tomb in Milledgeville's Memory Hill Cemetery provided a rare peek at the structure and burial furniture associated with a Euro-American antebellum southern elite family (Hammack et al. 2009). Iron and wooden coffins were among the features observed. Construction of the Town Creek Reservoir in Jones County prompted the relocation of the Redfield Cemetery (9JO187) (Braley and Moffat 1995, 1996). This late nineteenth-century burial ground was attributed to African American tenant farmers developing the former Lowe/Hawes plantation (Braley and Moffat 1996:5). The cemetery was located on the western side of a hill and displayed at least two interment clusters. Health conditions among nineteenth- and early twentieth-century rural African Americans came to light with this examination. Infectious disease, nutritional stress and violent injuries or deaths were noted as predominant health maladies recorded in this cemetery's skeletal assemblage (Braley and Moffat 1995, 1996). To date, an intensive examination of the mortuary practices associated with rural African American communities in the fall line and in the upland regions of Georgia has not been forthcoming. The Avondale Burial Place provided an excellent opportunity to address the mortuary traditions associated with African American communities from these regions.

## II. THE AVONDALE BURIAL PLACE IN GEOGRAPHIC AND HISTORIC CONTEXTS

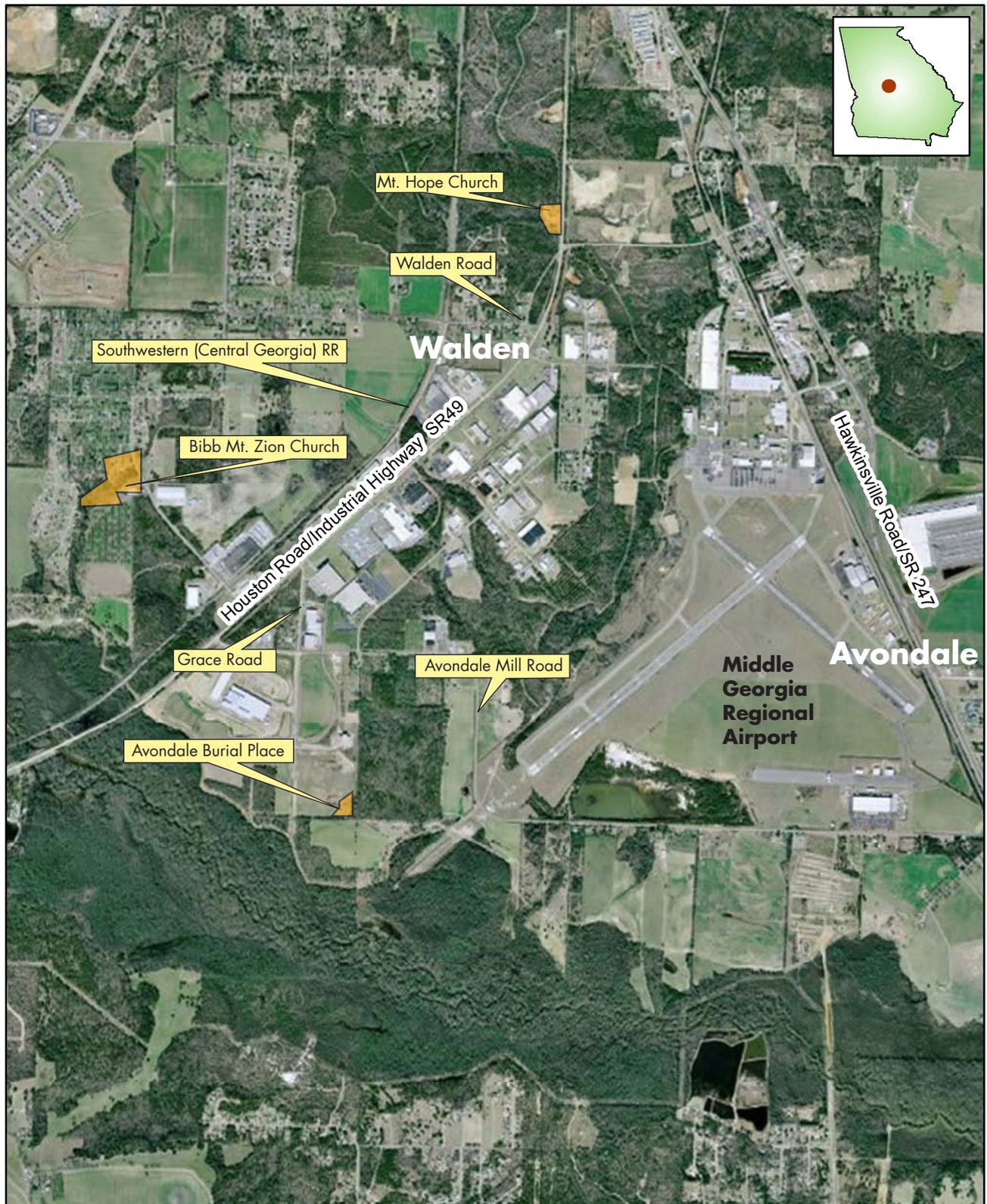
When a family or community treats their departed loved ones with respect and reverence, not only marking the occasion of their passing with special rituals and communal observance but also by keeping the burial grounds as sacred space, how can a cemetery become “lost?” The individuals buried at Avondale Burial Place were buried as valued members of their families and communities, placed carefully in graves with personal possessions and at some expense. Yet somehow, within approximately 75-100 years, almost everyone had forgotten about the cemetery. Against what historical backdrop did this occur?

It is probable that many lived in the area for several generations. That some may have been recent arrivals and buried their dead at the cemetery out of necessity can be guessed. But what is certain is that, for some space of time, the individuals buried here all worked, worshiped, learned, and lived in the communities of Rutland, Walden, or Avondale. It may not be possible to determine the specific identities of the individuals buried at the cemetery, but it is possible to reconstruct to some degree the community to which these people belonged.

While the available archival records prove that land in this area changed hands a number of times, they are silent concerning the cemetery that is located in the southeast corner of Land Lot (LL) 130 (Figure 2.1). Considering that this is an African American burial ground, this lack of documentation is not surprising. Historic African American cultural resources, and particularly those from the nineteenth century, have little to no documentary evidence of their existence. The federal census and slave schedules are the most consistent records of slave households and ownership, though the information provided is scant. Newspaper advertisements for slaves that are either for sale or who have run away sometimes give brief physical and personality descriptions, but they are from the European American’s perspective. Before the Civil War, the slaves that lived and worked in the project area had families, attended worship services, lived in small slave houses, and probably interacted with slaves on nearby farms and plantations. After the war, some likely left to find relatives or new opportunities, but many stayed and found work with families they already knew, and to be near their own families for support.

This chapter seeks to provide a historical portrait of the communities of south Bibb County in order to establish a historical context for understanding the cemetery. The chapter provides a brief cultural geography, a discussion of the chain of title research for the Avondale Burial Place property, and then builds a developmental history of the project area from 1820 to the present day. Available archival records provide much more information on the European American families and owners of the various properties in this area, while the names and lives of African Americans who lived there remain less defined. Some of these families moved away from rural Bibb County and Georgia as part of the Great Migration of African Americans seeking a better life in the nineteenth and twentieth centuries. Other families, however, remained in Bibb County and continue to play important roles in their communities.

Figure 2.1.  
Current Aerial View Showing the Study Area of Walden,  
Avondale, and the Avondale Burial Place



Source: Aerial Google Map 2011

## CULTURAL GEOGRAPHY

Bibb County lies in almost the geographic center of the state of Georgia and comprises 160,000 acres or 250 square miles (Bibb County Soil Survey 1922). Boasting an abundance of waterways, it is bound on the south by the Echeconnee Creek, and crossed by the Tobesofkee, Rocky, and Walnut Creeks, which drain into the Echeconnee to form the Ocmulgee River.

The project area is located near the southern border of Bibb County, and just north of the Echeconnee Creek (Figure 2.1). This area, which lies approximately 12 miles south of Macon, the county seat, has long been both rural and agrarian. Used for agriculture throughout much of the twentieth century, it was divided into large homesteads and plantations in much of the nineteenth century.

The Avondale Burial Place lies in the southeast corner of Land Lot (LL) 130, in Rutland, or Fifth District, Bibb County. When the Georgia government established Bibb County in 1822 from an assortment of adjacent counties in the center of the state, the northern part of Houston County became the southern part of Bibb. Echeconnee Creek divided the two counties, but the division of Bibb County into districts and then a grid of numbered lots in the 1820s included parcels that straddled the water and therefore both counties.

The LL system used in Bibb County creates a somewhat regular, geometric grid of square lots, with property lines intersecting at right angles. Therefore, the southeast corner of LL 130 touches three adjacent lots: LL 131 to the east, LL 132 to the southeast, and LL 129 to the south. The cemetery is located in the southeast corner of LL 130. This land lot often sold with LL 129, which straddles the Echeconnee River and is in both Bibb and Houston counties. These land lots and their occupants are discussed and illustrated in detail in Chapter III.

While the alignment of some roads in the area have shifted over time, the most important roads in the project area appear to be the following: Avondale Mill Road, which ran east-west and extended from Houston Road just south of Walden to the town of Avondale; Houston Road, which branched off of Hawkinsville Road in the northern part of Rutland, ran to the west directly into Walden, and then followed the Central of Georgia alignment to Avondale Mill Road near the Houston County Line; and Hawkinsville Road, which ran south from Macon to the southeast through Avondale, closely aligned with the Georgia Southern and Florida Railroad. The project area was situated south and between the communities of Avondale and Walden and the road network would have provided connections to both communities for those living near the cemetery.

The general area where the Avondale Burial Place is located seems to be called by several names. While the census refers to Militia District 520 or Rutland, other local maps including highway maps, rail maps, and soil maps (presented later in this chapter) refer to it as Walden, Avondale, or Rutland. The burial place was named in the early stages of the project as Avondale Burial Place based on its proximity to Avondale Mill Road. However, it should be noted that the newspaper and historical accounts uncovered during the project research refer to the area most often as Walden.

## CHAIN OF TITLE

The following section presents the overall chain of title for the project area (Table 2.1). The landowning families are discussed in more detail Chapter 3.

*Table 2.1. Deed Summary for the Project Area*

Time Period	Owner
1823-1824	Wiley Pope
1824-1832	William Crocker
1832-1832	Aaron Lessell
1832-1846	John L. Lessell
1846-1847	Lewis S. Avant
1847-Mid-1850s	Washington Durden and Heirs
Mid-1850s-1865	William Burgay
1865	G.F. and H.E. Oliver
1865-1869	William Burgay
1869-1873	William J. Smith and Cornelius B. Wilborn
1873-1877	Robert W. Johnson
1877-1892	John Barton and Heirs
1892-1917	Mrs. Statira Grace
1917-1919	M.M. Grace
1919-1935	Thomas C. Lockhart
1935-late 1970s	James and Louise King
Late 1970s-2000	Macon Bib Industrial Authority
2000-2000	Bert Thompson
2000-2007	Southern Wood Services, LLC
2007-Present	Wood Fiber Technologies, LLC

\*Note-Grey shading indicates the approximate outer date range for the cemetery, while blue shading indicates a date range illustrated with more certainty by the artifact assemblage.

Shortly after the creation of Bibb County, incoming settlers obtained grants for land in the county, often vying for locations near a waterway. The Echeconnee Creek proved a popular area and Wiley Pope quickly claimed Fifth District LL 130 through a land grant on December 2, 1823 (Bibb County Deed Book [BCDB] C:494, A:125). Pope sold the property three months later. William Crocker purchased the lot from Pope in 1824 for \$100, and he is the first known slave owner of the property (Bibb County Deed Book [BCDB] C:494, A:125; U.S. Bureau of the Census 1830).

Crocker owned LL 130 for eight years and then sold it to Aaron Lessell in 1832 for \$400. This was four times the amount Crocker paid for the tract, indicating that Crocker had improved the land and possibly built a home there. Lessell then made an important and lasting decision to divide the land lot into halves. When Lessell decided to sell the east half of LL 130, just six months after his purchase, he set a precedent for the lot's division. It was thereafter sold as two parts, a western half and an eastern half. The Avondale Burial Place is located in the southeast corner of

the eastern lot. All subsequent land transfers of the east half of the lot are pertinent to its history (BCDB C:541). Aaron Lessell sold the east half of LL 130 to John L. Lessell, his son, for \$200 (BCDB C:541, 8:333, 8:334). John Lessell held on to the property for 14 years.

In May 1846, Lessell sold the east half of LL 130 to Lewis S. Avant for \$700, as well as half of another, unnamed lot. He did not hold the property very long, and in 1847, he sold it to a member of the Durden family, whose first name is illegible on the deed record (BCDB C:541, 8:333, 8:334).

The Durden, or Durdin (sometimes Dardin), family patriarch Washington Durden was a prominent slave owner in Bibb County. Washington Durden passed away in 1855 and left a sizable estate, valued at over \$30,000. As a plantation owner, Durden was among the wealthiest of the elite planter class in southern Bibb County (U.S. Bureau of the Census 1850; Bibb County Returns Book H:609-613).

In 1858, William Burgay purchased several hundred acres of land from the heirs of Washington Durden (BCDB Q:816-817). This land was located several lots east of the LL 130, and contained a quarter acre area "known as the grave yards" reserved on the "Rix Place." It was not until the mid-1850s that Burgay purchased LL 130, comprising the project area, to establish his own homestead (BCDB Q:816-817). By 1861, Burgay's land likely included not only LL 130 but also part of LL 129, which was partially in Houston County.

After the war, Burgay faced a number of financial problems. Perhaps in order to satisfy the debt, Burgay attempted to sell the property several times. In a confusing series of real estate transactions, Burgay first sold the property to brothers G.F. and H.E. Oliver on February 8, 1865 for \$35,000 and then purchased the property back for \$2,050 in October of the same year. At the same time, Burgay sold to the Olivers the lots to the east comprising the "Rix Place," which he had bought from the Durden family. In 1866, Burgay recorded a deed selling his homestead property (LL 129, east half of 130, west half of 131) to John Bryant, guardian for C.B. Wilborn, with a promissory note of \$6,568 and only \$5.00 in hand. Apparently, the deal was never completed, and in January 1869, the sheriff put a notice in the paper for sale of the property to satisfy the judgment against Burgay by Susan Gregory. In November 1869, Burgay and his wife Nancy sold to William J. Smith and Cornelius B. Wilborn the homestead property (Figure 4) (Crum, no date; BCDB U:377, R:498, 614; *The Georgia Weekly Telegraph*, 15 January 1869:7).

Burgay's ownership had a lasting impact on the property. As it changed hands in the late nineteenth century, the land was referenced a few times as the "Burgay homestead place." Several newspaper advertisements for its sale proved that although Burgay reportedly sold the property to Smith and Wilborn in 1869, it was up for auction again in 1871 and 1873, for judgments against Burgay from Susan Gregory and from John L. Burge (likely Burgay), "founded on purchase money." The sales included "all the improvements" on the land, and likely included Burgay's home, various agricultural outbuildings, and the former slave quarters (*Telegraph and Messenger*, November 7, 1871:2; *Georgia Weekly Telegraph and Georgia Journal and Messenger*, May 13, 1873:7).

A man named Robert W. Johnson must have purchased the property either at the auction or a few years after, but he too was unable to retain the land. In 1877, all of the land that made up the William Burgay "homestead place" in Rutland District, LL 129, east half of LL 130 and west half of LL 131, with improvements, was again up for auction to the highest bidder. Johnson failed to pay the taxes on the land, so for a mere \$21.00 (or \$71.00, deed is partially illegible), John Barton purchased the 400-acre parcel (BCDB BB:189).

The John Barton family owned the east half of LL 130 until 1892, when Barton's heirs sold the land, and the west half of LL 129, to Mrs. Statira Grace, a somewhat unusual transaction in that Grace was a married woman, yet she purchased the land in her own name (BCDB 68:496). She only paid \$550 for the west half of LL 129 and the east half of LL 130. Ironically, an 1897 map of the county named her husband J.T. Grace as the owner of the lots (Fox & Company 1897). The Grace family retained the property through the turn of the twentieth century (Figure 5) (BCDB 68:496).

Statira Grace held on to the land for almost a decade before selling it to M. M. Grace for \$2,500 in 1917. The buyer most likely was a child of Statira's but there is no full name given on the deed (U.S. Bureau of the Census 1900; Bibb County General Index to Proceedings of Estates; Bibb County Will Book E:385). In just three years, M. M. Grace sold the west half of LL 129 and the east half of LL 130 for \$5,000 to Thomas C. Lockhart. The two halves totaled 202.5 acres (Figure 6) (BCDB 220:679, 680, 681).

Lockhart continued the tradition of farming the land in the project area. In 1934, Lockhart, then almost 60 years old, had a plat drawn up showing his property. He owned the east half of LL 130, the west half of LL 129, and a small parcel in LL 172, which was just north of 130. This smaller parcel was on the corner of Avondale Mill Road and Weldon Road (now Grace Road), and may have held the Lockhart home (Bibb County Plat Books 7:148, 89:741).

Thomas Lockhart sold the land to James and Louise King around 1935, and the Kings owned most of the east half of LL 130 into the 1970s. A 1970 plat indicates that the Kings retained ownership of over 90 acres on the lot, including the southeast corner where Avondale Burial Place rests. From the late 1970s through the early twenty-first century, the Macon-Bibb County Industrial Authority began purchasing land in and around the project area. Timber industries also took an interest in the area and various deeds regarding timber rights and land transfers eventually divided up LL 130 into two parcels. Parcel B, which contains the project area, was sold by the Macon-Bibb County Industrial Authority to Bert Thompson in January 2000, and in August 2000, Thompson sold the land to Southern Wood Services, LLC. Wood Fiber Technologies, LLC, purchased the land in 2007 in the last recorded deed transfer, although Bibb County tax records list Macon-Bibb County Industrial Authority as the current (Georgia Department of Transportation no date; United States Geological Service "Warner Robins" 1956; U.S. Department of Agriculture 1958, 1966; Bibb County Plat Books 7:148; Bibb County Deed Index; BCDB 4592:201, 4742:37, 7462:291).

## HISTORICAL OVERVIEW

### SETTLEMENT OF PROJECT AREA – 1820s-1861

As the names of some local rivers and streams suggest, this area was among the vast holdings of the Creek Indians before they ceded their land in 1821. The Treaty of Indian Springs transferred the land encompassing the entire southern part of the state of Georgia from the Creeks to the state government. An Act of the General Assembly established Bibb County in 1822, along with three other new counties, from land in Houston, Twiggs, Monroe, Jones, Henry, Fayette, and Gwinnett counties. Bibb County held former lands of Jones, Monroe and Houston counties and honored Dr. William Wyatt Bibb, a Virginia native who rose to prominence as the first Governor of Alabama in 1819. County commissioners quickly laid out lots for the town of Macon, which became the county seat. The lot system extended beyond the new town's borders though, and the entire county was divided into districts and then lot numbers. Lots near the waterways sold quickly and by 1830, Bibb County had a total population of 7,154, including 2,988 slaves. (Hamby 1998:8; Huskey 2008; U.S. Bureau of the Census 1830; Young et al. 1950:47-48).

The area where the cemetery is located has been referred to by a number of names. It is alternately known as Rutland, Georgia Militia District 520, or in the early census records as Subdivision 8, Bibb County (Figure 2.2). The earliest records place it as Houston County. The closest towns or communities are Walden and Avondale. While Rutland seems to define more of an area than a specific town, Walden and Avondale were more discrete entities with their own schools, churches, stores, and rail stations. Walden lies to the north approximately 1.7 miles from the cemetery along the Southwestern, later Central of Georgia, Railway, while Avondale is located about two miles to the east along the Georgia Southern and Florida Railway. In addition to LL 130, there are a number of other land lots in close proximity that figure prominently with the landowners throughout the mid to late 1800s. These include: Lls 129, 130, 131, 132, 155, 156, 157, and 158 (Figure 2.3).

In the decades leading to the Civil War, Macon gained prominence in central Georgia as a major transportation crossroads and industrial center while the surrounding Bibb County retained a largely rural, agricultural economy. The population of Bibb County rose to 9,802 (4,420 slaves) in 1840 and 12,699 (5,637 slaves) in 1850, when 453 people were engaged in manufacturing and there were 308 farms. Part of the growth was due to the county's location along the Fall Line. The availability of waterpower encouraged the growth in industry, and as the falls and rapids prevented navigation on the Ocmulgee River beyond Macon, it encouraged the growth of the railroads. Another factor was the location's centrality in the state, which benefited its rapid economic and industrial growth as a regional hub (Hamby 1998:8; Huskey 2008; U.S. Bureau of the Census 1830; Young et al. 1950:47-48).

Macon, the project area, and likely many other communities in the county, utilized local male leadership to promote order and execute estates of deceased neighbors. In 1838, concerned with county politicians who were earning votes by "plying people with liquor and public barbecues," each district elected four men to obtain pledges from the population that they would not tolerate

Figure 2.2.  
Georgia Militia Districts Highlighting District 520 – Rutland



Source: U.S. Gen Web Project, Ancestry.com

Figure 2.3.  
1892 Map of Bibb County, Georgia Showing Rutland



Source: 1892 Bibb County, Rand McNally Map

candidates who attempted to induce voters for their support (Macon Georgia Telegraph, September 11, 1838:2). Aaron Lessell was one of the four elected for the Rutland or Fifth District, and at the time his son John owned the project area, having purchased it from Aaron Lessell in 1832 (BCDB C:541).

By 1838, the county had its first railroad, and soon Macon became a central railroad hub for middle Georgia (Figure 2.4). The Southwestern Railroad, which would later become part of the Central of Georgia, ran through the town of Walden and near the Avondale Burial Place. To the east, Avondale had a stop on the Georgia Southern and Florida Railroad, which was also called the Suwannee River route (Storey 2011). This connectivity was critical for growth in the area. In particular, it allowed produce grown in the area, specifically melons and fruits, to be transported quickly to many different markets. Later, in 1892 and 1893, the original Nancy Hanks steam special would run along the Central of Georgia Route through Walden on its way from Atlanta to Savannah.

Additional lines in the 1850s generated a boom period for Bibb County, and by 1860, the population grew to 16,291 with 6,790 slaves belonging to 793 slave owners. There were 719 males working in manufacturing, but the number of farms only grew slightly to 367 (U.S. Bureau of the Census 1860). Macon's status as a transportation center aided its manufacturing growth, which quadrupled between 1845 and 1859. The railroad also encouraged the growth of agriculture.

Bibb County is well suited for multiple types of agriculture. With a growing season of 229 days, farmers can grow a wide variety of crops and as the temperature rarely drops substantially below freezing, winter crops are popular as well. The grazing season is about nine months long making dairy farming and livestock farming also lucrative businesses (Bibb County Soil Survey 1922).

During the early settlement period of Bibb County, the distance and difficulty in transporting crops to larger coastal markets necessitated the production of staple crops and livestock as opposed to cash crops. Like the entire south, the perfection of the cotton gin at the turn of the nineteenth century caused a shift to the far more profitable crop of cotton. In a short period of time, it became the dominant crop in Bibb County.

As farmers began to grow more and more cotton, a very labor-intensive crop, they purchased more slaves and the farms and plantations became progressively larger. This is reflected in the values of the personal estates and real estate of the white landowners in Walden in the decades approaching the Civil War (U.S. Bureau of the Census 1840, 1850 1860).

The 1850s Slave Schedule lists a total of 5,637 slaves in Bibb County. Of these, 336 were counted in Militia District 520. These 336 individuals were held by 54 families. The average number of slaves held by these households was 6.7, while the median was 4. The largest slaveholders in 1850 District 520 were the Stubbs families with 28 slaves. By 1860, they held a total of 74 slaves.

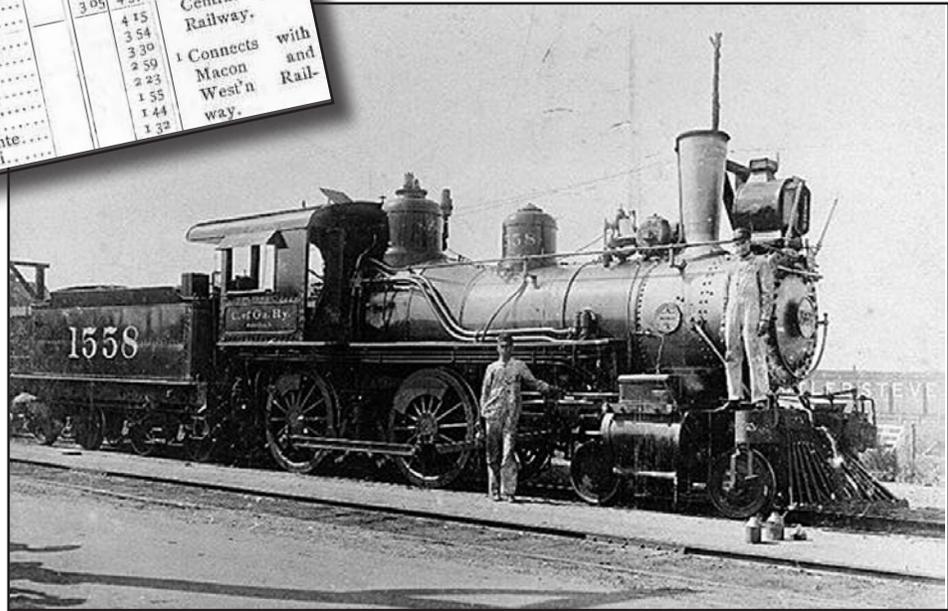
Figure 2.4.  
Railroads in Southern Bibb County

298 **SOUTHWESTERN RAILWAY.**  
Operated by Central, Ga., Railroad.  
W.M. WADLEY, President. | W.M. RODGERS, Gen. Superintendent.

Leave.			STATIONS.	Arrive.			CONNECTIONS.
Mail	Mail	Mls		Frs.	Mail	Mail	
A. M.	A. M.			P. M.	P. M.		
7 25	8 00	0	Macon 1	4 50	6 05	1 Connects with Central (Ga.) Railway.	
7 51	8 30	8	Seago	4 24	5 41		
8 05	8 45	12	Echeconnee	4 10	5 29	1 Connects with Macon and West'n Railway.	
8 20	9 03	17	Jackson	3 54	5 15		
9 04	9 52	28	Fort Valley	3 05	4 37		
9 24		35	Everetts		4 15		
9 40		41	Keynolds		3 54		
10 18		50	Butler		3 30		
10 50		60	Howard		2 59		
11 29		70	Geneva		2 23		
11 44		74	Juniper		1 55		
11 58		77	Belle Fonte		1 44		
12 10		80	Upton		1 32		

A. Southwestern Railway Timetable Showing Stop in Echeconnee, Just South of Walden (Rail GA.com)

B. The 1892 Nancy Hanks Savannah Atlanta Passenger Train



C. The 1892 Central Georgia Railway Map (RailGA.com)



D. Georgia Southern and Florida RR Showing a Stop in Walden in 1910 (1910 Hammond Map of Georgia)

**GEORGIA SOUTHERN & FLORIDA RAILWAY**  
"SUWANEE RIVER ROUTE"

VALDOSTA AND PALATKA.	
Mo.	Palatka.
12 14	12 14
12 15	12 15
12 16	12 16
12 17	12 17
12 18	12 18
12 19	12 19
12 20	12 20
12 21	12 21
12 22	12 22
12 23	12 23
12 24	12 24
12 25	12 25
12 26	12 26
12 27	12 27
12 28	12 28
12 29	12 29
12 30	12 30
12 31	12 31

E. Georgia Southern and Florida RR 1918 Timetable Showing a Stop in Walden (RailGA.com)

By 1860, the Slave Schedule for Militia District 520 included 550 slaves, an approximate 61-percent increase in 10 years. These slaves were held by 68 families. The average number of slaves in each household increased to 8, while the median increased to 5.

While southern planters reaped the rewards of enslaved labor and productive cotton crops, they also earned increasing hostility from abolitionists in the North. By the 1850s, the abolition movement gained national attention and political prominence, made more intense by the competing number of free versus slave states entering the Union. Other issues combined with this competition and estranged the North and South. After Abraham Lincoln gained the presidency, the South saw few alternatives to secession for preserving its way of life.

## CIVIL WAR

Secession from the United States of America and formation of a new nation, the Confederate States of America, pitted two regions against each other with devastating effects. The Civil War impacted Macon and Bibb County much like it did the rest of the South. With the men at war, wives, mothers, and daughters managed farms and plantations. The stories of William Burgay and Harriet Pace McArthur illustrate the types of challenges faced by southern families during the war.

William Burgay, owner of LL 130, and his two younger brothers, like many of their neighbors, left their plantations and farms behind to sign up with rapidly forming volunteer units. On July 3, 1861, William Burgay, then 27, and his younger brother Thomas M. Burgay, then 18, joined the 83 other men mustered into Company K, 11th Regiment Infantry, known as the "Houston Volunteers." William's brother Henry C. Burgay joined the same company on August 28, 1861, at the age of 15. With all three men gone from the homestead, William's wife Nancy, then just 20 years old with at least one small child, was left to run the plantation and to manage the white and black household. It is unknown whether or not William or his brother took any of the slaves with them into service (Brown 2002).

The company saw action in April 1862 and then fought in battles almost every month through December. In July 1862, William was elected Second Lieutenant and just a few weeks later young Henry went to the hospital with an unknown injury or illness. The following year the brothers again saw action beginning in April in Virginia; Henry was sent to the hospital in Richmond, where he died on April 7, 1863. Less than two months later, perhaps distraught over the death of his brother, William Burgay resigned from the army and headed home to Bibb County, Georgia. His surviving brother Thomas stayed with the company through at least May 1864 when he was wounded at the battle of the Wilderness. The third finger on his left hand was shot off, but he survived both the injury and the subsequent hospital stay. In the spring of 1865, 20 of the original 85 men of Company K, 11th Georgia Regiment Infantry were present at the surrender of Confederacy at Appomattox Courthouse (Brown 2009).

Oral traditions from the McArthur and Ryder families recount an incident that occurred during the Federal occupation of Macon. Soldiers foraging throughout the countryside attacked Ryder family members and a slave named Letty, demanding gold. Elderly matriarch Harriett McArthur, crippled at the time, went over to the scuffle and mortally wounded a Union soldier with her iron-footed

crutch. The few remaining men in the neighborhood quickly assembled at the Ryder property and helped capture the other rogue soldiers (Crum n.d.). Perhaps neighbor William Burgay had already returned from the war and was among those who came to their assistance.

During the Civil War, nearby Macon housed several hospitals and prisons. Elsewhere in Bibb County, a variety of industries contributed to the war effort. With a manufacturing arsenal and factories for wire, soap, matches, and swords, Macon produced many supplies for the war. The Findlay Iron Works produced combat equipment such as cannons and harnesses, as well as smelting \$1,500,000.00 in gold for the Confederacy Treasury Department. These factors combined to make Macon a strategic center for the Confederate Army. The city even served as the capital of Georgia, from November 1864 to March 1865 (Hamby 1998:8; Huskey 2008; U.S. Bureau of the Census 1840, 1850, 1860; Young et al. 1950:185, 218).

Like most areas in the South, the project area dramatically changed in the aftermath of the Civil War. The railroads that had so efficiently expanded Macon's commerce and manufacturing capabilities were devastated during the war. Without this transportation network, Macon would have been unable to survive. Its recovery was absolutely dependent on reconstruction of the railroad. Fortunately, Macon's geographic location near the center of the state and between major centers, including Savannah, Atlanta and Birmingham, made reconstruction of rail lines a priority. Eventually the railroads were rebuilt, but the process was slow.

#### THE 1870s

The end of slavery resulted in major shifts in agriculture. Not only had Southern planters lost their captive labor source, but they also lost substantial capital that had been invested in their slaves. Prior to the Civil War, the gang labor system, where slaves accomplished a single task together as a group (or gang) under the direction of an overseer, was the most common labor strategy (Bode and Ginter 1986). The first Reconstruction Era system employed over most of the south and the one advocated by the Freedman's Bureau was the contract wage labor system. The contract wage system focused on the landowner negotiating a wage, salary, or similar payment for work supplied by the individual laborer (Bode and Ginter 1986). In many cases former slaves, often working together as family groups continued to live in the same houses, received supplies from the landowner, and used the landowner's equipment, all of which were deducted from the agreed-upon wages. In the end, neither planters nor freedmen were very pleased with the arrangement. Planters did not like all the demands they felt were imposed by the workers in their contracts, and the freedmen felt like they were barely better off than they had been in slavery (Messick et al. 2001:28).

In response, many instituted a share system where the workers either rented the land, or more often, were paid with a share of the crop (Bode and Ginter 1986). Many different types of share arrangements were negotiated, but the common denominator was that rarely did the farmer come out significantly to the better. After paying the landowner back for seeds, supplies, or food items purchased on credit in the winter, they could even end up owing the planter after the crop went to market (Messick et al. 2001:29).

One difference could be seen on the landscape as the shift from slavery to wage earner to sharecropper/tenant occurred. Whereas once settlement patterns had been grouped by clusters of small houses, now they tended to be more dispersed across the land with each tenant having a small house on a small parcel of land.

The grounds on and around LL 130 remained farmland throughout the last quarter of the nineteenth century, a period of transition for the South. The transition to a tenant/sharecropping system resulted in a steady increase in the number of farms, as well as subdivision of land. In Georgia, the number of farms increased from 53,897 in 1860 to 69,956 in 1870 (Table 2.2). Bibb County experienced a similar increase, from 367 in 1860 to 443 in 1870. In general, the number of farms grew rapidly in the decades following the reconstruction.

*Table 2.2. Number of Farms in Georgia and Bibb County (U.S. Bureau of the Census 1860-1930)*

Date	Georgia	% Change	Bibb County	% Change
1860	53,897	-	367	-
1870	69,956	+ 30%	443	+ 21%
1880	138,626	+ 98%	728	+ 64%
1890	171,071	+ 23%	941	+ 29%
1900	224,691	+ 31%	1,250	+ 33%
1910	291,027	+ 30%	1,453	+ 16%
1920	310,732	+ 7%	1,457	+ 0.3%
1930	233,928	- 25%	908	- 38%

Source: U.S. Bureau of the Census 1860-1930

The 1870s were the years of the greatest increase in the number of farms in both Georgia and Bibb County for the period between 1860 and 1920. Georgia's number of farms almost doubled from 1860, and Bibb County had a 64 percent increase. This staggering growth never occurred again, but steady growth of above 20 and 30 percent into the turn of the century signaled a healthy agricultural economy in the state and county. Some of this growth was likely due to the subdividing of plantations into tenant and sharecropper farms, a practice that proliferated in the South during the late 1800s and early 1900s.

The newly freed slave population was instrumental in establishing new farms and between 1870 and 1880 the number of farms increased from 443 to 728. However, economic recovery in the state and in Bibb County included a new boom in manufacturing, which soon rivaled agriculture as a major employer. Though Bibb County was eighth among Georgia's 132 counties in manufacturing in 1870, it slipped slightly by 1880 to eighteenth among all counties; by this time, it only held 51 manufacturing establishments (Nesbitt 1895:421-422; U.S. Bureau of Census 1870, 1880, 1890).

During the next few decades, cotton was still king, but other crops were grown as well. In particular corn and melons seemed to do well in the area as did fruit and nut trees. Some landowners experimented with other agricultural land uses. The Minshew Family, who lived east of

the Avondale Burial Place and were long term landowners in Walden/Avondale area through the late nineteenth and early twentieth centuries, were known to have operated a dairy farm (Lucas n.d.).

### THE 1880s

During the 1880s, farming continued in the county's fertile soil, yielding mostly staple crops and various fruits, which were trucked into Macon's markets (Nesbitt 1895:421-422; U.S. Bureau of the Census 1870, 1880, 1890). In many parts of Georgia the 1880s and 1890s was a rise in "truck farming," a system of agriculture that relied on transporting a variety of perishable vegetables and fruits to non-local markets (Messick et al. 2001:36). The Macon area, with its central location in the state and strong transportation networks was ideally situated to take advantage of this new trend.

An item from *Sunny South* (July 28, 1882:8), mentioned in its Georgia News section that, "The little town of Walden, seven miles below Macon, has sold up to this time, \$8,000.00 net worth of watermelons. The sales of one day amounted to \$536."

In manufacturing, the number of establishments in Macon jumped to 217 by 1890. This included brick and tile factories, lumber, planing and textile mills, furniture, liquor, carriage and wagon shops and foundries (Nesbitt 1895:421-422; U.S. Bureau of the Census 1870, 1880, 1890).

In 1880, William Ryder, a long-term landowner in the study area and an extended member of the McArthur family, was the enumerator for the census (U.S. Bureau of the Census 1880). His familiarity with the immediate area lends credence to name spellings and relationships between individuals in the census as he would have known almost all of them personally. Using the 1897 parcel map as a guide, the route that Ryder took to survey the district can be estimated. While the exact locations of each household in the landscape cannot be identified in existing historical documents, the sequence that Ryder recorded names was a valuable aid to identifying the relative location of households among non-landholding citizens. This is discussed further in Chapter 3.

### THE 1890s

The loss of almost the entire 1890 census makes researching this decade a challenge. The expanding coverage of newspapers in this era though provides a glimpse into the daily life of the area. An article in the *Weekly Telegraph* titled *Macon's Charming Neighbor, One of the Loveliest Villages in Georgia* (September 11, 1893:8) presents a picturesque description of Walden during this period, "Ten miles from Macon on the Southwestern Road is situated sweet Walden, loveliest village of the plains." While expounding upon the virtues of the local area, the article describes the local white school as being, "a most commodious school building, possessing the best educational facilities." A section describing the beautiful homes in Walden deals primarily with the homes of Jerry Willis, J.D. Dunbar, and William Willis. Jerry Willis is described as one of the wealthiest planters on the southwestern railroad, shipping "quantities of luscious fruits, melons, and golden cantaloupes each season." Professor Kilpatrick's home is described as "vine wreathed," while Mr. Johnson's is a "rose embowered cottage" (*Weekly Telegraph* September 11, 1893:8).

In another article, this one from the *Macon Telegraph* (July 19, 1897:6), the paper details the farm of Jerry Willis. The article is entitled “Model Farm near Macon” and contains a description of Willis’ enterprise. It noted that he began to farm as a young man with 150 acres and \$1,900 in assets and now has 1,200 acres and a “snug cash balance.” During the interview, Mr. Willis noted that labor on his land was divided as follows:

I work part of my land with wage hands, rent some of it, and have some of it worked by croppers. While I have some excellent tenants, men who work their land in a business-like way, and with profit to themselves and to me, yet I think the wage system, which enables me to have complete control, is the preferable method.

One farming innovation to come to Bibb in this period is the artesian well. A November 27, 1898 article in the *Macon Telegraph* (November 27, 1898:15) tells how if the new artesian well being installed by Mr. Willis is a success, then many other local plantation owners plan to follow his lead.

A number of “For Sale” advertisements were located for property owners in the study era for the 1890s. These include advertisements or sheriff sale announcements for the farms of William Ryder, William Burgay, and Dr. J. W. Shinholser (Figure 2.5). In general, although cotton remained the number one harvest, other crops were becoming more entrenched in the area. Fruit trees in orchards, such as peaches, and nut trees, particularly pecans, became a much more common sight on the landscape. According to the 1922 Soil Survey, the southern and southwestern parts of the county were particularly well suited to peaches. Farmers growing fruit, like the Moffitts and Jerry Willis, took advantage of immediate access to two local rail stations, one in Avondale and one in Walden (Figure 2.6).

By the 1890s, Macon’s mercantile establishments solidified their control over much of the trade for the wealthiest counties of the Middle Georgia region and portions of south Georgia. A review of the county in 1896 noted, “In industrial development the advancement of the county and city have been wonderful, exhibiting its superior advantages” (Nesbitt 1895:420-421). It continued by mentioning the excellent system of public schools, the major universities, and the various religious institutions available to Bibb County residents.

In 1893, John T. Grace, then owner of LL 130, furnished refreshments again at the annual Methodist Echeconnee campground meeting for the city dwellers, even though “some of the best dinners the good Georgia housewife knows how to prepare” would be spread on the picnic blankets of most country families (*The Macon Telegraph* August 17, 1893:6; Crum, n.d.). The location of the Methodist campground was near the Avondale Burial Place and clearly played a role in the lives of the families within that area.

### THE 1900s

By 1900, the population of Bibb County had nearly doubled in the span of two decades to total 50,473 (Table 2.3). The rapid growth contributed to the rise in farms, which nearly doubled in just a single decade to 1,250 (Table 2.2), while the number of manufacturing establishments





Source: Herman S. Fox and Company, 1897 Map of Bibb County

Figure 2.6. 1897 Fox & Company Map of Bibb County Showing Detail in the Study Area

diminished slightly to 200 (U.S. Bureau of the Census 1900). Over half of the population was African American. The rise in farms continued in the early 1900s, as did the population increase, which was especially intense in the county seat of Macon, which doubled in population between 1900 and 1910.

Table 2.3. African American Population in Bibb County from 1870-1960

Bibb County			
Year	Total Population	African American	% African American
1870	21,255	11,424	54
1880	27,128	15,700	58
1890	42,370	23,336	55
1900	50,473	27,395	54
1910	56,646	27,481	49
1920	71,304	33,025	46
1930	77,042	32,906	42
1940	83,783	35,536	42
1950	114,079	40,839	36
1960	141,249	47,131	33

Source: U.S. Bureau of the Census 1870-1960

“For Sale” advertisements in the *Macon Telegraph* provide a clear picture of the farms of two of the landowners near the area. In the July 30, 1901 issue, Robert A. Ryder, son of William and Sarah Ryder describes his property as “For sale or exchange-will sell or exchange for improved city property” (see Figure 3.7). The property is listed as 275 acres, which are well adapted to fruit farming, in Rutland district, near Walden. The dwelling and tenements are about halfway between the two railroads. In a 1901 (November 2, 1901:6) advertisement in the *Macon Telegraph*, D. P. McArthur advertised for sale or rent a 400-acre farm near Walden. The article describes it as “well watered valuable stock range at a bargain.”

In the 1906 *Cyclopedia of Georgia* (Candler et al. 1906:504), Walden is described as “having a money order post office, with rural free delivery, an express office, several goods stores, some small factories, does some shipping, and in 1900 reported a population of 100.” The European American families of Walden seemed to have an active local social circle in the early 1900s. Articles like this one in the *Macon Telegraph* (July 17, 1902:3) are common:

Miss Minnie Moffitt of Walden Georgia has entertained at her house party for the past two weeks Miss Eldora Wadsworth and Miss Fannie McArthur of Rome, Miss Lula Kilpatrick and Miss Pauline Grace of Walden...

Not all the news was so pleasant however. That Walden had a store in the 1900s owned by J. B. Willis is confirmed in an article about a local contractor shooting and killing the local railway agent in Willis’ store (*Macon Telegraph* July 10, 1902:6). Another article underscores the deep racial divide (*Macon Telegraph* September 5, 1902:6). Entitled “White Boys do Farm Work:

*While Negro boys attend baseball games Crops are being harvested by industrious whites.*" The article described one farmer who claimed he could not entice any African Americans to work for him even at higher wages. He advertised for European American boys and got a large response to his ad from boys in Macon seeking extra cash. While the clearly Jim Crow sentiments of the farmer and the article blame this on local African Americans preferring to play baseball, it is far more likely that this is the beginning of a trend in the area towards a labor shortage as farm sizes rose and African Americans slowly left the area looking for better pay and lives elsewhere.

The 1905 Bibb County Directory contains a section on the African Americans living in Bibb County. It provides rough addresses, landowners, employers, crop information, and vocation for a number of African American families living in the study area. Information from this directory was used extensively and is illustrated in the graphics and family descriptions in Chapter III.

### THE 1910s

The 1910s saw devastation from the boll weevil hit Georgia. The "winged demon" arrived in Thomas County in 1915 and by the end of the decade was found throughout Georgia (Messick et al. 2001:38). The post-war drop in cotton prices halted the growth of farming in the county, and by 1920, there were 1,457 farms in Bibb County, just four more than the total from 1910 (Figure 2.7) (U.S. Bureau of the Census 1910). World War I led to the establishment of Camp Wheeler, which lasted from 1916 until the just after the war in 1919. This temporarily added to the sharp population growth in the area. While the population overall of Bibb County was growing, the African American population as a percentage of the total population had begun a slow decline. Between 1900 and 1920 the African American population of Bibb County dropped from 54 percent of the total population in 1900 to 46 percent of the total population in 1920 (University of Virginia n.d.). Increasingly, African Americans were leaving the South in search of other opportunities in the North.

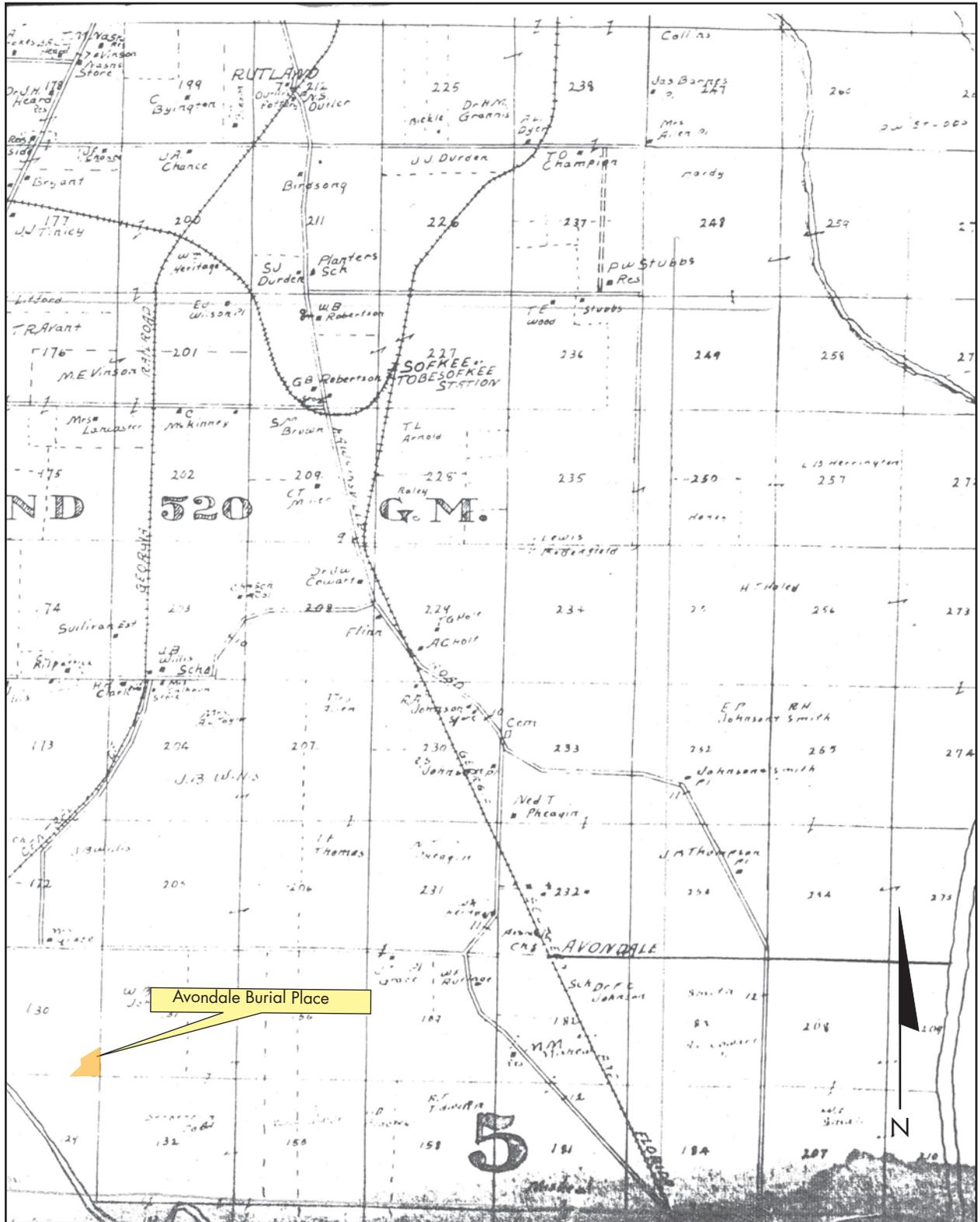
### THE 1920s

The Bibb County Soil Survey provides a description of the county, as it existed in 1922. The population of Bibb was 71,304, a 27-percent increase over 1910, most of which was in the rural parts of the county. It describes the towns of Lizella, Lorane, Rutland, Walden, and Skipperton as being the most densely populated areas outside of Macon. Crisscrossed by a number of railroads, no part of the county was more than five miles from the railroad. The road system was described as excellent and most of the county had telephone and mail service (Figure 2.8).

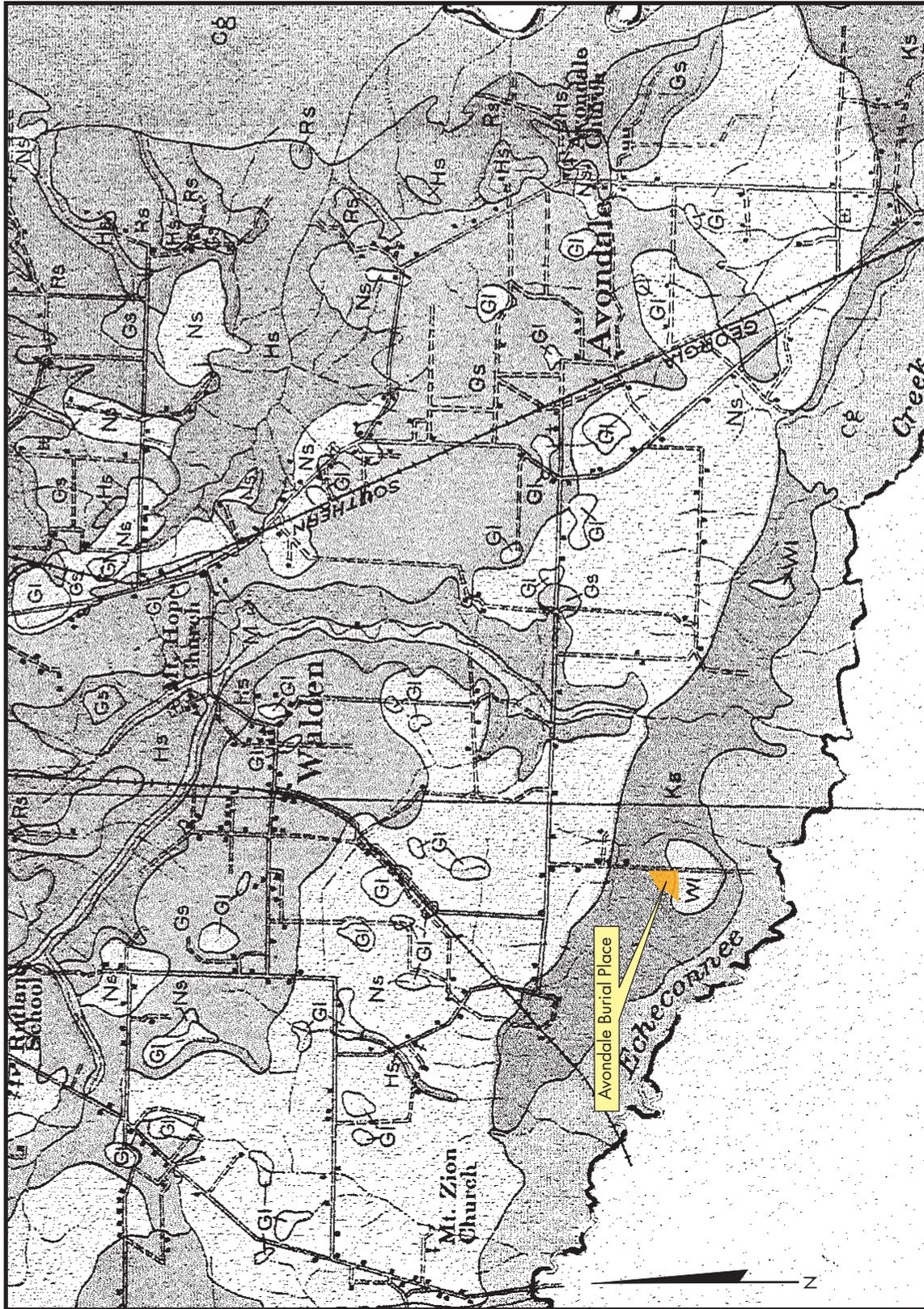
In much of the county, most of the farmhouses were small and usually lacked running water and electricity. Mules continued to be the dominant stock animal and the outbuildings on most farms were few in number and small in size (Phillips et al. 1922:1090).

While some farms in Bibb County were still quite large, most, including tenant farms, ranged from 20-100 acres. The average farm was 73.2 acres, with 44.6 of those considered improved. In 1920, 63 percent of the farms were tenant farms; most were farmed by African Americans. Typically, the European American landowners lived in Macon or on tracts closer to the town (Phillips et al. 1922:1092). The typical arrangement is described in the soil survey as follows (1922:1092):

Figure 2.7.  
1914 Parcel Map



Source: The Hudgins Company Atlanta, Georgia, 1914



Source: Bibb County Soil Survey 1922

Figure 2.8.  
1922 Soil Survey

The land is rented on shares, for cash, or for a stipulated quantity of cotton. The latter is the most common, and payment consists of 1 to 2 bales of cotton for a farm of 25 to 30 acres. In the share-rent system the owner retains the privilege of deciding what to plant and furnishes the land, machinery, and stock, and one-half of the fertilizer and seed, and the crop is equally divided between the owner and the tenant.

As in previous generations, "Practically all of the hired farm laborers are negroes" (Phillips et al. 1922:1092). The Soil Survey also noted that the small tract farmers usually relied on their families for labor. Farm laborers earned typically from 60 cents to \$1.00 per day with the use of a tenant house. Picking peaches was worth from two cents a basket up to \$1.00 per day and was done mostly by African American women and children, while packing and grading peaches earned mostly European American workers at \$2.00-\$2.50 per day (Phillips et al. 1922:1092).

The boll weevil continued to devastate crops in the area, reaching a peak statewide in 1925 (Messick et al. 2001:38). The Phillips et al. reported, "Under the present boll-weevil conditions, cotton growing is in a demoralized condition. Methods to control the weevil have not generally been adopted." Cotton remained the number one cash crop, although production as recorded in the 1920 census reflected a decrease of 31 percent over a 10 years period from the 1910 census (Bibb County Soil Survey 1922:1087).

As the boll weevil continued to devastate cotton crops, peach cultivation increased. The 1920 Census shows 207,978 peach trees of bearing age in Bibb County. The picking season ran from about mid-May until the end of July with the fruit packed at packinghouses adjacent to railroad stations. Many of the peach growers had sideline enterprises such as truck crops, hogs, or poultry. Popular truck crops in 1922 were collards, turnips, onions, cabbage, and lettuce, as well as watermelons and cantaloupes (Phillips et al. 1922:1088).

Additionally, the 1922 Soil Survey reported that with the decrease in cotton, there has been an increased interest in growing sweet potatoes, peanuts, and small grains (Bibb County Soil Survey 1922:1087-88). Corn remained the second most valuable crop in 1922. Dairy farming increased in the county in the 1920s with almost double the values from 1909 and six times the value since 1899. They also noted that most European American farmers had a few head of cattle for their own use, but most African American tenants could rarely afford to keep anything but a milk cow (Bibb County Soil Survey 1922:1087-88).

Manufacturing in Macon also diminished to only 165 establishments in 1920, despite the growth of the population to 71,304. The trend only continued into the 1920s, as the struggling economy took its toll on both agriculture and manufacturing.

During the 1920s the overall percentage of the population that was African American continued to decline. Over this decade it dropped another four percentage points (University of Virginia n.d. 1920, 1930). The soil survey even noted this exodus:

During the last few years there has been a considerable exodus of negroes to the North and West, and a number of farms, particularly in the more hilly sections, are now unattended (1922:1092).

The close of the 1920s ushered in the Great Depression with the collapse of the U.S. stock market. A failing economy and the devastation of the boll weevil would erase the gains in the local economy that had gradually improved since the aftermath of the Civil War.

#### THE 1930s

The 1930s were a difficult decade throughout the United States. The crash of 1929 had dealt a further blow, reducing the number of farms to 908 in 1930, less than the number from 1890. New Deal relief in Bibb County concentrated in and around Macon, and included archaeological and historic studies (Hamby 1998:9; Huskey 2008; U.S. Bureau of the Census 1890, 1900, 1910, 1920, 1930) (Figure 2.9). During this decade, the percentage of African Americans in Bibb County stayed constant, remaining at 42 percent. This was probably due to the lack of jobs available in northern cities.

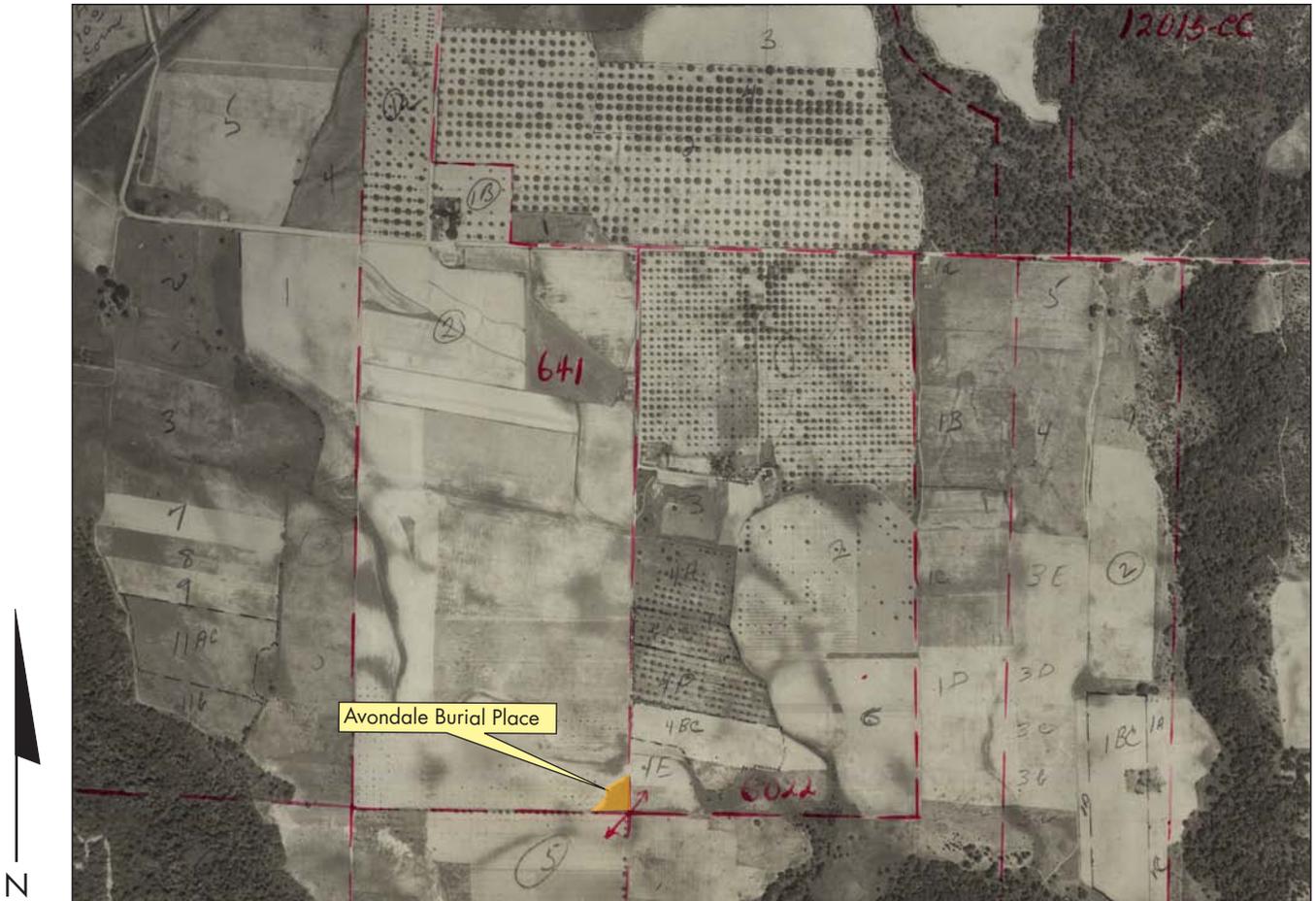
#### 1940s-PRESENT

The flight of African Americans from the South was renewed in the 1940s. What would later be termed the Great Migration of African Americans leaving the South was solidly in play. Between 1940 and 1950 the African American population dropped from 42 percent to 36 percent of the total population and from 1950-1960, it fell another three percent to 33.

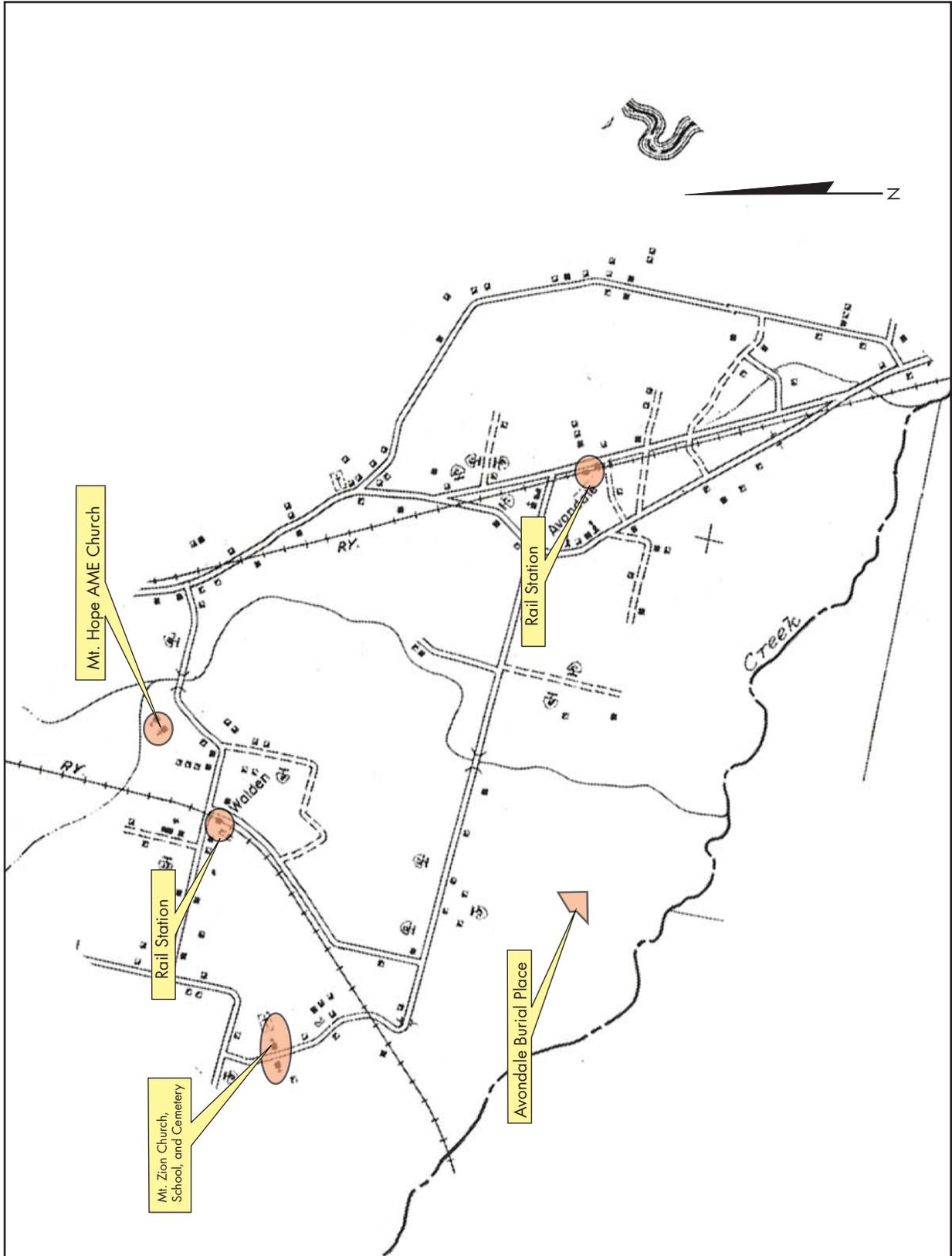
Overall, the World War II period introduced a new era of growth with the advent of the nearby Robins Air Force Base in Houston County. This facility became the largest employer in central Georgia and helped stimulate the rapid industrial and retail growth in the post-war era. The population of Bibb County continued to boom until about 1960, and has grown more slowly since, with a slight drop in the 1980s (University of Virginia n.d.). Macon continues to be an important city in central Georgia, and as a host to two major highways, it retains its status as a transportation crossroads.

Residents who moved into the surrounding area during the 1940s and 1950s, including Homer Garrison and Harry Lucas, were aware of the cemetery, perhaps because of a burial they remembered hearing about in the 1950s. Harry Lucas remembered a woven and barbed wire fence that indicated the location of the cemetery (Gale 2008a). However, a 1956 USGS topographic map made no indication of the cemetery. In 1958, an aerial photograph taken of the area revealed that the wooded cemetery stood out from its surroundings, which had largely been cleared for cultivation, and the same land use pattern appears in a 1966 aerial photograph (Figures 2.11 and 2.12). A 1970 plat map indicates that the Kings retained ownership of over 90 acres on the lot, including the southeast corner, or project area. Construction of the Middle Georgia Regional Airport during the 1940s consumed a large amount of acreage to the east of the Avondale Burial Place. From the late 1970s through the early twenty-first century, the Macon-Bibb

Figure 2.9.  
1938 Aerial Photograph



Source: USDA 1938



Source: University of Georgia Map Libraries Digital Collections

Figure 2.10.  
1940 Highway Map

Figure 2.11.  
1958 Aerial Photograph



Source: USDA 1958

Figure 2.12.  
1966 Aerial Photograph



Source: USDA 1966

County Industrial Authority began purchasing land in and around the project area (Figure 2.13). Timber industries also took an interest in the area and various deeds regarding timber rights and land transfers eventually divided up LL 130 into two parcels. Parcel B, which contains the project area, was sold by the Macon-Bibb County Industrial Authority to Bert Thompson in January 2000, and in August 2000, Thompson sold the land to Southern Wood Services, LLC. Wood Fiber Technologies, LLC, purchased the land in 2007 in the last recorded deed transfer, although Bibb County tax records list Macon-Bibb County Industrial Authority as the current owner (Gale 2008b; United States Geological Service "Warner Robins" 1956; U.S. Department of Agriculture 1958, 1966; Bibb County Plat Books 7:148; Bibb County Deed Index; BCDB 4592:201, 4742:37, 7462:291).

### THE GREAT MIGRATION

Between World War I and the 1970s, approximately six million African Americans left the south and moved to the west, upper Midwest, and northeastern United States, primarily to large cities such as New York, Chicago, Detroit, or Los Angeles, but also to smaller cities such as Milwaukee or Gary (Wilkerson 2010:9). The movement began slowly, but gained speed rapidly. By the second decade of the twentieth century, 555,000 African Americans had left the South (Wilkerson 2010:161).

African Americans left the South for a number of reasons. First, racial discrimination, segregation, violence, and lynching were all on the increase in the late nineteenth and early twentieth century. A variety of laws (known as Jim Crow laws) placed restrictions on African Americans' rights and freedoms, while the birth of the modern Ku Klux Klan led to an increase in violence against African Americans. Second, many African Americans worked as tenant farmers and share croppers in an economic system where production and profits were controlled by white landowners; African Americans were provided very meager returns. The negative impacts of the boll weevil cotton infestation in the late 1910s and early 1920s made being a tenant farmer in the South even less appealing. Finally, industrialization in the Midwest and Northeast created a need for workers that made emigration economically appealing (Wilkerson 2010).

Wilkerson described the Great Migration as a "silent pilgrimage...It was vast. It was leaderless. It crept along so many thousands of currents over so long a stretch of time as to be difficult for the press truly to capture while it was underway" (2010:9). Unlike the prominent African Americans who had fought to end slavery, or the Civil Rights leaders who would follow, the Great Migration lacked leaders. Instead, it sprang from millions of people making an individual choice to seek a better life. Wilkerson noted that Booker T. Washington was "vehemently against it," and Frederick Douglas, who did not live to see the Great Migration, thought the abandonment of the South was a "premature, disheartening surrender" (2010:42).



Source: USDA 1972

Figure 2.13.  
1972 Aerial Photograph

Historians often credit World War I with creating the labor shortage in the industrial North that triggered the start of the mass exodus from the south (Wilkerson 2010:36). Wilkerson, however, noted two pieces of evidence that show that it had likely started just prior to the war (2010:36). Railroad companies had been quietly recruiting African American workers in the south as cheap labor as early as 1915 and in 1916, *The Chicago Defender*, an African American newspaper in Chicago, ran a small story credited as being the earliest print reference to the migration:

Selma, Ala., Feb. 4 – The white people of the extreme South are becoming alarmed over the steady moving of race families out of the mineral belt. Hundreds of families have left during the past few months and the stream is continuing. Every effort is being made to have them stay, but the discrimination and the race prejudice continues as strong as ever. Not many ears ago there was a dearth of labor in this part of the country and the steerage passengers from Europe were sought. They cannot do the work of the race men, as they do not understand. Local editorials in white papers are pleading with the business men to hold the race men if possible (Wilkerson 2010:36-37, 558-559).

The paragraph went on to state that according to some of those that were leaving, “the treatment didn’t warrant staying” (Wilkerson 2010:37). This was certainly an understatement (Figure 2.14).

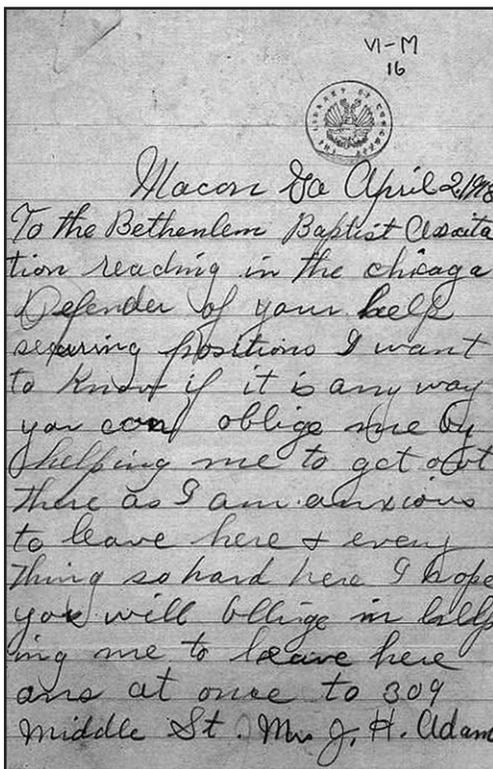
After Reconstruction ended, the south began to systematically retract freedoms and opportunities for African Americans (Wilkerson 2010:38). What would become known as the “Jim Crow Laws” would begin in the 1880s and extend into the 1960s. Cemented by Plessey versus Ferguson in 1894, the concept of “separate but equal” was in practice, far from equal. In addition to unfair labor practices and unequal access to resources and opportunities, violence, and in particular lynching, against African Americans was rampant in the South in the decades approaching World War I (Wilkerson 2010:38). In the 1934 book, *The Tragedy of Lynching*, it was estimated that an African American was hanged or burned alive every four days somewhere in the South (Wilkerson 2010:38). Newspapers carried the reports of alleged crimes, photos and articles, and even “time and place for upcoming lynchings” (Wilkerson 210:39).

Although African Americans sought to flee the South, the white southern establishment did not want them to leave. In fact, states and cities enacted Anti-Enticement Laws to stop it. Migrants sold off their belongings slowly and kept information on their departures secret in order to prevent white employers from preventing their departures (Wilkerson 2010:216-217). Many agents for northern companies acted in secret as cities sought to run agents out of town. In Macon, one law required a labor agent to obtain a recruiting license. In addition to a \$25,000 fee the agent had to obtain the recommendations of 25 local businessmen, 10 ministers, and 10 manufacturers (Wilkerson 2010:163). Agents caught violating the law paid stiff fines and could be sentence to hard labor.

An editorial in the *Macon Telegraph* dated September 15, 1916 (cited in Wilkerson 2010:36, 162) illustrates this point close to the project area:

Figure 2.14.  
Early Years of the Great Migration

A. An African American Family Newly Arrived in Chicago, 1922 (Source: Schomburg Center for Research in Black Culture)



B. 1818 Letter from Mrs. J.H. Adams of Macon, Georgia to the *Chicago Defender* (Source: Library of Congress' The Carter Woodson Collection of Negro Papers and Related Documents)

**If You are a Stranger in the City**

If you want a job      If you want a place to live  
If you are having trouble with your employer  
If you want information or advice of any kind

CALL UPON

**The CHICAGO LEAGUE ON URBAN  
CONDITIONS AMONG NEGROES**

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Telephone Douglas 9098      T. ARNOLD HILL, Executive Secretary

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C. Card Distributed by the Chicago Urban League

Everybody seems to be asleep about what is going on right under our noses. That is, everybody but those farmers who have wakened up on mornings recently to find every negro over 21 on his place gone – to Cleveland, to Pittsburgh, to Chicago, to Indianapolis... And while our very solvency is being sucked out beneath us, we go about our affairs as usual... We must have the Negro in the South. It is the most pressing thing before this state today. Matters of governorships and judgeships are only bagatelle compared to the real importance of this negro exodus.

After the first years of the migration, labor agents were no longer necessary as word of mouth from earlier migrants, particularly family and friends, and black newspapers such as the *Chicago Defender* provided a constant stream of enticement. While the *Chicago Defender* was banned throughout the South, Pullman Porters on rail trips throughout the South braved being caught and routinely smuggled papers, sometimes hurling whole stacks out of windows at certain spots along the route. The police and local authorities in many southern cities considered those trying to leave fugitives, often blockading trains at stations or arresting dozens of African Americans at a time to prevent them from moving north. Sociologists Weatherford and Johnson believed that these measures had the opposite effect on migration. Instead of deterring it, they made people even more determined to leave (Wilkerson 2010:162-165).

The paths traveled north in the Great Migration were not random (Figure 2.15). In fact, they corresponded directly with the primary rail and bus lanes north from a southern state.

The Great Migration ran along three main tributaries and emptied into reservoirs all over the North and West. One stream...carried people from the coastal states of Florida, Georgia, the Carolinas and Virginia up the eastern seaboard to Washington, Philadelphia, New York, Boston and their satellites. A second current...traced the central spine of the continent paralleling the Father of Waters, from Mississippi, Alabama, Tennessee and Arkansas to the industrial cities of Cleveland, Detroit, Chicago, Milwaukee, and Pittsburgh. A third and later stream carried people from Louisiana and Texas to the entire West Coast... (Wilkerson 2010:178).

To avoid being stopped, some people bought tickets to closer destinations and then bought their longer distance ticket in a town where no one knew them and still others walked to distant points of departure. Migrants traveling north crowded into waiting rooms at rail stations across the South. While these routes were typical, they were not absolute. Georgia, rich in rail lines, provided connections to the Midwest as well as the Northeast.

The Great Migration likely explains why the Avondale Burial Place was both abandoned and forgotten. The boll weevil and the exodus led to a decline in tenant agriculture in the early decades of the twentieth century. As African Americans left the region, African American sites and landscapes, like the Avondale Burial Place, were abandoned and forgotten.



## LOCAL INSTITUTIONS

A number of local institutions would have been important to the local African American community during the time that the cemetery was in use. All of these appear to have been located in Walden, not Avondale.

### AFRICAN AMERICAN CHURCHES AND SCHOOLS

By the 1880s, Walden has several established African American churches. These included the Bibb Mt. Zion Baptist Church and Mt. Hope AME Church. The Mt. Hope AME Church was established in 1865 (Talerie Boyd, Personal Communication 2010). According to the church website (2011) the Bibb Mt. Zion Baptist Church was founded by a group of African American men and women in 1862 as Mount Zion Church. In about 1884, they purchased land from A. Moffitt, who sold it to them for \$1.00. Moffitt, however, put restrictions on the deed so that it could only be used as a site for worship. Mount Zion Church later changed its name to Bibb Mt. Zion Baptist Church in order to distinguish itself from another church of the same name in the region.

Both Bibb Mt. Zion Baptist Church and Mt. Hope AME Church were affiliated with burial grounds. These were generally administered by mutual aid societies. These organizations were a central part of life for most African Americans in the late 1800s and early 1900s (see Chapter III). The Rising Star Burial Society was affiliated with Mt. Hope AME Church and the Good Samaritan Burial Society was associated with Bibb Mt. Zion Baptist Church. Both of these societies still actively upkeep and manage the church cemeteries today.

Restrictions placed on slave education prior to emancipation meant that most African Americans were illiterate. Community leaders recognized that in order for African Americans to improve their place in society, it was paramount that they receive an education. On the local level, Bibb Mt. Zion Baptist Church and Mt. Hope AME Church operated schools for children. In 1887, F. A. Hunter is listed as the principal of Mt. Hope AME Church School and Rev. R. M. Harris was the principal at Bibb Mt. Zion Baptist Church (Weekly Telegraph July 12, 1887:4). In 1895, Rev. Harris was still principal at Mt. Zion, while Julia Denton was principal at Mt. Hope (Macon Telegraph June 28, 1895). These schools and principals were still in operation at the turn of the century (Macon Telegraph June 25, 1901:1). R.M. Harris was still listed as the principal in 1915 (Bibb County Board of Education 1915).

Despite the presence of these schools, education could not always consider a priority to the rural farmer. There was an interesting note in the September 26, 1898 issue of the Macon Telegraph on school attendance. It questioned whether the attendance at school would be much higher that year as the crops had been poor and there was little cotton to pick. This pattern emphasized that the needs to provide labor and support the family took precedence over the student's education.

In 1923, a Rosenwald School was constructed at Mt. Hope AME Church. The school was built on a three-acre tract at a cost of \$2,500.00 (Fisk University Rosenwald Database 2001). Funding came from two sources; \$700.00 was granted by Rosenwald money and \$1,800.00 was public money. It is not known if this was local or state money. The building plan was as a two-teacher

type. This type of school was designed for two classrooms/teachers. It would typically have two classrooms with a removable partition in between. Each class would have its own entrance, vestibule, and cloakroom and there would be a shared industrial room (Hanchett 2011). Unfortunately, there are no extant photographs of the school.

The local center of commerce was in Walden. The Southwestern Railroad operated a small rail yard and train stop, giving the community access to passenger service and shipping (both incoming and outgoing). J. B. Willis capitalized on this resource and by the 1890s he has established a general store. It lay at the center of Walden, across the street from the Liberty Sardis Church and adjacent to the rail yard. It appears on the 1892 parcel Map of Bibb County (Figure 2.3). Not only did the store provide goods, it likely served as a communication center. Since J. B. Willis was also listed as the Postmaster, Willis's store provided an important link with the outside world. It is likely that many of the goods used in local funeral traditions were obtained in Walden.

### III. PEOPLE IN COMMUNITIES SURROUNDING THE AVONDALE BURIAL PLACE

The oral history of the cemetery asserted that McArthur plantation slaves were buried there. This chapter begins with the study of the European American families in the area as their records often provide the richest source of information about these African American families. Next the chapter describes the relationships of a number of the African American families who made the immediate project area their home for many generations.

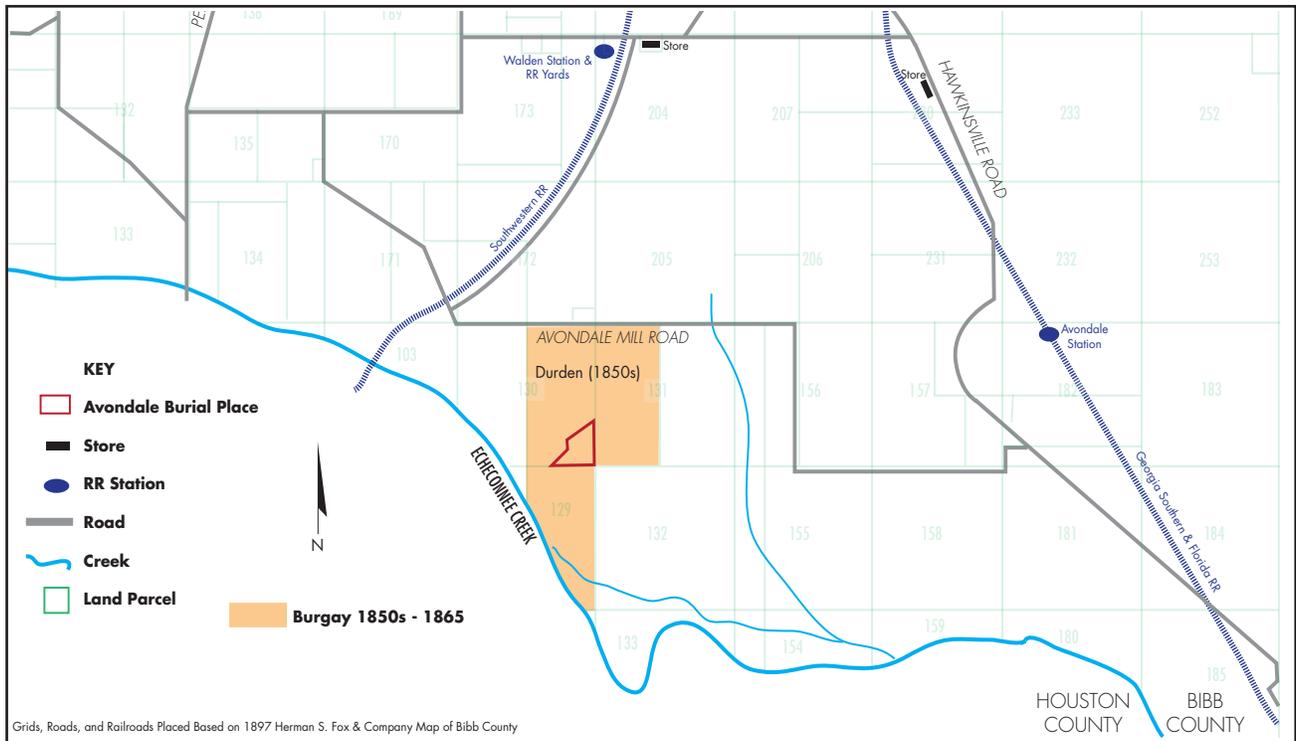
Prior to the twentieth century, property in the Walden/Rutland area was largely owned by European Americans. The 14 European American families included in this section are either listed as slaveholders in the 1850 or 1860 U.S. Federal Census Slave Schedule or have figured prominently in the area throughout a large portion of the nineteenth and early twentieth centuries. Additionally, these families lived or owned land in area between Walden and Avondale. Several families are included, because they owned LL 130 in the 1900s. In cases where numerous households with the same surname are present and living in fairly close proximity, they are discussed as a group. The archival evidence associated with these families provides the only documentary evidence for the African Americans living as slaves in the project area. In particular, the wills for John McArthur and William B. Thomas mention the names and ages of their slaves and provide a starting point for the African American family research. The African American families included in this chapter were chosen either due to a direction connection with these former slaves, or because they seemed to have a long history in the project area as evidenced by the detailed census. A series of sketch maps presents the approximate locations of landowners and African American tenants from the antebellum period to the 1880s. Locations are based on the proximity of names in the census and known family or employer relations (Figures 3.1-3.5).

#### LANDOWNER FAMILIES

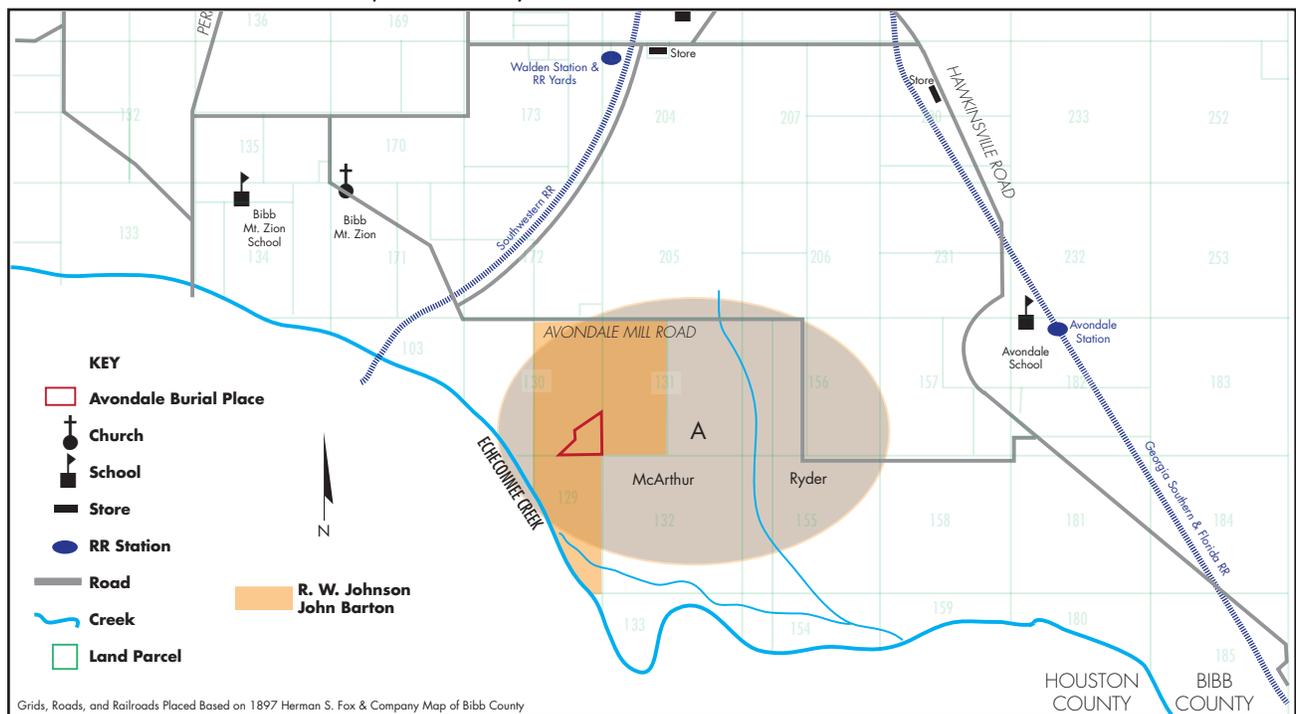
##### THE CROCKER FAMILY

William Crocker purchased LL 130 from Pope in 1824 for \$100, and he is the first known slave owner of the property (Bibb County Deed Book [BCDB] C:494, A:125; U.S. Bureau of the Census 1830). Crocker's household at the time included his wife and infant son. There were also five slaves: two males and a female between the ages 10-23, and two young girls under 10 years old. Given that Crocker is the earliest slaveholder to own the property where the Avondale Burial Place is located, he represents the earliest possible landowner to have established the burial facility. Crocker owned LL 130 for eight years and then sold it to Aaron Lessell in 1832.

Figure 3.1.  
Sketch Maps of Land Ownership in the Study Area, 1850s-1870s

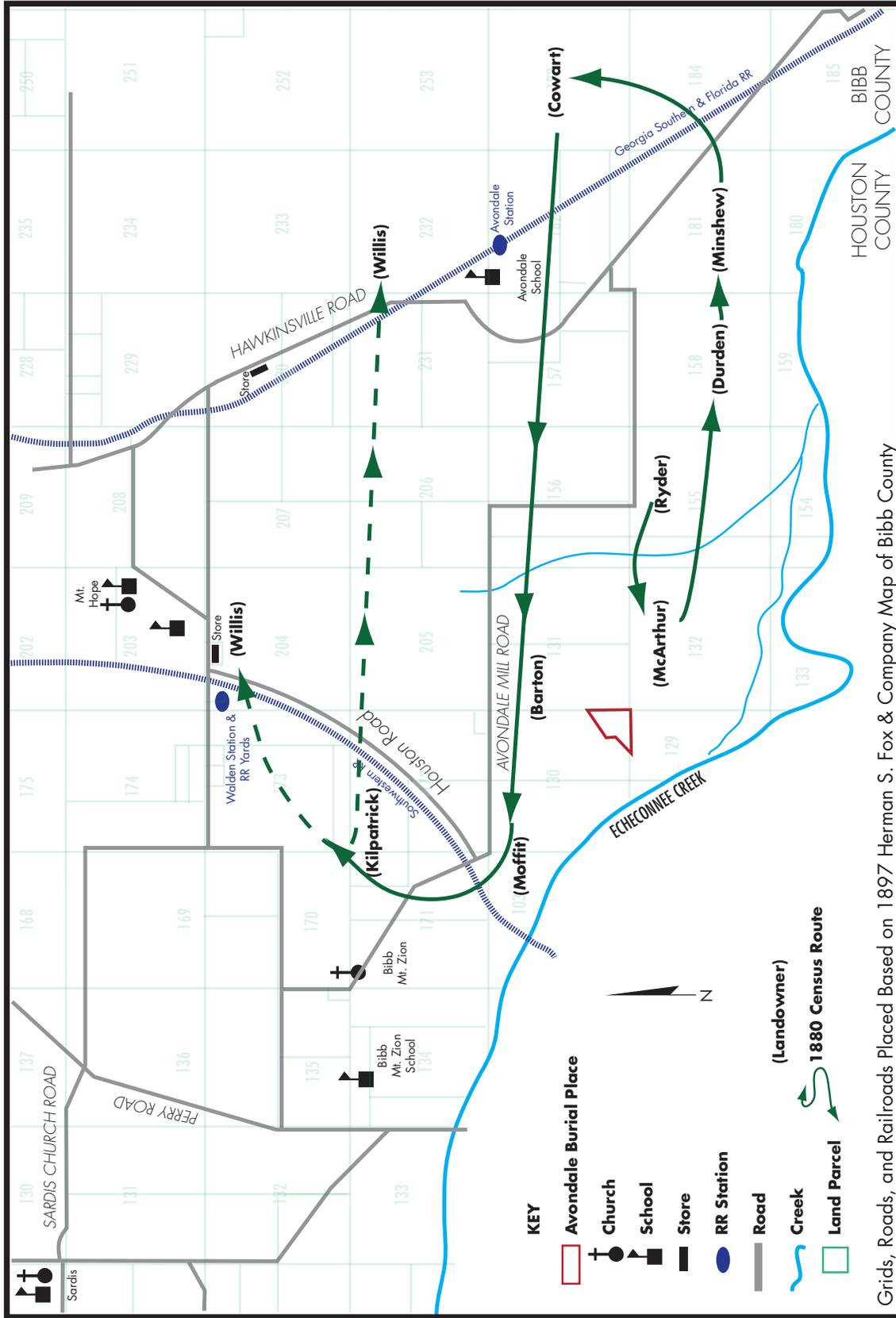


A. Antebellum Period Ownership in the Study Area



A African American Families Close to McArthurs, Ryders, Bartons: Anthony and Dinah Thomas; Alice, Frank, Mary and Walter Barton; Floyd, Ellen, Henry, Elbert, Gillian, Tallulah, and Thomas Barton, Henry and Tilda Barton; March, Hattie, Elisa, Mary, Martha, and Ollie Thomas; Juba, Shelly, Henry, Alice, Mahala, James, Henry, Ann, Willie, Ordellia, Castello; Judy Thomas; Susan Ryder; Joshua, Isabella, Columbus, Alexander, Henry, Amy, and Ellen Walker.

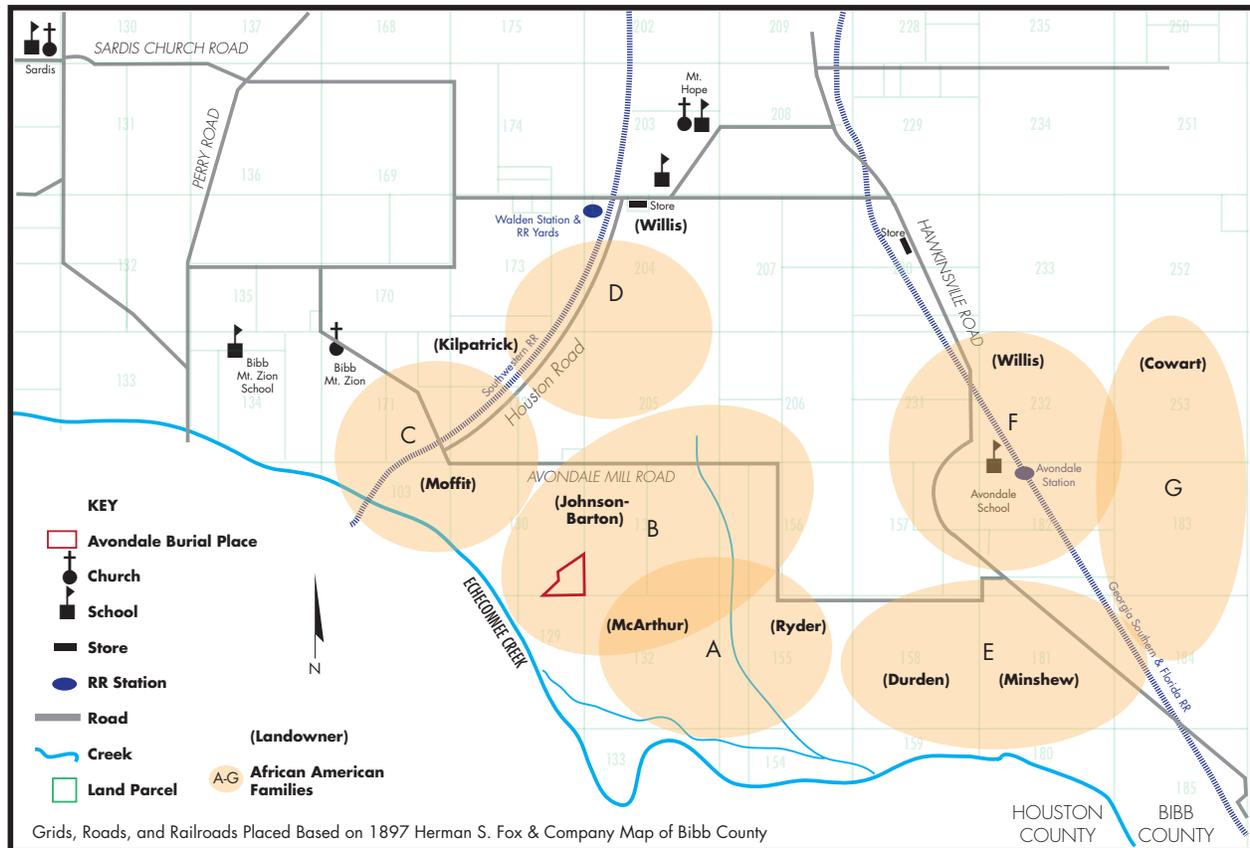
B. 1870s Ownership in the Study Area



Grids, Roads, and Railroads Placed Based on 1897 Herman S. Fox & Company Map of Bibb County

Figure 3.2. Estimated 1880 U.S. Census Takers Route through Walden-Avondale

Figure 3.3.  
Estimated Locations of Local African American Families at the Time of the 1880 Census



A. Individuals: Nancy Johnson, Henry Walker, Dent Green, Susan C. Barton, Stanton and Jinnie Clark, Hearty Thomas, Mattie Thomas, Henry Thomas, Lena McClendon, Ollie Thomas, Joe McClennan, Willy Lucas, John Gile, Sylvia Gile, Maria Johnson, and Peter McBray

B. Individuals: Jack and Martha Bostick; S. Delia, Mary, Sallie, and Moses Cummins; Mattie Hodge; Ben, Eliza, Julia, Hager, James, and Elijah Cummins; Andrew Kinlaw; Margaret, Mittie, Eddie, and Hannah McClennan; Floyd, Ellen, Leila, Thomas, and Elijah Barton; Alexander, Ellen, and Joshua Walker; Jim, Willie, Elizabeth and Elisha York.

C. Households of: Eula Tommie, Bowen Henderson, Samuel Moore, and Henry Thomas

D. Households with Surnames: Brown, Dow, Harris, Lundy, and Londy

E. Households with Surnames: Moland, Gile, Bagley, Tankersly, Brown, Dixon, Young, Brown, Brown, and Allen

F. Households with Surnames: Smith, Hunter, Henderson, Faulk, Thorpe, Stubbs, Orange, and Brown

G. Households with Surnames: Johnson, Dean, Deah, Reese, Morrell, Bivins, Wilson, Page, Bateman, Hughes, Turner, Johnson, Smith, Lane, Felder, Daniel, Carter, Churchwell, and Allen

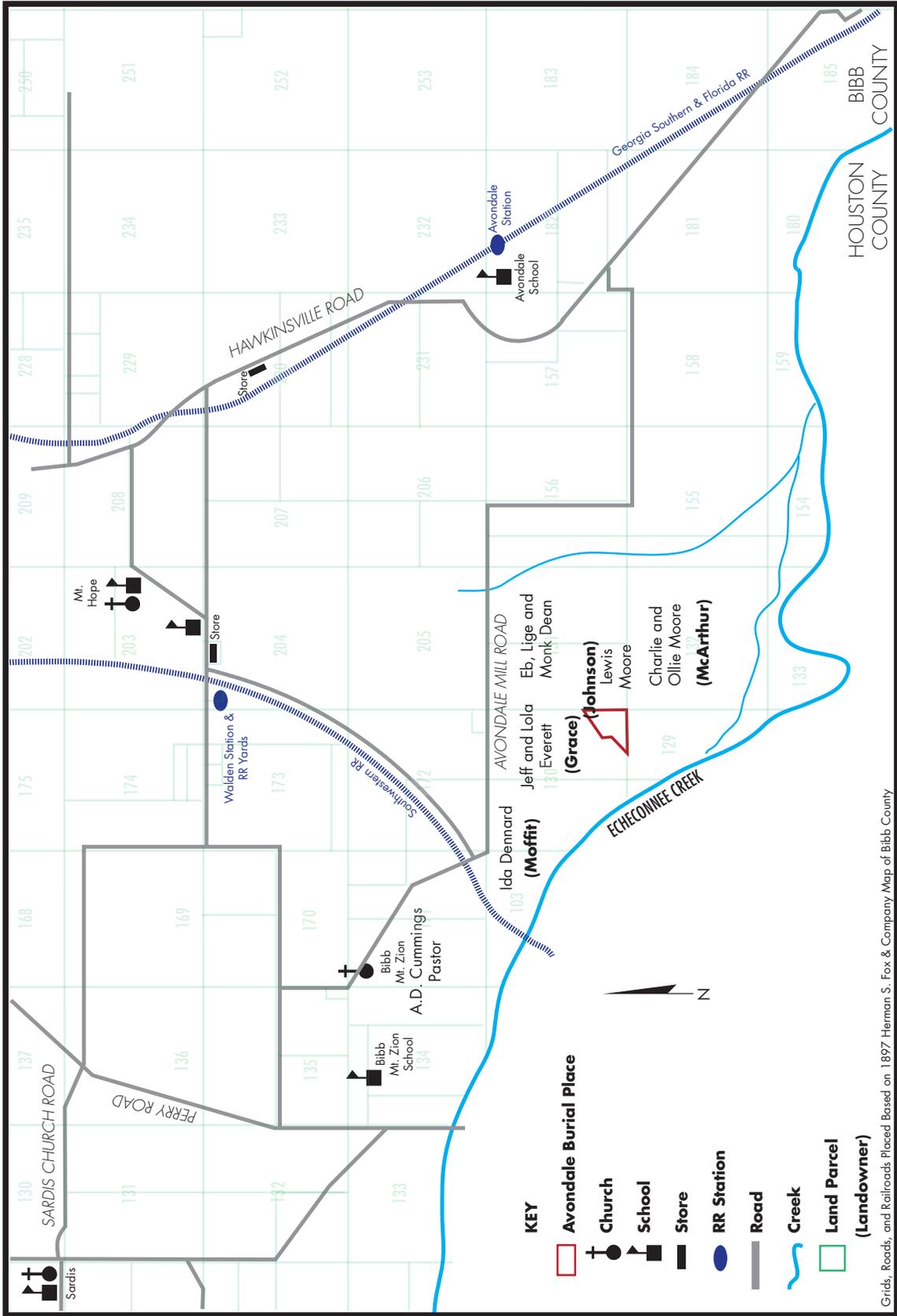


Figure 3.4. Estimated Location of Local African American Families Based on the 1905 County Directory



## THE LESSELL FAMILY

Aaron Lessell sold the east half of LL 130 to John L. Lessell, his son, almost immediately after purchasing it from Crocker (BCDB C:541, 8:333, 8:334). John Lessell held on to the property for 14 years. He does not seem to appear in the 1840 federal census, though there is a John Leslie listed in Bibb County with a European American five-person household and no slaves (U.S. Bureau of the Census 1840). This is likely John Lessell's family. John was employed in agriculture.

In May 1846, Lessell sold the east half of LL 130 to Lewis S. Avant for \$700, as well as half of another, unnamed lot. Avant was listed in the 1840 census with a large family but he did not own slaves at the time (U.S. Bureau of the Census 1840). He did not hold the property very long, and in 1847, he sold it to a member of the Durden family, whose first name is illegible on the deed record (BCDB C:541, 8:333, 8:334).

## THE THOMAS FAMILY

The Thomas family came to the Rutland area sometime after 1850. In the 1850 Census, William B., his wife Caroline (both originally from Connecticut), their four children, and five others who may have been related were living in the 271st District of McIntosh County. Based on the census and William B. Thomas' will dated March 31, 1854, William Thomas moved his family to Rutland, living on a plantation on LL 28 and 29 in Bibb County (U.S. Bureau of the Census 1850 and 1860; Bibb County Will Book). As there are no such numbered lots in Rutland and as based on the 1860 Slave Schedule, Caroline Thomas was known to have lived near the McArthurs and the McLendons in 1860, it is thought that these parcels are likely LL 128 and 129. If this was the case, then they were in close proximity to LL 130.

The Thomas estate seemed wealthy by local standards. In 1850, Thomas' real estate was valued at \$6,000, while Caroline's personal estate in 1860 was valued at \$12,370 with \$5,500 in real estate. This is approximately the same value as William Burgay's personal estate in 1860 (\$12,500) and almost triple that of Daniel P. McArthur's estate.

The will of William B. Thomas recorded in 1854 in Bibb County, Georgia lists a number of slaves by name (Bibb County Will Book B:29-32). Hester (32) along with her eight children were bequeathed to the three oldest Thomas children, Mary C., Moore B., and William B., Jr. This family was to be divided amongst these children, as the executor felt was best. Hester's children were: Robert (16), Tenah (14), Joe (12), Cate (10), Hetty (8), Tony (6), Martha (4), and Ella (18m). William B. Thomas bequeathed to his son, Charles S. Thomas, the slaves March (14) and his sisters Rachel (6) and Stepney (9). Caroline Thomas, William Thomas's wife received Toney (60), Stepney (65) along with his wife Maria (?)(26) and their three children Sally (?)(3), Mary (5), and Henry (infant). Caroline also received Judy (30) and a 53-year-old man whose name was illegible. In the next section of his will, William B. Thomas specified that Caroline Thomas also was empowered to sell March, Rachel, and Stepney and invest the proceeds in the name of his son Charles S. Thomas. Finally, William B. Thomas bequeathed to his daughter Mary C. Thomas, Diana (38) and noted that Mary had already received a bill of sale for Diana.

William B. Thomas' will indicates that no less than 28 slaves were present, a number of them representing children who may have been born after the 1850 census was taken. By 1860, the Thomas' owned 18 slaves, indicating that sale and death had probably reduced the family's human holdings. The Thomas' are listed as having owned 23 slaves in 1850 while living in McIntosh County. Caroline Thomas either died before 1870 or moved, as she could not be located in that census. In William B. Thomas's will, he made provisions for her if she chose to move back to the North. It is possible that this is what she chose to do either before or in the aftermath of the Civil War.

### THE MCARTHUR FAMILY

The McArthur family appears in the Bibb County census in 1830 (Figure 3.6). This included John McArthur, his wife Harriet Pace McArthur, and their children. The McArthurs came to Bibb County from Robeson, North Carolina. With ties to Lls 132, 133, and portions of Lls 131, 136, 154, and 155, the McArthurs were affiliated with the land near the cemetery for much of the nineteenth century. John McArthur died in 1846 and his will serves as a rich source of information on some of the local African American slaves in the immediate area of the cemetery (Bibb County Will Book 92:256). John's will listed six children: Daniel P. McArthur, Samuel J. McArthur, Mary L. McArthur, Sarah L. McArthur, John L. McArthur, and Harriet Rebecca McArthur.

While half of the McArthur children moved away from Walden, the other half remained. Daniel P. McArthur, the oldest child, married Mary John Harris. Sarah L. McArthur married neighbor William Ryder, while Harriet Rebecca McArthur married Roderick McLennan, another neighbor. Of those that left, John McArthur, Jr. moved to Wilkinson, Georgia. Samuel lived in Rome, Georgia, or other areas near Macon, and Mary L. married Thomas B. Little and moved to Thomasville in Thomas County, Georgia.

When John McArthur died in 1846, three men appraised his estate (Crum n.d.). These included John Barton, who was likely a neighbor at the time. Barton later became an owner of LL 130. Lewis S. Avant, who was a Justice of the Peace at the time, also briefly owned the east half LL 130. In 1858, Lewis S. Avant was one of the executors for Washington Durden's estate.

John McArthur's estate inventory lists his slaves by name and according to their value. In the absences of ages, their values on the inventory are noted in parentheses to provide a rough estimate of their relative ages. The inventory lists: Peggy (a woman-\$100), Nancy (a woman-\$500), Amy (a woman-\$600), Joe (a boy-\$600), Margaret (a girl-\$385), Ellen Virginia (a girl \$300), Isabella (a girl-\$250), Lucinda (a girl- \$235), Henry (a boy-\$200), Sophronia (a girl-\$250), Darkas (a girl-\$235), and Susan Caroline (a girl-\$100).

In 1852, the beneficiaries of John McArthur's will signed a receipt for the property bequeathed to them. The slave distribution was as follows: Isabel and Sophronia went to William and Sarah Ryder; Ellen (Ellen Virginia) went to Daniel P. McArthur; Thomas B. and Mary McArthur Little received Amy and her child Bill (presumably born after the 1846 inventory); Henry and Caroline went to John McArthur; Joe went to Harriet R. McArthur McLennan, and Harriet Pope McArthur, John McArthur's widow, received Nancy and her daughter Margaret. From the receipt it is not

Figure 3.6.  
McArthur and Ryder Family Photograph



Photograph Courtesy of Ms. Amma Crum

clear where Lucinda, Darkas, and Peggy went after 1846. Additional information is available on the families and descendants of the McArthur's slaves. Some of these intersect with the slaves on other local plantations. These detailed family relationships are discussed independently in the later part of this chapter.

The full distribution of all of John McArthur's land holdings was not disclosed. He left the west half of LL 155 and his residence to his wife Harriet Pace McArthur so presumably the house was located on LL 155. The home reportedly burned down during the Reconstruction era (Crum n.d.). In 1863, Lewis Avant sold the west half of LL 132 to Daniel P. McArthur and they subsequently owned it for many years (BCDB 42:167).

### THE RYDER FAMILY

Closely tied to the area immediately surrounding area of the Avondale Burial Place is the Ryder family (Figure 3.6). William Ryder Jr. was the first Ryder in the Rutland area. Born in Liverpool, England to parents William Ryder, Sr. and Mary Dean Ryder, William Jr. sailed from England as an adolescent. Stories of exactly how he arrived in America vary greatly – everything from being kidnapped, to running away from home and sailing as a stowaway or cabin boy, to being taken as a passenger by a family friend. What seems likely though is that after arriving in coastal Georgia, he lived with a family friend, attained a classical education, and became a young scholar. McArthur/Ryder family tradition holds that as a young teacher in Savannah, he met with planters from inland who had traveled to Savannah by boat with their cotton. They became friends and he decided to move inland and teach, traveling back with them by boat up the Ocmulgee River. These planters were the McArthurs and the Minshews. Ryder would settle adjacent to both families upon reaching Bibb County. It seems the three families remained close, in fact, William Ryder served as guardian to Mortimer Minshew's children after his death.

In 1845, William Ryder married Sarah McArthur, the fifth child of John and Harriet Pace McArthur. They settled on land adjoining the McArthurs to the east and William worked as a School Master. William Ryder is included in the 1850 Slave Schedule as owning five slaves. Several of these slaves may have been part of Sarah McArthur's inheritance from her father. When John McArthur died in 1846, he willed William and Sarah Ryder two young girls, Isabel and Sophronia. While John McArthur died in 1846, William Ryder signed a receipt for these girls in 1852. Based on the fact that the girls were appraised for identical values in the McArthur's inventory, they were likely close in age and health. They are thought by descendants to have been sisters or cousins.

William Ryder was involved in a number of real estate transactions. In 1852, he sold the southwest corner of LL 156 to Daniel P. McArthur and in 1853 John McArthur sold William Ryder one half of LL 155. In 1863, William Ryder sold east half of LL 131 to Eliza Johnson. Ryder and McArthur family histories place the Ryder and McArthur homes in Lls 155 and 156 respectively.

In 1860, William Ryder's family numbered eight family members, a laborer, and a blacksmith. Little seems to have been recorded about the laborer and blacksmith. The Ryders also owned nine slaves. These included six females aged 33, 18, 17, 15, 8, and 1 and three males, aged 13, 5, and 2. Using the 1852 receipt from McArthur's will and the family's account of an altercation with

troops during the Civil War, the 33-year-old female was thought to be named Letty and the 17- and 18-year-old girls are likely to be Isabella and Sophronia. From the age distribution recorded for the Ryder slaves, at least one of these women had children.

William Ryder was a Civil War veteran. Ryder and his friend and neighbor Mortimer M. Minshew enlisted in 1861 in Company B, 27th Regiment, Georgia Volunteer Infantry, Army of Tennessee, also known as the Bibb Grays or Rutland Grays. Ryder served with the 14th Battalion Georgia Infantry and he was a member of the Georgia Militia.

Known as Professor Ryder, he remained active in the community in the 1880s, serving as a trustee of the nearby Campground of the Methodist Episcopal Church South in 1887. He continued to teach school and in 1880 served as the census enumerator for Rutland District. His household in 1880 consisted of six family members and African American servants Nancy Johnson, Henry Walker, Green Dent, and Susan Barton. William Ryder was a prominent Mason and when he died in 1895, he received full Masonic funeral rites. Sarah Ryder died in 1907. They are both buried in the Liberty Methodist Church Cemetery.

### THE BARTON FAMILY

The Barton Family patriarch, John Barton, arrived in the Bibb County area in the 1840s. According to his tombstone and the 1860 census, John Barton was born in 1812 in Georgia. The Bartons have a long family history with LL 130, specifically from 1877 through 1912. John Barton was unmarried much of his life, even though he had some property and wealth. In 1850, John Barton (37) of Georgia was recorded in the census as living in the Lower 5th District in Houston County. His household consisted of only one other person – Durant G. McKinny (27). The 1860 census documented that Durant G. McKinny had left and that John Barton was living with Aaron Harp, a 35-year-old brick mason.

In 1860, John Barton had \$2000 in real estate and \$6,700 in total property. J. Willis was his neighbor and the Thomas and McArthur families were also nearby. He was listed in the 1860 Slave Schedule as owning 11 slaves and two slave houses. While the names of these slaves were not specifically stated in the available documentation, a number of reasonable assumptions about their identities can be made (see the African American Families section later in this chapter.)

John Barton married Francis (sometimes Frances) Hartley, who was 25 years his junior, in the 1860s. Francis was the daughter of Frederick Hartley. She was in her 20s when she married John. Frederick Hartley, along with William Burgay and the McArthur family, was among John Barton's neighbors. The Moffitt family also lived nearby as long-term owners of the west half of LL 130.

The 1870s saw John Barton purchase LL 130 in an auction on the courthouse steps. The former owner, Robert W. Johnson, had been unable to pay the taxes so John Barton bought the property for the highest bid. The deed is partially illegible, but the purchase price appeared to be either \$21 or \$71. The total property included in this sale was LL 129, the east half of 130 and the west half of 131 for a total of 400 acres. John Barton only lived on LL 130 for about two years; he passed away in late spring of 1879. He left behind a 41-year-old wife (Francis Barton) and four children aged 2-14.

John and Francis Barton's oldest sons worked on the farm on the property. By 1880, Frances's sister and niece were living on the property with the family. Also working on the farm and listed as a part of the household for the 1880 census was Elbert Barton, a 20-year-old African American servant. Other African Americans in the community bore the Barton surname; some of them most likely freed slaves. They lived near the European American Barton family in 1880.

At this point, there is some confusion in the deed records for these three parcels (129, 130, and 131). A record in the Bibb County Deed Book (BCDB 68:496) shows the 1892 sale of the land by John Barton's heirs for the west half of LL 129 and the east half of LL 130 to Mrs. Statira (also recorded as Satira) Grace for \$550. This was a somewhat unusual transaction in that Grace was a married woman, yet she purchased the land in her own name. Ironically, an 1897 map of the county named her husband J.T. Grace as the owner of the lots. The Grace family retained the property through the turn of the twentieth century. This sale did not include west half of 131.

In contrast to this sale, however, a Georgia Supreme Court Case, *Barton et al. vs. Johnson et al.*, January 9, 1912 involves an action of ejectment. When John Barton's will was probated, the second item stated that, "all property, real, personal, and mixed, shall remain together under the control and management of my wife, Francis Barton for the joint support and maintenance of herself and my child or children during her widowhood" (Georgia Supreme Court, 1912: 516-518). In probate court, in 1879, 12 months support was duly set apart in the sum of \$1,200 in money to Francis and her four children.

An execution issued on this year's support judgment, and was levied upon the east half of LL 129 and the east half of LL 130, and these two lots were purchased at sheriff's sale by one Thomason, as trustee for Mildred Johnson. The land was pointed out by Francis F. Barton, and the purchaser at sale was put in possession of the east half of lot 129 and the west half of LL 131, under the impression that this latter lot was the east half of lot 130, and the land was bid off under this purchaser under this mistake. The widow and the plaintiffs were in the possession of the east half of lot 130 until the year 1893 when they sold it to Mrs. Statira R. Grace; all of them joining in the conveyance. The present defendants are privies in the estate with the purchaser at sheriff's sale, and have been in the continuous adverse possession of the east half of lot 129 and the west half of lot 131 since the sheriff's sale in 1881 (Georgia Supreme Court, 1912: 516-518).

Before this suit reached the Georgia Supreme Court, multiple earlier suits had been brought by the Bartons, which they lost to the defendants. The first few were in 1893 against J.C. Johnson to recover the east half of LL 129 and the next was against Ms. A. E. Johnson to recover the west half of LL 131. In the end, the Supreme Court ruled that as Francis Barton had incorrectly pointed out LL 131, which was of equal value to LL 130, and the purchasers had been in possession of that lot and LL 129 for 30 years, they did indeed own both LL 129 and 131. Additionally, as Francis Barton had sold LL 130 to Statira Grace, and Mrs. Grace had purchased it in good faith and been in possession of it for a number of years, Mrs. Grace did own LL 130. This court decision ended the Barton family's direct involvement with the land in and around the Avondale Burial Place.

## THE BURGAY FAMILY

Closely tied to LL 130 during the 1870s through 1890s was the Burgay family. Thomas Burgay was a widowed 35-year-old when he wed teenager Mary Frances Wright in 1848. A farmer in Monroe County, he owned about \$2,000 worth of real estate in 1850. William Burgay was born in Georgia around 1834. He was the oldest of at least nine children born to Thomas Burgay. According to the 1850 census, William Burgay was 16 years old, working as a farmer and living at his father's home. When Thomas Burgay died in 1852, he left a large number of young children and a 20-year-old widow. As she waded through the legal process of probating Thomas's estate, Mary Frances Burgay gained legal approval of a dower's part of the estate. This was administered by some of her neighbors, but it did not prevent the Burgay land from being sold.

Thomas Burgay owned five slaves at the time of his death: Solomon, Natt, Mariah, Dinah and a boy named Abram. It is unknown where they went after Thomas Burgay's death. Presumably, Mary Frances Burgay died within a few years or was unable to support the family. In either case, the children were separated and went to live with other family members. These Burgays took them in as "orphans of Thomas Burgay" in 1855, while 20-year-old William Burgay was just starting his own family. His 14 or 15-year-old wife Nancy gave birth to their son Thomas G. Burgay in 1855, and in a few years William Burgay took in two of his young brothers, Thomas M. and Henry C. Burgay (William 2005; U.S. Bureau of the Census 1850, 1860).

Within a few short years, William Burgay emerged from his father's household and purchased both slaves and property. Sometime in the mid-1850s William Burgay purchased LL 130, which included the Avondale Burial Place, to establish his own homestead. In 1858, he bought several hundred acres from the heirs of Washington Durden. This land was located several lots east of LL 130, and contained a quarter acre area "known as the grave yards" reserved on the "Rix Place" (BCDB Q:816-817). As it is several lots to the east, this burial ground is not the Avondale Burial Place. William Burgay sold some of this land almost immediately, but moved a steam gristmill from the parcel, presumably for use on his own farm on LL 130. He either bought or inherited slaves from his father's estate. By 1860, William Burgay owned nine slaves, ranging in age from eight to 60 years old. He had three houses for the enslaved men and women, whose names are not mentioned in any documents.

In just a few years, William Burgay far surpassed the wealth of his father, owning \$12,000 worth of land and \$12,550 worth of personal estate by 1860. He was two to three times wealthier than his neighbors, including the 63-year-old Harriet McArthur, who owned just \$1,000 in land and \$2,500 in personal estate, and Daniel P. McArthur, then a 39-year-old farmer with \$3,300 worth of land and \$4,760 in personal estate (BCDB Q:816-817; U.S. Bureau of the Census 1850, 1860).

As the Civil War approached, Burgay's land likely included not only LL 130 but also part of LL 129, which was still partially in Houston County. As noted earlier, William fought with the Confederate Army. On July 3, 1861, William Burgay entered into the Civil War by joining Company K, 11th Regiment Infantry, known as the "Houston Volunteers." When he returned home

in the summer of 1863, William Burgay faced a number of his own personal conflicts. The Civil War adversely affected his property. Remnants of Sherman's army reportedly pillaged the nearby McArthur family home and likely vandalized the surrounding properties including the Burgay place. In 1868, Burgay turned himself over to the Sheriff's office for shooting Mortimer Minchew in a duel (*Macon Messenger* 1868 in Rucker 1984:326). In addition, he was wounded by two shots fired at him and his wife as they returned to Macon one night in a buggy. Both shots hit him in the thigh, but were not fatal (*Macon Telegraph and Messenger*, November 19, 1871:3).

A woman named Susan Gregory won a lawsuit against William Burgay for unpaid debts. Burgay's property, which at the time included LLs 129, the east half of LL 130 and the west half of LL 131, were among his holdings. His net worth diminished considerably after the emancipation of his nine slaves at the end of the Civil War. Perhaps in order to satisfy the debt, Burgay attempted to sell the property several times. In a confusing series of real estate transactions, Burgay first sold the property to brothers G.F. and H.E. Oliver on February 8, 1865 for \$35,000 and then purchased the property back for \$2,050 in October of the same year. At the same time, William Burgay sold to the Olivers the lots to the east comprising the "Rix Place," which he had bought from the Durden family. In 1866, William Burgay recorded a deed selling his homestead property (LLs 129, east half of 130, west half of 131) to John Bryant, guardian for Cornelius B Wilborn, with a promissory note of \$6,568 and only \$5.00 in hand. Apparently, this last deal was never completed, and in January 1869, the sheriff put a notice in the paper for the sale of these properties to satisfy the judgment against William Burgay by Susan Gregory. In addition to the lots comprising the Burgay homestead, seven bales of his cotton were also to be auctioned off to help satisfy the judgment lien against him. In November 1869, William Burgay and his wife Nancy sold to William J. Smith and Cornelius B. Wilborn the homestead property (Crum n.d.; BCDB U:377, R:498, 614; *The Georgia Weekly Telegraph*, January 15, 1869:7).

By 1870, William Burgay and his wife Nancy moved to Brunswick, Georgia, where William worked as a dry goods dealer. No children were listed in their household in the 1870 census of that year, though Nancy Burgay was about 29 years old at the time. William Burgay's brother, Thomas Burgay, was also living with them in Brunswick, where he worked as a policeman. He was married with three children. By 1880, William and his wife moved back to Bibb County, albeit in a different district and a considerably less affluent area. Most of their neighbors were African Americans. The Burgay household had one European American female servant, and a nephew who helped on the farm. It seemed that William Burgay enjoyed a very brief period of prosperity before the war; after the loss of his farm and homestead, he struggled to make his way in business and finally returned to farming (U.S. Bureau of the Census 1870, 1880).

Although Burgay experienced apparent hardships and loss of his short-lived wealth, the homestead he established on LLs 129, 130 and 131 in the Fifth District had a relatively lasting impact on the property. As it changed hands in the late nineteenth century, the land was referenced a few times as the "Burgay homestead place." Several newspaper advertisements for its sale proved that although Burgay reportedly sold the property to Smith and Wilborn in 1869, it was up for auction again in 1871 and 1873, for judgments against Burgay from Susan Gregory and from John L. Burge (likely Burgay), "founded on purchase money." The sales included "all the improvements" on

the land, and likely included Burgay's home, various agricultural outbuildings, and the former slave quarters (*Telegraph and Messenger* November 7, 1871:2; *Georgia Weekly Telegraph and Georgia Journal and Messenger* May 13, 1873:7).

Two households of African Americans with the Burgay surname appear in the 1870 Houston County census. These may represent William Burgay's former slaves.

### THE DURDEN FAMILY

The Durden (sometimes Durdin, Dardin or Darden) family patriarch, Washington Durden, was a prominent slave owner in Bibb County. He moved to Bibb County by at least 1819, when his son James Durden was born to his wife, Hannah. His other surviving son, Benjamin Durden, was born in 1822. Both sons later died as adults in Texas. Washington Durden collected several properties during his lifetime, though he apparently lived alone in his senior years.

Washington Durden was listed as Washington "Darden" in the 1850 census, where he was recorded as a 63-year-old farmer. He was born in North Carolina and owned about \$9,000 in real estate. On the 1850 Slave Schedule, Washington Darden was listed as owning 21 individuals; nine of these were female and 12 were male. Eight of these slaves were also identified as children. Unfortunately, names were not recorded.

Washington Durden passed away in 1855 and left a sizable estate, valued at over \$30,000. At his death, he was among the wealthiest of the elite planter class in southern Bibb County (U.S. Bureau of the Census 1850; Bibb County Returns Book H:609-613).

In the 1860 Slave Schedule, only Ann Durden is shown. She is listed with four slaves, two men (40 and 60), a woman (45) and a girl (5).

Some inferences can be drawn about where the Durdens actually lived. On the 1850 Slave Schedule, Washington Durden was listed immediately before the Minchew and McArthur households; this may indicate that he lived near them. By the latter part of the 1890s, Washington Durden's heirs were in possession of LL 158 and 159, located between the Minshew and Ryder properties. They also appear close to the Minshews on the 1880 census. It is likely that the Durdens lived close to these families.

### THE MOFFITTS

The Moffitts owned parcels to the west of LL 130. Alston Moffitt and his wife Anna E. Moffitt appeared in the 1880 census with three children. Alston Moffitt was born in North Carolina and Anna E. Moffitt was born in Georgia. The Moffitts were long time owners of the west half of LL 130 along with portions of LL 103, 171, and 172. They were not listed on either the 1850 or 1860 Slave Schedule as owning slaves, although it is possible they did own them at some point in time.

## THE MINSHEWS

The Minshews (sometimes spelled Minchews) lived in the Rutland-Avondale area for most of the mid to late 1800s. Oral history records the Minshew family as the primary dairy farmers in the Rutland area (McDowell-Jackson, Personal Communication 2011). Calvin Minchew appears in the 1840 census as living in Houston County with three males and three females.

In the 1850s Slave Schedule, two Minshews are listed, R. R. (Redding R.?) Minshew and M. (Mortimer) Minchew. R.R. Minshew, born in 1817 in Georgia, owned six slaves. Mortimer, a Georgia native born in 1820, owned seven slaves. Mortimer was married to Nancy Hill Minchew. The Minshews are listed in close proximity to each other, as well as the Johnsons, Durdens, and McArthurs. In the 1860 Slave Schedule, Mortimer Minshew owned 12 slaves and R. R. Minshew owned four. Again they are in close proximity to the Burgay, McArthur, McLendon and Thomas families.

A dispute arose between the Minchew and Burgay families in 1868. In William Rucker's *Marriages and Obituaries from the Macon Messenger 1818-1865* (1984:326), there is a short article:

Mr. William Burgay who killed Mr. Mortimer Minchew, in a recontre in the Rutland District of this county on Friday the 11th inst-an [sic] account of which was published at the time-came to this city on Friday last, and voluntarily surrendered himself to the custody of sheriff Martin, and was admitted to bail.

## THE GRACE FAMILY

Statira Grace purchased the west half of LL 129 and the east half of LL 130 from Francis Barton in 1892 for \$550 (BCDB 68:496). As mentioned earlier, this was a somewhat unusual transaction in that Statira Grace was a married woman, yet she purchased the land in her own name and not under her husband's name (John T. Grace). This sale did not include the west half of 131. There were issues with the ownership of LL 129 and 130 throughout the late 1800s and it was not until a 1912 Georgia State Supreme Court ruling that ownership was clearly defined. Even though Statira Grace owned the property, it appears that Francis Barton and some or all of the Barton children continued to live on LL 130 until around the turn of the century.

John T. Grace, who married Statira in 1876, ran the family farm. In 1900, he was 44 years old, supporting a household with seven children (ages six through 22), on the east half of LL 130 and the west half of LL 129. While the oldest daughter was a school teacher, the older boys divided their time between school and working on the farm. Grace owned the house with no mortgage, but his farm pursuits may not have been entirely prosperous. When John T. Grace died in 1908, he left only five dollars to each of his children and all of his property to his wife. Statira Grace held on to the land for almost another decade before selling it in 1917 to M. M. Grace for \$2,500. In just three years, M. M. Grace doubled his or her money by selling the west half of LL 129 and the east half of LL 130 for \$5,000 to Thomas C. Lockhart. The two halves totaled 202.5 acres (BCDB 220:679, 680, 681; U.S. Bureau of the Census 1900, Bibb County General Index to Proceedings of Estates; Bibb County Will Book E:385).

### THE LOCKHART FAMILY

The Lockharts continued the tradition of farming land around the project area. In the 1920 census, Thomas Lockhart was listed as 44 years old and living with his 39-year-old wife, Annie, and five children, aged 2-13. Despite the agricultural challenges of the 1910s and 1920s brought on by invasion of the boll weevil and subsequent drops in cotton prices, Lockhart managed to earn a living from his farm and support his household.

By 1930, the Lockhart's oldest daughter had a husband and three children living with them on the farm. Perhaps the Great Depression further challenged the family farm, as Lockhart, then almost 60 years old, had a plat drawn up in 1934 showing his property (see Figure 3.5). He owned the east half of LL 130, the west half of LL 129, and a small parcel in LL 172, which was just north of 130. This smaller parcel was on the corner of Avondale Mill Road and Weldon Road (now Grace Road), and may have held the Lockhart home (Bibb County Plat Books 7:148, 89:741; U.S. Bureau of the Census 1920, 1930). Thomas Lockhart sold the land to James and Louise King around 1935. The Kings owned most of the east half of LL 130 into the 1970s.

### THE JOHNSON FAMILY

A man named Robert W. Johnson purchased the Burgay property (the east half of LL 129, the east half of 130 and the west half of 131) either at the auction of William Burgay's property or a few years after it, but he too was unable to retain the land. In 1877, all of the parcels that comprised the William Burgay "homestead place" were again up for auction to the highest bidder. Robert W. Johnson had failed to pay taxes on the land. The deed is not legible, but appears that John Barton purchased the entire 400-acre tract for either \$21.00 or \$71.00 (BCDB BB:189).

Other Johnson families owned land near the study area in addition to Robert W. Johnson. In the 1850 Slave Schedule, two Johnsons appear close to the Durden, Minshew and McArthur families. Morgan Johnson, Durden's neighbor, owned 13 slaves and William Johnson, an immediate neighbor of the McArthur household owned one slave. In the 1860 Slave Schedule, a number of Johnsons are listed. Specifically, Eliza Johnson (3 slaves), Millison Johnson (10 slaves), Luther R. Johnson (8 slaves), and Young Johnson (11 slaves) were all slaveholders, living in the Walden area.

Other members of the Johnson clan played a role in landownership in the immediate project area as well. R.A. Johnson also owned land northeast of the cemetery and across Avondale Mill Road. As a result of the Barton et al. v. Johnson et al. court case, Dr. J.C. Johnson was in possession of the west half of LL 131 in 1897. Dr. J. C. Johnson was a physician and signed a number of death certificates for members of the Rutland and Walden communities.

### THE STUBBS FAMILY

The Stubbs family of Walden/Rutland did not own land in close proximity to LL130; however, they warrant noting as they were clearly the largest slaveholding family in Rutland prior to the Civil War. The 1850s Slave Schedule shows four households with the surname Stubbs as slaveholders. These include: Edward Stubbs, Thomas Stubbs, Peter Stubbs, and George Stubbs. Between them they owned 28 slaves. In the 1860 Slave Schedule, that total rose to 74.

## AFRICAN AMERICAN FAMILIES

The story of the African American families of Rutland and Walden is not a history that can be easily reconstructed. Like all early individual African American histories it must be painstakingly pieced together from small fragments of data often found in property records. For example, European Americans in the 1850s may appear with their full names, their parent's identities, and places of birth in censuses, marriage records, death records, probate records, and newspaper articles. The names of slaves, however, if recorded at all, will almost always be a first name only. Additionally, these names rarely appear in a census, but instead are recorded as property transactions in wills, estate inventories, bills of sale, or in personal estate records.

Genealogical research for this project began with the Barton and Thomas families' own records, building from the extensive research several family members have conducted over the last 20 years. For ease of reference, when information is sourced to this extended family's oral and archival history, it has been attributed to "Barton-Thomas family history" (Mason n.d.; Boyd n.d.). The Barton and Thomas families connect and intersect with many of the African Americans in the project area, but the histories presented below do not represent all of the area's African American families.

Another useful clue in researching African American families can be found in the naming patterns. Slaves were rarely given surnames. After emancipation, African Americans adopted their own surnames, sometimes choosing the name of the previous masters or current European American employers. They sometimes choose a name of their own liking as it had a particular meaning to them. For first names, a slave master almost always chose the name for a slave newly arrived from Africa. Slaves were almost never allowed the privilege of retaining their African names. Transfer of ownership probably was not a common reason for a slave owner to re-name a slave. While there were likely a large number of slave owners that named the children of their slaves, it would also seem that slaves in the Walden-Rutland area were given at least some latitude to name choose their child's name. First names, therefore, often repeat down maternal lines for generations. Mothers frequently named children after their mothers, sisters, grandmothers, and brothers. This can be a useful tool when scanning census records for likely ancestors.

While drawing conclusions about African American relationships and land usage without benefit of archival records may generate more questions than answers, there is at least some evidence of interaction among the European American landowners in and around the community. Distinct from modern beliefs in rigid property boundaries and highly ritualized burial customs, antebellum era conduct created permeable property lines. Family graveyards were sometimes within sight of the family home and neighbors from nearby farms and plantations created informal communities.

### DESCENDANTS OF THE SLAVES OF JOHN MCARTHUR

Research, into these families, hinge on the presence of John McArthur's will. As noted, John McArthur died in 1846. His estate inventory lists the first names of his slaves at the time of his death (Table 3.1). Additionally, the beneficiaries of the will signed a receipt that detailed the property they were to receive, including the first names of the slaves.

Table 3.1. *Individuals Listed as Slaves in John McArthur's Estate Inventory*

Name	Value	Received by in Probate
Peggy	\$100.00	Not listed
Nancy	\$500.00	Harriet Pace McArthur
Amy	\$600.00	Thomas & Mary McArthur Little
Joe	\$600.00	Harriet R. McArthur McClendon
Margaret	\$385.00	Harriet Pace McArthur
Ellen Virginia	\$300.00	Daniel P. McArthur
Isabella	\$250.00	William & Sarah Ryder
Lucinda	\$235.00	Not listed
Henry	\$200.00	John McArthur Jr.
Sophonra	\$250.00	William & Sarah Ryder
Darkas	\$235.00	Not listed
Susan Caroline	\$100.00	John McArthur Jr.
Bill	w/Amy	Thomas & Mary McArthur Little

Over the course of the mid to late 1800s, the history of these individuals and their descendants became intermingled with the history of slaves from many of the plantations near the McArthurs. This report grounds its data on the McArthur slave family tree in order to organize information into a coherent structure. While the McArthur slaves and their descendants are certainly likely candidates for being buried at the Avondale Burial Place, they are not the only families present in the project area.

### Peggy

The story may begin with Peggy. Peggy was the oldest slave owned by John McArthur in 1846. She is believed to have been quite old as her value was listed at \$100 in the estate inventory, which was the same as that of an infant girl. Additionally, Peggy's name is not mentioned in the receipts, indicating that by 1852, she was considered to be too old to be of value or possibly that she died between 1846 and 1852.

One final possibility, and the most likely, is that she was transferred to Samuel McArthur through probate. Samuel McArthur was the executor of the will and was not listed as having received any of the estate on the receipt. This may be because as executor he was already considered as in possession of the estate. Based on the values listed in the inventory, not from the receipt, the values listed for Peggy, Darkas, and Lucinda (none of whom were addressed in the receipt) are approximately equal to the values of slaves received by the other family members. The receipt values were higher, reflecting the seven years that passed since the inventory was completed and receipt signed.

Regardless of the theory above, Peggy has not been located by name in any records after John McArthur's 1846 will. There was a 62-year-old woman listed in the 1860 Slave Schedule in the household of Harriet Pace McArthur along with two women aged 40 and 20; these are presumed to be Nancy and Margaret since they were bequeathed to Harriet Pace McArthur. This was

probably Peggy. Since Peggy was not recorded in the 1870 census, she likely died between 1860 and 1870 making her between 62 and 72 years old. It is possible that she is buried at Avondale Burial Place.

The Barton Thomas family believes that at least two of Peggy's children, daughters, were also accounted for in John McArthur's will. Both Amy and Nancy are thought to be Peggy's daughters. One line of evidence for this is that Nancy chose to name one of her children Margaret; Peg and Peggy are common nicknames for Margaret. Based on their ages, Peggy likely was born towards the end of the eighteenth century. This would mean she would have been 50 years old at the time of the will. While the family believes Peggy was the mother of Amy and Nancy, their father or fathers remain unknown. At the time of the will, there were no adult males in the McArthur inventory. It is possible that one of Amy or Nancy's male children were named for their grandfather. This would make Joe, William, or Henry possible names for Amy and Nancy's father(s).

#### Amy (Londay/Lunday/London) and Nancy (McArthur/Johnson)

Amy was born between 1813-1817 according to estimates from her age in the 1870 and 1880 censuses (57 and 64 years old respectively). She, along with her son Bill, were willed to John McArthur's daughter, Mary L., and her husband, Thomas Little. Thomas and Mary Little lived in Thomasville, Thomas County, Georgia. Amy married Harry London of Washington County. He died before 1870, as he is not listed in the 1870 census. Amy appeared on the 1870 City of Thomasville census as Amy Londay, a 57-year-old farm laborer with her children: William (28), a railroad laborer; Columbus (16), a pan sitter in Tin Pan Alley; and Mary (12).

In 1880, Amy appeared to be living on her own in Thomasville, where she was still listed as a laborer. Before being bequeathed to the Littles, Amy is thought to have had a number of the other children listed on the McArthur inventory. Ellen Virginia's death certificate listed Amy as her mother. Additionally, it is possible that Isabella and Henry were also Amy's children. At one point in the 1880s, three of Isabella's children were living with Ellen Virginia and her husband. This reliance on the extended family to support children may imply that Isabella and Ellen Virginia were related, possibly sisters. Sophronia as well, may be Amy's daughter (or niece) as there was a Sophronia Johnson living with Mary and Thomas Little as a servant in 1880. Amy passed away between 1880 and 1900, making her 64-84 years old when she died. Amy centered her life among her family in Thomasville with her husband, Harry London, her youngest son, William, from Bibb County, her daughter/niece Sophronia, and Sophronia's children.

Like Amy, Nancy's age in 1870 was listed at 57, indicating that she was probably born around 1813. Nancy and her daughter, Margaret, were willed to Harriet Pace McArthur, John McArthur's widow. Harriet Pace McArthur continued to live in Bibb County until her death in 1873. Margaret was Nancy's only confirmed child; however, the closeness of Margaret, Joe McLendon, March Thomas, and possibly Susan suggests that Darkas, Joe, and Susan may be Nancy's children as well.

In the 1870 census, Nancy appeared as Nancy McArthur, living in a household with her daughter Margaret McClendon and her husband Edward or "Ned," and their children. Nancy McArthur was listed as a farm laborer with Georgia as her recorded birthplace. Harriet Pace McArthur was listed in the household of her daughter and son-in-law, Sarah and William Ryder. As these names appear on the same page in the census, Nancy McArthur probably lived in very close proximity to the Ryders.

In 1880, Nancy appeared as Nancy Johnson living in a household with Henry Walker, one of Isabella's children (and therefore her great nephew or grandson); Susan C. Barton, possibly Susan Caroline – Nancy's niece or daughter; and Green Dent. They lived in the household inventoried immediately following William and Sarah Ryder in the census. Nancy, Susan Barton, and Green Dent were listed as servants. Many other relatives of this family were listed on that first page of the 1880 census, as William Ryder served as the census enumerator in 1880. It is possible that Nancy chose the last name Johnson because she was living on, or near, the Johnson property. Robert W. Johnson owned LL 130 during at least part of the 1870s and the Johnson family was widespread in the Walden/Rutland area.

Nancy did not appear in archival records after 1880. She likely died between 1880 and 1900, making her between 67 and 87 years old at the time of her death. Nancy, unlike Amy, was almost certainly buried in the Rutland or Walden area. She centered her life close to the area and people she grew up with, as well as her children and grandchildren. While it is possible that she is buried in the Avondale Burial Place, it is also possible that she was buried at either Bibb Mt. Zion Baptist Church or Mt. Hope AME Church, both of which had cemeteries by the end of the nineteenth century.

#### The Children of Amy (Londay/Lunday/London) and Nancy (McArthur/Johnson)

##### Joe (McClendon)

Joe is believed to be the son of Nancy. This is assumed to be the case, as he maintained close ties to Margaret McClendon, who is the known daughter of Nancy McArthur/Johnson. Additionally, Margaret McClendon named one of her children Joseph, possibly after her brother. In John McArthur's will, Joe was bequeathed to John's daughter, Harriet Rebecca McArthur [McClendon]. Harriet Rebecca McArthur McClendon was married to Roderick McClendon. She lived near her parents until her death in 1858.

There was a Joseph S. McClendon (28) listed in the Rutland 1870 census as a blacksmith's helper. This man was reported to have been born in Georgia. John McArthur's will contained specific mention of blacksmith tools, indicating that he probably had a blacksmith working on his property. While Joe would have been young at that time, he may have been able to capitalize on having this equipment available to learn a valuable trade. Joe seems to have taken his former owner's name after Emancipation. In 1870, he was living in a household with Maria Danforth (49) "keeping house," and Rosanna Stubbs (18) who was listed as a farm laborer. The European American Johnson family lived nearby.

No record of Joe can be found after the 1870 census. It is possible he moved away, changed his surname, or he died sometime between 1870 and 1880. If Joe passed away, he would have been between 28 and 38 years old. While he may have lived with Rosanna or Maria, it does not appear that he ever married. He is a probable candidate for burial at the Avondale Burial Place.

#### Margaret (McClendon) and Her Children

Margaret, daughter of Nancy, was married to Edward "Ned" McLendon. As originally part of John McArthur's estate, Margaret had been willed to Harriet Pace McArthur along with Nancy. Margaret was born in 1836; she was 34 years old when recorded in the 1870 census. Margaret was listed in a household with her husband, Ned (40); children Ella (10), Lena (8), Joseph (6), Toby (4), William (?), and Mit (7 mo.); her possible brother-in-law Frank (21), his wife, Julia (14), and their daughter, Frances (4 mo.); and Margaret's mother Nancy (57). They lived in close proximity to Daniel P. McArthur, March Thomas' family, the Ryders, and the Walkers.

A court case, from Bibb County described the trial of March Thomas, Ed McLendon (Ned), and Bill McLendon for stealing meat from a smokehouse (Talerie Boyd, Personal Communication 2011). Once accused, a search of the McClendon's home place revealed the meat was buried in the front yard. March received 10 years in jail for the theft.

By 1880, Margaret McClendon was a widow. Ned is believed to have died between 1876 and 1877. He would have been about 46-47 years old when he died; he may have been interred at the Avondale Burial Place. Ned's death date is based on the age of Margaret youngest child, Hannah, who was listed as three years old in the 1880 census. At that time, Margaret (40) was living with her children Mittie (Mit) (10), Eddie (7), and Hannah (3) in a household that was adjacent to her cousin, Ellen Virginia, and her husband, Floyd Barton, and their family.

Margaret McClendon's son Joe McLendon (16) is listed in 1880 as part of John D. McArthur's household along with his cousin Ollie Thomas (John D. McArthur is the son of Daniel P. McArthur and Ollie Thomas is Hattie Thomas' son). Margaret McClendon's relative, Julia McLendon (25), was listed as living in Dawson (Terrell County, Georgia) with her three children Willie (14), Boss (10), and Lottie (7). It is unclear what happened to Julia's husband, Frank. Margaret's daughter, Lena (18), lived as a servant in J.T. and Martha Ryder's home. Lena married Isaac Moore in 1886 (1900 U.S. Census). In 1900, they are 35 and 38 years old with their niece, Mary Davis, living with them. Lena was recorded as having had two children with none living. In 1910, Lena Moore's niece Lottie McLendon was living in the Moore household. Margaret's daughter, Frances, married Benjamin H. Harmon in 1893; local landowner, R. A. Johnson, officiated at the service. The Harmon's children were William, Clifford, Esla, Jerry, Early, Seth, Callie, Love, and Collier.

Margaret McClendon's daughter, Mit McLendon (26), was listed in the 1900 census as living on the other side of John D. McArthur. Mit's children were Ernest (13) and Lottie (9). Margaret's son, Eddie McLendon, presumably fathered Eddie McLendon, Jr., who was born in 1909. Eddie McLendon Jr. was later buried in the Bibb Mt. Zion Baptist Church cemetery. Eddie McLendon Jr.'s date of death is not known. The burial places for Margaret McClendon and most of her children have not been identified.

### Susan Caroline (Ryder/Barton/Jones/McArthur/Hyland/Ryland) and Her Children

Susan Caroline presents more of an enigma. Susan Caroline was willed to John L. McArthur along with her bother Henry. Three possible theories exist for her whereabouts after 1852. One is that Susan Caroline married James Hyland (Ryland?). This is supported by listings for a Caroline (25), who is married to James Hyland in the 1870 census. The Hylands lived with their three children (Samuel, John, and George) next to Margaret and Ned McLendon. No member of this family could be located after the 1870 census.

The second possibility was that Susan Caroline is Caroline McArthur in the 1880 Thomas County, Georgia census. Henry and Susan Caroline (called Caroline in the 1852 receipt) were willed to John McArthur's son, John L. McArthur, who lived in the 154th District of Thomas County in 1880. Henry McArthur (49) and his wife Caroline (47) are listed as working on a farm and keeping house. Henry and Caroline's ages place their birthdays in 1831 and 1833, respectively, which would seem to be too old to be a strong match. In this scenario, they would have married as cousins, with Susan Caroline McArthur as the daughter of Nancy McArthur/Johnson and Henry McArthur as the son of Amy Loday. They could not be located past the 1880 census. In this scenario it is less likely either Susan Caroline McArthur or Henry McArthur would have been buried in Walden.

The final possibility is that Susan Caroline was recorded in the 1870 census as either Susan Ryder (26), living alone and adjacent to William Ryder's household or Susan C. Barton (35) in the 1880 census, who appears in the household with Henry Walker (Isabella's son), Nancy McArthur/Johnson (possibly Susan Caroline's mother or aunt), and Green Dent. Susan Caroline is not married. They are listed as servants and are recorded adjacent to the Ryders on the census. Of note, is that in 1870, John Barton owned the east half of LL 130, making Mr. Barton a neighbor of the Ryders. Again, it is possible that Susan's surname, like Nancy McArthur/Johnson's last name, reflected ownership of the parcel of land where they lived at some time prior to or during the 1880 census. Finally, in the 1910 census there was a Susan Jones (70) living in between Lena Moore (Margaret McClendon's daughter) and A. C. Moffitt. The Moffitts were long time landowners of the west half of LL 130. The possibility that Susan Ryder, Susan Barton, and Susan Jones are the same person living in extremely close proximity both temporally and spatially, and reflecting the appropriate ages adds considerable credence to this theory. It is the one most favored by Barton-Thomas genealogists.

If Susan Caroline is among those buried at Avondale Burial Place, then the first or third possibilities are the most likely. In the first scenario she could conceivably be buried with her whole family, as they don't appear past the 1870 census. That would mean a 25-35-year-old woman, a 40-50-year-old man, boys 8-18 and 6-16, and a girl 1-11 all buried between 1870 and 1880. In the second scenario, Susan Caroline did not marry and never had any children. She would have died between 1910 and 1920 as a 70-80 year-old woman.

## Darkas (Hattie/Hearty Thomas)

Darkas, like Susan Caroline, represents something of a challenge to definitively locate in the archival record. The most likely scenario, proposed by the Thomas family descendants, was that Darkas changed her name to Hattie (Hearty or Hardie) after Emancipation (Figure 3.7). Originally part of John McArthur's estate, John McArthur's will is silent on the disposition of Darkas after 1846. Valued at 235 dollars, Darkas is thought to have been close in age to Isabella, who was born in 1841. This would have made her approximately nine years old in 1850. A girl of Darkas' age appeared under Harriet Pace McArthur's name in the 1850 Slave Schedule.

Darkas' immediate whereabouts after 1850 can be guessed. There are three logical outcomes. First, it is possible she died between 1850 and 1852 and this would explain her absence on the receipt in 1852. If interred in the Avondale Burial Place, she would have been about 9-11 years old. The second possibility was that Samuel McArthur, as the executor of the will, sold her before 1852. No records have been found that indicate whose property she became. The final possibility was that she might have been part of the inheritance of the executor, Samuel McArthur. Samuel McArthur did not sign the 1852 receipt indicating what he had received from the estate. As noted earlier, this may be because the estate was already considered to be in his possession. This may account for the absence of Peggy, Darkas, and Lucinda on the document. Darkas would have been about 11 in 1852.

If the theory that she changed her name to Hattie is correct, then one possibility was that she was sold locally and remained in Walden. Hattie Thomas appeared in the 1870 census as 29 years old, which corresponds with Darkas' age estimate. Hattie married March Thomas, a man who grew up on the nearby Thomas plantation. Based on his involvement in the aforementioned smokehouse burglary, he obviously knew Ned and William McLendon, both of whom were Darkas' kinsmen. March and Hattie are listed immediately after Daniel P. McArthur's family in the census and only one family separates them from the Ryder family. Their home was undoubtedly in close proximity to these households.

By 1870, Hattie and March had four children: Eliza (13), Mary A. (10), Martha (8) and Ollie (4). Based on Eliza's age, March and Hattie were probably together before 1857. March Thomas supposedly was sentenced to jail for the smokehouse theft in the 1870s. He is believed to have died. March Thomas does not appear in the 1880 census, but his youngest son, Henry, is born in 1872. March thus would have died between 1872 and 1880. If buried in the Avondale Burial Place, he would have passed away when he was 32-40 years old.

The 1880 census shows only Hearty Thomas (42) living with her youngest son, Henry (7), and daughter Mattie (Martha), who at age 15 is working as a servant. Sometime after 1880, Hearty married Isaac Avant (Boyd n.d.). Hearty cannot be found in the 1900 census but Isaac Avant is listed as a widower living with John Dean (23) and George King (16). Hearty passed away after 1880 (and after marrying Isaac Avant) and before 1900. She would have been between 43 and 63 when she died. She may also have been buried in the Avondale Burial Place.

Figure 3.7.  
Hearty Thomas



Photograph Courtesy of Ms. Talerie Boyd

Four of March and Hattie Thomas's children were located in the 1880 census. Eliza Thomas married Charles Allen in 1874 and in 1880 they were living next to R. A. Johnson with their three children: Annie, Ava, and an unnamed baby girl (Figure 3.8). By 1900, Charles and Eliza Thomas Allen had five more children: Effie (18), Mary Lou (17), Pearl (16), Doshia (13), and Ada (10). They were living adjacent to J. D. McArthur. Eliza is thought by the family to have had 12 children total (Talerie Boyd, Personal Communication 2011). Eliza Thomas died in 1936 and was buried in the Mt. Hope AME Church Cemetery. Mary Thomas could not be located after 1870.

Martha Thomas (or Mattie Thomas) lived with her mother and brother, Henry in Walden. She was 15 in 1880. She then appears again in 1900 as the head of house (35) with children, Lee (7), John H. (5), and Viola (3). In 1910, Viola Thomas married Jim Moore (Annie Moore's son).

Hattie Thomas' son, Henry Thomas, was listed in the 1900 census as living in Manchester, Georgia. In 1910, he was married to Clara Thomas and resided in Macon's Ward 4. They had a daughter, Minnie Lee, and a baby boy. After 1910 they were living in Detroit, Michigan with two more children, Carey and John.

In 1880, Hattie Thomas' son, Ollie Thomas, was working with Joseph McClendon (Margaret McClendon's son) in John D. McArthur's house as a servant. By 1900, Ollie married Charlie Moore and they had seven children: Ida, Sip, Leola, Mary, Elijah, Isiac, and Doot. In 1905, the Bibb County Directory lists Charles (Charlie) and Ollie Moore as working on the McCarty Place. As there are no known McCartys in the area, this is probably the McArthur Place.

In 1910, Ollie and Charlie were living with their children Anderson, Elijah, Mary, Isiac, Clifford, and Annie Lou. By 1920 Annie Lou and Clifford still lived with them, as well as grandchildren Mattie May Law (8) and Johnnie Lee Jones.

Ollie and Charlie's daughter Ida married Hardy Bryant. Ida, who was a washerwoman, died in 1922 at the age of 39. According to her death certificate she is buried at Bibb Mt. Zion Baptist Church Cemetery.

Ollie and Charlie's son Elijah married Leola King and they appeared to be childless in the 1920 census. By 1930, they are 32- and 30-years old respectively and have three children: Erma Lee, Bot, and Agnes. Leola King's grandfather, Greene King, was also living with them. Ollie, Charlie, Elijah, Leola, Bot, and Agnes are all known to be buried in the Bibb Mt. Zion Baptist Church Cemetery.

Hattie Thomas' family lived very close to the McArthur and Ryder families for a number of decades. A further clue tying this family to the land the east half of LL130 comes from GDOT interviews with Mr. Harry Lucas. As a boy living in the Walden/Rutland area during the 1950s, Lucas remembers the unmarked Avondale Burial Place and a number of tenant houses on the west half of LL 131 (Carlson and Southall 2010). Harry Lucas associated the area with the Moore family. He remembered Ollie's son, Ladge (short for Elijah) and his wife, Leola Moore, living there. Leola was Lucas' nanny during the summer.

Figure 3.8.  
Charles Allen and Eliza Thomas Allen



Photograph Courtesy of Ms. Talerie Boyd

### Ellen Virginia (Barton/Wicker) and Her Children

Ellen Virginia was the daughter of Amy and Harry Loday (Figures 3.9 and 3.10). She was born in approximately 1840. A story handed down in the Barton family recounts Ellen Virginia's remembrances. As a little girl, she remembered hiding dishes in the woods for the mistress of the plantation. In later years, she would recall that she "should have hid some for herself!" Ellen Virginia was willed to Daniel P. McArthur, John McArthur's son. As John McArthur's will had not been probated in 1850, Ellen Virginia shows up as an 11-year-old girl in the possession of Harriet Pace McArthur in the 1850 Slave Schedule. In the 1860 Slave Schedule, Ellen Virginia appears as a 20-year-old woman with two sons, thought to be Elbert (2) and Henry (8 mo.). Ellen Virginia is thought to have had an 8-month-old baby girl, but the family believes she died as an infant. This child may be among those buried at the Avondale Burial Place. The father of Henry and Elbert was Floyd Barton, a slave on the nearby Barton Plantation.

Ellen Virginia married Floyd Barton and they appear together in the 1870 census. Floyd was 36 and Ellen was 30. The census listed them as having five children: Henry (12), Elbert (11), Gillian (8), Tallulah (7), and Thomas (6). Their household was preceded in the census by a household with Anthony Thomas, a farm laborer aged 70 and his wife Dinah Thomas, a domestic servant aged 60, Thomas and Alice (23), Frank (3), Mary (1) and Walter (13). Anthony and Dinah Thomas are thought to have once been slaves in the Burgay household on LL 130. They were likely related to March Thomas. Immediately before the Thomas household, John and Francis Barton (on LL 129, 130, and 131) were listed. Henry Barton's household follows immediately after Ellen and Floyd Barton's. Several entries down from Ellen Virginia and Floyd Barton's household were listings for the Moffitts, longtime holders of the west half of LL 130.

In the 1880 census, Ellen Virginia and Floyd Barton's household consisted of their children, Leila (likely Lula or Tallulah-17), Thomas (16), and Elijah (13). In addition, Alexander (18), Ellen (12), and Joshua, Jr. (8), the children of Isabella (Ellen Virginia's sister) and her husband, Joshua Walker, were living with the Bartons. The Barton household was listed in the census immediately after Margaret and Ned McLendon. There was only one family in between them and Frances Barton on the east half of LL 130 and A. Moffitt on the west half of LL 130. According to the Barton family records (Mason n.d.), Floyd Barton died in Walden around 1882. His death was not noted in the records at the Bibb County Health Department. He was about 48 years old when he died. He may have been buried in the Avondale Burial Place.

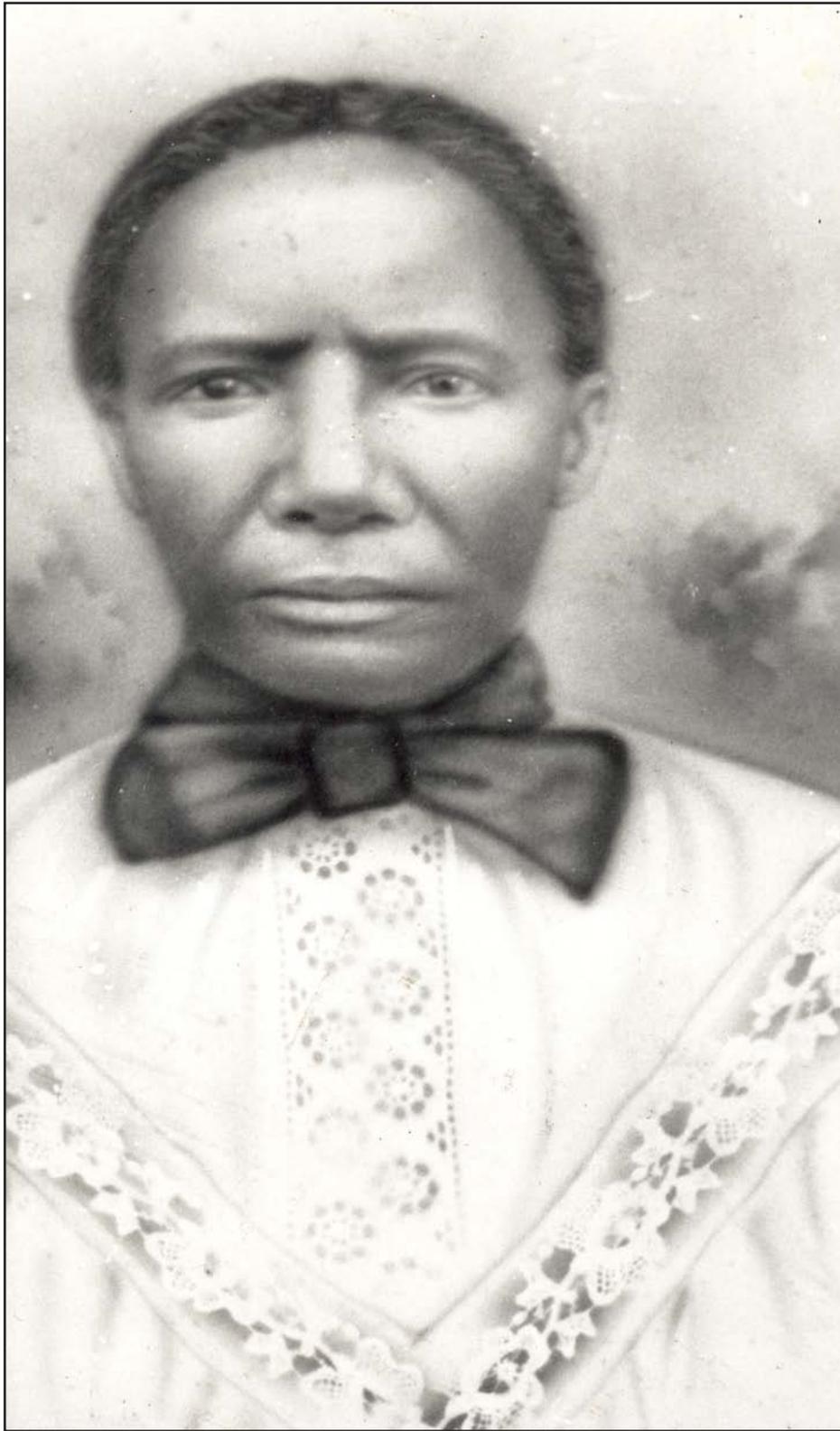
Ellen Virginia and Floyd Barton had six children living children in 1880. At this point nothing has been located on the youngest, Elijah Barton, after 1880. It is possible that he died or moved out of the area. If Elijah Barton was buried in the Avondale Burial Place, he would have been at least 13 years old. Henry Barton, the eldest son, married Mary Cummings (Figure 3.11). The Reverend R. M. Harris, who was also the principal at Bibb Mt. Zion Baptist School and presumably minister at the church, officiated (Mason, Personal Communication 2010; Bibb County Board of Education 1915). Mary Cummings was the daughter of neighbors Stephen and Adelia Cummins. She had been attending Central City College before her marriage to Henry. Central City College was

Figure 3.9.  
Ellen Virginia Barton Wicker



Photograph Courtesy of Mr. Skip Mason

Figure 3.10.  
Ellen Virginia Barton Wicker



Photograph Courtesy of Mr. Skip Mason

Figure 3.11.  
Henry Barton and Mary Cummings Barton



Photograph Courtesy of Mr. Skip Mason

founded in Macon in 1899 by Reverend E. K. Love of the Missionary Baptist Convention of Georgia, as a co-educational institution providing both high school and college curricula. Mary and Henry Barton had four children: Lula, Delia, Sallie, and Mattie. They eventually relocated to the town of Cordele, in Crisp County, Georgia. Henry Barton died in 1916.

Ellen Virginia's son, Elbert Barton, was listed as a servant in the 1880 census in the household of Francis Barton. This would be on the east half of LL129, the east half of LL 130 and the west half of LL 131. According to Barton family records (Mason n.d.), Elbert Barton died sometime between 1880 and 1900. His children moved to Lumber City, Georgia to live with their relatives. Elbert would have been 21-41 years old when he died. He may have been buried in the Avondale Burial Place.

Ellen Barton's daughter, Gillian Barton, married John Sinclair and settled down in Rutland (Figures 3.12 and 3.13). After John's death (year unknown), she married Joe Johnson. Gillian and Joe later moved to Lumber City. Ellen Virginia Barton, now a widow, went with her. Gillian had nine children with Sinclair and Johnson (Figure 3.14). Gillian Barton was buried in Lumber City. Her children were either buried elsewhere or lived past the time that the Avondale Burial Place was actively used for burial.

Ellen Virginia's daughter, Lela Barton (or Tallulah/Leila/Lula), was listed in the 1880 census (as Leila), along with her brother Elbert. Both were recorded as working in Francis Barton's household. In 1886, Lela married Henry Casterlow. There were Castillos, Castelohs, and Castilohs all listed in Rutland in the area near the cemetery in both the 1870 and 1900 censuses. The 1870 census recorded John Castillo as living with his father, Henry Casterlow. The Casterlow household was adjacent to March Thomas' family; Henry was five at the time. In 1900, Lula (Lela Barton) (35) and Henry (33) Casterlow still lived in Rutland and had seven children: Minnie, Ellen, Will, David, Lula, Timothy, and James. Following Henry Barton's lead, they moved to Cordele, Georgia. Barton Family records (Mason n.d.) note that Henry Casterlow got into some trouble; he and Lela had to quickly leave the area. At this point, Henry and his family changed their surname from Casterlow to Smith. Some of the Casterlows would later move to Yukon, Florida, near Jacksonville.

Ellen Virginia's son, Thomas Barton, was 16 in 1880 and living with his parents in Rutland. He appeared again in the census records for Telfair County in 1910. By then he was 46 years old. By 1920, he had moved to Lumber City and was recorded as living with his wife, Nannie (56), and his mother, Ellen Wicker (73) (Figure 3.15). Ellen Wicker is believed to be the same person as Ellen Virginia Barton.

Robert Wicker appeared in the 1900 census as a 50-year-old, single man living with a border in a house in Lumber City. The 1910 Lumber City census recorded Robert and Ellen Wicker married and living in Lumber City. In 1920, when she appeared again in the census, Ellen was listed as widowed and part of Thomas Barton's household (her son's); this indicated that Robert Wicker had died between 1910 and 1920. It is unlikely that he was interred in the Avondale Burial Place. Ellen Virginia subsequently died at the age of 92 in 1932. She was buried in Lumber City, Georgia, at Cedar Grove Cemetery. Her death certificate listed her parents as Amy and Harry London.

Figure 3.12.  
Gillian Barton Sinclair, Pictured with One of Her Children, Possibly Lela



Photograph Courtesy of Mr. Skip Mason

Figure 3.13.  
Gillian Barton Sinclair Johnson



Photograph Courtesy of Mr. Skip Mason

Figure 3.14.  
Gillian Barton Sinclair Johnson with Annie and Gilbert Johnson



Photograph Courtesy of Mr. Skip Mason

Figure 3.15.  
Thomas and Nannie Barton



Photograph Courtesy of Mr. Skip Mason

### Isabella (Walker) and Her Children

Isabella, born around 1841, is believed to be one of Amy Loday's daughters along with Ellen Virginia. This connection is based on the fact that Ellen Virginia took care of Isabella's children in 1880. Isabella also named two of her children Ellen and Amy, possibly after her sister and mother. That she named one son Henry, may also point to Henry being Amy's child and therefore, potentially her brother. Isabella was willed to William and Sarah Ryder. Isabella appeared in the 1870 census fairly close to the Ryders, and was listed on the same page with the McLendons, Susan Ryder, and the Hyland households. Isabella (29) was married to Joshua Walker (35). They had five children in 1870: Columbus (11), Alexander (9), Henry (7), Amy (5) and Ellen (9 months).

Isabella and Joshua could not be located on the 1880 census, however all six of their children could be identified. Isabella and Joshua may have died between 1872 and 1880, which would make them 31-39 and 37-45, respectively. They may be present in the Avondale Burial Place. In 1880, Joshua, Jr. (8-born 1872), Ellen, and Alexander moved in with Ellen Virginia and Floyd Barton. Isabella's son, Henry Walker, was listed as a servant in the 1880 census, living with Nancy Johnson, Green Dent, and Susan C. Barton in a house adjacent to the Ryders. Isabella's son, Columbus Walker (21), is listed in the 1880 census as married Letty Walker and living in Rutland. They could not be located in the 1900 census, indicating that they have moved or passed away. Death is possible, particularly since they had a son, Walter (b. 1881), who was subsequently listed as living with his uncle Henry Walker (Columbus' brother) in 1900.

### Sophronia

Based on the identical value placed on her and her kinswoman, Isabella in John McArthur's inventory, Sophronia is thought to have been born around 1841. Sophronia was willed to William and Sarah Ryder along with Isabella in 1852. She is believed to have been Amy Loday's daughter (Mason n.d.). Sophronia and Isabella appeared on the 1860 Slave Schedule with William Ryder as 17 and 18-year-old girls.

In 1880, there were no obvious indications that Sophronia was living in the Walden area. There are several Sophronias listed in the census, but without supporting evidence, none of these can be linked to the Barton-Thomas lineage. One of these women however, looked more promising than the others. In 1852, Amy Loday had been willed to Thomas and Mary Little, so it is possible that as Amy's daughter, Sophronia may have gone to live with her mother. A Sophronia Johnson subsequently appeared in the 1880 Thomas County census as living in the home of Thomas and Mary Little. She was employed there as a servant. At this time this woman was 37 years old, which placed her birthday around 1843, a reasonable estimate for when Amy's daughter would have been born. The Johnson surname could indicate that for some period of time she lived on the Johnson property, which was close to the cemetery. It is also possible that the Johnson surname connected her with Nancy instead of Amy Loday, as Nancy was also listed in Bibb County in 1880 as Nancy Johnson. Sophronia, therefore, may be Nancy's daughter, although evidence best supports Amy being Sophronia's mother.

In the 1900 Thomasville, District 87 Census, there is a Soprona Johnson (60) listed as a widow, living alone, and working as a day laborer. She is noted as having had one child and one child is still living.

Finally it is also possible that Sophronia died between 1860 and 1870. This would have made her between 18-28 at the time of death. If so, she may have been interred in the Avondale Burial Place. However, the evidence best supports the possibility that she lived and was recorded as Sophronia Johnson.

#### Henry (McArthur?)

Henry was willed to John L. McArthur along with his sister or cousin, Susan Caroline in 1852. He appeared in the 1850 Slave Schedule as a possession of Harriet Pace McArthur. He was five years old in 1850. There was no clear evidence that Henry was either Amy or Nancy's son. The true identity of his parents remains enigmatic. One important link to this family was that Ellen Virginia, Hattie, and Isabella all had sons named Henry. It is possible that their father, Nancy's husband, or grandfather may have been named Henry.

As noted earlier, there was a Henry McArthur (49) listed in the 1880 Thomas County census. Henry McArthur was married to a Caroline McArthur (47) who may or may not be the same as his cousin, Susan Caroline Ryder/Barton. This person, however, may be too old to be Henry and Susan Caroline as they should only be around 35 years old in 1880. A more likely possibility is that Henry McArthur died sometime between 1852 and 1870. If this were the case Henry would have been between five and 25 years of age. He would likely have been buried in Walden, possible Avondale Burial Place.

#### Lucinda

Like Peggy and Darkas, Lucinda was not listed on the 1852 receipt from John McArthur's will. This could be because she died or was sold after 1850, or because she remained with Samuel McArthur, the executor of the estate. She was listed in the 1850 Slave Schedule under Harriet Rebecca McArthur's property as a 6- or 7-year-old girl.

The only possible candidate for Lucinda in the census records was Lucinda Collins (38). She was listed in the 1870 census as living with her husband, Allen Collins (40), in Subdivision 8 of Bibb County of the 1870 census. They had three children: Melvina (12), Allen (6), and Samuel (2). However in keeping with the McArthur records, Lucinda should be only about 27 years old in 1870. The 10-year disparity between ages implies that these individuals were not the same woman.

If Lucinda passed away between 1850 and 1870 she would have been approximately 7-27 years old. If she died locally and not at Samuel McArthur's homeplace, she would likely have been buried in Walden, possibly the Avondale Burial Place.

### William (Lunday)

William was Amy's son. He was not listed on the John McArthur slave inventory, but was signed for in the receipt from 1852 by Thomas Little. He appeared as William Lunday in the 1870 Thomasville census as a 28-year-old laborer for the railroad. His mother, Amy Lunday (57), was listed as the head of household and a farm laborer. The census also listed Amy Lunday's children, Columbus (16), a pan sitter in Tin Pan Alley and Mary (12), as living in the household.

In 1880, Amy Lunday is listed as living alone, indicating that William Lunday has moved away. In 1900, William (52) appeared in the census as married to Flora (48) with their grandson, William Davidson (13). It is unclear who exactly were William and Flora's children. William Lunday died between 1900 and 1910 at the age of 52-62. Flora Lunday was listed as a widow in the 1910 Thomasville census. In all likelihood, William Lunday was buried in Thomasville.

### Columbus (Lunday)

Columbus appeared for the first time in the 1870 Thomasville census as living with his mother, Amy Lunday, his half-brother or brother William, and his sister Mary. At that time, Columbus was 16 years old and working as a pan sitter in Tin Pan Alley. Columbus did not appear to have any strong ties to the Walden-Rutland area. With a life centered on Thomasville, Georgia, it is highly unlikely that he would have been buried in the Avondale Burial Place.

### Mary (Lunday)

Mary (12) appeared for the first time on the 1870 Thomasville census as living with her mother Amy Lunday, her brother Columbus Lunday, and brother or half-brother William Lunday. Like Columbus, Mary's ties to southern Bibb County are considerably less than those to Thomas County, Georgia. Mary's life did not return her to the Walden-Rutland area; she probably was not among those interred at the Avondale Burial Place.

## HISTORY DISCUSSION

While the archival evidence gives no indication of the burial grounds located in the project area, it does generate a long list of ownership and likely interactions among the families in this southeast corner of Bibb County. Typical of the history of many African Americans, the individual identities of those buried at Avondale Burial Place may never be determined. Their lives, their families and their deaths somehow merged onto this plot of ground, a plot which none of them formally owned. Perhaps then, this burial ground speaks to the relationships that once existed among both white and black residents of the area, informal and formal landownership and appropriation of space, and invisible ties that bound generations of families living in this community.

At some point during the early twentieth century, however, the ties binding the families to this community began to unravel. How the Avondale Burial Place was forgotten is actually an oft-repeated story throughout the late nineteenth- and early twentieth-century South. Two factors played critical roles. The first was the trend away from family and community burial grounds and towards church and burial society plots and the second, was the story of the Great Migration.

After emancipation, it became easier for African Americans to acquire land to build homes, farms, or small businesses, as well as community buildings such as churches or schools. As religious groups became more organized they were often able to purchase land for church buildings, and it was common for these churches to have an associated cemetery and or burial/mutual aid society. The life of a sharecropper or tenant farmer was transitory and even though individuals may have stayed in the same general area, they moved frequently from farm to farm. As seen in the number of land transactions, advertisements for farms, and court cases or sheriffs' sales shown earlier for the project area, landownership of specific parcels in the post bellum period was not particularly stable. Increasingly, African American families saw merit in burying their loved ones in a church cemetery where they knew the graves would be taken care of, rather than on land that may be sold to a less cooperative landowner. Avondale Burial Place seems to exhibit this trend.

The cemeteries at both the Bibb Mt. Zion Baptist Church and Mt. Hope AME Church were established in the later part of the 1800s. Exactly when is difficult to pinpoint as both cemeteries appear to contain a number of early unmarked graves. Additionally, many of the earliest markers in the cemeteries are difficult to read.

The late 1800s was a transitional time in the area when families may have chosen to continue burying their loved ones in the family or community burial ground, or they could opt instead for the church or burial society cemetery. While the tradition of burying in a church cemetery instead of family and community burial grounds can account for why Avondale Burial Place was no longer used, it does not account for why it was forgotten. Loss of the cemetery to community memory can be attributed instead to the largest internal migration of people in U.S. history – The Great Migration. The Great Migration was the movement of large portions of the African American Population over a span of 50 years from the rural, agricultural south to the urban, industrial north, Midwest, and west.

The Great Migration has been eloquently described in Isabel Wilkerson's 2010 work, *The Warmth of Other Suns*. Although the book focuses on three individuals who all left the South during different times and for different reasons, research for the book included more than a thousand oral interviews and detailed archival research. The book spans the entire period of the Great Migration, which Wilkerson places from World War I through the 1970s (2010:8). Most previous discussions of the Great Migration have focused on the economic realities of the movement, namely the labor shortage in the North created first by World War I and later, World War II, combined with the devastating economic blow dealt to agriculture in the South, the boll weevil. Wilkerson's telling, however, relates more to the story of the Avondale Burial Place as it focuses on the independent choices of individual African Americans to leave their homes and move not just to another county, but instead, in many cases, across a continent.

The Great Migration permanently altered the economy and face of the South, while simultaneously changing the cities and cultures of the North and West. But specifically, how did it impact the Avondale Burial Place? Based on the oral interviews collected at the Barton-Thomas Family Reunion in May 2010, it seems most of their descendants took the eastward path of migration through the Carolinas, Maryland, Pennsylvania, and New York. Although there also seems to

have been a branch of the Thomas family, the descendants of Henry Thomas, that moved to Detroit. Oral interviews of family descendants cited different reasons for why they felt their ancestors had left. Sherry Wilder said that it was hard for the young ones to maintain the farm – they left to seek better opportunities. Talerie Boyd also remembers that her mother left in 1953, she would have been around 20, for better opportunities. Henry Byron remembers that the boll weevil had made farming difficult, and there was a boom in Florida so they moved there.

John Wilder said his grandparents had 12 or 13 children and lived on their own farm in Lumber City, Georgia. They left because one of their sons had killed a white man, so the whole family fled. “All the girls ended in Durham, North Carolina, and all the boys landed up in New York.” Talerie Boyd said her grandmother had left Bibb County when she was 17 years old. She had worked on the Willis’ land as a sharecropper in the 30s or 40s. Family stories claim she was a very fast cotton picker (Talerie Boyd and John Wilder, Personal Communication, May 29, 2010)

In leaving, the African Americans that left severed many of those ties to their community including their burial places. In Wilkerson’s story of Ida Mae Branson Gladney, she had been living in Chicago for 61 years when she made her first trip home to Mississippi since 1983 (2010:516-520). On this trip, she visited the grave of her mother at the church cemetery. When her brother-in-law asked if she planned to be buried down here, she replied, “No, I’m gonna be in Chicago.” Home was now somewhere else. Ida Mae was lucky, however, in that her more immediate family members seemed to be buried at the church. Unlike a small, unmarked cemetery like Avondale Burial Place, she could visit her family’s graves.

## POTENTIAL DESCENDANT COMMUNITY

When GDOT initiated the search for a potential descendant community, they quickly encountered a local news story that had been picked up by the national press in 2007. In July of 2007, descendants of two former slaves of the McArthur Family held a reunion at the McArthur Family Cemetery in Bibb County. While researching her family history (the Thomas Family), Ms. Talerie Boyd, who believed she was descended from a former slave of the McArthurs, contacted Ms. Amma Crum, a descendant of the McArthur family who still lived in the area. Ms. Boyd provided Ms. Crum with Mr. Skip Mason’s address, as they had recently linked their families together, and he believed as well that his family (the Bartons) was descended from one of the McArthur’s slaves (Figure 3.16). Ms. Crum and her brother contacted the current landowner of the property where the McArthur family cemetery is located, and they agreed that the Barton and Thomas families could have a reunion in 2007 on the site. Approximately 100 people attended, including: members of the Barton and Thomas families; descendants of the McArthur family; and a member of the Bamileke tribe of Cameroon, whose DNA was a 99.7 percent match with Mr. Mason (Figure 3.17) (*The Decatur Daily* July 7, 2007).

Because the oral tradition of the Avondale Burial Place associated it with the slaves of the McArthur family, some connection to the Thomas family seemed possible. Upon learning of the reunion held in 2007, GDOT contacted Ms. Boyd and Mr. Mason. The Barton and Thomas families responded enthusiastically to the opportunity to learn if they were related to the individuals buried at the

Figure 3.16.  
Skip Mason with Barton Family Photograph Collection



Photograph Courtesy of Mr. Skip Mason

Figure 3.17.  
Barton-Thomas Family Descendants



A. 1987 Reunion



B. 2007 Reunion

Photographs Courtesy of Mr. Skip Mason

Avondale Burial Place. They have shared their genealogical research and given oral history interviews. For the first press and family day at Avondale Burial Place, many of them attended with their children to see the excavations in progress and to learn about the project. GDOT invited the public to the Avondale Burial Place in June 2009. A group of potential descendants attended this event to learn more about the project and observe the excavations in progress. In 2010, the Barton and Thomas Family Reunion was held in Macon and the group visited the site again (Figure 3.18). Since that time, members of these families have provided DNA samples to the University of Oklahoma DNA study of the site sponsored by GDOT. This study is ongoing and at the time of this writing, results are not yet available.

Figure 3.18.  
Barton-Thomas Family at Avondale Burial Place



A. 2009 Family/Press Day



B. 2010 Family Reunion



## IV. FOLK CEMETERIES AND FUNERAL RITUALS

### SOCIAL ROLES AND THE MORTUARY RITUAL

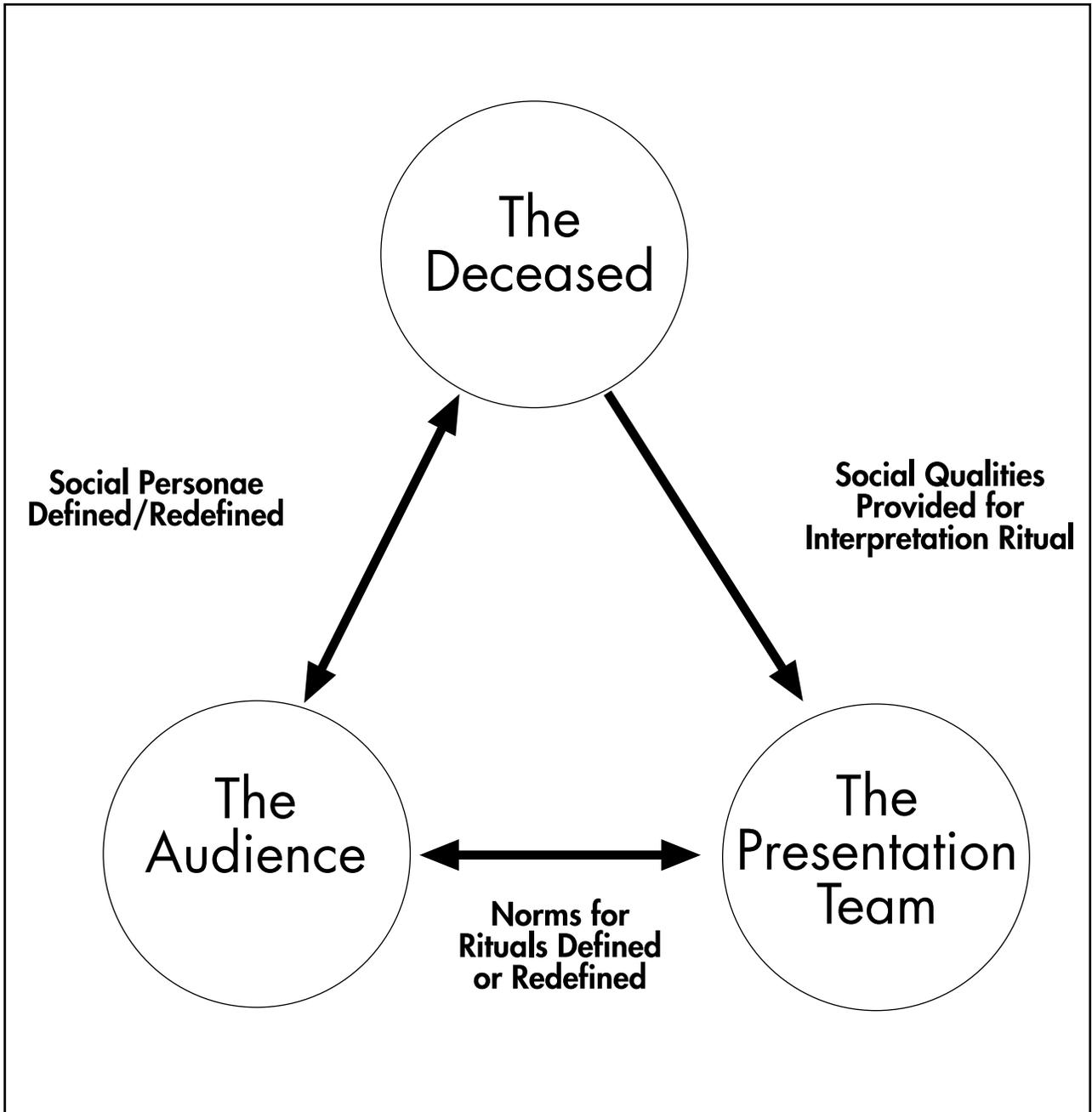
Death is not just a physical phenomenon; it is also a social one. Death permanently removes humans from social and physical environments. It is an agent of social disintegration, preventing the departed from contributing their labor, wisdom, experience, capital, and genes to the community's overall well-being. Over time, death removes all members of a community; therefore, communities cannot ignore death's effects. When death occurs, a community must minimally acknowledge the decedent's passage and adjust its organizational structure to compensate for the loss.

Removing the dead from the world of the living is a delicate social undertaking. Dying represents an important rite of passage, where the dynamic social identities of the living are transformed into permanent social classifications of the dead (Saxe 1970). Each culture develops mortuary rituals that are designed to reaffirm the dead and living's new place in the social network. Mortuary rituals therefore are performances acted out by members of the surviving community. Individuals assume culturally prescribed social roles, that is, they limit their behaviors to fit within the boundaries of a pre-determined social classification and act out a display designed to influence how the viewing audience thinks and feels about death and the death event. The ritual, therefore, is an interpretation of the death event seen in a manner that is supportive of both the dead and the community (O'Shea 1984). This is accomplished by grounding these rituals in the community's larger structure of beliefs and material symbolism (McGuire 1988). In this regard, the mortuary ritual is a means of reaffirming and shaping social values (Geertz 1973).

In order to understand the mortuary ritual, it is necessary to review what social roles are present. Following Goffman (1959), participants are defined as behaving according to one of three generalized role patterns – they may represent the deceased, they may be part of the presentation team, or serve as members of the audience. Accordingly, interactions between roles result in the completion of the mortuary ritual (Figure 4.1).

The deceased is played by the non-living (or soon to be non-living) individual. It is their impending death that initiates the mortuary ritual of which they are the main focus. Throughout life the deceased accumulate physical, material, and social qualities that define who they are in society. These features provide the presentation team with the basic tools to interpret and guide permanent assignment of a social identity to the dead. Because the dead cannot actively participate in the ritual, their role is purely passive. They serve the ritual as a medium, subject to physical and symbolic modification to affirm the dead's place in the community's structure.

Figure 4.1.  
A Model of Mortuary Interactions



Source: Matternes, 2000

Since the dead are incapable of manipulating how a surviving community perceives them, post-mortem image control is assigned to the presentation team (Goffman 1959). These individuals ensure that the audience has interpreted relevant aspects of the deceased's social persona and that a culturally appropriate mortuary ritual is performed.

Presentation teams act as social mediators. They evaluate the dead's social qualities, suppress those that are irrelevant or uncomplimentary, and symbolically emphasize important and positive social qualities within the range of responses acceptable by the community (O'Shea 1984). They accomplish this transformation through body preparation, participation in the ritual, and application of the appropriate post-interment behaviors. In a modern American funeral, the presentation team includes such figures as pallbearers, clergymen, florists, eulogizers, wood workers, spouses, children, and other family members, as well as the funeral directors and their accompanying staff.

The audience is composed of people who interpret the burial ritual but do not formally participate in its execution. Their duty is to observe mortuary displays and judge whether to accept how the dead are presented as part of the surviving community's heritage. Despite their seemingly passive role in the ritual, audiences define the presentation team's success in portraying the deceased. audiences do not have to witness the entire mortuary ritual; their response can be generated during any segment and even after the ritual has been completed. Since the mortuary ritual generates materials that allow qualities of the dead to be communicated long after the funeral has ended and the grave has been sealed, the audience includes those who view the grave and any accompanying surface decorations. Audiences provide the medium through which change in mortuary ritual can occur. As presentation teams are largely drawn from former audiences, they may reuse and integrate successfully accepted past reinterpretations and variations into new rituals. These changes may eventually be incorporated into the community's mortuary traditions.

Mortuary rituals are composed of integrated ideas generated by three distinct sets of actors. The actions and interactions of these participants determine the range of presentation available and given to a particular mortuary ritual. Based on the qualities acquired by the deceased during life, the presentation team evaluates and interprets the dead's place in the community within the norms that the audience feels is applicable to a given situation. It is important to recognize that cultural filters are in place; only those qualities that are complimentary of the dead and/or the community are used. These idealized views define how the living and the dead fit into the social matrix, reaffirm the community's cosmology, and identify which social constructs are important. When the audience views mortuary features, what they are interpreting are community perceptions. What are presented are not literal vignettes of the community, but ideological representations of how the community wishes to be portrayed.

Social scientists have used the role interaction model to address various aspects of the mortuary ritual as it applies to the individual funerary events; however, it should be recognized that the same basic roles, mechanics, and outcomes communicate information on a much broader level, which includes both time and space. The accumulated result of each mortuary ritual where memorialization includes deposition of the dead in the community's landscape is what largely defines a cemetery.

## THE FOLK CEMETERY

The American South is blessed with a unique suite of burial grounds generally classified as folk cemeteries. Typically found in non-urban locations, the folk cemetery can be characterized by form, architecture, and content that deviate from those found in contemporary, more mainstream American cultural practices. Folk cemeteries are the product of folk funerals. While the elements found in the cemetery are the most durable and visible, the entire ritual is frequently laced with aspects that stray from American norms. Folk cemeteries (and funerals) tend to rely on materials not intended for use in a mortuary context; these objects usually convey a message that is not adequately addressed by more prevalent cultural practices or not addressed in a means that the local culture could fully comprehend. In the past, these cemeteries were typically composed of non-elite community members. They tended to express ideas that related to their own culture's history and traditions.

Bibb County is positioned in the juncture between the coastal plain and the piedmont upland environments. While many subcultures can be observed within these regions, two particular folk traditions stand out as relevant to the Avondale Burial Place. Burial traditions characterized by rural lowland and coastal African American communities probably best address funeral practices stemming from the Avondale Burial Place community's cultural heritage. Likewise the burial practices of the upland folk contain elements that were widespread throughout many of Georgia's rural communities. Since there have been over 200 years of contact and interaction between these communities, the material and behavioral components of these rituals are very similar, albeit frequently for different underlying reasons.

Nineteenth- and twentieth-century observers have noted that African Americans in the rural coastal environments of southeastern seaboard developed lifestyles that blended unique elements from their West African heritage with the southern European American-dominated culture. Among these were distinctive mortuary traditions, many elements of which are still an important part of contemporary African American culture. The basic elements of this funeral tradition can be observed throughout most of the American South and its spread across the United States largely follows the movement of southern African Americans before and especially after the Civil War. Nineteenth- and early twentieth-century accounts gathered largely from the coastal communities of Georgia, North Carolina, and South Carolina have served as primary sources for understanding and modeling African American funeral practices. In contrast, primary sources are relatively silent about the traditions followed by African Americans in the southern interior.

Burial traditions of the southern interior, which included most landforms with elevations above the fall line in Georgia, exhibited their own blend of ideas. Prior to the expansion of transportation systems in the South, rural communities were challenged by social and economic isolation, a general lack of expendable capital, and a reliance on time-tested non-mainstream cultural beliefs and superstitions. The response to these pressures was a high level of self-sufficiency and independence from the outside world. The rural uplander frequently did not rely on the market to fulfill their needs; they were proficient at utilizing the resources available in their immediate environment. This 'make-do' approach had important implications for the funeral ritual.

Researchers recognize that these communities functioned independent of mainstream American mortuary customs; instead, they blended practices from European American, Native American, and African American traditions to rectify social instabilities set in motion by a death event. The resulting cemeteries stand in stark contrast to their more urban contemporaries. It is often nearly impossible to distinguish upland cemetery's sub-cultural affiliation without some prior knowledge of the community that produced them.

## THEOLOGY

### CHRISTIAN THEOLOGY

Christian cosmology was a dominant component of the upland folk and a major contributor to the lowland folk patterns. Nineteenth- and early twentieth-century Christianity tended to view human existence as a linear sequence of events. With conception, the body becomes infused with a soul and during the course of a lifetime; the choices made by the descendant determined their fate after death. This version of Christianity recognized the existence of an afterlife, so physical death was not viewed as an end of existence; rather, it was a passage to another world. Most Christians recognized the existence of at least two spiritual planes where the soul would ultimately and permanently reside. The return of Jesus Christ (who would rise in the east) marked the decline or end of human existence on earth and the ascension of all souls to the spiritual planes. Reincarnation was generally not considered possible in Christian cosmology.

Outside of celestial intervention, the worlds of the living and the dead were recognized as independent. While the living could petition entities in the afterworld for celestial intervention, these appeals were not made to the dead; rather, they are made directly to God (or one of God's associates). Likewise, the dead were generally considered unable to intercede in the affairs of mortals.

The cross became an important mortuary symbol emphasizing the hope for resurrection after death. Observations that plants died back in the winter provided a seasonal allusion with death. Flora such as cedars, yucca, vinca, and other evergreens that kept their foliage over winter were symbols of eternal life, while plants including lilies, bulbs, and perennials that reemerged in the spring symbolized life after death.

Christian beliefs recognized the significance of the mortal shell as the soul's link between worlds of the living and the dead. The body needed to be curated in a manner that made it available until the day of ascension; it also provided a means of social communication. The grave was an efficient means of achieving these two objectives.

While more elite Southerners tended to accept a division between the worlds of the living and the dead, this opinion was not shared by the more numerous and poorer European and African Americans. Many practitioners of southern folk culture recognized that the spirit world could influence the world of the living (Russell 1997:437). These pre-Christian concepts of the supernatural world permeated the Christian (largely European American) non-elite epistemologies and became parts of American folk belief systems (Milbauer 1989; Stilgoe 1978).

Circumstances of the victim's death played an important part in community responses. Deaths were viewed as either 'unnatural', and generally caused by violent, unjust, valiant, or untimely circumstances, or they were 'natural' and the result of aging, disease, or unremarkable causes. While unnatural deaths were given cause for special funerary elaboration, many early European Americans viewed natural death as an ordinary part of the human life cycle. Death was no different than any other event that happened in a person's life. With no social compass to point out the significance of a person's death, the need for elaborate, permanent memorialization was not deemed necessary (Hijiya 1983:343). Concern was more for the soul than the dispensation of the mortal remains. Periods of public mourning were abbreviated, grave furniture was sparse, and funerals were relatively minimized. The absence of elaborate ornamentation, inscription, and even use of permanent gravestones reflected a continuation of these traditional attitudes in many Southern and Upland environments.

During the nineteenth century, Christian views on death shifted to less spiritual and more secular concerns. The eighteenth century's preoccupation with the fate of the soul evolved into trepidations over having not lived a meaningful life and died un-mourned by the world around them. Mourners were expected to openly display their love and devotion to the dead by public gestures of grief and affection to the dead and an unwillingness to let go of the dead. Dress and actions of those most closely related to the dead were altered to demonstrate affection and grief. Photographs of the dead became commonplace to capture their image, use of embalming increased, hair and other personal belongings were viewed as means of keeping the dead's memory in the world of the living. In turn, these actions demonstrated that the mourners were of 'good character' and were socially respectable (Loughridge and Campbell 1985:8). While elements of these attitudes may be seen in both Upland and African American funeral rituals, they were not the dominant themes that permeated more mainstream American practices.

### WEST AFRICAN THEOLOGY

Most nineteenth- and early twentieth-century African Americans accepted Christianity. Their burial practices in turn reflected many Christian-based traditions. Some non-Christian West African traditions, however, managed to survive but their original meanings became lost or hidden in Christian dogma. What survived were ideas and practices utilized by a broad spectrum of African societies and concepts that could easily be adapted to fulfill more than one meaning. The funeral ritual became a mechanism of social cohesion during the pre-Emancipation period. Scholars have pointed to the ring shout and the second funeral as examples of pan-African rituals that helped unite African slaves from diverse origins into cohesive communities (Hildebrand 2006:144; Stuckey 1987:12).

While slaves were drawn from nearly all parts of Africa, the Bakongo, a large civilization in the Kongo were among the most heavily impacted (Thompson 1984; Thompson and Cornett 1981). While some beliefs were unique to these people (and to subgroups within them), their recorded traditions exhibit commonalities among many fundamental beliefs throughout much of west and central Africa. Using Bakongo traditions as a model, West Africans believed that there were two worlds – that of the living and that of the dead (Morrow 2002; Thompson 1984; Thompson and Cornett 1981). These worlds shared a common plane or ground surface with the living existing on

one surface and the dead inhabiting the opposing side. The plane that separated these two worlds was referred to as the Kalunga line. Since many of the deepest soil deposits in West Africa contained white kaolinite clay (and therefore were closer to the opposing realm), the world of the dead was likewise considered to be white.

Above both worlds, the sun traveled in a circle creating a perpetual cycle of day, night, mid-day, midnight, sunset, and sunrise. This cycle and its significant points reflected the same cycle seen in human life. The rising of the sun signified a person's birth; mid-day reflected the middle of the individual's life; sunset symbolized their death and midnight was a point leading towards the person's rebirth. As the sun passed from one to the other side of the Kalunga line, so did life. Life therefore was not viewed as a finite state; rather it was one of many transitions in a continuing cycle between both worlds.

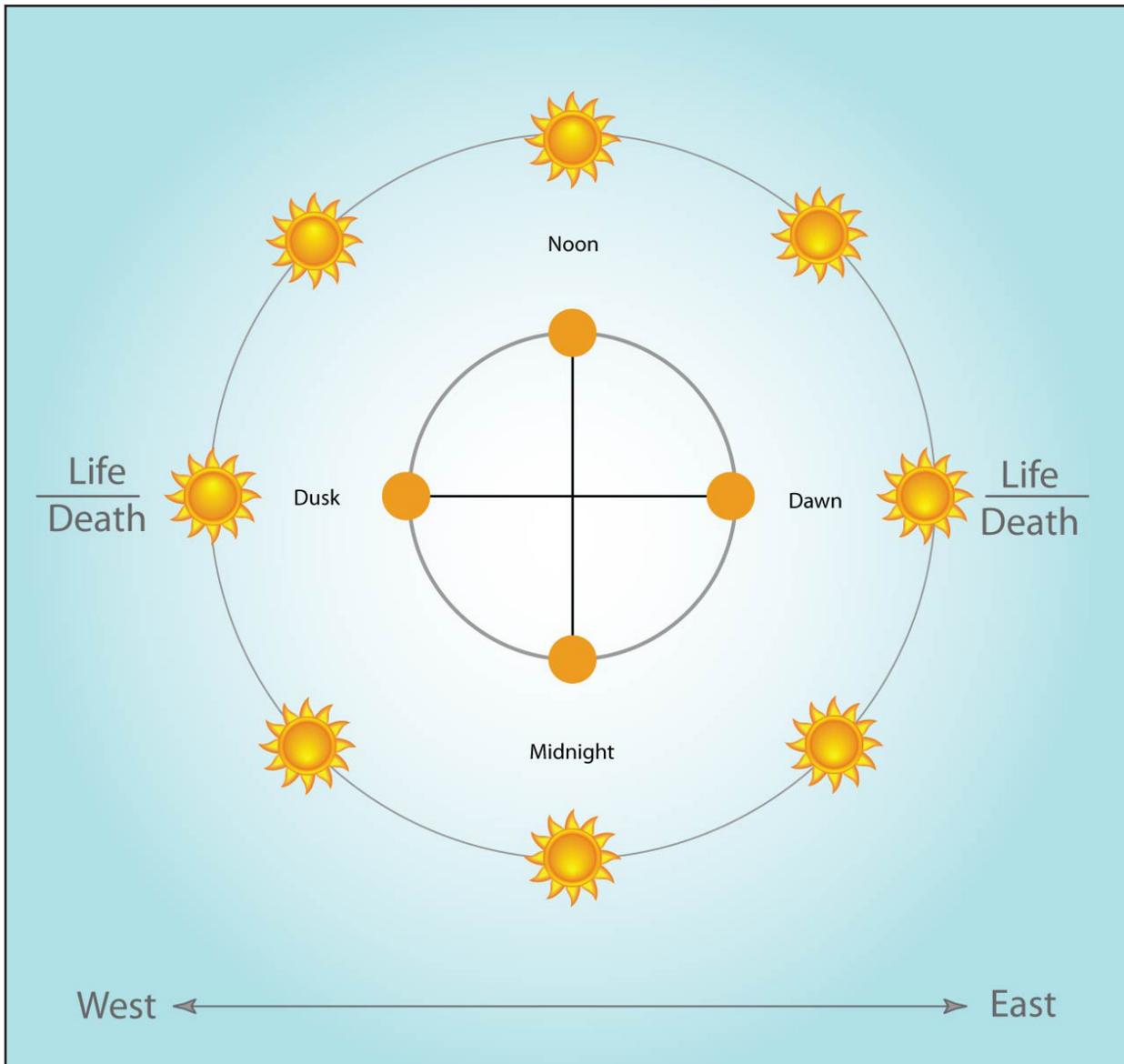
Great bodies of water (oceans, rivers, or lakes) were thought to separate the worlds of the living and the dead. It was necessary for the spirit to cross these to reach the next world. As the sun rose or set and its light shimmered on the water, visions of the world of the dead could be seen (Fenn 1985:43). Water, therefore became an important symbol for the transition between life and death. The flash or shimmer of sunlight became a means of viewing the spirits of one's ancestors and a conduit for supernatural control. Silver utensils, coins, foil, ceramic glazes, and glass could also produce flashes. These reflections served a dual purpose by trapping or dazzling spirits, preventing them from leaving an area and providing a pathway into the spirit world.

Many African American mortuary symbols had their roots in this structure. The cyclic movement of the sun across the sky was linked to the spirals of a snail shell and the never-ending border of a circle. The opposing points of the sun's movement across the sky formed a cross and when combined, the cross and circle cosmogram neatly outlined the shape of the world, the movement of heavens, and the cycle of life and death (Figure 4.2). Circles, shells, water, crosses, white, and silver were important mortuary symbols in nineteenth- and twentieth-century African American communities.

Traditionally the grave was viewed as a place where the worlds of the living and dead were able to interact with one another (Morrow 2002:107). Unlike more Christian-based theologies, traditional West African belief systems recognized that the dead could manipulate the living and the material world. Because death was viewed as a transitional state and not an instantaneous phenomenon, the spirits of the dead, particularly the recently dead, were found near their burial sites (Jones 1925:173).

The funeral rituals developed in West Africa and in the Americas were designed to allow the living to appease the departed's spirit. Viewing life as little more than a transition between states of existence meant that the dead were still considered part of the family and community support network with rights and obligations that the living could be relied on to fulfill. In general, there were two means of fulfilling these obligations. Paramount was adequate preparation of the dead for journey to the next world. The living were expected to provide the materials and metaphysical protection needed for the spirit to reach the world of the dead. Second, the dead had to be

Figure 4.2.  
West African Cosmogram



Drawn from concepts outlined in Morrow 2002; Thompson 1984; Thompson and Cornett 1981

reassured that the support network was still in place. The oft-cited elaborate African American mortuary displays validated that the community believed that the decedent had lived a meaningful and worthwhile life (Davidson 2007:198). Once interred, the living insured that the grave was regularly visited and properly maintained. These were tangible acts designed to show the dead that they were still loved and respected.

Fulfilling the spirit's needs were in turn means of manipulating the spirit world. In return for their efforts, spirits offered medicinal powers and supernatural protection to the family or community (Evans et al. 1969:77; Fenn 1985:43; Russell 1997:424). Failure to meet these obligations not only rescinded the dead's help, but the angered spirit would return to haunt and harm the living.

## THE CEMETERY AND THE GRAVE

In general, rural cemeteries in Georgia assumed three forms. Perhaps the least common forms were communal or municipal cemeteries. Communal cemeteries were found close to a town center and were generally overseen by a municipal authority or private organization (such as a burial association or funeral home). Grave plots were purchased, donated, or arranged through consultation. Communal cemeteries tended to be placed in visible portions of the cultural landscape and were perhaps the closest analog to urban cemeteries found in rural environments. Jabbour and Jabbour (2010:56) noted that communal cemeteries run by municipal authorities exhibit the greatest diversity of size and headstone style among rural cemeteries. Other cemeteries were built on church grounds. While frequently the cemetery was a large component of the church's land use, they were usually placed behind or beside the church and rarely competed with the church structure as the focal point in the landscape. These cemeteries become increasingly less common in the foothills and mountains (Jabbour and Jabbour 2010). The most commonly encountered rural burial grounds were family cemeteries. Family cemeteries were private grounds reserved for family members. Their audience was rarely the public at large, so monuments and decorations tended towards simplicity. Family cemeteries were frequently separated from the surrounding grounds and living area by fences or enclosures.

Rural cemeteries can also be divided in terms of how the property was managed. Burial grounds that were regulated by an overseeing institution that controls who can be buried, where graves may be placed in the cemetery, and the range of symbolic expression allowable on a grave are referred to as formal cemeteries (Richey et al. 2008). Groups, including churches, burial associations, municipal authorities, and commercial enterprises, recognized that cemeteries conveyed important messages about the burial community and sought to restrict these messages to those deemed to be positive and appropriate statements. The range of expression associated with these cemeteries is more restrictive than found in informal cemeteries. Informal cemeteries lack a singular institutional authority. They are composed of numerous smaller groups, usually representing individual families, whose control is limited to their particular burial area. Informal cemeteries convey few cohesive messages about the cemetery population as a whole; focus is more directed towards messages communicated by family plots and individual graves. Most communal and church cemeteries were formal cemeteries. Family and some communal cemeteries, such as the School Street Cemetery in Washington Georgia, were informal burial grounds. In the

Avondale area, cemeteries including the Good Samaritan Cemetery and the Mount Hope AME Church Cemetery could be considered formal cemeteries, while the McArthur Family Cemetery was very likely an informal burial ground.

### CEMETERY AND GRAVE LOCATION

Cemeteries in the upland areas were usually located on hilltops, ridgelines or on their adjacent slopes (Jeane 1978:896). These locations were chosen because they drained well and they made use of land that was difficult to develop for agricultural purposes. Christian theology recognized that the desirable spheres of the afterworld were "in the sky" or at least above the living world (Cottle 1997:17; Knight 1973). Placement of the cemetery on high ground placed the dead closer to the spiritual world; the cemetery became a metaphor for heaven or paradise on earth.

Many rural landholders felt strong bonds between themselves and their land, particularly land that had been in the family's possession for numerous generations. The cemetery provided a tangible means of legitimating a family's claim to membership in a community and ultimately to property ownership (Botwick 1997). Burial on family property or on church grounds where the family had traditionally been members were means of reaffirming a family's place in the community's social structure.

When choice was provided, rural African American communities invariably chose private locations for burial areas. This may have been done to provide the spirits a locality that was isolated from the living (Jones-Jackson 1987:73). Slaves were buried on unusable bits of land, near field corners, close to fresh water (swamps, creeks, ponds or rivers), adjacent to European American cemeteries, or as part of a slave quarters complex. Tines Kendrick, a former slave from Crawford County, Georgia recalled that the slave cemetery on her plantation was located in an isolated location away from the main complex, a location not that dissimilar to what was observed at the Avondale Burial Place (Tines Kendrick in Yetman 2002:83). Roediger (1981:170) noted that some Southern communities or churches provided communal grounds where local slaves could be buried. When possible, African American burial in the post-Emancipation era would have been with one's formerly enslaved kinsmen or tended to reflect locations with these same geographic features.

The organizational structure within most lowland and upland cemeteries centered on the nuclear family. Burial grounds frequently were divided into sub-parcels with predetermined spaces within each plot reserved for specific immediate family members. Different nuclear family groups frequently defined their own space within the cemetery, forming a large network of inter-related extended families. This pattern mirrored the social networks that evolved in rural southern communities (Jeane 1992:113).

A paramount priority for many African Americans was assurance that they would be interred in the family cemetery (Combes 1974:56; Georgia Writers Project 1972:95). Great lengths were made to insure that one's mortal remains were returned to the family burial ground. Individuals who died away from the family burial grounds were shipped back using the most efficient means possible. Putrefaction of the un-embalmed became such an issue that in 1862 the Central, Macon, and Western, as well as the Southwestern Railroad banned rail shipment of all coffins that were not

encased in a charcoal filled box (Adams et al. 1862:2). Since dead family members were part of the support network that protected the living from supernatural maladies, it was imperative that the deceased were buried with the spirits of other kinsmen. The penalty for not being interred with the family spirits was to wander with no final resting place (Suzie Branch and James Collier in Georgia Writers Project 1972:62-63, 77). Likewise the fear of contaminating the cemetery, a family's most powerful magical charm, meant that strangers and non-family members were buried elsewhere. In some parts of Georgia, 'Stranger's lots' or 'Stranger's Cemeteries' were erected beside more family oriented cemeteries to inter nonfamily members. The small, isolated burial ground outside of the Osburn Family Cemetery in Walker County, Georgia is an excellent example that the Stranger's Lot was a concept found in upland settings (Windham et al. 2011:25).

Fear that stillborn and premature infants were victims of sorcery and thus a potential source for metaphysical contamination of the family plot has its roots in West African culture (Parrington et al. 1989:120). These infants frequently received less preferential treatment than other children. Infant segregation has been associated with malevolent magic in a few African American cemeteries, indicating that this cultural perception probably survived into the late nineteenth century in some communities (Crist et al. 2000:96; Matternes et al. 2010:333).

Segregation of the nonmember was not a uniquely African feature; the European-Christian culture had long-standing traditions governing cemetery membership. European-Christian communities tended to use grounds that were specially blessed by the church and set aside for burial purposes. The sanctity of these grounds was maintained by excluding the unworthy from burial. Those who had sinned and thus condemned their souls to hell (or purgatory) were buried in remote, unmarked locations. The excommunicated, murderers, felons, suicides, and similar social outcasts were buried at cross roads, sometimes at night so that their wandering souls would forever be unable to haunt their former communities (Stilgoe 1978:24). While lunatics were perceived as innocent victims possessed by demons, they were denied burial to prevent contamination of the holy ground. Unbaptized children (who lacked the grace of God and thus unable to go to heaven) could likewise not be interred in a Christian burial ground.

Cosmology dictated how graves were positioned. The traditional Christian burial form placed the body in an extended position in an east-west alignment. While probably adapted from pre-Christian pagan burial traditions, Christians grounded this burial posture on the second coming (or judgment day), which envisioned Christ arriving in the east. Graves were oriented with the head to the west in order to allow the dead to face Jesus on his arrival. This was symbolically tied to the concept of rebirth and hope of a life after death (Milbauer 1989:177). From an African perspective, burial in this same east-west positioning meant that the dead were synchronized with the structure of the universe (Genovese 1972:98; Pollitzer 1999:142). Placing the head to the west meant that the dead could observe the sun as it rose and trekked across the sky.

Whenever possible, graves were placed with the decedent's spouse and/or kinsmen. Children tended to be buried in close proximity to their parents. European and Christian traditions dictated that wives were interred to the south (or left hand side) of their husbands (Miller et al. 2004:363).

Graves placed out of an east-west orientation generally reflected a desire to deny the decedent spiritual grace. This alignment reflected conditions associated with the individual's character or cause of death. Violent or unnatural deaths, which would have included animal attacks, disfiguring disease, violent injury, and the death of murderers, suicides, or those with socially malignant personalities, were traditionally denied a proper burial in West African cultures (Hildebrand 2006:137). Elements of this practice survived into the New World. Victims of drowning in particular were oriented north-south to appease water spirits while those deemed as sinners were placed with their heads to the east (Burn 1991:21; Cohen 1958:96; Mills et al. 2008:197). Individuals of low moral character may be buried face down to symbolize that their fate lay in hell (Gregorie 1954:315). In the Caribbean, this positioning was reserved for those who possessed supernatural powers (Gregorie 1954:315). Alternatively, murder victims were buried face down to help identify the killer (Gregorie 1954:315). Finally, among Gullah-Geechee sea island communities, children were buried face down to prevent the child from returning for its siblings (Herskovits 1941:189). Joe Anderson of Washington, Georgia recalled one particularly disliked member of the community who was buried extremely deep to insure that he remained in his grave (Anderson, Personal Communication, 2007). This probably related to a wider belief that a deep grave prevented a spirit from returning to haunt the living (Puckett 1926:107-108). In the uplands, north-south oriented graves and those buried with their heads to the east were reserved for those who had fallen from Christian favor; on the day of judgment, these persons were doomed to rise facing the wrong direction or with their backs to Jesus (Jordan 1980:246).

## GRAVE DECORATION

### Markers

The nineteenth- and early twentieth-century American concept of an appropriately decorated grave usually included stone memorials marking its head and foot ends. Stone markers served two purposes. First, they provided durable points in the landscape that identified exactly where a given decedent was interred. This insured that descendants knew where their loved one was buried and prevented future deposits from unintentionally disturbing the grave. Stone markers also provided a permanent medium where information about the decedent and the community's perception of death could be conveyed to all future viewers. Gravestone form and prose have not remained static, rather they have both undergone considerable change over time to reflect important shifts in mainstream American culture (Hijiya 1983). In Georgia, stone markers can be found in both upland and lowland cemeteries.

Uninscribed grave markers were common in rural environments where they were valued as permanent grave locaters. Perhaps the most ubiquitously found monuments were fieldstone markers. They were a common feature wherever naturally occurring rock could be extracted from the local environment. When possible, tabular stones approximating the dimensions of commercially produced head and footstones were chosen (Figure 4.3a). Jordan (1982:45) observed that the tops of fieldstones were occasionally pecked into square, rounded, and gable shapes. Fieldstones occasionally had the decedent's name or initials crudely carved into their

Figure 4.3.  
African American Folk Grave Markers



A. Granite Fieldstone Marker (Stone Mountain Cemetery, African American Section, DeKalb County, Georgia)



B. Handmade Concrete Marker for Bessie Goodwin (Mt. Hope AME Church, Bibb County, Georgia)



C. Handmade Concrete Marker for George Lee Walker with Encircled Crosses (Old Smyrna Methodist Church Cemetery, Harris County, Georgia)



D. Cedar Plank Grave Marker (Brinson Cemetery, Emanuel County, Georgia: Photo Courtesy of Sarah Lowry)

surfaces, In Washington County, African American graves were occasionally marked with chunks of white quartzite (Richey et al 2008:35). LeeDecker et al. (2009:91) have noted that use of the fieldstone marker continued well into the twentieth century. They can be found on a variety of rural cemeteries in and around Bibb County.

Rural African American grave markers in particular often diversified away from the traditional stone forms found in mainstream urban cemeteries. Use of alternative materials including cement, bricks, roofing tile, iron, architectural stone, cinderblock, edging, and other construction materials have been used either directly as markers or to fashion memorials. These can still be commonly observed in cemeteries throughout Georgia. African American markers frequently explored artistic concepts outside the traditional American marker style often to convey Afro-centric ideas (Figure 4.4a). Concrete markers shaped like a capital "T" have been recognized as the portions of the West African cosmogram that are below the Kalunga line (Figure 4.3b) (Morrow 2002:108-109). Concrete enabled the maker to embed a variety of materials in the matrix (Figure 4.4b). Bits of glass, tile, marbles, ceramic, figurines, shells were among the objects commonly observed in these markers. While Christian iconography dominated handmade African American markers, these monuments frequently also depicted suns, moons, and encircled crosses (Figure 4.3c).

Wood was probably the most commonly used nondurable marker type found in rural southern communities. Among the less wealthy members of society, planks and posts approximated the forms of more formal gravestones (Figure 4.3d). Wooden shingles and boards were sometimes used to mark slave graves (Genovese 1972:200; Vlach 1991:47). Wooden markers were sometimes carved into anthropomorphic, zoomorphic, or abstract forms. Work by such artists as Cyrus Bowen can be directly tied to grave art decorating graves in Northern Angola (Genovese 1972:200; Vlach 1991:47). Wrought iron was occasionally worked to fashion chains, probably identifying loyalty to the Independent Order of Oddfellows and to make anthropomorphic figures (Figures 4.4c and 4.4d) (Richey et al. 2008:41).

Nineteenth- and early twentieth-century graves marked with inscribed memorials tended to be less common in rural southern cemeteries than in more urban settings. This can be attributed to a reliance in many southern burial communities on non-written media to record who was buried in a cemetery. Matternes and Richey (2009) have argued that one of the primary differences between urban and rural southern cemeteries was audience focus. While many urban cemeteries were designed to inform the visitor, who was frequently literate and more often times not local, the primary audiences for many rural cemeteries were local community members. Many people in the rural south were poorly educated and would have been unable to read a gravestone inscription.

Grave markers also tended to be made from nondurable materials, which over time left many graves unmarked. To overcome these obstacles, the names of those interred in a cemetery were recorded as part of the community's oral tradition (Jeane 1989:163). Mnemonic cues, including use of distinctive grave decorations and grave placement relative to other geographic features, helped document a grave's identity. To illustrate this, Edelle Osgood explained how she knew where her unmarked kinfolk were buried:

Figure 4.4.  
Anthropomorphic and Abstract African American Folk Grave Markers



A. Concrete Anthropomorphic Figure  
(16 Gate Cemetery, Beaufort, S.C.)



B. Concrete Marker with Embedded Iron  
Cover and Oddfellows Chain (Resthaven  
Cemetery, Wilkes County, Georgia)



C. Iron Anthropomorphic Figures (School Street Cemetery,  
Wilkes County, Georgia)



C Oddfellows Chain (Stone Mountain  
Cemetery, African American Section  
DeKalb County, Georgia)

I know the spot where my granddaddy and my aunt were buried. I couldn't just go out there, but I know about where because I'm going by the fence that was there, because I remember leaning up on the fence when they was buried, my granddaddy and my aunt (Edelle Osgood in Meader 2002: Appendix [Osgood Interview]:22).

### Grave Offerings

Markers are not the only means by which a grave's location is identified. Accessory materials, collectively referred to here as grave offerings, are frequently in direct association with a grave and can be used to delineate its position on the landscape. Grave offerings are typically placed on, beside, or directed towards an interment. They may help retard unwanted plant growth and control surface erosion, but their primary purpose is communication. They convey specific, often highly personal information about the decedent to an audience. In upland cemeteries, this audience is primarily (but not exclusively) family, local and non-local community members. The primary audience in lowland African American cemeteries is frequently the spirit of the departed.

Late nineteenth- and early twentieth-century lowland and coastal African Americans possessed a rich tradition of grave offerings. While commercially produced mortuary decorations were occasionally used, household objects were charged with social meaning and commonly pressed into service. Some of the more ubiquitously used forms were complete and fragmentary vessels. Complete vessels fulfilled both functional and symbolic needs. Glass and ceramic hollowware objects served as planters, vases, grave markers, edgings, decorative covers, and offering containers.

Placing bottles on and around graves was a long-standing Southern and African American mortuary tradition (Jeane 1978:898; Milbauer 1989:179). Fenn (1985:43) and members of the Georgia Writer's Project (1972:127, 130) noted the use of bottles as a grave offering on both African American and West African graves as a means of appeasing the dead.

The placement of personal items also served as a form of spiritual appeasement. To prevent the dead from wandering back to the world of the living, West Africans and African Americans provided the dead with the necessities they once had in life (Fenn 1985:43; Vlach 1991:45). Possessions, including toiletries, glasses, tools, false teeth, and medicines were commonly left on the grave's surface for the dead's use (Burn 1991:345; Fenn 1985:44; Parrington and Wideman 1986:61; Thompson and Cornett 1981:96). Toys, including dolls and doll parts were commonly placed on the grave of a child (Roediger 1981:175; Thompson and Cornett 1981:210). Regarding what materials were left on a grave, Sarah Washington of Eulonia, Georgia observed, "I don't guess you be bothered much by the spirits if you give 'em a good funeral and put the things what belong to 'em on top of the grave" (Sarah Washington in Vlach 1990:139-140). Inclusion of these materials on the grave was a means of supporting the dead and prevented the spirit's return to look for them.

Meanings varied by how the vessel was positioned. Inversion on the grave's surface was viewed by some African American communities as an 'inversion' of life and a symbol of the spirit world (Thompson 1984:142). Objects placed upright were designed to be seen or used by both the living and the dead. Alkaline and other glazed stoneware vessels placed at the head of the grave were used as grave markers (Burrison 1983:27; Richey et al. 2008:47). On the graves of those who died at night, lamps and lamp fragments were placed within the confines of the grave's perimeter to help lead the dead to the spirit world (Fenn 1985:67; Thompson and Cornett 1981:199). More personal wares made of glass, including bottles (particularly medicine bottles), tumblers, and dishwares were intentionally positioned on top of the grave (Milbauer 1989:179). Frequently these objects were among the last touched by the deceased. Some believed that they were still charged with spiritual emanations from the deceased (Blassingame 1972:37; Capozzoli 1997:330; Vlach 1990:140). Placement of grave offerings was not just a protective move; it was a gesture to persuade the spirit to use their powers for the benefit of their descendants (Thompson and Cornett 1981:181). While grave offerings were directed toward the spirit, they also communicated important qualities and features of the dead's social personality to the living audience.

Sometimes the focus of the grave offering was not the object proper but what was inside it. On St. Mary's Island, for example, food offerings were left on the grave to provide the spirit with sustenance (Georgia Writer's Project 1972:194). Some offered vessels frequently contained little more than water. Water symbolized the transition between the worlds of the dead and the living (Capozzoli 1997:331; Fenn 1985:45). Glass water pitchers, canning jars, vases, and metal cans, which could all also be used to hold flowers, are common finds on gravesites. The association with water was also a reason to include bathroom tile on the surface of a grave (Fenn 1985:45).

On some African American graves, objects were intentionally broken or 'killed'. This symbolic gesture was designed to release the object's spirit from its material form and was a metaphor that life had ended (Nichols 1990:10; Vlach 1991:45). Others believed that shattering an object broke the chains of death and prevented other family members from following a departed loved one into the spirit world (Morrow 2002:106). The scattering of glass fragments and other sparkling objects on grave surfaces allowed the living to see the dead in the resulting shimmer (Fenn 1985:46). Vlach's (1990:138) observation that pressed glass was often among the sherds may be explained by the ability of the glass's uneven surfaces to capture and reflect light. Puckett (1926:106) observed that Georgia's African Americans viewed broken glass placed specifically on the grave as a means of keeping the spirit within the grave. Genovese (1972:200) felt that the use of broken pottery on grave surfaces had ties to the West African use of potsherds to symbolize the destruction of body by death. Evans et al. (1969:82) viewed these sherds as offerings left to appease the spirits. Glass sherds scattered on the surface of the grave therefore, served as a medium allowing the living to manipulate the world of the dead.

Color was also an important component of glass and stoneware decoration. African Americans followed West African traditions that associated white with the afterworld (Nichols 1990:13; Vlach 1991:45). The placement of bleached seashells, white, satin or milk glass, marginally decorated

or undecorated whiteware, ironstone, porcelaneous ironstone or porcelain, and bristol slipped or salt glazed stonewares on a grave would have added mortuary connotation to any message conveyed by the object's form. The high glazed surfaces of these potteries also had the ability to shimmer when light bounced off their surfaces. This was particularly evident if the object's surface was textured, embossed, or incised. The use of glazed pottery as a grave offering may also have been a means of manipulating the supernatural.

Many of these same offerings were deposited on non-African American upland graves and at first glance they would appear to be identical. There are, however important distinctions between their uses. While bottles, jars, and other water-bearing vessels may be commonly found on upland graves, their purposes were largely to serve as flower vases or, when inverted, they were used as a grave covers or edgings (Jeane 1978:898). They rarely were placed to hold food offerings. These goods generally lack the water symbolism found in their African American counterparts. While broken pottery and glass may be found on upland graves, these were more a product of weathering and not from intentional breakage.

A variety of objects including toys, photographs, letters, whirligigs, planters, and figurines were commonly placed on top of upland graves. These objects were generally not personal possessions of the dead and their presence was not designed to appease the spirit. Grave houses and similar enclosures were sometimes placed on top of the grave to help protect it and to convey the decedent's importance to the family. Upland surface decorations were more commonly communication mediums designed to express the decedent's interests and personality qualities to the visitor.

Grave edgings and covers, which included fences, vegetative borders, and ledger stones, were an important component of the rural surface decoration. In Lowland and Coastal African American cemeteries, they acted as charms. Marking the margins of a grave defined space that belonged to the spirit. Edging provided a supernatural barrier capable of keeping the spirit from wandering and at the same time protecting the spirit from harmful magic. Thompson and Cornett (1981:185) recognized that African American grave edgings corresponded with 'luumbus' or sacred enclosures placed around West African graves. Edgings around upland graves served more as a means of surface identification rather than as a spiritual barrier (Clauser 1994:6).

## THE FUNERAL RITUALS

### CARE AT DEATH

The concept of 'folk' is most commonly associated with the cemetery, but the reliance on non-mainstream American ritual is found throughout the entire funerary tradition. A review of funeral events beginning with the moment that the death event is imminent will best illustrate this concept.

Late nineteenth- and early twentieth-century rural communities were not comfortable with the concept of the unattended death. Most communities felt that they had a responsibility to care for its members. In the uplands, medical care was frequently scarce and residents had to rely on home remedies to aid the afflicted (Crissman 1994). Many deleterious health conditions were beyond

the scope of help that could be provided, even by the available medical community; death was a frequent and constant concern whenever a person's health was jeopardized. This recurrent exposure meant that the signs of impending death could be recognized. Family and friends engaged in a 'death watch'. During this vigil, the victim was constantly attended to provide aid and prayers until their condition either improved or death occurred.

In African American communities, family members were assisted by church and mutual aid group members who watched and cared for the sick and dying (Holloway 2002:34; Parsons 1923:215; Sisk 1959:169-170; Torain 1943:351; Vernon 1993:54-56). Caregivers were expected to comfort and support the dying. One coastal South Carolina native summed up the responsibility as "We got tuh help him cross de ribber," recognizing that the living were there to ease the victim through the death event (Pollitzer 1999:142).

When death was imminent, the victim's mouth was closed and the eyes pressed shut to prevent the spirit from going to a 'bad place' (Puckett 1926:85). Once death occurred, caregivers would shriek not only in bereavement and to let others know that the victim had died, but also to scare off any lurking malevolent spirits (Pollitzer 1999:142). The spirits of those who 'died well' were less expected to return to the world of the living.

Allowing a 'bad' or unattended death to occur was a condemnation of an individual's worth within a community. One of the penalties for anti-social behavior was to die unattended. Gregorie (1954:315) related that in 1871 a church member in Sumter County, South Carolina "'backslided' into sin; when she became ill, none of her friends came to her aid and she died, probably of neglect." A bad death doomed the spirit to an eternity of roaming the earth (Pollitzer 1999:142).

Death brought on the need for a presentation team to form and begin preparing for funeral events. Initially the presentation team consisted of those present at the death, but usually expanded to include other members of the community. One of the most important preparatory functions of the presentation team was to inform the community that a death had occurred. In an age before electronic communication and noise pollution, drums and bells served as efficient means of mass communication to a community that was widely dispersed over the landscape. In the uplands and among some lowland African American communities, the church bell was the primary means of gaining a community's attention. Brooks Moody of Hinesville, Georgia recalled:

I can remember we used to have a bell on top of the church and any time anyone died in our community and we was having a funeral, we had a certain man who would ring the bell and everybody in the community would know that somebody was dead or they was having a funeral (Moody in Meader 2002 Appendix [Moody Interview]:2).

While couriers were sometimes dispatched to carry the news, the funeral drum was the more common medium of communication in lowland African American communities. Funeral drums had their origins in West African funeral ceremonies, where they announced each step of the funeral ritual (Thompson and Cornett 1981:177). Drums were initially beat on the day of the death to alert the community and thereafter to apprise them of the funeral's progress (Georgia Writer's Project 1972:76). Universally recognized drum beat rhythms communicated a death

announcement and each community was expected to pass the message on to even more outlying settlements (Georgia Writer's Project 1972:122, 140, 143, 155). In some communities a plow was rung (referred to as 'knocking the sweep'); one beat was struck for each year of the deceased's age (Sisk 1959:169).

The home of the deceased was prepared not only for visitors but to prevent or discourage the spirit from lingering. The dead were often moved to a bed positioned with the head towards the west. This placed the victim in alignment with the rest of the world, providing the spirit guidance about which way to travel (Holloway 2002:123). Once the decedent was removed, the house was thoroughly swept and cleaned to remove all physical reminders of the death event (Parsons 1923:213). Clocks were stopped at the time of death in fear that they would cease to function properly (Burn 1991:21-22). In Appalachia, clocks were stopped to symbolize the end of one period of life and the beginning of another (Crissman 1994:25). Mirrors, pictures, and glass panels were covered or turned backward, as it was considered bad luck for the spirit to see itself (Blakeley and Harrington 1997:169; Parsons 1923:214; Sisk 1959:169). Alternatively this was also done to prevent the spirit from being captured in the glass (Holloway 2002:123). Tobacco smoking was banned from the house and fires were not started in the hearths for these same reasons (Thompson and Cornett 1981:194). Pillows were removed from the home to make it less comfortable for the spirit (Holloway 2002:123). Wreathes were sometimes hung on the front door to inform passers-by that a death occurred (Holloway 2002:19). Objects like clothing, combs and brushes that were not saved for use on the grave were either thrown away or burned (Emma Coker in Waters 2000:98; West Turner in Perdue et al. 1976:289).

#### PREPARING THE DECEDENT

Much of the presentation team's immediate attention was also turned towards preparing the body for final dispensation. While embalming saw widespread use in the mid- to late nineteenth century, it was generally only available in more metropolitan areas. Embalmers, including John J. Clay, were in Macon by at least 1881, but the process was costly and beyond the scope of most African American budgets (*Macon Telegraph and Messenger* 1881:2; Wilson 1983:52). The procedure's quasi-medical nature may also have raised suspicions in communities already sensitized by body snatching and other medical depredations. Embalming did not appear to have been widely used in southern African American communities until the mid-twentieth century (Blasingame 1977:650; Dolan 1994).

Timing of the physical interment has traditionally been a sensitive issue with African American communities. Providing the dead with a proper burial in the slave community was a paramount concern and there were few slaveholders who were foolish enough to forbid or dramatically interfere with the ritual. Funerals, however did take time away from other duties and some control over when and how a long a funeral could take place was enforced. In Georgia, informants such as Rachel Adams noted that, "If a nigger died that mornin' they sure didn't waste no time a-puttin him right on down in the ground that same day" (Rachel Adams in Killion and Waller 1973:120). At the other end of the spectrum, Robert Shepherd reminisced:

If a slave died on our place, nobody went to the fields 'til after the buryin'. Marster never let nobody be buried 'til they had been dead 24-hours, and if they had people from some other place he waited 'til they could get there. He said it wasn't right to hurry 'em off into the ground too quick after they died. He never seemed to care if us went – 'fact was, he said we ought to go (Robert Shepherd in Killion and Waller 1973:93).

Lack of embalming meant that the bodies had to be buried relatively quickly. Among some communities and during the summer, burial occurred within the first 24 hours of death (Burn 1991:45; Courlander 1996a:82; Waring 1894:318). In other communities (and other seasons), burial might wait several days. There were several preparations that could be made to retard exposure to the unpleasantness of decomposition. Recognizing that heat advanced decay, bodies were kept in cool, dry locations inside the house or underneath shade trees and away from insects and scavengers. If available, ice was used to keep the body below room or outside temperatures (Holloway 2002:55). Sometimes, body cavities were sealed with coffee grounds or cotton infused with salt and turpentine to retard odor and fluid seepage (Burn 1991:45; Emma Coker in Waters 2000:98). Plates filled with salt were placed on the belly to release and then absorb gasses that were trapped inside the abdomen (Hurdle 1953:75).

When undertakers were not used, the presentation teams were responsible for arranging the body for its final presentation to the audience. Initially, members of the presentation team would lay the decedent out on a cooling board, an ironing board, or chairs with a plank stretched between them where it was thoroughly bathed (Burn 1991:45; Hurdle 1953:75; Parsons 1923:213). Bathing the body was a necessary step to remove the unpleasantness often associated with the death event and to insure that the body was presentable to funeral audiences. In rural communities, this responsibility usually fell on the family or their immediate friends. Among many West African cultures, a thorough bathing of the decedent, usually by a select group of women, was an important part of the funeral ritual (Roedinger 1981:174; Smith 2010:22). This tradition survived into the pre-Emancipation African American culture and through at least the nineteenth century (Simon Brown quoted in Stuckey 1987:39). Preparing the decedent to look their best was an obligation the dead could expect from the living.

Cooling boards helped to set the limbs in a position that would accommodate placement in a coffin. Hands and arms were arranged across the chest or abdomen (Dickens and Blakeley 1978:312). Washing the body was a task that typically fell within the women's domain (Roedinger 1981:169). The men were usually shaved (Burn 1991:45). To remove the troubling stare from the dead's unblinking eyes, coins were placed on the lids to hold them shut (Hurdle 1953:75). Evans and Travis observed,

Rather than have the eyes partly open, they'd push the eyelids down and lay a piece of money –usually a penny—on the eyelid to keep it from being partly open at the funeral. They'd make sure that they had the eye pulled down to shut, then

they put that penny, or it could be a nickel, on there. When the eye got set properly, they dropped (knocked it off the face) that penny off into the casket and [buried] it with them (Evans and Travis [1980] quoted in Crissman 1994:31).

Traditionally, mouths would have been tied shut and in a few cases, putty may have been applied to help hold the mandible in place (Nichols 1990:17). Sheets were sometimes draped over the decedent until they were placed in their coffin (Willis Cofer in Killion and Waller 1973:46; Hurdle 1953:75).

Family members were often aware of how the victim wished to be buried and every effort was made to insure that these wishes were carried out. For fear of haunting, the desired burial place and burial attire were acquired for the dead (Moore 1980:476). Hillerman (1980:92) observed that the dead were frequently clothed in specially made or conserved attire, designed to enhance the decedent's appearance and define their role in the funeral ritual. Males in the African American community were frequently buried in either suits or street clothes (Davidson 2010). Women were interred in dresses and children were typically buried in simple dresses, shifts, and nightgowns. Enslaved pre-Emancipation women were frequently wrapped in winding sheets (Willis Cofer and Robert Shepherd in Killion and Waller 1973:46, 93). Male slaves were buried in whatever clothing the decedent owned at the time of death (West Turner in Perdue et al. 1976:289). Robert Collins of Macon, Georgia recommended that the yearly allotment of clothing for a slave should include two cotton suits for the summer, two woolen ones for the winter, shoes, hats, socks and underclothes (Collins 1853:8). Relative to the season, these would have been the clothes anticipated for the interment of a pre-Emancipation field worker.

If the deceased did not provide for or own suitable burial clothing, existing garments were modified or obtained. Funeral directors and burial associations also had access to commercial burial wear. A wide array of specially made attire, referred to by the funeral industry as 'burial robes,' was available from funeral suppliers (e.g. Crane, Breed, and Company 1877; St Louis Coffin Company 1903). Surviving examples of commercially produced burial clothing exhibited pleats and openings designed to accommodate for bloating. Existing clothing was commonly slit down the back for similar purposes (Owsley et al. 2006:96).

### SETTIN' UPS

Sometimes the decedent had the foresight to acquire a coffin, but more frequently, one had to be obtained. Coffins and caskets were either made locally by a family or community member or obtained from a commercial outlet (see Chapter V). The measures needed to obtain a suitable burial case were set in motion as soon after the death event as possible; however, the presentation team had other tasks, including notification and gathering of family and friends, preparation of the gravesite, and arranging for the burial service, to be accomplished. Once a coffin or casket arrived, the dead would be moved into it, where it would either remain at the victim's home or it was moved to a local church. If weather allowed, it would be kept open in a cool spot (usually the front porch) where it was constantly guarded against cats and other scavengers (Burn 1991:45; Genovese 1972:198; Parsons 1923:213).

Humans are frequently not equipped to witness the death of a family or community members without some forms of social and psychological adjustment. An emotional response and reconciliation of death is an important component of this. In rural southern communities, an informal social gathering designed to honor the dead and provide support to the bereaved occurred in the period between death and burial. These gatherings have deep roots in most Old World cultures and cannot easily be attributed to a single origin.

Fear of premature burial was prevalent in American society. Establishing a waiting period before the decedent was physically interred provided an opportunity to insure that their state had not been misdiagnosed. The night(s) after the body was prepared, a gathering of friends and family members would accompany it. 'Settin' Ups' were rituals of respect for the dead. While similar to the European American funeral wake, the African American settin' up can be traced to pre-Emancipation traditions and probably has West African origins (Genovese 1972:198; Pollitzer 1999:146; Stuckey 1987:39). The settin' up was designed to keep the spirit company, lasting up to three days before the body was transferred to the grave (Georgia Writer's Project 1972:113; Sisk 1959:169-170). Attending a settin' up was also a means of showing care, respect, and support for a member of the community. Visitors did not attempt to cheer up the bereaved; they spoke of God, faith, and provided a gift or bit of money to help cover the funeral expenses (Dolan 1994). In the uplands, neighbors brought the family pies, cakes, and other delicacies as tokens of their sympathy (Sisk 1959:170). Lights or candles were sometimes placed at the head of the casket to help guide the spirit to the other side.

Food and drink were provided to those gathered, while prayers and chants were offered and hymns were sung. Sometimes, chickens were sacrificed in front of the deceased's home to keep spirits away; the birds were frequently then eaten by the mourners (Georgia Writer's Project 1972:136, 147, 167; Pollitzer 1999:146). If hogs were available, they may also be butchered and served (Holloway 2002:168). Food and drink offerings were purposefully set aside on a table or discreet corner to insure that "the spirit has plenty at the last" (Georgia Writer's Project 1972:143, 160, 192, 194). The meal offered at the settin' up evolved into the funeral banquet, an important component of the twentieth-century African American funeral (Smith 2010:83).

Settin' ups provided each mourner the opportunity for a private moment with the dead. Prior to the closure of the coffin it was expected that those present would "put hands on the corpse" as a gesture of farewell (Georgia Writer's Project 1972:106, 113, 130, 143). Young children were frequently passed over (or under) the coffin of a parent or grandparent to prevent the spirit from returning for the children (Burn 1991:345; Jones-Jackson 1987:73; Moore 1980:476; Parsons 1923:213). This tradition has also been viewed as an additional farewell to the dead and a means of alleviating a child's fear of death (Nichols 1990:17; Roediger 1981:170). Passing the child over the casket is a practice still in use among some southern communities (Jones-Jackson 1987:73; Moore 1980).

Settin' ups provided an opportunity for objects to be placed within the coffin. In Christian theology, the spirit of the departed has little to no ability to manipulate material objects. As a result, objects placed with the dead are of little value to them. While grave goods and surface objects for the

dead tend to be relatively rare, Christian doctrine does not prohibit their inclusion (Kieffer-Olsen 1997:187). This concept differs from that of the traditional West African. Similar to the personal objects left on the grave's surface (see *Grave Offerings*, this chapter), food, personal possessions, medicines and religious objects commonly accompanied the dead for use in the next world (Genovese 1972:198; Lillie Knox in Chandler 1936; Van der Zee et al. 1978:70). Low country funeral director, Herbert Fielding, noted that sticks were sometimes placed in the hands of the deceased to provide them with a weapon for protection or retribution in their journey (Fielding 1990:58). Particularly, but not exclusively among upland communities, coins or tokens were placed with the dead. This practice probably has pre-Christian origins; the coin was provided so that the decedent would have fare to pay Charon (or St. Peter) for crossing into paradise or the world of the dead (Hartland 1915:430; Parrington and Wideman 1986:61). Coins used to secure the eyes may well have fulfilled this function as well. Matternes et al. (2010:300) suggested that coins found in coin purses included with some African American interments were present to pay fare to the world of the dead. Coffins were typically sealed at the end of the settin' up and prior to transport to the burial site. This sealing can be viewed as the division between the settin' up and the burial portions of the funeral ritual. With the rise of the commercial funeral home industry, sittin' ups were transferred from the church or victim's residence to the funeral home (Holloway 2002:168; Smith 2010:84).

Digging the grave was generally considered a male contribution to the ritual (Nichols 1990:21; Tartt 1939). Traditionally, in the South, this has been the domain of the immediate friends and family members; however churches, mutual aid groups, professional morticians, and other community members pitched in to help. Prior to Emancipation, field hands were frequently tasked with grave excavation (Robert Shepherd in Killion and Waller 1973:93). Crissman (1994:62) described the traditional grave form used through much of the southern uplands:

In the first section, the workers dug about four feet into the ground and then decreased the width about four to six inches on each side to create a bench or shelf. Then they dug about two feet further, creating a second section the width of the burial container. Later, when the burial took place, three or four layers of boards were placed on the shelf over the coffin.

This two-chamber or 'vaulted' grave was sometimes lined with planking. In Sumter County, Alabama, Tartt (1939) noted that the grave for Amy Chapman was:

...dug to the appointed depth of four feet and its bottom leveled to hold the casket steady. In lieu of a trestle, a sapling was cut from the nearby thicket and laid across the grave lengthwise. Steadied on this, first the outer pine covering, then the coffin of light purple were lowered in and silently the men threw in shovelfuls of dirt until it was covered....

This passage emphasized not only the presence of a casket but also that a wooden liner was placed within the open grave. The distribution and origins of the wooden liner are not well understood; Bromberg and Shephard (2006), however, recognized that its use can be traced to at least the early colonial period.

Vault planking, used to separate the burial chamber from the grave's fill, was probably also used in pre-Emancipation era slave interments. Shepherd remembered that, "They never had no outside box for the coffin to be set in, but they put planks on top of the coffin before the started shoveling in the dirt" (Robert Shepherd in Killion and Waller 1973:94). African Americans continued to use vault planking well into the early twentieth century (Lester Campbell in Dickens and Blakeley 1978:305). Vault planking, sometimes also called 'grave arches', can be traced to late eighteenth-early nineteenth-century upland where it helped to delay surface slumpage (Matternes 1998; Swauger 1959).

### THE BURYIN'

Many rural southerners viewed the funeral as a final testament of their life and, particularly among African Americans, the funeral was a critical summary of their worth as a human being. Prior to the nineteenth century, the funeral evolved into a social mechanism where family and community could openly show care and respect for the departed. Rural funerals were divided into two separate ceremonies. 'Buryin's' referred to relatively short ceremonies designed to physically inter the dead in a grave. In African American communities, it was one of the last opportunities to provide the spirit with the things it needed to proceed to the next world. These were followed up with a more elaborate ceremony called a 'Second Funeral' that occurred at a later date.

Buryin's usually began at the church or decedent's home. Prior to Emancipation, European American preachers or slaveholders were allowed (or tolerated) to speak at the funeral (Frank Bell in Perdue et al. 1976:26; Genovese 1972:199; Willis Cofer and Robert Shepherd in Waters 2000:46, 127; Linton Stephens in Harris 1985:50-51). More commonly (and after Emancipation), a member of the slave or freedman clergy officiated, blessing the dead with appropriate Christian sentiments. Funeral liturgies were frequently spoken at the home or church, before the dead was transported to the gravesite. In the uplands, a family or community member spoke in the absence of available clergy. Attending the buryin' was considered a sign of respect and, in many communities it was probably a formal social obligation. After Emancipation, buryins' were attended by both African and European American community members (Burn 1991:345; Cindy Wright in McCune 1938). With the acceptance of embalming as a part of the funerary preparation, the buryin' evolved into a more modern-style funeral, held at either the church or the funeral home.

During the post-Emancipation era, mourners typically dressed in formal or 'Sunday best' clothing; both as a sign of respect and to provide the appropriate image of themselves to the attending community. Black and dark colors were preferred in most rural communities. Mutual aid society members frequently wore uniforms, badges, sashes, or like clothing. There was little question that some freedmen widows dressed in black mourning wear, but the mourning status of the slave and more impoverished is not well understood. Loughridge and Campbell (1985:20) documented slave mourning clothing in Richmond's (Virginia) Valentine Museum collections, but these may well be clothing designed to grieve loss in the slave holder's household and not the death of the slave's more immediate family members. In southern society, men donned mourning wear for three

months, while women were expected to observe it for a minimum of 2.5 years (Loughridge and Campbell 1985:8, 12). While marriage and dating proscriptions probably applied for these time periods in rural communities, it is unlikely that mourning wear was donned except in social settings.

Funeral processions started at the home (or place where the body had been kept) and ran in accordance to the burial site. The dead were typically transported to the gravesite at the head of the procession in the back of a wagon pulled by oxen or horses (Burn 1991:45; Georgia Writer's Project 1972:184). In Macon (and when afforded by the family or a mutual aid society), a highly decorated horse drawn hearse could be hired to transport the dead to their final resting place (Figure 4.5). Funeral processions that were directed by mutual aid groups were often brilliant pageants. Society members often wore colorful uniforms while other well-dressed members of the procession wore membership badges (Parsons 1923:215; Smith 1895:2). Mourners frequently traveled by foot when the distance to the burial site was short.

Following European traditions, upland funeral processions were typically somber affairs. Mourners travelled quietly or occasionally to the sound of a hymn being sung. Traffic along a well-travelled road typically stopped and pulled over to allow a procession to proceed down the center as a sign of respect for the dead. These differed dramatically from African American processions. African American processions were anything but somber. They exclaimed the joy of a community member proceeding to the next stage of the life cycle. Procession members walked to the sound of drums or a band (provided by a church or mutual aid society), singing, clapping, and chanting (Courlander 1996b:302-303; Georgia Writer's Project 1972:127, 180). Thompson and Cornett (1981:203) noted that in tidewater Georgia, procession drums were beaten following rhythms that had West African origins.

Night funerals were social artifacts from the pre-Emancipation period (and possibly from West Africa) when funerals were conducted at night to prevent disruption of the day's workload (Frazier 1930:217; Georgia Writer's Project 1972:182; Elijah Green and Sam Polite in Hurmence 1989:66, 80). The dead were brought to the gravesite by lantern or torchlight and mourners marched and sang around the grave (Adele Frost in Hurmence 1989:40; Georgia Writer's Project 1972:143; Harris 1985:51). Among some coastal Georgia communities, attendees would toss the lighted torches behind them (Cate 1930:156). These spent torches were never retrieved for fear of supernatural repercussions. At the 9CH875 cemetery in Chatham County, Georgia, a considerable amount of carbon was noted in the upper soil layers and some could be interpreted as burned trees, while others could not. It was speculated, however, that some of this wood carbon might have resulted from night funerals, although admittedly no definitive evidence of the practice was recovered (Matternes et al. 2010:352).

Community members recognized that cemeteries had a specific entrance, some of which were more appropriate for entry with a coffin than others. Covered or arched entrances, liberally referred to as lychgates, were considered the portal that the dead passed through for burial. In coastal and lowland communities, before the funeral procession crossed the cemetery's threshold, it would stop and permission was asked of the family's spirits to allow the procession to come in (Georgia Writer's Project 1972:160, 165).

Figure 4.5.  
Macon Undertaker D.A. Keating's Advertisement Emphasizing Hearses for Hire



Source: *Macon Telegraph*, August 25, 1898-8:3

At the gravesite, procession members would gather for a few final words, a prayer, and a hymn. Traditionally, pallbearers would stand on either side of the coffin and lower it into the grave. To retrieve the ropes, coffins were slightly tipped to allow the rope to pass underneath them. Bricks placed under the coffin and pedestalled bases observed in the Chatham County cemeteries probably facilitated rope removal (Matternes et al. 2010). Mourners were encouraged to throw a handful of soil into the grave as a symbolic farewell gesture (Georgia Writer's Project 1972:87). While this gesture has been adopted by many upland communities, its origins probably lie in societies inhabiting Africa's west coast (Genovese 1972:200; Pollitzer 1999:147).

The lowland and coastal African American burial processions were known to march and chant in a ring (referred to as a 'Ring Shout') around the grave to the rhythm of the drum (sometimes referred to as the 'Dead March') (Genovese 1972:199; Georgia Writer's Project 1972:62, 127, 155, 184). The ring shout was one of the most clearly recognized survivals from West African mortuary rituals (Thompson and Cornett 1981:54; Stuckey 1987:10-11). Nichols (1990:15) felt these actions were designed to focus God's attention and power on a specific spot (the grave). This power would then be focused on driving any malicious spirits away from the naïve decedent's soul (Wilson 1923:57). Among some lowland communities in Georgia, mourners would then fall to the ground as the coffin was placed into the grave (Georgia Writer's Project 1972:67). Officiating clergymen would be encouraged to say a few final words over the coffin before it was deposited.

Once the coffin was installed, mourners would continue to sing and chant until the burial was completed (Georgia Writer's Project 1972:125, 180). Sand was sometimes dumped on or about the coffin as a means of magical protection. This practice stemmed from the belief that any lingering spirit would have to count each grain before being able to move beyond the sand layer (Evans et al. 1969:81). Excess soil, left over from the creation of a subsurface chamber, was piled on top of the grave to form a neat mound, more or less conforming to the size of the original grave pit. Monuments and grave offerings were deposited at the close of the buryin' or at a slightly later date.

While many outsiders tended to view the African American grave as a cluttered jumble of debris, they were carefully maintained. Gravesites were regularly weeded, trash removed, depressions in-filled, and carefully re-mounded (Morrow 2002:106). Sometimes, food offerings were left at the gravesite (Georgia Writer's Project 1972:194). Some communities chose to scrape grave surfaces; this bare earth appearance elicited a sense of order and tidiness common on West African cemeteries and African American yards (Jordan 1980; Westmacott 1992). This same practice was the dominant practice used in the uplands prior to the introduction of power lawn equipment (Jabbour and Jabbour 2010). A well-maintained grave conveyed that the dead were still remembered while a sunken, overgrown grave reflected a person who had been abandoned or forgotten (Gundaker 1998:234).

## THE SECOND FUNERAL

The necessity of getting an un-embalmed body in the ground quickly left little time for elaborate preparation. While the physical burial usually occurred within a few days of the death, a

memorial ceremony (sometimes referred to as a 'Funeralizing' or 'Second Funeral') occurred at a later date after there was an opportunity for preparations to be made. Variants of the second funeral were found in both lowland/coastal and upland community settings.

Since graveside funeral services tended to be relatively brief, more extended versions, referred to in the African American communities as 'second funerals' were practiced at a later time. Various forms of the second funeral can be found in societies throughout most of west and central Africa (Hildebrand 2006:144; Smith 2010:23). In both the pre- and post-Emancipation worlds, work requirements and the time needed to organize and gather participants for a more elaborate memorialization meant that second funerals could be delayed for up to a year or more after the decedent had been interred. They were sometimes set on Sundays or other non-work days to allow maximum participation. Second funerals were major social events, frequently turning into all day pageants.

These memorial ceremonies were highly interactive gatherings of the community where public participation included singing, preaching, witnessing, and testimonials. The preacher overseeing the service had to be a man of considerable charisma. As noted by Franklin Frazier:

There was much staked on the fame of the officiating brother. He must be one of their own color and a man of reputation. They must have a man to plow up their emotional depths and they must have freedom to indulge in the extravagancies of their sorrow. These demonstrations were their tribute to their dead and were expected to be fully adequate to do honor to the family (Frazier 1930:216).

A long, well-preached service with numerous testimonials, hymns, and prayers was considered a testament to the deceased's place in the community (Holloway 2002:172, 178).

Second funerals were often highly charged, emotional events. They frequently involved an active interplay between officiates and the audience. Public displays of grief were common (Georgia Writer's Project 1972:87). Morrow (2002:108) suggested that this boisterous interactive structure has its origins in Bakongo traditions where the voices of the community called to God to help direct the spirit. Spiritually, the second funeral aimed as correcting any omissions been the spirit and living worlds. It reaffirmed that the dead were still a part of the community's structure and provided a much-needed catharsis among the living, which may not have been able to fully grieve during the initial burial event. Pye's (2009) examination of northern Florida African-American funeral rituals illustrated that many parts of modern rituals had their origins in this memorial ceremony.

In south and central Georgia, the second funeral evolved into ritualized annual events, where community members would gather to memorialize all who had died during the previous year (Georgia Writer's Project 1972:87, 131, 147). As early as the 1920s, African American communities in Twiggs County, Georgia, for example, held gatherings every August where the souls of those who had departed since the last funeral were all memorialized at once (Myrick 1929 in Blasingame 1977:579). As communities dispersed as part of the Great Migration, second funerals became a form of social bonding. Particularly when practiced as an annual event (called

a 'homecoming' or 'camp meeting'), they provided a mechanism where dispersed family and community members could come together and bond over common heritages (Meader 2002). In these regards the homecoming served not only to remember the recently departed but to honor all of one's ancestors.

Other upland communities practiced variants of the second funeral and some have suggested that they may have a common African origin (Blassingame 1977:43). Suffering from the same lack of immediately available clergymen as found in many isolated African American communities, rural uplanders frequently delayed memorialization until a preacher was in the area.

The evolution of the second funeral into an annual event also occurred in the upland communities, where it was frequently referred to as Decoration Day (Decoration Days officiated as a church event were also called Homecomings). Decoration days served similar goals as African American homecomings. Families came together to sing, pray, share food, and reconnect their bonds between kinsmen and the land (Coyle 2009:40). Decoration days began by cleaning up and maintaining the cemetery. Trash and limbs were removed, stones righted, and plantings refreshed. While the immediate purpose behind these tasks was to clean up the burial ground, an important byproduct was that it provided an opportunity for the young to learn from their elders who their ancestors were and where they were buried. Once cleaned, the cemetery became a focal point for the community to gather, reconnect with past and living kinsmen, and pray. Decoration Days culminated in large outdoor feasts designed to help spread fellowship among members of the cemetery community (Jabbour and Jabbour 2010).

## GRAVE CARE

Many African-American communities recognized that the dead maintained a place in the living community's world and that the condition of a grave was a reflection of the relationship between the living and the dead (Richey et al. 2008:49). While public appearance of the grave during Decoration Days and Homecomings provided venues that clearly made social statements, grave maintenance was expected to occur on a more regular basis. Poorly maintained graves indicated that social ties between the living and the dead were lost or that dead's social identity was too repellent to be worthy of memory (Gundaker 1998:234). It was expected that graves were weeded, grave mounds maintained, surfaces leveled and/or scraped, debris removed, and flowers or decorations provided. In coastal Georgia, community maintenance and upkeep for cemeteries occurred well after the community has left the area (Meader 2002).

Similar patterns of upkeep were expected in Upland settings. Grave surfaces were generally kept clean of extraneous materials. Citing possible origins in sixteenth century church directives against plant growth for health measures, Jeane (1992:122) noted that graves were scraped clean. Grave mounds were regularly reconstructed to emphasize the grave's dimensions. In more recent upland cemeteries, well-manicured grass covers, layers of sand or pebbles, or concrete covers have replaced mounds. Distinctive and frequently native or symbolically important flora was used to retard weed growth in and around graves. Much like their lowland counterparts, upland communities viewed an overgrown grave as a symbol of disrespect for the dead (Jeane 1992:117).

The Avondale Burial Place community was never visited by an Anthropologist interested in mortuary rituals, nor did any accounts of how the community responded to death survive to the present day. Lacking primary evidence from community informants, understanding of the cemetery and how the burial community felt about death and contended with it was considered from multi-regional and several sub-cultural perspectives. This review, which focused on coastal, upland, rural, and African American funeral traditions, provided a cultural framework for interpreting how the cemetery's dead would likely have been addressed. Every time the ritual was practiced, it would have been unique and it is likely that many of the components outlined in this chapter were not used in every ceremony, if at all. What is revealed, however, is that the community utilizing the Avondale Burial Place had a wide array of ideas, interpretations, and belief systems available for consideration. The ceremony followed a general sequence of events, involved a common set of actors, and attempted to address issues that were critical to the community. These issues, which included importance of the family, support from the community, belief in an existence of an after life, and

recognition that obligations to family/community members continued after death, were common among rural communities during the time that the cemetery was in use. Addressing these would have been core elements to the Avondale Burial Place community's responses to death.

The goal of a funeral is to mend the social void created by death and utilize the death event as a means of rebonding family and community members. The means in which these issues were addressed stemmed from their own heritage, from those of neighboring communities, and others that may have evolved in the socio-cultural climate of the American South and Central Georgia. Material vestiges of these traditions found in the Avondale Burial Place can be identified as components of many of these rituals; it is likely that the funeral and burial rituals practiced at the Avondale Burial Place were similar to those used in the communities and regions surrounding the site.



## V. INDUSTRY, ORGANIZATION, AND THE COFFIN IN CENTRAL GEORGIA

Successful completion of the mortuary ritual in central Georgia evolved from the simple, private family and community function of the eighteenth and early nineteenth centuries to a complex social event. Nowhere was this phenomenon best exemplified than in African American communities. Emancipation provided a means where the African American community was able to explore and develop a mortuary ritual reflecting their own ideas without the compromises imposed by slavery. The ritual, however, could rarely be accomplished within the means of a single private family. The social resources outlined in this chapter provide an indication of the support possible to the burial community with particular emphasis placed on how the coffin, the single most mortuary specific artifact needed for the ritual's successful completion, could be obtained.

### MUTUAL AID GROUPS

Many African American communities considered it irresponsible for the dead to leave all the arrangements and expenses to the next of kin (Jones-Jackson 1987:25). Along the Georgia Coast, financial preparation for death began at birth to insure that whenever death occurred, the decedent was not a burden on those left behind. Death was a known event and as noted, it provided a synopsis of one's worth in the community. The measures taken by the decedent to secure a 'proper burial' was a means of communicating one's own evaluation of their worth to the viewing audience.

One means of insuring that the funeral one received was the one desired was by enrollment in a mutual aid group. Mutual aid groups focused on the strength of collective labor and funds to better the quality of life among their members. Herskovits (1941:16) argued that these organizations have their origins in West African societies. This concept prevailed through slavery and formal recognition in the Americas can be attributed to eighteenth-century groups including the Brown Fellowship, African Union Society, Free African Society, and Prince Hall Freemasons, among freedmen communities (Finchett 1940:144; Garman 1994:86; Gundaker 1998:61; Smith 2010:40). In the African American community, these groups included fraternal and secret societies, fellowship societies, burial associations, and burial insurance associations (Gordon 1937; Smith 2010). Most mutual aid groups tended to operate on a local level; however, some grew to become prominent national societies (Table 5.1). Some organizations active in Bibb County commanded memberships of 600-800 members; the United Brothers and Sisters were believed to have a membership of over 1,000 people (Smith 1895:2). While some organizations' main focus was strictly to enable its members the benefit of a better funeral than they could otherwise afford, other groups concerned themselves with the social, moral, and economic betterment of its members (Garman 1994; Trotter 2004). Membership offered a sense of identity and a support structure that extended above that of the family and church. Mutual aid groups were natural vehicles for social and political change in the African American communities.

Table 5.1. Mutual Aid Societies in Bibb County and Georgia

Mutual Aid Group	Geographic Scope (Minimum)	Source
American Woodmen (Supreme Camp of American Woodmen)	National	Gordon (1937); Schmidt (2011)
Benevolent Order of Good Samaritans	Georgia	Southeastern Reporter (1913)
Boston Brothers	Macon/Bibb County	Smith (1895)
Coachman's Assembly	Georgia	Gordon (1937)
Courts of Calanthe (Grand Court Order of Calanthe)	Georgia (National?)	Gordon (1937)
Daughters of Bethel	Georgia	Gordon (1937)
Daughters of Samaria	Georgia	Southeastern Reporter (1913)
Fairy Queens	Macon/Bibb County	Smith (1895)
Golden Star Brothers	Macon/Bibb County	Smith (1895)
Grand United Order of True Reformers (Order of Good Templars)	National	Butler (1879); Fahey (2007)
Hamburg Sisters	Macon/Bibb County	Smith (1895)
Honey Bees	Macon/Bibb County	Smith (1895)
Household of Ruth	National	Gordon (1937)
Improved Benevolent Protective Order of the Elks of the World	National	Butler (1879); Gordon (1937)
Improved Order of Samaritans	National	Gordon (1937)
Independent Order of Good Samaritans	National	Southeastern Reporter (1913)
Independent Order of Oddfellows (Grand United Order of Oddfellows)	National	Gordon (1937)
International Order of Twelve Knights and Daughters of Tabor	National	Gordon (1937); Ohio Historical Society (2011)
Knights of Moses	Georgia	Gordon (1937)
Knights of Pythias	National	Gordon (1937)
Masons (Prince Hall Freemasons)	National	Evans (2009)
Mosaic Templars of America	National	Bush and Dorman (1924)
Mourning Doves	Macon/Bibb County	Smith (1895)
New Jerusalem Sisters	Macon/Bibb County	Smith (1895)
Nightingales	Macon/Bibb County	Smith (1895)
North Star Sisters and Brothers	Macon/Bibb County	Smith (1895)
Order of the Eastern Star	National	Gordon (1937)
Sons and Daughters of Butterflies	Macon/Bibb County	Smith (1895)
Sons and Daughters of Jacob	Georgia	Gordon (1937)
Sons and Daughters of the Ring Tailed Dove	Macon/Bibb County	Smith (1895)
Union Brotherhood Lodge	Macon/Bibb County	Lucas-Myers (2011)
Union Brothers and Sisters Society	Georgia	Braley and Moffat (1995)

Nearly all mutual aid groups recognized that management of the funeral was a highly desired component to African American membership. In the Macon area, members contributed between 10 cents and one dollar a month to these groups with the understanding that upon their death the mutual aid group would cover the costs of a socially appropriate funeral (Smith 1895:2). Membership and participation in burial association or mutual aid functions insured that not only were funeral responsibilities addressed but that reciprocal amenities (a coffin, attendees, a procession, and frequently a band or hearse) would be present at their funeral. Among some organizations, membership insured interment on grounds owned and maintained by the mutual aid group. Other membership benefits included widows' pensions, orphan endowments, sick pay, and low interest loans (Brown 2002; Parsons 1923:215; Smith 1895:2).

Mutual aid membership incurred not only monetary but social commitments. Members had to be active in the organization and their presence at a funeral was demanded. N.L. Willett in Beaufort, South Carolina noted:

It's the 'Society' that does the burying. They make an all day gala matter of it with marchings and regalia and charge any member of the particular society of the deceased two dollars if he or she does not attend (Willet 1927:2).

Funeral attendance of a particularly prominent member of the African American community would virtually cause daily commerce to cease. In Macon, R.W. Smith bemoaned:

Ninety-nine out of a hundred of these societies work a blessing to the negro, but every one of them proves a great inconvenience and hardship to the Southern white people especially housewives.... there are from one to three half days each week when the Southern housewife is without a servant (Smith 1895:2).

## THE LOCAL FUNERAL INDUSTRY

The planning and logistics of both European and African American funeral rituals frequently became complicated and required the coordination of specialists to complete them flawlessly. Arising largely from the ranks of the fledgling funeral industry, the undertaker became a key figure, able to arrange and direct the funeral. By Reconstruction, the mortuary ritual had developed into an important mainstream American service industry. The mass production of paraphernalia specifically for use during the funeral ritual during the latter portions of the nineteenth century removed the need for the individual or undertaker to construct them, leaving them free to assist in other portions of the funeral planning. Undertakers reinvented themselves, becoming 'funeral directors' to address this new market niche. Since many mutual aid societies had strong ties to local churches, the funeral director marketed the mutual aid society for business. These mutual aid societies provided much of the financial support needed to turn funeral directing into important businesses (Lincoln and Mamiya 1990:245-246).

Prior to and during the early reconstruction period, the Macon commercial funeral industry was run by, and largely catered to European American communities. A review of period newspapers, city directories, and funeral home histories indicated that the demand for socially appropriate funerary

services became an important capitalistic enterprise (Table 5.2). No less than 33 firms were part of Macon's funeral industry. In the outlying and more rural communities, a single funeral director usually addressed the mortuary needs of both European and African Americans (Robertson 1959:90).

Social restrictions, however, limited access to some of these establishments to African Americans. Funeral Director, Louis H. Burghard, for example advertised itself as "The Only Establishment in Macon Catering to White Patronage Exclusively" (County Directory 1905:522). In Georgia, funeral directors catering specifically to the African American community began emerging in the 1870s and were established business professionals across the U.S. by the turn of the twentieth century (Matternes et al. 2010:209-210, Wright and Hughes 1996). By the 1880s, African American entrepreneur W.M. Bryant was offering undertaking and coffin making services to Bibb County's African American communities (City Directory 1888:84). Shortly thereafter, African American owned and operated ventures, including Central City Undertaking Company, Hubbard's Undertaking Company, and C.H. Hutchings and Sons, provided important avenues for African Americans into the Macon business world (McDowell-Jackson 2011) (Figure 5.1).

*Table 5.2. Macon/Bibb County Firms Contributing to the Funeral Industry*

Organization	Business	Circa	Source
Anderson, C.H.	Monument Cutter and Distributor	1900s-1910s	City Directory (1900, 1912)
Artope, T.B./Artope and Whitt	Monument Cutter and Distributor	1880s-1920s	City Directory (1888, 1900, 1912, 1920)
Bentley, D.C.	Undertaker	1920s	City Directory (1920)
Bryant, W.M.	Coffin Maker/Undertaker	1880s	City Directory (1888)
Burghard, Louis H./Snows Memorial Chapel	Undertaker	Est. 1892-Current	City Directory (1920), SCI Management (2011)
Central City Undertaking Company	Undertaker	1900s-1920s	City Directory (1900, 1920)
Clay, John J.	City Sexton and Undertaker	1880s	City Directory (1888)
Clay, Lamar	Undertaker/Embalmer	1890s-1900s	City Directory (1891, 1900), County Directory (1905)
Clay's Coffin Store (John J. and Elmo Clay)	Coffin Maker, Embalming, Funeral Supplies and Funeral Arrangements	1890s-1900s	Macon Telegraph (Advertisements), Macon Telegraph and Messenger (1881)
Emory and Company	Undertaker	1900s	City Directory (1900), County Directory (1905)
Findlay Coffin Company	Coffin Makers	1890s	City Directory (1891)
Ford, J.W.	Furniture (Coffins and Funeral Supplies)	1880s-1890s	City Directory (1888, 1891)
George [Georgia] Quincy Granite Company	Monument Cutter and Distributor	1900s-1920s	City Directory (1900, 1912, 1920)
Harrison Mutual Burial Association	Burial Insurance	1920s	City Directory (1920)

Table 5.2. Macon/Bibb County Firms Contributing to the Funeral Industry

Organization	Business	Circa	Source
Hart, Jesse.B. and Brothers/Harts Mortuary	Undertaker/Funeral Director/Embalmer/Carriage Rentals	Est. 1899-Current	County Directory (1905), City Directory (1920), Macon Telegraph (Advertisements), Harts Mortuary (2011)
Heath, O.P.	Monument Cutter and Distributor	1880s	City Directory (1888)
Hubbard's Undertaking Company/Frank Hubbard	Undertaker/Funeral Director	1910s-1920s	City Directory (1912, 1920)
Hutchings, C.H. and Sons/Hutchings Funeral Home	Undertaker/Funeral Director	Est. 1895-Current	City Directory (1920), Georgia Informer (2004)
James, O.D.	Monument Cutter and Distributor	1920s	City Directory (1920)
Keating, Dennis A.	Undertaker/Embalmer, Coffins and Funeral Supplies, Hearse Rentals	1880s-1900s	City Directory (1888, 1891, 1900), Macon Telegraph (Advertisements)
Mathias Frey and Son	Monument Cutter and Distributor	1900s	County Directory (1905)
McManus, L.M./McManus and Company	Undertaker	1890s-1900s	City Directory (1900), Macon Telegraph (Advertisements)
Morse, O.	Coffins and Funeral Supplies	1850s	Macon Telegraph (Advertisements)
O'Brien, James	Monument Distributor	1870s	City Directory (1872)
Poe Marble Company	Monument Distributor	1910s-1920s	City Directory (1912, 1920)
Richert, Frederick	Furniture (Coffins and Funeral Supplies)	1870s	City Directory (1872), Georgia Weekly Telegraph (Advertisements)
Robbins, J.D.	Monument Cutter and Distributor	1910s	City Directory (1912)
Stafford and Collins	Undertaker/Embalmer	1920s	City Directory (1920)
Stephens, J.T. and W.J. Brown	Coffin Maker/Undertaker	1880s	City Directory (1888)
Taylor, W. and E.P. Taylor Furniture Company	Furniture (Coffins and Funeral Supplies), Hearse Rentals	1850s-1880s	City Directory (1872), Macon Telegraph (Advertisements)
Wood and Bond	Furniture (Coffins and Funeral Supplies)	1880s-1890s	City Directory (1888, 1891)
Wood, Arthur L.	Coffins and Funeral Supplies, Hearse Rentals	1870s-1900s	City Directory (1872, 1900), Macon Telegraph (Advertisements)
Wood, Thomas/ T. and G. Wood	Furniture (Coffins and Funeral Supplies)	1850s-1890s	Macon Telegraph, Georgia Journal and Messenger (Advertisements)
Woods Undertaking Establishment	Undertaker/Embalmer	1850s-1890s	Macon Telegraph, Georgia Journal and Messenger (Advertisements)

Figure 5.1.  
Advertisements for African American Funeral Directors

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**FUNERAL DIRECTORS**

**The  
Hubbard's Undertaking  
Company**

**Funeral Directors  
and Embalmers**

WM. LEMONS, Manager and Embalmer

468 Cotton Avenue

P H O N E S

Day 997      -      -      -      -      Night 3334

---

Day Phone 2044      Night Phone 1528

**C. H. Hutchings  
& Sons**

**Funeral Directors**

510 Cotton Ave.      Macon, Ga.

Source: City Directory 1920

Coffins, caskets, and mortuary accoutrements were offered by a variety of establishments including W. and E.P. Taylor Furniture Company, L. McManus and Company, and Clay's Coffin Store (Macon Telegraph 1851-1885; City Directory 1872, 1900). Receptacles sold by Thomas Wood were advertised as made of "sheet, cast and wrought iron, rosewood, walnut, and all woods" (Macon Telegraph and Messenger May 14 1875:1). Wood's establishment also offered mahogany and 'velvet' coffins, and imported Fisk Burial Cases, a well-known "air-tight and indestructible" iron burial case from Cincinnati, Ohio (Georgia Telegraph February 19, 1856:3; Crane, Breed and Company 1858). O. Morse of Forsyth, Georgia offered similar high-end coffins and caskets to the central Georgia markets (Georgia Journal and Messenger February 6, 1856:4). By the early 1890s the demand for commercially produced burial cases was large enough for C.S. Findlay to open the Findlay Coffin Factory in Macon (City Directory 1891).

Unfortunately, price lists for burial cases in the Macon/Bibb County area do not appear to have survived. However, some inferences can be made from secondary sources. Advertisements for elaborate metallic caskets, such as the ones offered by Frederick Reichert and Arthur Wood typically cost several hundred dollars (Figure 5.2). On the other end of the spectrum, coffins for infant paupers were provided to Bibb County for 74 cents each; adult coffins provided to Bibb and Jones counties for indigent interments were bid at two to five dollars (Macon Telegraph 1898:3). In 1881, John J. Clay, proprietor of Clay's Coffin Store, boasted; "I will be able to sell coffins, full size from \$2.00 up..." (Macon Telegraph and Messenger 1881:2). Clay noted elsewhere that coffins of varying sizes were available (Macon Telegraph and Messenger 1881:1). Sales receipts from furniture maker Thomas Wood indicate that in the early 1880s, wooden coffins could be purchased from \$13.50 to \$20.00 (Wood 1880, 1882a, 1882b). Handmade coffins could have been constructed from materials on hand or procured for the cost of lumber, nails, finish, and hardware, if deemed appropriate.

Merchandisers offering coffins and caskets for sale were largely situated inside the town limits of Macon. The trip from the outlying rural communities into town to obtain a burial case, particularly while trying to prepare for a funeral, would have been a cumbersome task. In Georgia, traveling peddlers occasionally supplied coffins to needy purchasers (Robertson 1959:91). Community stores frequently made arrangements with coffin distributors to have a burial case shipped to the store or delivered to a local rail stop (McDowell-Jackson Personal Communication 2011). Locally, the Central of Georgia Railroad's Walden Station, the general store adjacent to it, and the Georgia Southern Railroad's Tobesofkee Station may have been components of the Avondale Burial Place's coffin distribution system. However, as discussed below, coffins may also have been made locally.

Monuments were another valuable market in Central Georgia. By the early nineteenth century, gravestone carvers had evolved from small cottage industries to larger, more commercial ventures. In Bibb County, carvers and distributors included T.B. Artope, George Quincy Granite Company, O.P. Heath, O.D. James, James O'Brien, Poe Marble Company, and J.R. Robbins. Monuments could also be obtained from catalog sales, including Sears Roebuck and Company (DBI Books, Inc. 1970:739). While gravestones were imported from sources in Vermont, Britain, and Italy, monument grade granites and marbles were available from quarries in northern and east-central Georgia (McCallie 1907; Watson 1902). Georgia manufacturers, such as the Continental Marble and Granite Company, offered no less than 206 individual monument styles in

Figure 5.2.  
Macon Furniture Maker Frederick Reichert's 1872 Advertisement

**FREDERICK REICHERT,**  
39 THIRD ST, BELOW CHERRY, MACON, GA.,  
MANUFACTURER OF



**COFFINS AND BURIAL CASES,**  
OF EVERY DESCRIPTION.  
A SPECIALTY MADE OF  
**METALLIC CASKETS;**  
All sizes on hand or made to order.

See CARD of FURNITURE on Page 111.  
**Prompt Attention to Orders from Abroad.**

Source: City Directory 1872:183

a variety of sizes and stone forms (Continental Marble and Granite Company n.d.). Locally quarried monuments could be obtained relatively inexpensively. In 1907 a tabular tombstone made from Georgia marble could be purchased for as little as \$10-12.00 (McCallie 1907:18).

In Georgia, unglazed terra-cotta earthenware markers and glazed stoneware burial markers were also manufactured (Burrison 1983; D'Angelo 2008). These included rounded columnar burial markers without inscription and flat terra-cotta brick markers with the decedent's name and birth/death dates inscribed. Archaeologist Jim D'Angelo (2008:51-58) documented the use of clay markers in Milledgeville that were likely produced at McMillen brickworks, while in the Macon area stoneware markers could have been obtained from the Crawford County potteries to the west, and may also have been made at the Macon area brickworks. Clay monuments were less costly than stone and hence may have been sought as 'permanent' monument in African American communities.

## RURAL ALTERNATIVES TO THE COMMERCIAL MARKET

The commercial market was not the only source for mortuary supplies. As noted earlier, the social and economic isolation of rural communities prompted inhabitants to seek alternative means of obtaining suitable mortuary paraphernalia. The most widespread solution was to find materials within their own environment. Clothing, grave decorations and body treatment supplies could be obtained from stores found around the residence. Likewise grave markers could be obtained from construction salvage or collected from natural rock outcroppings. More mortuary-specific materials, principally the coffin, frequently required the assistance from within the community.

In rural communities, coffin making was traditionally done to order by local woodcrafters (LeeDecker 2001:6). Construction of a coffin was a task any proficient wood worker could accomplish. Generally, two measurements, the head to foot length and shoulder width, were needed. LeeDecker et al. (2009) noted that only a few saws, planes, a hammer, various marking tools, and a template or pattern board were all that were needed for local craftsmen to build a coffin. While commercially made coffins were frequently made of exotic and higher-grade woods, the local inexpensive coffin was made from pine or other regionally available softwoods. In Georgia, pine and oak burial cases were in use through the end of World War II (Robertson 1959:92).

## COFFINS IN THE AFRICAN AMERICAN COMMUNITY

Notable African American storyteller, Simon Brown, recalled that slaves were buried in homemade coffins in pre-Emancipation era Virginia (Stuckey 1987:39). Pre-emancipation African American coffins were frequently simple, relatively crude receptacles consisting of little more than an unadorned rectangular box large enough to enclose the deceased (see also discussions in Davidson 2004a:112-116 and Roedinger 1981). Ex-slave informant, Rachel Adams, noted that in Georgia and prior to Emancipation: "Them coffins had no shape to 'em; they just squared pine boxes" (Rachel Adams in Killion and Waller 1973:120). Slave coffins tended to be made from the available local pine and were sometimes blackened with paint, smut, and turpentine, or with crepe (Roedinger 1981:169; Robert Shepherd in Killion and Waller 1973:93; Starbuck 2008:36). Black calico was sometimes used to line or cover the coffin (Neal Upson in Killion and Waller

1973:109). The use of decorative coffin hardware from late nineteenth-century urban settings was an indication that some African Americans were participating in mainstream American-style burial rituals (Botwick 2001:4).

There were important notable exceptions to this, particularly in large urban settings or where the enslaved were beloved members of the landowner's household. These decedents were provided with professionally constructed and decorated receptacles (Howson and Bianchi 2006:253). Even in these cases, coffin makers tended to select lower grade materials for construction (Rauschenberg 1990:36). While large-scale slaveholders were able to hire an African American or European American carpenter to build these containers, small-scale slaveholders or their slaves were more often responsible for building their own coffins (Genovese 1972:195).

The tradition of nonprofessionally-made coffins continued after the Civil War. Armed with knowledge learned during slavery, community wood workers were able to create burial cases for the local African American populace. Slave era carpenters were typically able to construct a coffin in one day and made it to fit the individual (Willis Cofer in Killion and Waller 1973:46). Susan La Conte, of Possum Point, Georgia recalled that when her mother died, the local coffin maker used a piece of string to measure her mother's dimensions to determine the appropriate sized coffin for her (Georgia Writer's Project 1972:143). In keeping with death being a community, not just a family responsibility, local carpenters would sometimes be called on to make a pine box coffin at little to no charge for a family who simply did not have the means to afford one (Burn 1991:344).

## COFFINS IN GEORGIA

Coffin construction does not appear to have varied substantially between rural communities. Crissman (1994:50) noted that sometimes the decedent, knowing death was imminent, would order the coffin made to their own specifications. Local craftsmen sometimes kept a small supply on hand in case they were suddenly needed.

Very little has been reported about coffins from Bibb County and central Georgia. Surviving examples of late nineteenth- and early twentieth-century unused burial cases from the Macon area have not surfaced or made themselves available for examination. Examination of the Fish Vault in Milledgeville's Memory Hill Cemetery revealed that prosperous mid-nineteenth-century members of the community were interred in relatively unadorned wooden coffins or caskets (Hammack et al. 2009:12). One family member was interred in a Fisk Metallic Burial Case that was placed in a wooden vault or shipping case.

Mid- to late nineteenth-century European American graves from rural Talbot County, Georgia revealed a mixture of simple hexagonal coffins and more elaborately decorated caskets (Garrow and Symes 1987). All receptacles were composed of wood and fastened together using nails; wood screws and thumbscrews were used to secure lids to the sides. Viewing plates, white metal and stamped brass hardware, consistent with late nineteenth- and early twentieth-century decorative fashions, were found on caskets. While these burial cases were too poorly preserved to identify distinct manufacturing styles, simplicity and/or use of locally available resources were implied by the use of a potential shipping crate as a casket for a middle aged female (Garrow and Symes 1987:38).

Coffins and caskets from the Redfield Cemetery, a rural African American tenant farmer burial ground in Jones County, Georgia were generally seriated by form and decoration type (Braley and Moffat 1995:59). Coffins were all constructed out of wood planking; lack of nails along the shoulder curve implied that they were probably kerfed and bent containers. Nails tended to be found along the margins, possibly indicating that the coffin sides were vertical rather than beveled outward. White paint residue was noted on at least one coffin (Braley and Moffat 1995:48). Newspaper was used either to line coffins or as a packing material. Plain, relatively unadorned hexagonal coffins were gradually replaced with burial cases exhibiting late nineteenth century mass-produced decorative coffin hardware (Braley and Moffat 1995:59). During the transition from coffins to caskets occurred, much of the hardware remained analogous. Swing bail handles, found on both coffins and caskets were replaced by short bar handles. Both coffins and caskets were fastened together using cut or wire nails, with screws occasionally used to secure the lids. Viewing plates were uncommon but found on both coffins and caskets. These tended to be portrait-sized and positioned to allow the face and upper chest to be viewed.

Better-preserved examples of African American burial cases were recovered from the 9CH875 and 9CH1168 cemeteries in Chatham County, Georgia (Matternes et al. 2010:211-222). Coffin style and decorative form followed the same basic pattern observed at Redfield Cemetery. Both vertical and outwardly beveled walls were noted among coffins; casket sides tended to be vertically oriented. A few examples of octagonal or multi-paneled caskets were clearly definable. Several coffins were finished with white paint over a red undercoat. At least one coffin had decorative thin blue lines painted along the margins. Half-couch lids were noted with two children. Many of the lids tended to be flat, however laminated composite, 'ogee' or 'round top' forms were also noted. Tacks and fabric emphasized that some receptacles were lined, and at least one burial case exhibited packing material. Some burial containers were fine crafted commercial products, while others showed a simple, unsophisticated workmanship that may represent a home manufactured receptacle. In one example, lettering painted on the receptacle's lid read "Handle With Care," indicating that a shipping box was used to bury an infant.

The late nineteenth and early twentieth centuries were periods of transition in American mortuary customs. Changes in notions of appropriate behavior and decorum translated into material shifts spanning from the ritual down into the grave. Archaeological evidence indicated that these ideas acculturated not only mainstream, more urbanized populations but also reached to the rural, more isolated and marginal members of society. Burial cases in central Georgia and among African American populations reflected a combination of traditional customs, where the family and immediate community were responsible for constructing a burial receptacle intermeshed with a rise in use of more finely crafted commercial products made by burial professionals.



## VI. PROCEDURES AND RESULTS

Archeological investigations of the Avondale Burial Place were divided into four parts: historical research; surveying the area to identify the distribution and number of mortuary features present; the recovery and examination of mortuary deposits; and the reinterment of all recovered materials at the Bethel AME Church Cemetery. The lack of obvious surface markers entailed the use of several survey methods. The survey procedures employed at the Avondale Burial Place included an intensive examination the ground surface for indications of mortuary features, surface soil density testing and unit excavation, examination using ground penetrating radar, and an investigation employing search and rescue dogs (aka cadaver dogs). Survey procedures and results are discussed in this chapter while the reinterment procedures are discussed in Chapter XIII. The description of the survey results is followed by discussions of the recovery procedures and documentation and analytical protocols applied to the human assemblage.

### HISTORICAL RESEARCH METHODS

Many different resources were used in researching the Avondale Burial Place. These included archives and repositories, public records, oral histories, cemetery records, public health records, family histories, newspapers, journals, and books. This section presents details on the resources consulted for the project.

Numerous types of public records were used for this research. Deed research was conducted at the Bibb County Courthouse, Clerk of the Superior Court, with the project location plotted on the modern Bibb County tax maps using their online GIS system. This yielded a plot number 302-O150-0058-1001, an address of 1001 Airport South Drive, and a current owner, Wood Fiber Technologies, with a parcel size of 37.8 acres. The sales record for this plot indicated a deed from 2000, in deed book 4742/37. In addition to deed records, wills, estate inventories, marriage certificates, court proceedings, and tax records were researched.

Census records were used extensively in this research. In addition to the U.S. Federal Censuses, the Federal Census Slave Schedules and Mortality Schedules were researched as available. Census research was conducted utilizing online resources on Ancestry.com.

In an attempt to find an original, official name for the Avondale Burial Place and to determine the date of death for individuals of interest, researchers examined the death record books at the Bibb County Office of the Georgia Department of Public Health Vital Records for the years 1882-1896. Records from 1897-1911 were scanned only for a cemetery name. Death certificates from 1919-1927 are available online at the Georgia Archives website and these provided information of cause of death, place of internment, physician, and undertaker. While these did not yield information specific to the Avondale Burial Place, they did provide context for burial practices in the area.

Libraries and both virtual and actual archives were a rich source of local information. In Macon, the Macon Bibb County Public Library's Genealogical and Historical Room provided historic maps, city and county directories, family and business histories, funeral homes, school and church records, store ledgers, cemetery records, and most importantly a knowledgeable staff. Librarians and archivists were familiar with the project and suggested a number of possible research avenues. In addition to the Macon Library, research was conducted at the Georgia Archives in Morrow. Newspapers, in particular the *Macon Telegraph*, were accessed via the Georgia Historic Newspapers Website and the Digital Library of Georgia. Maps and aerial photographs were obtained from GDOT and the University of Georgia Map Library in Athens, Georgia.

Field research for this project included preliminary surveys of the two African American cemeteries (both run by burial societies) closest to the Avondale Burial Place, Good Samaritan Burial Society Cemetery and Rising Star Burial Society Cemetery. These field visits provided data on the earliest marked graves in the cemetery, as well as a concept of what families in the project area were affiliated with which church.

This historic context and the genealogical research presented rely on the years of research completed by the family genealogists/historians for some of the families involved in the project. Ms. Talerie Boyd of the Thomas family, Mr. Skip Mason and Ms. Sherry Wilder of the Barton family, and Ms. Amma Crum of the McArthur and Ryder families all have spent years researching and compiling their family histories. All of them graciously shared their extensive research with New South Associates and GDOT.

Finally, oral histories have provided important information and in particular, the memories of Mr. Lucas, not only resulted in the rediscovery of the cemetery, but also have provided important information of some of the last historic inhabitants of the project area. Members of the Barton and Thomas families gave interviews to researchers, and these have also enriched our understanding of the historic communities and families of the project area.

## SURFACE OBSERVATIONS

New South Associates broke the archaeological investigations into several phases. First, the project area was examined for surface features identifying where graves might be located. These would be used to provide an initial approximation of the cemetery's boundaries. A second phase entailed a systematic subsurface examination to verify whether other graves were present. Excavation of test units to verify soil conditions were initiated in the fourth phase. Finally, subsurface exposure of grave pits using heavy equipment was followed by excavation and recovery of mortuary features.

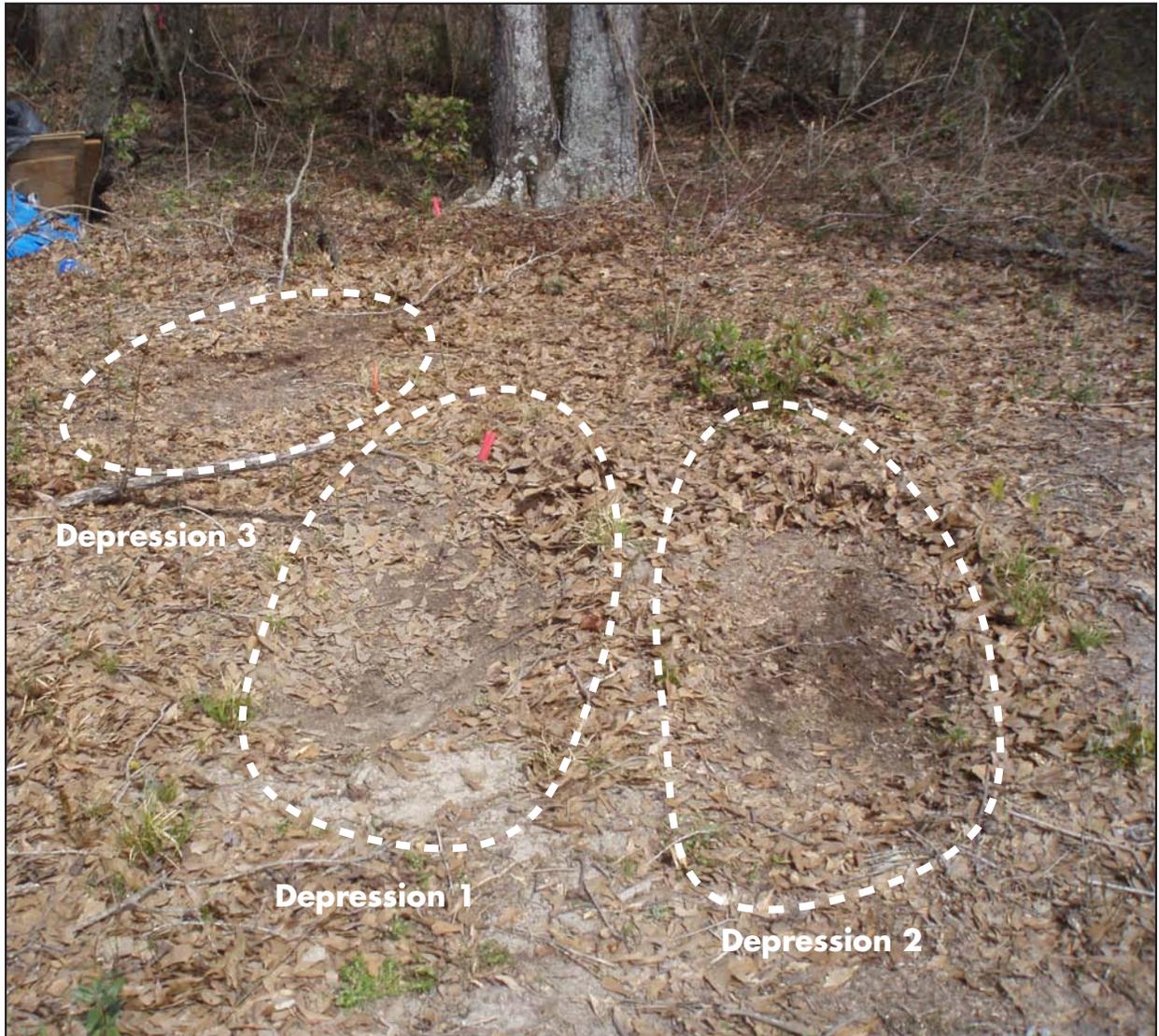
Graves placed in rural environments, such as the setting found at 9B1164, are less clearly defined than those found in more urban settings and therefore are frequently more difficult to detect. A battery of surface features was developed from other rural cemeteries in the southeastern United States to guide identification. From the ground surface, potential rural mortuary deposits are identified by any of the following features:

1. Human-sized cigar-shaped depressions or mounds;
2. Presence of formal stone, metal, concrete or wooden grave markers;
3. Presence of dressed or undressed fieldstones arranged as head and/or footstones;
4. Presence of concentrations of mortuary associated ground covers, particularly vinca, narcissus (daffodils), cedar, hemlock, crepe myrtle, gardenia, spirea, roses, lilies, and/or irises;
5. Stone, metal, wood, earthen or floral enclosures that restrict land use for other (particularly agricultural) purposes;
6. Oval or rectangular concentrations of stone, glass, wood, metal, seashells or plastic containers, used to outline a potential grave's dimensions;
7. Low oval or rectangular piles of stones;
8. Maintained areas evidenced by removal of vegetation and unwanted debris; and/or
9. Oval or human-sized color/plant differences in mowed areas.

A comprehensive examination of the area for surface features found minimal evidence of any potential graves. In general, the surface consisted of a thick layer of leaf litter and decayed organic debris overlain by a canopy of pioneer plants and large hardwood trees. Despite examinations over the course of several seasons, these vegetative conditions hampered identification of surface features. A concentration of three linear depressions along the eastern margin of a tractor trail was noted (Figure 6.1). All three depressions were probed, providing inconclusive evidence about their status as potential graves. Subsequent examination of the area by search and rescue dogs generated a positive response for Depression 1. The locations of these depressions were plotted and when compared with the final cemetery distribution, Depression 1 corresponded nicely with F-52. No supporting evidence was found to indicate that Surface Depressions 2 or 3 were mortuary features; it was suspected that they were formed by tree falls or activities associated with the adjacent tractor trail.

No architectural remains or symbolic plants were identified. Several less visible land use features were noted. A partial barbed wire fence or enclosure was observed along the southwestern side of the wooded area. This appeared to be separate from the boundary fences that separated the project parcel from land under tillage. As noted earlier, a separate barbed wire fence ran along the property boundary separating LL 130 into two halves. On the eastern side of this fence, a deeply rutted vehicle trace was observed. The trace corresponded with the location of an unimproved northwest-southeast oriented road visible in a number of early aerial images (see in particular Figures 2.9 and 2.11). Surface vestiges of this trace could be observed in tracts north of the project area. Once the ground surface was cleared, the depth of ruts and subsequent

Figure 6.1.  
Potential Surface Depressions Looking East



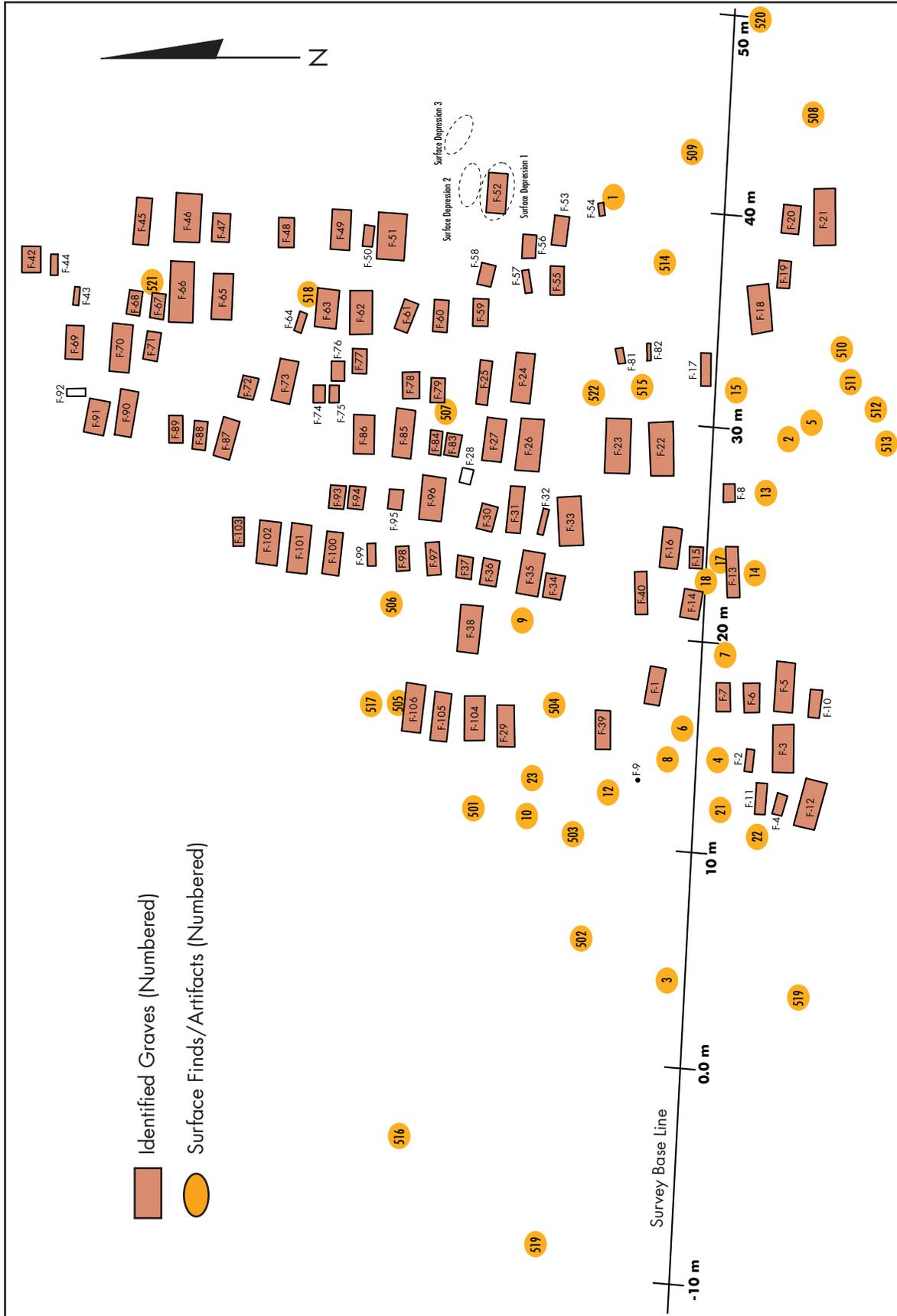


Figure 6.2. Distribution of Potential Surface Artifacts from 9B1164

impassibility of this trace across LL 130 became apparent and probably resulted in the development of a parallel trace on the west side of the fence. A vehicle-wide depression was noted immediately adjacent to the cemetery; however, there was no indication that this second trace impacted it.

During and after the project area was cleared of all vegetation, surface examinations turned up a number of surface artifacts. While many of these objects (including rubber bicycle tires, agricultural hose, modern toilet and plumbing debris, sheet tin, linoleum-covered concrete, mobile phones, aluminum crutches, and automotive parts) had been discarded along the fence lines in the mid- to late twentieth century, they were not recognized as part of the cemetery's assemblage. Nevertheless, a light scatter of glass, ceramics, and other artifacts potentially dating back to the nineteenth and early twentieth centuries, however, were identified as having potential mortuary ties (Table 6.1). When possible, the locations of these objects were piece plotted (Figure 6.2). The resulting distribution approximated the location of the cemetery, implying that these materials may represent objects intentionally left on the surfaces of the burial area. Unfortunately, most of these artifacts were recovered loose on the surface and, therefore, they were probably out of their original context. At best, they provided only a general outline of a potential burial area. Artifact concentrations tended to be greatest in locations where undisturbed surface soil lenses were deeper and at the base of the slope. These data implied that the cemetery was potentially larger than was initially suggested by the GDOT survey.

*Table 6.1. Nineteenth- and Early Twentieth-Century Artifacts from Surface Deposits at 9B1164*

Piece Plot Number	Object	Quantity
1	Whiteware/Edgeware, Blue Scalloped	1
2	Ironstone Body Sherd, Undecorated	1
3	Ironstone Rim Sherd, Undecorated	1
4	Ironstone Rim Sherd, Embossed	1
5	Glass Jug Neck and Handle, Clear, Molded	1
6	Brick, Machine Made	1
7	Porcelain Foot Ring Sherd, Undecorated	1
8	Ironstone Body Sherd, Undecorated	1
9	Glass Bottle Sherd, Clear	2
9	Porcelain Foot Ring Sherd, Blue Transfer Print	1
10	Ironstone Foot Ring, Undecorated	1
12	Ironstone Body Sherd, Undecorated	1
12	Ironstone Rim Sherd, Embossed	1
13	Ironstone Body Sherd, Undecorated	1
14	Glass Bottle Mouth, Olive, Crude Lipping Tool Finished	1
15	Cement Fragment, Possibly Hand Molded Surface	1
17	Ironstone Rim Sherd, Undecorated	1
18	Glass Bottle Sherd, Clear	1
21	Ironstone Body Sherd, Undecorated	1
22	Brick Fragment, Handmade	1

Table 6.1. Nineteenth- and Early Twentieth-Century Artifacts from Surface Deposits at 9BI164

Piece Plot Number	Object	Quantity
23	Ironstone Foot Ring, Rim and Body Sherds, Undecorated	4
23	Ironstone Rim Sherd, Embossed	1
23	Glass, Clear, Bottle	1
501	Ironstone Body Sherd	1
502	Porcelain, Decaled	1
503	Glass, Clear Bottle	1
504	Ironstone Rim Sherd	1
505	Ironstone Rim Sherd	2
506	Glass Rim, Clear Bottle	1
507	Glass, Clear Bottle	1
508	Pearlware Body Sherd	1
509	Glass, Clear Bottle	1
510	Ironstone Rim Sherd	1
511	Ironstone Body Sherd	1
512	Glass Rim, Clear Bottle	1
512	Glass, Clear Bottle	1
513	Glass Rim, Clear Bottle	1
514	Mortar, Brick	2
515	Brick, Hand Made?	1
516	Ironstone Rim Sherd	1
517	Glass, Clear Bottle	1
518	Glass, Clear Bottle	1
519	Glass Base, Amber Bottle	1
520	Glass Base, Aqua Bottle	1
520	Ironstone Footrim	1
521	Brick, Machine Made	1
521	Glass, Amber Bottle	1
521	Glass, Clear Bottle	1
522	Grave Marker Fragment, Marble	1
General Surface Find	Battery, Carbon Insert	1
General Surface Find	Brick, Machine Made	8
General Surface Find	Fence Wire, Braided	1
General Surface Find	Glass Bottle, Amber	1
General Surface Find	Glass Bottle Base, Amber	1
General Surface Find	Glass Bottle Base, Amethyst	1
General Surface Find	Glass Bottle Base, Clear	8
General Surface Find	Glass Bottle Base, Selenium	1
General Surface Find	Glass Bottle Rim, Clear	4
General Surface Find	Glass Bottle Sherd, Amber	8

Table 6.1. Nineteenth- and Early Twentieth-Century Artifacts from Surface Deposits at 9B1164

Piece Plot Number	Object	Quantity
General Surface Find	Glass Bottle Sherd, Aqua	1
General Surface Find	Glass Bottle Sherd, Clear	1
General Surface Find	Glass Bottle Sherd, Green	1
General Surface Find	Glass Bowl Rim, Clear	1
General Surface Find	Glass Decanter Stopper, Amethyst	1
General Surface Find	Glass, Flat, Aqua	2
General Surface Find	Glass Lamp Chimney Sherd, Clear	1
General Surface Find	Glass, Pressed, Amethyst	1
General Surface Find	Glass Vase Base, Clear	1
General Surface Find	Hammerstone, Quartzite	1
General Surface Find	Hinge, V-Strap	1
General Surface Find	Insulator, Salt Glazed Ceramic	1
General Surface Find	Iron Bar, Molded	2
General Surface Find	Iron Pin, Heavy Equipment	1
General Surface Find	Ironstone Body Sherd	2
General Surface Find	Ironstone Rim Sherd	5
General Surface Find	Plow Blade, Iron	1
General Surface Find	Porcelain Body Sherd	1
General Surface Find	Porcelain Body Sherd, Blue Transfer Print	1
General Surface Find	Porcelain Doll Head	1
General Surface Find	Porcelain Figurine Sherd	2
General Surface Find	Refined Earthenware, Pink Glazed	1
General Surface Find	Shotgun Shell, Brass Cartridge	1
General Surface Find	Tile, Blue Glazed	1
GDOT Surface Finds		
GDOT-1	Glass Bottle Sherd, Clear	1
GDOT-2	Porcelain Rim Sherd	1
GDOT-3	Porcelain Body Sherd	1
GDOT-4	Earthenware Body Sherd	1
GDOT-5	Ironstone Body Sherd	1
GDOT-6	Glass Bottle Sherd, Aqua	1
GDOT-7	Charcoal	2
GDOT-8	Unidentified Ferrous Metal Fragment	1
GDOT-9	Earthenware Rim Sherd	1
GDOT-10	Glass Bottle Sherd, Aqua	1
GDOT-11	Charcoal	1

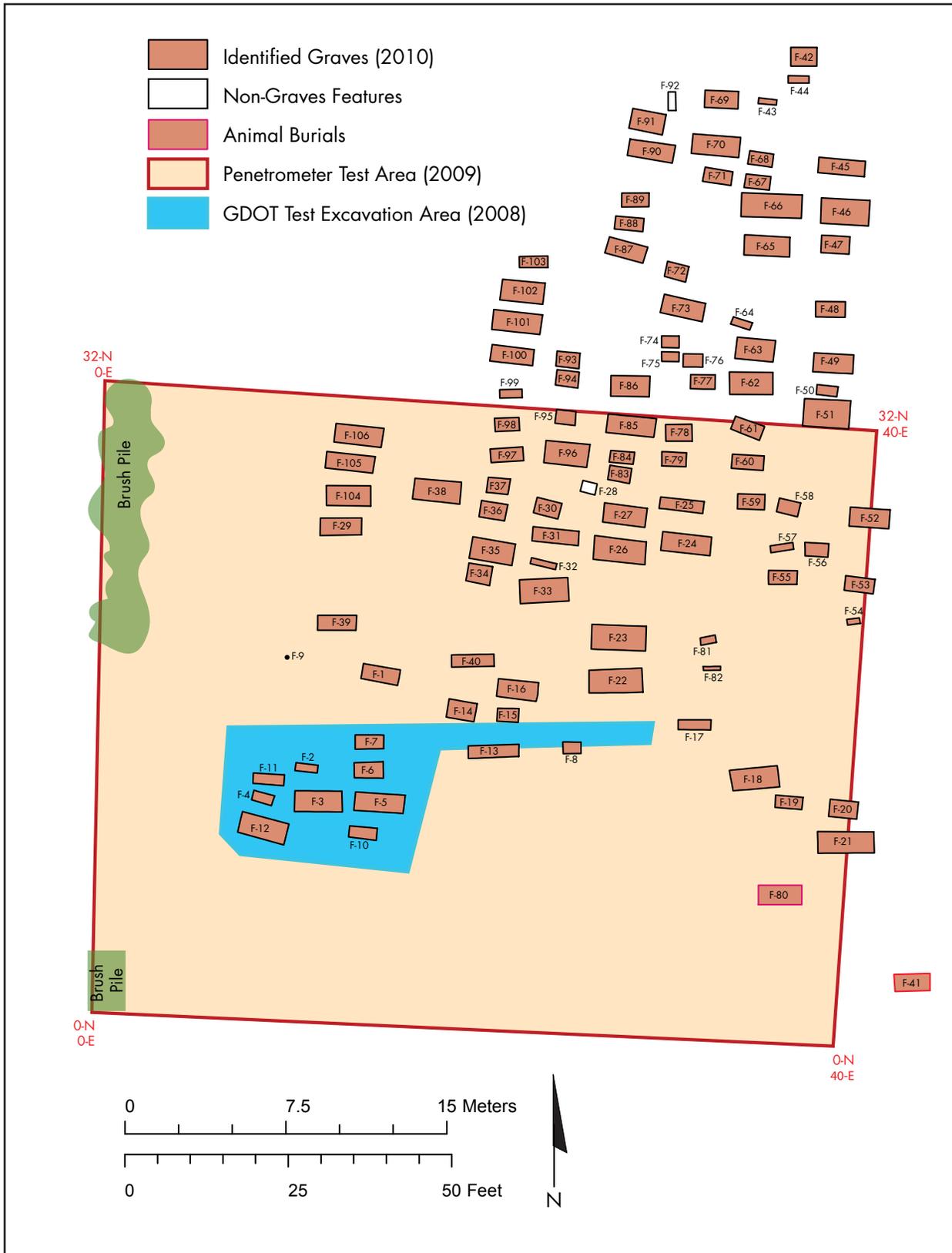
## SOIL DENSITY TESTING

The second phase of the field survey focused on determining if any unmarked graves were present in the project area. Examining soil compaction is a means of identifying potential gravesites with a minimum disturbance to the ground surface. Traditionally, this type of examination has been conducted using a steel tipped ceramic probe; however, recent comparisons have advocated the use of a soil compaction probe or penetrometer for grave identification (Hailey 2007). Following a strategy outlined by Killam (2004:45), transects spaced 50 centimeters apart were superimposed on the landscape. Each transect was systematically tested at 50-centimeter intervals for the presence of subsurface features. The 50-centimeter probe spacing ensured that all areas large enough to hold a human-sized grave pit were tested. A test area that was 40 meters long (east-west), 32 meters wide (north-south) on the summit of the cemetery rise, and encompassing grounds demonstrated by GDOT as being within the cemetery was examined to learn the feasibility of using this technique to detect unmarked grave pits (Figure 6.3). All available ground surfaces within the test area were examined using a manually inserted penetrometer.

Penetrometers measure soil compaction density. In clay-based environments, individual soil particles tend to be plate-like and align themselves parallel to the ground's surface. If left undisturbed, these soils will retain considerable compaction. When disturbed, however the orientation of these particles will shift, enabling space to form between particles and the soil to become less dense. This phenomenon has enabled researchers to identify the presence of unmarked graves, which structurally are often little more than a disturbance filled with soils that have lost their original particle alignments. Grave shafts constructed up to 150 years prior to survey have been detected using soil compaction (Owsley 1995:737). Penetrometers measure the amount of soil compaction within a given test site in pounds per square inch; with measurements of 100 indicating extremely loose soil and, those gauged at 350 being too dense to penetrate. Soil conditions at 9B1164 required the use of a dense soil (0.5-inch) tip. When possible, the tip of the penetrometer was inserted 23 centimeters (9 inches) into the soil to obtain a reading that was free from post-depositional surface disturbances.

The resulting data matrix, illustrated in Figure 6.4, provided some important insights into the site's underlying structure. Much of the project area was very irregular, exhibiting a large number of extremely loose and compacted soils in immediate proximity to each other. Many of these corresponded with circular surface depressions and long linear bands, indicating the presence of former stumps and tree falls. The organic surface 'duff' horizon extended up to 30 centimeters deep in some places, indicating that parts of the area may never have been fully cleared. This type of avoidance in a heavily agricultural area is consistent with burial areas observed in other parts of Georgia (Matternes 2003; Matternes et al. 2004). Soils also tended to express the least amount of compaction around the base of mature trees. This was interpreted as disruption of the soil environment by growth and outward expansion of the tree. A uniformly uncompacted zone near the center of the test area corresponded with the location of the GDOT exploratory excavations.

Figure 6.3.  
Surface Density (Probe) Survey Test Area



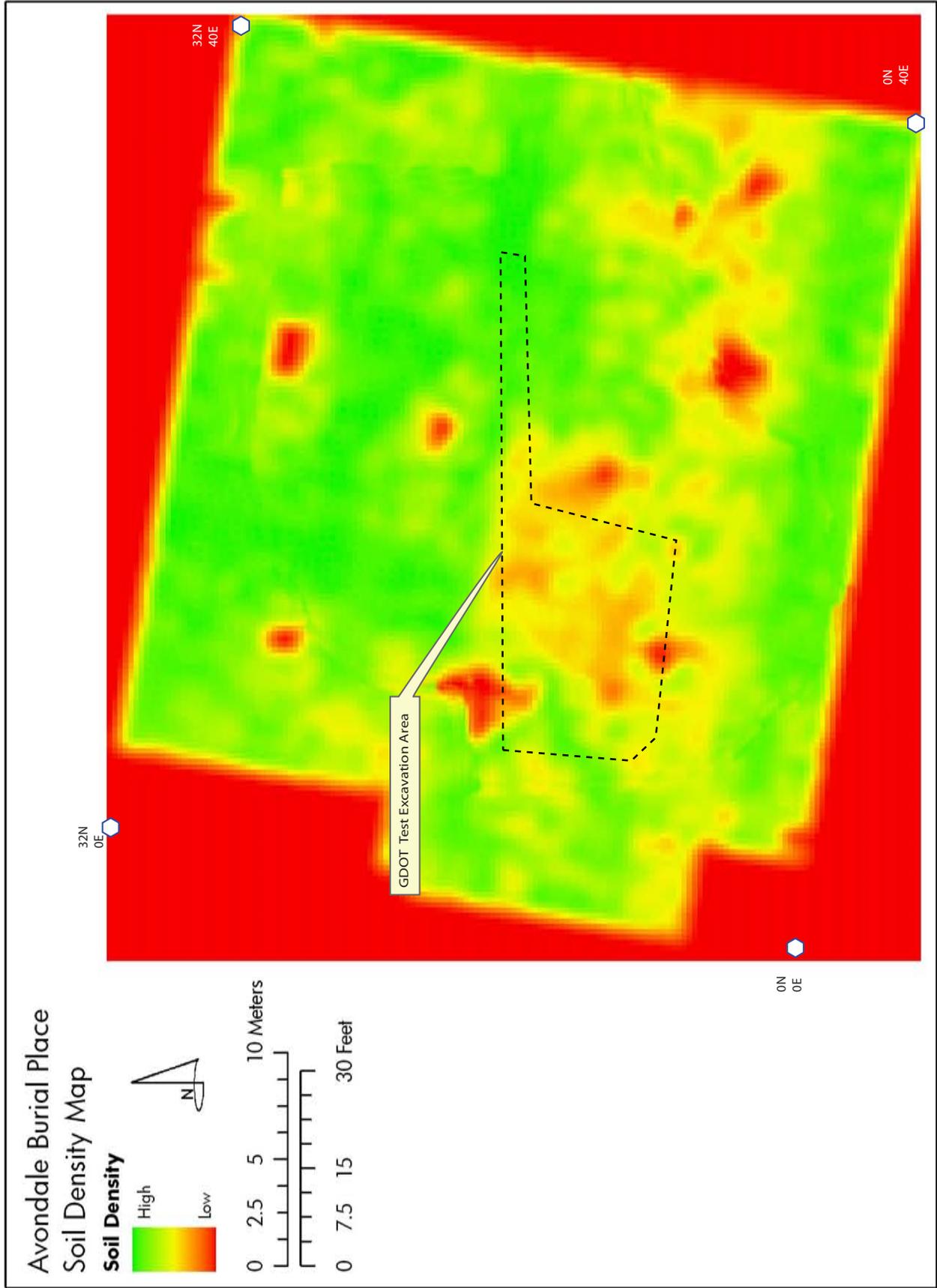


Figure 6.4.  
Soil Density Map for Survey Test Area

On the southern side of the test area and coinciding with the approximate boundaries of an agricultural fence line, soils exhibited a more uniform (and denser) compaction with a distinct transition towards a very dense soil 30-40 (12-15 in.) centimeters below ground surface (cmbgs). This pattern was identical to plow zones observed in former agriculturally tilled fields. The paradoxical observation of disturbed, yet more compacted surface soils can be attributed to plow-mixing of surface silts and sands with the underlying more clay-enriched soils (as revealed during subsurface testing) and subsequent reconsolidation after use for agricultural purposes terminated.

Exposed areas along the northeast side revealed that very little organic debris were present. Surface soils were noted to be very dense and were interpreted as undisturbed subsoils. These were features associated with a deflated soil environment. The absence of 'old wood' trees and lack of an associated plow zone may be evidence that the locality had been cleared and left fallow in the past. An erosional depression on the western and northwestern sides of the project area was denser than the central portion of the project area and less compacted than the northeastern portion. Subsequent exposure of this area during the stripping phase revealed that a road that ran along the northern side of the cemetery probably formed this depression. Portions of this road are visible in the 1966 aerial photograph (see Figure 2.19). These soils could easily have washed off of the project area.

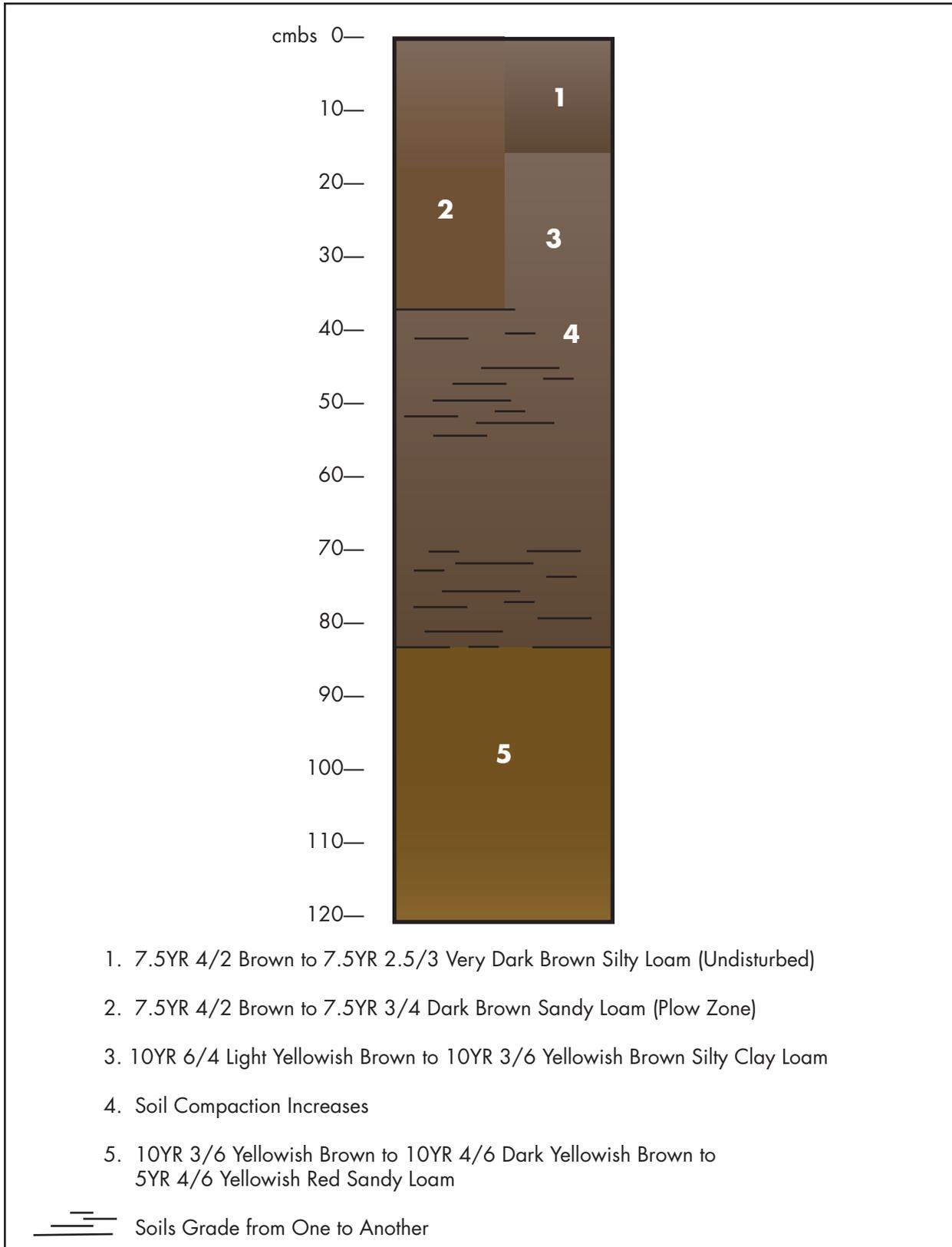
Probe results indicated a diverse range of surface soil environments and hinted that the underlying soils may also be equally as complex. Stratigraphic information was gathered from 11 50x50 centimeter test units. Test Unit placement was based on the original GDOT testing, initial ground penetrating radar results, initial cadaver dog results, and information obtained from probing. The goal of these units was to provide as much stratigraphic information about soil conditions across the burial area. Nine units were placed to address the suspected margins and central core of the burial area. Two additional units added to address soil conditions adjacent to the agricultural fields (Test Unit 11) and conditions downslope from the suspected margin of the burial area (Test Unit 7). Unit locations were originally intended to be 10 meters apart with Test Units 7 and 11 positioned 10 meters north or south of the central north-south units. Most unit locations, however, had to be modified in the field to avoid trees and other surface obstacles. Test unit locations were distributed as outlined in Figure 6.5.

Stratigraphic profiles among the 11 units confirmed a highly variable subsurface structure. Each profile exhibited a unique depositional sequence; however, soil structures did tend to correspond with the Norfolk and Davidson soil series. Units on the southern, western, and northern sides of the project area were largely sandy-loams. They were grouped as Norfolk series soils (Figure 6.6). The top 10-20 centimeters were covered in an extremely fine-grained organically rich silty loam. Undisturbed areas exhibited a dense root layer. The underlying layer, reflecting light yellowish-brown to yellowish-brown silty loams, was marked by a well defined interface. Soils tended to grade into richer yellowish-brown colors and into dark yellowish-brown to yellowish-red colored sandy-clay loams with increasing depth. Soil colors tended to become slightly darker the more northward (and down slope) units were placed. This seemed to correspond with proximity to existing wetlands and a general increase in subsurface moisture. Sand content was relatively high in soils that were generally above 50 cmbgs. Deeper aspects were emphasized by marked

Figure 6.5.  
Location of Test Units on 9B1164



Figure 6.6.  
Norfolk Series-Like Composite Soil Profile from 9B1164



increases in compaction and clay content. This structure was consistent with those in the Norfolk-Orangeburg soils and most specifically with the Norfolk Sandy Loams (Woods 1979:17-18). Some structural variations in the project area may have corresponded with differences Woods noted between slope grades. These Norfolk-like soils tended to be found along the Coastal Plain Upland ridge tops and were found in the immediate project area. They probably represented primary sedimentary deposits from the surrounding Piedmont uplands. Unit 11 and possibly Unit 9, both along the southern margin of the project area, exhibited brown to dark-brown sandy loams to a depth of around 35 cmbgs. These did not correspond with any undisturbed soil profile. Their location, depth, slightly elevated clay content, and homogenous texture were consistent with soils disturbed by agricultural tillage. The northeastern corner of Unit 1 encountered a slightly darker yellowish-brown curved corner with a concentration of cut nails, one of which was clearly identified with the head positioned vertically. The feature was initially identified as a potential mortuary structure (F-9) and unit excavation terminated to avoid further disturbance. An undecorated piece of ironstone was recovered in the top 10-20 centimeters of Unit 7.

Units in the central and northeastern portions of the project area followed the Davidson series (Figure 6.7). They were covered in a very thin brown to very dark brown silty loam that was identical to those noted in the Norfolk series. Undisturbed areas exhibited compacted yellowish-red sandy clays that became denser, redder and more clayey as depth increased. This soil profile did not match any noted by Woods in the immediate area; however, it was very similar to the Davidson soils noted on the broad ridge tops of Bibb County's piedmont uplands (Woods 1979:13). These soil observations were indicative that local soils following the Davidson series might be remnants of a deflated upland surface that formed from degraded igneo-metamorphic parent materials.

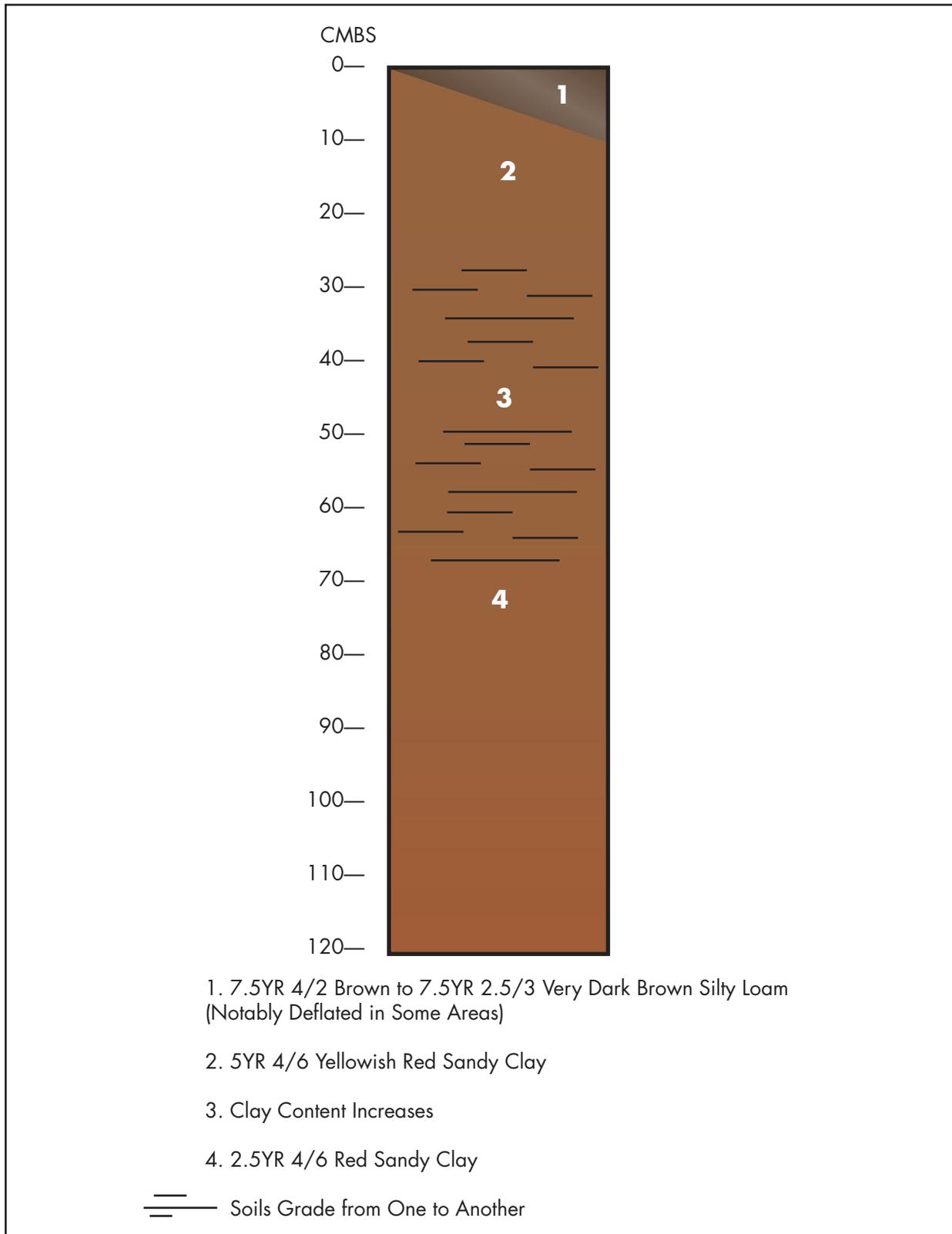
Geologically modern anomalies were noted among the Davidson series units. Units 2 and 3 descended on mottled clay-sandy clay less compacted deposits suspected to represent relatively modern disturbances. Unit 6 encountered what was initially believed to be a tree fall but now is recognized as the shaft of F-27. Unit 5 also encountered the margin of a feature estimated by probing to have a total depth of at least 1.5 meters; the feature's base could not be excavated; its location and depth were consistent with F-38. A single piece of panel bottle glass was encountered near the surface of Unit 2.

In general, the probe/penetrometer soil survey and unit sampling provided considerable information about the general surface soil structure of the project area. These results, however, were not capable of defining patterns that correlated with unmarked graves. Given the antiquity of these remains, some surface soils probably had re-compacted while others were disturbed by a variety of human and non-human agents. Survey using a soil probe was deemed unreliable for this soil environment and not pursued across the rest of the project area.

## SEARCH AND RESCUE (CADAVER DOG) SURVEY

Search and Rescue dogs, also known as cadaver dogs, have demonstrated an ability to detect human remains, including those of great antiquity or minimal representation, with a considerable degree of reliability. With the appropriate training, these animals are able to detect and alert their

Figure 6.7.  
Davidson Series-Like Composite Soil Profile from 9B1164



trainers to the scent location of buried human remains. They have the ability to detect buried human remains in subsurface environments that are beyond the range of more accepted archaeological grave detection methods (submerged soils, beneath rock or buried enclosures, or where the body has been highly disturbed or has been disarticulated) (Dupras et al. 2005:40).

Technically, cadaver dogs are not trained to find human remains, rather to detect the scents emanating from them (Lasseter et al. 2003:617). Most dogs are able to detect and discriminate smells represented by only a few parts per million particles; these are generally imperceptible to humans. Gases, liquids, and molecular compounds associated with decomposition that have worked their way to the surface may be detected by the cadaver dog and serve as the primary means for dogs identifying potential gravesites.

Unlike other burial detection techniques, cadaver dogs are frequently unable to pinpoint the exact locations for human remains, particularly if large assemblages of discretely deposited remains are buried in a relatively small area (Dupras et al. 2005:40). It has been New South Associates' experience, however, that cadaver dogs can easily identify the presence of family clusters within unmarked cemeteries and are able to mark within 10 feet the location of isolated individual graves. Given the presence of a relatively high water table within northern portions of the project area, cadaver dogs provided an alternative means of grave detection in an area not well suited to other forms of nondestructive burial detection.

New South Associates contacted members of Alpha Team Search and Rescue (ATSAR) for assistance. ATSAR has been an active force in law enforcement and rescue communities, participating in federal, state, and private search, rescue, and recovery investigations in Georgia and throughout the world. Members and dogs have been extensively trained in the recognition and alerting procedures for buried human remains. Trainers specifically were certified by the Georgia Emergency Management Agency (GEMA) and National Association for Search and Rescue (NASAR). Teams of professional handlers allowed their dogs to systematically investigate the suspected cemetery area to determine where the cemetery boundaries might be located. Trainers kept a watchful eye on their dogs' action. When a dog alerted on to a potential scent location, the site was marked with flagging tape and recorded on the project area map. Cadaver dog alerts included those detected using other methods as well as sites not previously identified.

Lasseter et al. (2003:618) noted that environmental conditions in the southeastern United States can have profound effects on a cadaver dog's ability to accurately detect buried human remains. Canine surveys were planned to optimize field conditions. ASTAR visited 9B1164 twice, once on April 19, 2009, limiting their focus to the area approximating the Soil Density Test Area and again on February 26, 2010, allowing the dogs to investigate roughly 1.5 square acres in and around the project area. Surveys began in the midmorning and finished by early afternoon, terminating before the dogs and handlers became tired. During both visits, temperatures ranged between 40 degrees and 60 degrees (Fahrenheit) and winds were light, generally less than five miles per hour. The ground was moist from recent rains and humidity levels were under 70 percent. During the 2009 survey, ground disturbance had been limited to brush clearing several months earlier. The 2009 excavation area had been opened and backfilled about six months prior to the 2010 survey;

the grounds surrounding this area were otherwise undisturbed. These previously excavated areas were omitted from 2010 survey. Some of the undisturbed grounds surrounding the 2009 excavation area were undoubtedly surveyed in both 2009 and 2010.

Alerts represent pre-arranged signals that the dog used to communicate to the handler that an appropriate scent has been detected. The locations for six of ASTAR's Search and Rescue Dogs were documented. Alert sites were mapped between dogs and the pin flags subsequently removed to prevent biasing the next animal's run through the grounds. There were 61 alerts recorded (Figure 6.8). Despite encouraging the dogs to explore parcels well outside the confines of where the cemetery was subsequently determined to be located, most alerts were concentrated in or near graves inside the cemetery. All dogs alerted on locations within the cemetery resulting in a 100-percent success rate in identifying the location of the cemetery. During the 2010 survey, a concentration of false alerts, defined by Lasseter et al. (2003:617) as alerts where no human remains were found, in the southeastern portion of the project area were probably caused by the recovery team. During the previous year's fieldwork, this area served as an equipment storage, parking, and lunch/break area. Dust and soils from the graves were undoubtedly deposited from the team's equipment and clothing, leaving the ground surface impregnated with human scent. It is possible that some of the other false alerts may have also resulted from archaeological activities (mapping, trash pick-up, surface collecting, etc).

Positive alerts were considered alert locations corresponding to a grave or within 50 centimeters of a known grave. A total of 25 positive alerts, representing 41.66 percent of all alerts, were subsequently determined to be associated with 13 interments (Tables 6.2). The success rates using canine detection were tabulated in Figure 6.3. Detected graves were about equally split between adults and subadults; most were buried in coffins and placed in vaulted, secondary chambers. Nearly half of the graves were independently identified by more than one animal. In the case of F-38, nearly all of the 2010 dogs alerted on it and F-27 was alerted by two canines. F-8 was identified by one dog. As outlined previously, however Test Units 5 and 6 had inadvertently disturbed the upper aspects of these graves (but not the burial chambers); it is likely that human decay scent trapped in the grave matrixes was redeposited on or near the surface, making detection easier. Likewise, F-8 has been partially uncovered by GDOT testing. Subtracting these nine spurious positive alerts resulted an adjusted score of 16 positive alerts. Positive alerts on previously undisturbed graves accounted for 26.66 percent of all positive alerts.

*Table 6.2. Graves Detected by ASTAR Search and Rescue Dogs*

Feature Detected	Number of Alerts	Individual	Receptacle Form	Grave Form	Notes
F-8	1	Infant	Casket	Vaulted	GDOT Impacted
F-16	1	Adult Male	Casket	Vaulted	
F-23	2	Adult Female	Coffin	Vaulted	
F-27	2	Adult Male	Coffin	Vaulted	Test Unit Impacted
F-31	3	Adult Male	Coffin	Indet.	
F-37	1	Infant	Coffin	Vaulted	

Table 6.2. Graves Detected by ASTAR Search and Rescue Dogs

Feature Detected	Number of Alerts	Individual	Receptacle Form	Grave Form	Notes
F-38	6	Adult Male	Coffin	Vaulted	Test Unit Impacted
F-49	1	Adult	Coffin	Vaulted	
F-55	1	Child	Casket	Vaulted	
F-56	2	Child	Coffin	Vaulted	
F-87	2	Adult	Coffin	Vaulted	
F-94	2	Child	Coffin	Vaulted	
F-95	1	Child	Coffin	Shaft Only	

Table 6.3. Graves Detection Success Rates for ASTAR Search and Rescue Dogs

	Count	Proportion	Adjusted	Proportion
Total Alerts	60	1.00	60	1.00
Positive Alerts	25	0.4166	16	0.2666
False Alerts	35	0.5833	35	0.5833
Spurious Alerts			9	0.1500
Total Interments	101	1.00	98	1.00
Positively Identified	13	0.1287	10	0.1020
Not Identified	88	0.8712	88	0.8979
Spurious Identifications			3	0.0306

The success of canine detection compared well with other established tests. Ultimately, the cemetery yielded 101 interments; the search and rescue dogs were able to detect 13 or 12.87 percent of these. As noted, F-8, F-27, and F-38 were spurious representations of success in detection of the true cemetery condition as they had been impacted about a year before canine surveys. But in comparison with modern forensic applications of cadaver dog success, where dry bone specimens were buried only a few months prior to the examination, detection results including these three features were reasonable comparative elements of the Avondale Burial Place test sample results. An adjusted, more conservative estimate of 10 positively identified graves (that eliminated these three features from the sample) resulted in detection of 10.20 percent of the true number of graves. Raw and adjusted proportions from the Avondale Burial Place Cadaver Dog Survey are both slightly below but comparable to the 15-percent positive alert on dry bone success rate reported by Lasseter et al. (2003:620) for trials conducted in the summer in Alabama. It should be recognized that the Avondale Burial Place test sample differed dramatically from those used in Alabama in one regard; Avondale Burial Place's dry bone samples had not been buried for a few months, rather they were in mostly undisturbed contexts for about a century. The availability for scent at Avondale Burial Place to work its way to the surface was considerably more demanding than the conditions created by Lasseter et al.'s study. It is likely that optimal environmental conditions may have played a very positive role in canine grave identification.



## GROUND PENETRATING RADAR

Ground penetrating radar (GPR) data are acquired by transmitting pulses of radar energy into the ground from a surface antenna, reflecting the energy off buried objects, features, or bedding contacts and then detecting the reflected waves back at the ground surface with a receiving antenna (Conyers 2004:1). To collect radar reflection data, surface radar antennas are moved along the ground in transects and a large number of subsurface reflections are collected along each line. As radar energy moves through various materials, the velocity of the waves will change depending on the physical and chemical properties of the material through which they are traveling (Conyers 2004). The greater the contrast in electrical and magnetic properties between two materials at an interface, the stronger the reflected signal, and therefore, the greater the amplitude of reflected waves (Conyers 2004). When travel times of energy pulses are measured, and their velocity through the ground is known, distance (or depth in the ground) can be accurately measured (Conyers and Lucius 1996). Each time a radar pulse traverses a material with a different composition or water saturation, the velocity will change and a portion of the radar energy will reflect back to the surface and be recorded. The remaining energy will continue to pass into the ground to be further reflected, until it finally dissipates with depth.

The depths to which radar energy can penetrate, and the resolution that can be expected in the subsurface, are partially controlled by the frequency (and therefore the wavelength) of the radar energy transmitted (Conyers 2004). Standard GPR antennas propagate radar energy that varies in frequency from about 10 megahertz (MHz) to 1000 MHz. Low frequency antennas (10-120 MHz) generate long wavelength radar energy that can penetrate up to 50 meters in certain conditions but are capable of resolving only very large buried features. In contrast, the maximum depth of penetration of a 900 MHz antenna is approximately one meter or less in typical materials, but its generated reflections can resolve features with a maximum dimension of a few centimeters. A trade-off therefore exists between depth of penetration and subsurface resolution. In this survey, a 400 MHz antenna was used, which generally produced data of good resolution at depths up to just under two meters (about five ft.).

The success of GPR surveys in archaeology is largely dependent on soil and sediment mineralogy, clay content, ground moisture, depth of buried features, and surface topography and vegetation. Electrically conductive or highly magnetic materials will quickly attenuate radar energy and prevent its transmission to depth. Clay fractions in a particular soil determine the degree of signal loss and the velocity of the signal in the ground. Attenuation is the degree to which signal degrades with distance.

Under ideal conditions, a 400 MHz antenna generally provides radar penetration to between one and four meters. However, the exact depth varies considerably depending on local conditions. Clay can be challenging for GPR because it has a low relative dielectric permittivity (RDP). In practical applications, this generally results in shallower than normal depth penetration because the radar signal is absorbed (attenuated) by the clay regardless of antenna frequency (Conyers 2004).

The basic configuration consists of an antenna (with both a transmitter and receiver), a cart, and a wheel for calibrating distance. The operator then pushes the antenna across the ground surface systematically (a grid) collecting data along a transect. These data are then stored by the receiver and available for later processing and manipulation.

The "time windows" within which data were gathered was 40 nanoseconds (ns). This is the time during which the system is "listening" for returning reflections from within the ground. The greater the time window, the deeper the system can potentially record reflections. To convert time in nanoseconds to depth, it is necessary to determine the elapsed time it takes the radar energy to be transmitted, reflected, and recorded back at the surface by doing a velocity test. Hyperbolas were found on reflection profiles and measured to yield a relative dielectric permittivity (RDP), which is one way to calculate velocity. The shape of hyperbolas generated in programs is a function of the speed at which energy moves in the ground, and can therefore be used to calculate velocity (Conyers 2004). All profiles and processed maps were converted from time in ns to depth in centimeters.

Several factors influence the overall effectiveness of GPR for detecting graves. Soil conditions are the most important, with clay being the most difficult to penetrate. Its high conductivity causes the radar signal to attenuate much quicker, which in turn limits its overall depth and strength. Age of the graves is also critical, with older graves being more difficult because they have had more time to decompose and are less likely to have intact coffins or caskets (if they were present to begin with). When possible, it is helpful to calibrate the GPR to local conditions by passing it over a known grave and noting the overall strength or weakness of the associated signal.

## FIELD METHODS

Prior to data collection, it was first necessary to establish a formal grid. This was accomplished with measuring tapes and a Nikon DTM-332 total station with a TDS Recon data collector. A primary map station was positioned in the southwest corner of the survey area. A large plastic survey stake was ponded flush with the ground surface and marked with high visibility flagging tape. From this site datum, metric measuring tapes were used to establish a grid over the survey area using triangulation to ensure that corners were at right angles. Plastic survey stakes were then placed at each grid corner.

For each survey block, non-metallic surveyors' tapes with meter and sub-meter markings were used to guide data collection in parallel transects at even spacing throughout the grid. The GPR unit instrument was moved along the guides, which were placed at 0.25-meter intervals. All geophysical instrument data sets were collected in the Y direction beginning in the southwest corner of each grid.

The survey was conducted with a Geophysical Survey Systems, Inc. (GSSI) SIR 3000 control unit with an attached 400MHz antenna. The first step was to calibrate the antenna to local conditions by walking over various areas of the project area and adjusting the instrument's gain settings (Conyers 2004). This method allows the user to get an average set of readings based on subtle

changes in the RDP. Field calibration was repeated as necessary to account for changes in soil and/or moisture conditions. Effective depth penetration was approximately one meter. Signal attenuation (degradation) was a factor in the depth penetration of this survey, but resolution of data from the first meter remained good.

Because of the way radar energy is propagated in the ground, it is generally standard practice to collect data perpendicular to the long axis of targets (if known), within the grid. Because most Judeo-Christian burials are oriented east-west, the survey grid was roughly positioned so transects would run north-south. This way the radar profiles intersected each burial in the maximum number of transects. The antenna was pulled using in zig-zag pattern to optimize field time.

### Data Processing

All data were downloaded from the control unit to a laptop computer for post-processing. Radar returns were initially recorded by their strength and the elapsed time between their transmission and receipt by the antenna. Therefore, the first task in the data processing was to set "time zero," which told the software where in the profile the true ground surface was. This was critical to getting accurate results when elapsed time is converted to target depth. A background filter was applied to the data, which removed the horizontal banding that can result from antenna energy "ringing" and outside frequencies such as cell phones and radio towers. Background noise can make it difficult to visually interpret reflections.

The next data processing step involved the generation of amplitude slice-maps (Conyers 2004). Amplitude slice-maps are a three-dimensional tool for viewing differences in reflected amplitudes across a given surface at various depths. Reflected radar amplitudes are of interest because they measure the degree of physical and chemical differences in the buried materials. Strong, or high amplitude reflections often indicate denser (or different) buried materials, such as building materials. Such reflections can be generated at pockets of air, such as within collapsed architecture, or from slumping sediments. Amplitude slice-maps are generated through comparison of reflected amplitudes between the reflections recorded in vertical profiles. In this method, amplitude variations, recorded as digital values, are analyzed at each location in a grid of many profiles where there is a reflection recorded. The amplitudes of all reflection traces are compared to the amplitudes of all nearby traces along each profile. These data can then be "sliced" horizontally and displayed to show the variation in reflection amplitudes at a sequence of depths in the ground. The result is a map that shows amplitudes in plan view, but also with depth. Often when this is done changes in the soil related to disturbances are enhanced, thereby increasing the likelihood of detecting features.

Amplitude slice maps are a series of x,y,z values, with x and y representing the horizontal location on the surface within each grid and z representing the amplitude of the reflected waves. All data were interpolated using the Krigging method and then image maps were generated from the resulting files.

From the original .dzt files (raw reflection data), a series of image files was created for cross-referencing to the amplitude slice maps. Two-dimensional reflection profiles were also analyzed to determine the nature of the features identified on the amplitude slice maps. The reflection profiles show the geometry of the reflections, which can lend insight into whether the radar energy is reflecting from a flat layer (seen as a distinct band on profile) or a single object (seen as a hyperbola in profile). Using these profiles to confirm or refute ideas about the nature of buried materials seen in the three-dimensional slice maps, potential subsurface features were then delineated.

## GPR RESULTS

Much like the search and rescue dog surveys, GPR was used twice to examine portions of the Avondale Burial Place. Radar surveys necessitated that the ground surface be cleared of obstructions, which meant that all brush and forest needed to be removed. Surveys were initiated in March 2009, and again in April of 2010, after timbering had occurred and prior to mechanical stripping. Select amplitude slice maps are shown in Figures 6.9-6.14. Both surveys were accomplished after cadaver dog searches had been done; however, the operators were largely unaware of the ASATAR survey results. A total of 71 subsurface anomalies were classified as potential graves (Figure 6.15). In general, these anomalies were scattered across the survey blocks with concentrations focused on groups of graves and stands of trees. Using the same criteria as with the canine survey, anomalies intersecting or within 50 centimeters of a known grave were considered positive identifications of the graves. Comparison of the anomalies to the underlying grave distribution confirmed that 36 of these anomalies were probably caused by graves (Table 6.4). Detected graves were about equally split between adults and children, indicating that size was not a factor influencing graved detection. Both vaulted and simple shaft graves pits were well represented and burial case forms were near equal. There were no indications that grave architecture strongly influenced GPR's ability to detect graves in this cemetery. GPR was also able to define the location of F-41, a dog burial.

*Table 6.4. Graves Detected by Ground Penetrating Radar*

Feature Detected	Point ID No.	Individual	Receptacle Form	Grave Form	Notes
F-1	5	Subadult	Taper-to-Foot	Vaulted	Post-Excavation Detection
F-2	30	Infant	Casket	Vaulted	
F-3	30	Adult Female	Coffin	Vaulted	
F-5	32	Adult Male	Casket	Shaft Only	
F-6	31	Infant	Indet.	Indet.	
F-7	31	Infant	Casket	Vaulted	
F-8	40	Infant	Casket	Vaulted	
F-10	35	Infant	Coffin	Shaft Only	
F-14	36	Infant	Coffin	Vaulted	
F-16	10	Adult Male	Casket	Vaulted	Post-Excavation Detection
F-18	46	Adult Female	Coffin	Vaulted	

Table 6.4. Graves Detected by Ground Penetrating Radar

Feature Detected	Point ID No.	Individual	Receptacle Form	Grave Form	Notes
F-30	57	Child	Casket	Vaulted	
F-34	56	Child	Casket	Vaulted	
F-36	8	Child	Casket	Vaulted	Post-Excavation Detection
F-38	6	Adult Male	Coffin	Vaulted	Post-Excavation Detection
F-41	52	Non-Human	Casket	Shaft Only	
F-42	18	Child	Coffin	Vaulted	
F-45	16	Adult	Coffin	Vaulted	
F-46	15	Adult	Casket	Vaulted	
F-59	17	Child	Coffin	Vaulted	
F-60	66	Child	Coffin	Vaulted	
F-61	64	Child	Indet.	Indet.	
F-70	13	Adult	Casket	Vaulted	
F-73	14	Adult	Coffin	Vaulted	
F-78	63	Child	Casket	Vaulted	
F-84	61	Child	Casket	Vaulted	
F-85	62	Adult	Coffin	Vaulted	
F-87	11	Adult	Coffin	Vaulted	
F-90	12	Adult	Coffin	Vaulted	
F-95	59	Child	Coffin	Shaft Only	
F-96	60	Adult Female	Coffin	Vaulted	
F-97	58	Child	Coffin	Shaft Only	
F-102	9	Adult	Coffin	Vaulted	
F-104	1	Adult	Casket	Vaulted	
F-105	2	Adult Female	Casket	Shaft Only	
F-106	3	Adult	Casket	Vaulted	

About half the GPR anomalies identified as potential graves could not be linked to known graves. Large tree roots probably caused the vast majority of these. Animal burrows and buried modern trash piles, particularly in the eastern portion of the project area, may have accounted for other non-grave anomalies. Among the positively identified graves, detection of F-1, F-16, F-36, and F-38 during the 2010 survey represented anomalies detected after these graves had been excavated and backfilled at the end of the previous season. Shaft definitions for these features, therefore, did not reflect true archaeologically derived features, rather recent reconstructions of the original grave outline. A more accurate picture of the success rate for defining nineteenth- and early twentieth-century grave structures at the Avondale Burial Place could be made by removing these four spurious features. An adjusted score of 32 detected graves indicated that about 45 percent of the anomalies could be identified as undisturbed graves at the depth in which they were surveyed (Table 6.5).

Figure 6.9.  
GPR Amplitude Slice Maps from 2009 Survey, 1 of 3

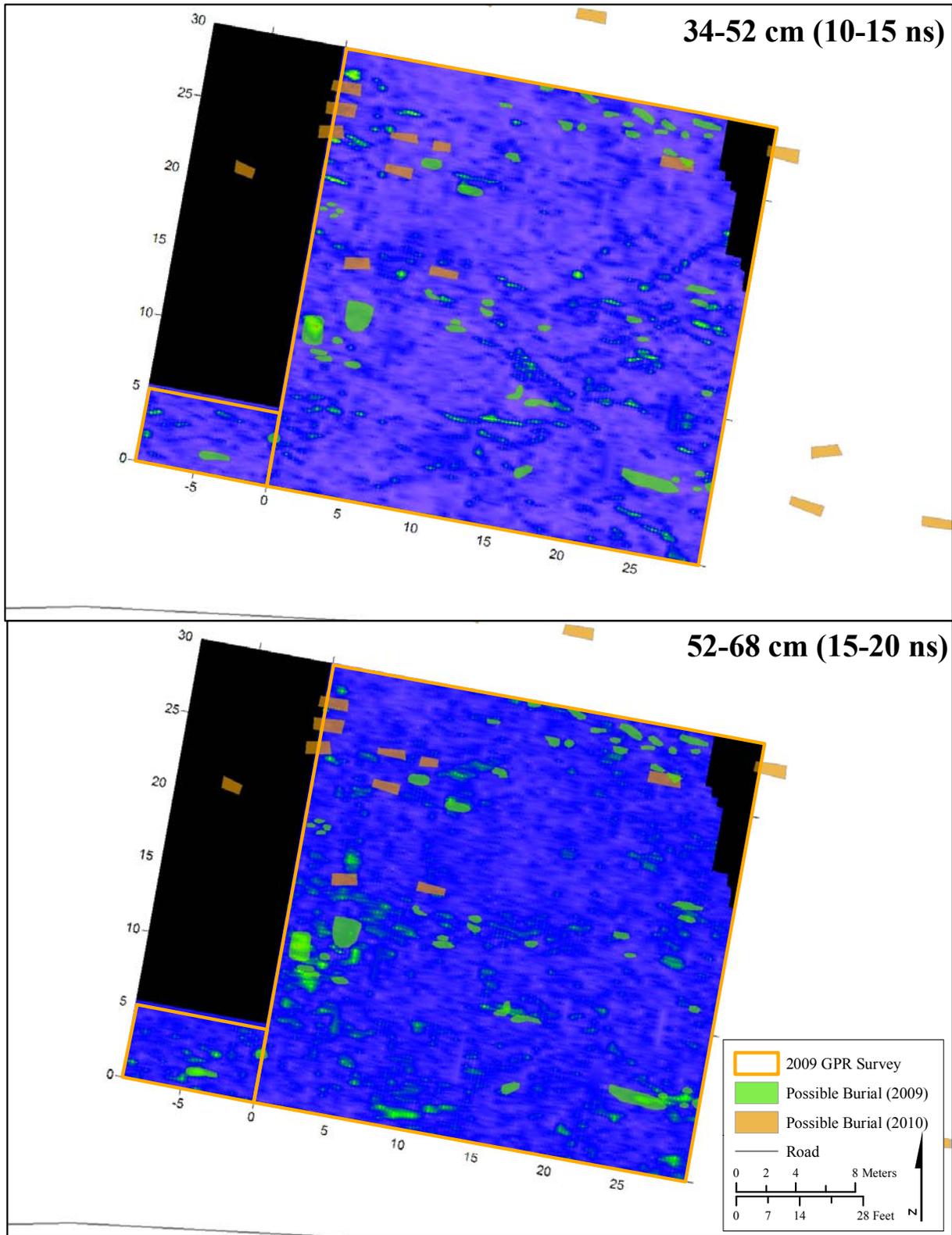


Figure 6.10.  
GPR Amplitude Slice Maps from 2009 Survey, 2 of 3

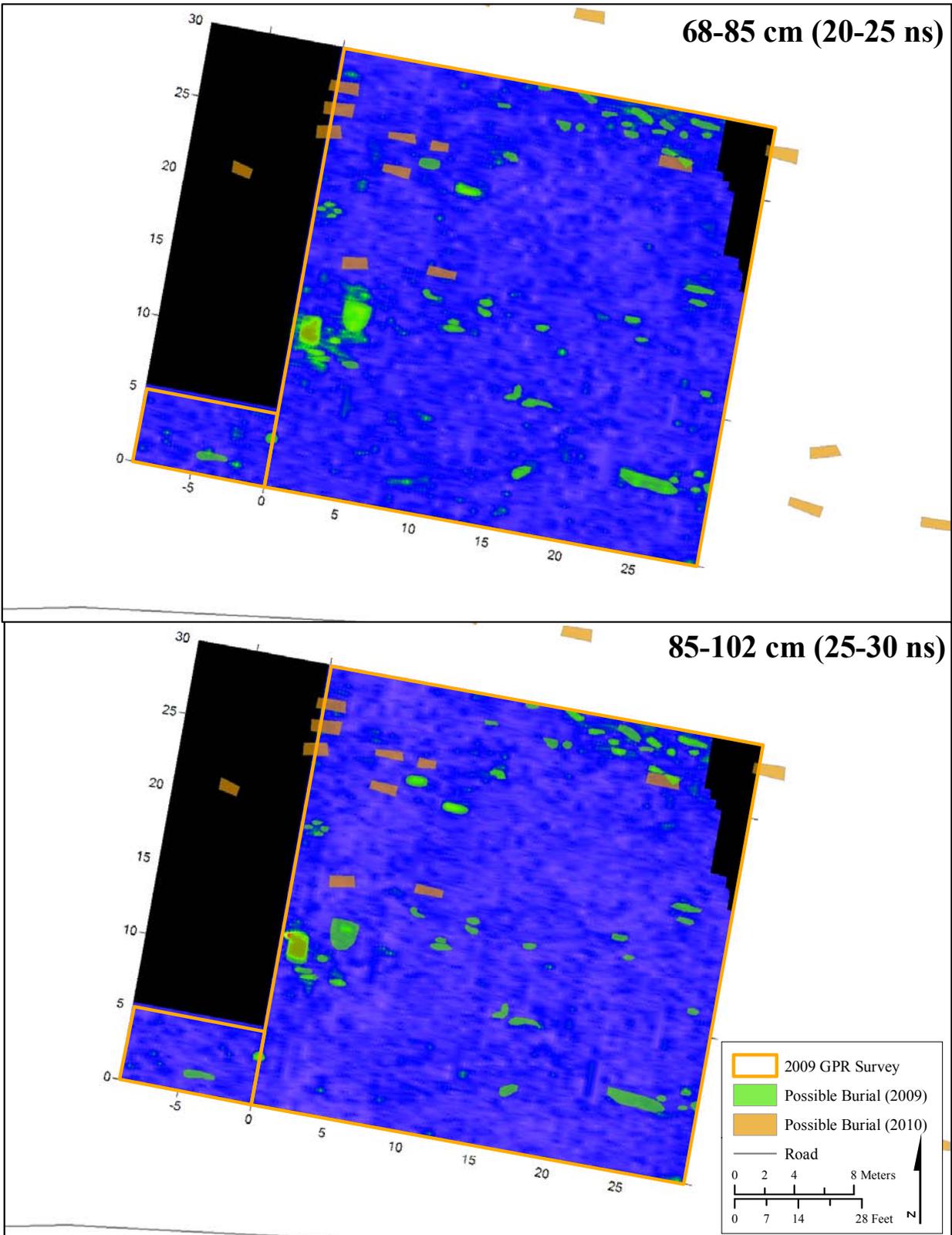


Figure 6.11.  
GPR Amplitude Slice Maps from 2009 Survey, 3 of 3

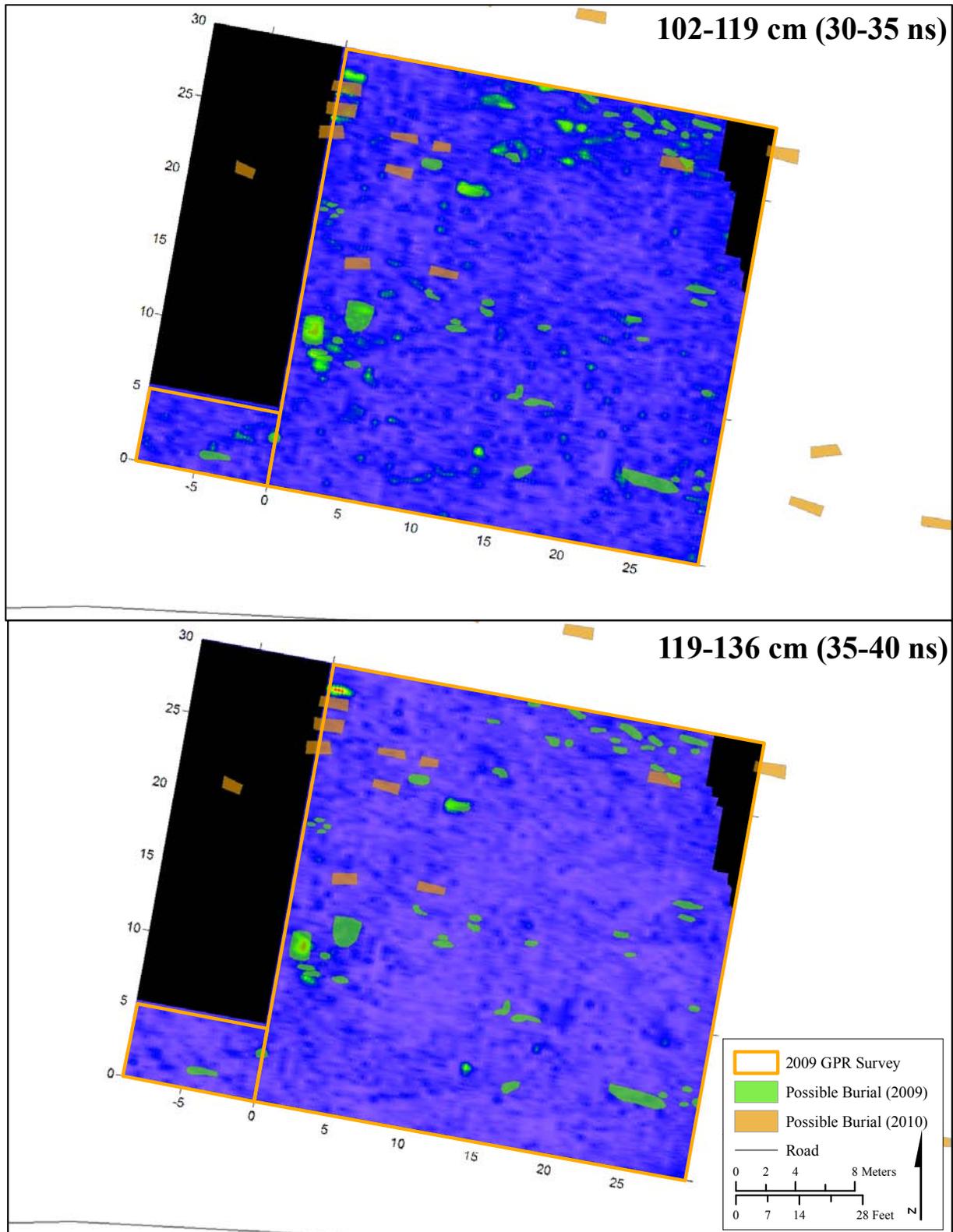


Figure 6.12.  
GPR Amplitude Slice Maps from 2010 Survey, 1 of 3

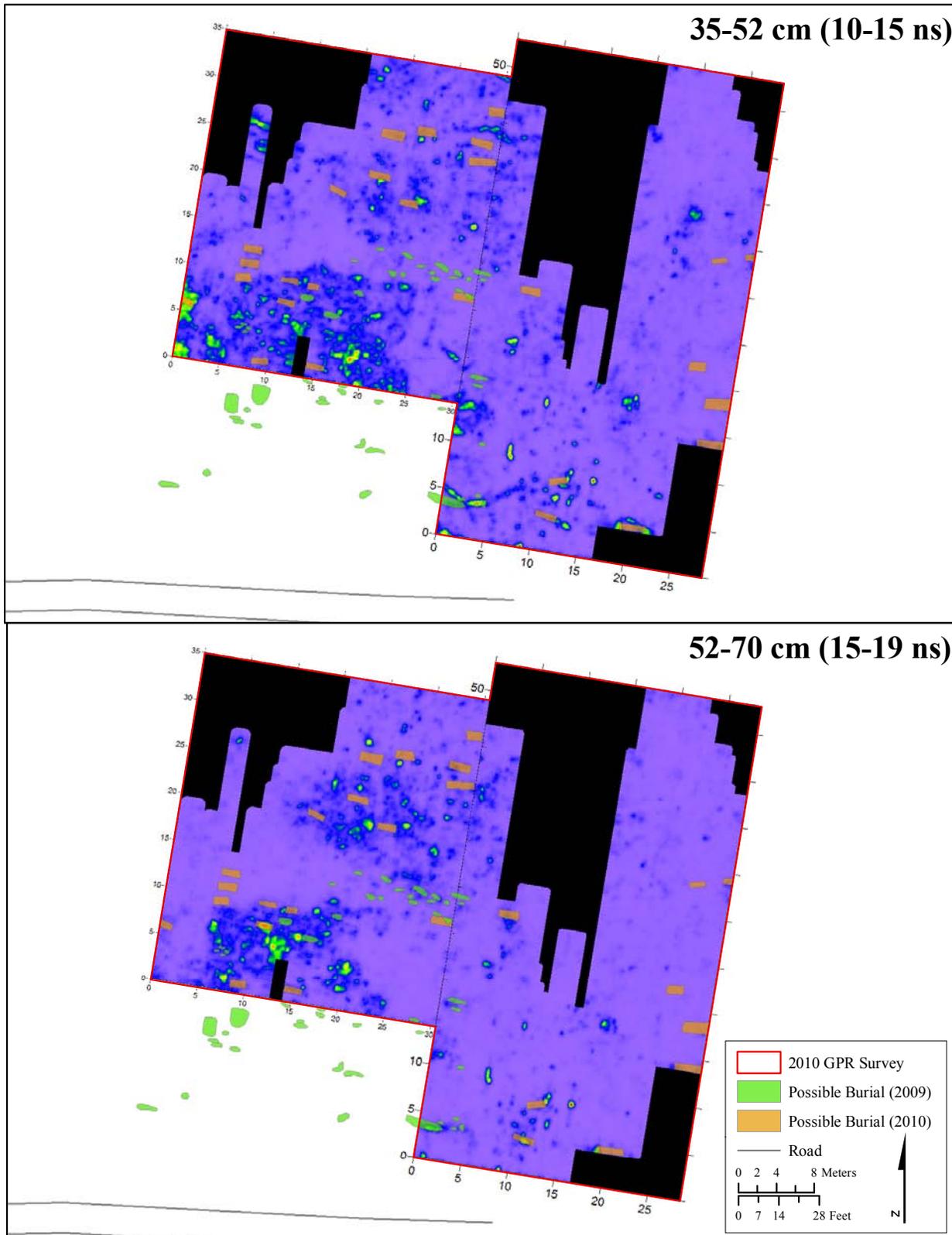


Figure 6.13.  
GPR Amplitude Slice Maps from 2010 Survey, 2 of 3

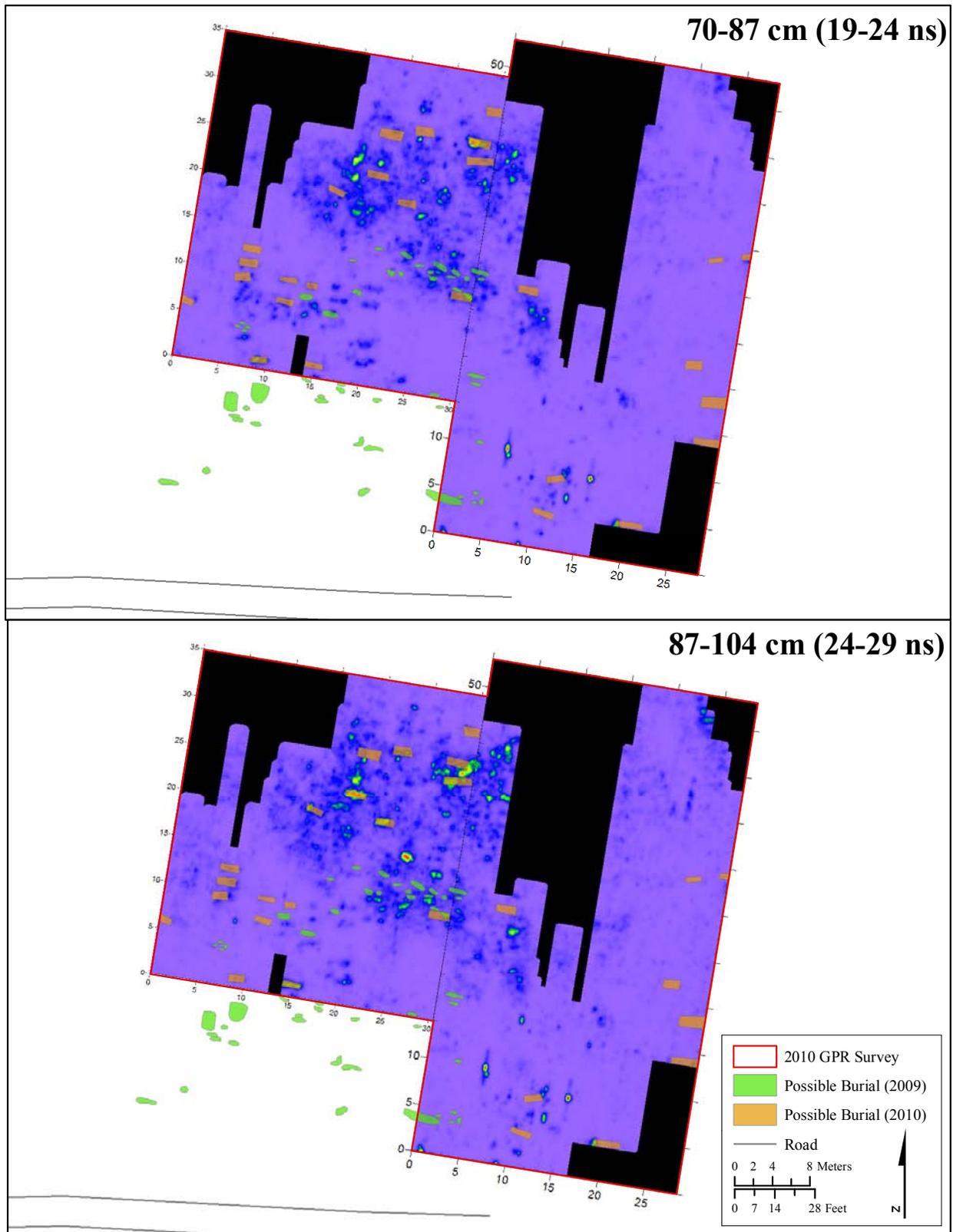
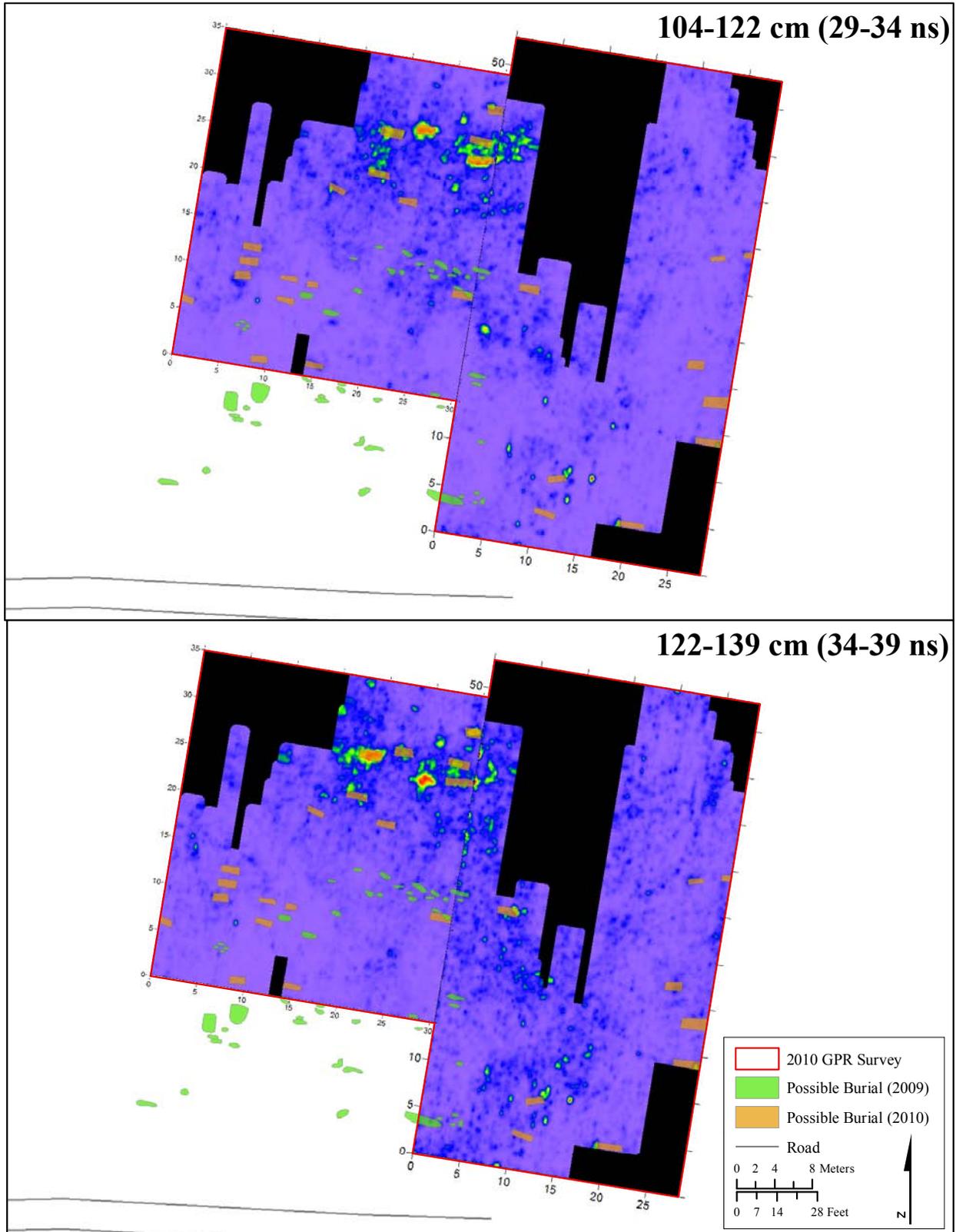


Figure 6.14.  
GPR Amplitude Slice Maps from 2010 Survey, 3 of 3



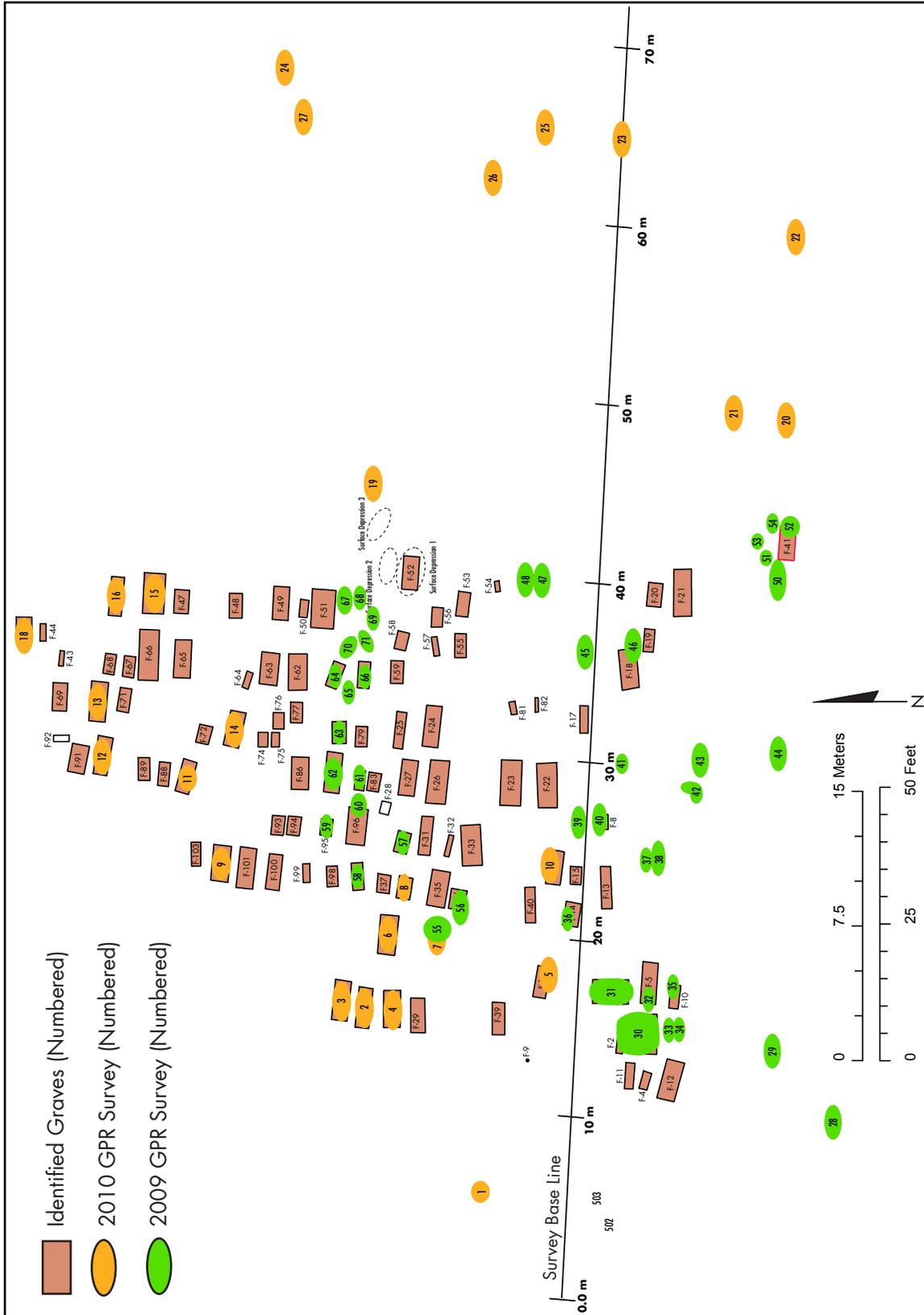


Figure 6.15. Distribution of Ground Penetrating Radar Anomalies

When compared to the overall number of graves present in the cemetery, the 36 positively identified graves accounted for about 35 percent of the total assemblage (Table 6.5). By removing the four graves that were only identified after being disturbed from the sample, an adjusted and more accurate view, where almost 33 percent of the assemblage was identified, was obtained. In the sandy clay and silty clay loams underlying the Avondale Burial Place, GPR was able to positively identify the location and general distribution of graves in the cemetery and its ability to detect discrete gravesites fared better than other survey methods. These soil conditions, however, represented a major challenge to grave detection methods and these results emphasized that surface survey methods could only conservatively approximate the true number of graves present. These data cannot be treated as an accurate and absolute record of all unmarked interments present in a burial area.

*Table 6.5. Grave Detection Success Rates for Ground Penetrating Radar*

	Count	Proportion	Adjusted	Proportion
Total Anomalies Detected	71	1.00	71	1.00
Graves Detected	36	0.5070	32	0.4507
Non-Graves Detected	35	0.4929	35	0.4929
Spurious Graves Detected			4	0.0563
Total Interments	101	1.00	97	1.00
Positively Identified	36	0.3564	32	0.3298
Not Identified	65	0.6435	65	0.6701
Spurious Identifications			4	0.0412

## SUBSURFACE CEMETERY DELINEATION

A more accurate record of the cemetery's structure had to come from an examination below the ground surface. There were practically no undisturbed surface features indicating the presence of a cemetery at 9BI164. All initial indications of the cemetery's presence had come from GDOT's subsurface investigations. An examination of test pit stratigraphy revealed evidence that some of the soils immediately beneath the ground surface were modified, while others appeared to be relatively undisturbed. While these seemingly undisturbed soils held the potential to retain detectable mortuary features, there were no reliable indicators that extended to the surface from which to assess the cemetery's size and extent.

Non-invasive techniques, including soil compaction, ground penetrating radar and canine detection; all indicated the presence of subsurface structures within the project area. It is important to recognize, however, that the data from these sources are all probabilistic in nature and cannot be treated as empirical data. Surface detection data are capable of providing a reasonably accurate estimate of the size of the burial area, but cannot be relied on to identify the presence of all mortuary features, nor do they possess the ability to correctly classify all soil features as mortuary or non-mortuary related. While various anomalies were identified, there was no data verifying which of these were graves and which represented other subsurface structures. Empirically identifying the true number of potential graves present required removal of the project area's surface.

Currently, the most accurate means of identifying the presence of an unmarked grave is through visual estimation. This method entails removal of all disturbed surface soils and exposure of the underlying matrix at a depth where outlines of the intruding grave shaft can be clearly seen. When systematically excavated below a modern disturbance soil environment, grave shafts will leave an archaeological signature; where grave shafts are not present, the soil remains undisturbed. In general, grave shafts are noted as intrusions into the underlying soil matrix. These archaeological features are identified by changes in the color, density, moisture content, soil type and shape. Bass and Birkby (1978, in Killam 2004:64) noted that the use of heavy equipment fitted with flat blades could efficiently produce excavation floors to expose these features. Since the Avondale Burial Place is a historic-period facility and burial customs of the historic era southeastern United States minimized the degree of soft tissue reduction prior to interment, the resulting burial areas had to be large enough to accommodate the human form. Mortuary features at 9B1164 were identified as humans-sized rectangular or oval-shaped stains in the subsoil.

Prior commencement of New South Associates' fieldwork, all surface vegetation was removed from the project area. All large trees were removed before mechanical excavation started, however, stumps larger than 12 inches in diameter were left in place to prevent the accidental disturbance of any underlying mortuary deposits. The project area was graded down with a flat bladed backhoe to expose the underlying soil matrix. While disturbed and surface soils did not generally extend much deeper than 35-40 cmbs, feature clarity did not emerge until at least 70 centimeters of soil were removed. This partly could be attributed to natural disturbances. Mechanical removal of surface soils exposed larger profiles than afforded by test units, emphasizing the magnitude and negative affect that the dense tree root layer had on the cemetery. This was particularly evident during exposure of F-22, where the well-defined primary grave shaft walls abruptly terminated immediately below the root lens (Figure 6.16). Roots, bioturbation, and animal burrowing activities probably worked in conjunction to retard feature visibility until all soils above and around the root lens were removed.

Soil conditions required the exposed surface to be shovel shaved to allow clarity to determine what form each stain represented. Once areas were cleaned, the Mortuary Archaeologist examined the exposed surface to determine if grave features were visible. All potential mortuary features were assigned a unique feature number. They were flagged, logged into a feature inventory, photographed and mapped in a plan view sketch map of the project area. Flagging taped nails were inserted on the outside corner of each feature and a protective layer of landscaping fabric was placed over the feature. As an added precaution to reduce solarization, low mounds of backfill were placed on top of each potential grave.

## ARCHAEOLOGICAL RECOVERY

Archaeological recovery of each burial feature began with the recovery team reviewing and verifying that grave delineations were accurate. Plan view sketches of the mortuary feature's pre-excavation outline were made and if necessary, the feature was photographed again (Figures 6.17-6.20). The contents of each grave were manually excavated using trowels, bamboo picks,



Figure 6.16. Field Profile During Exposure of F-22 Emphasizing Grave Shaft Loss

Figure 6.17.  
Representative Field Plan View of Feature 21

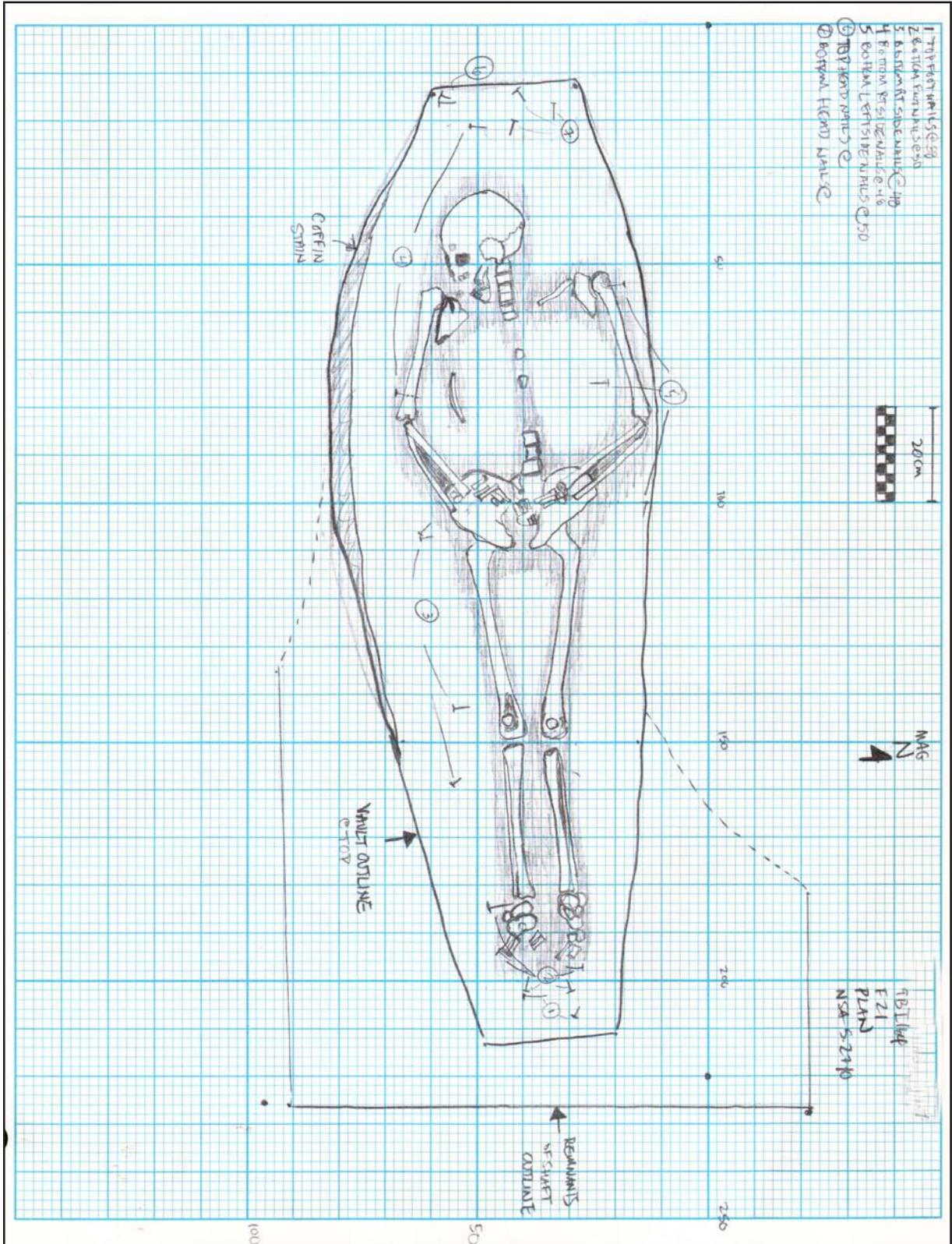


Figure 6.18.  
Representative Field Plan View of Feature 37

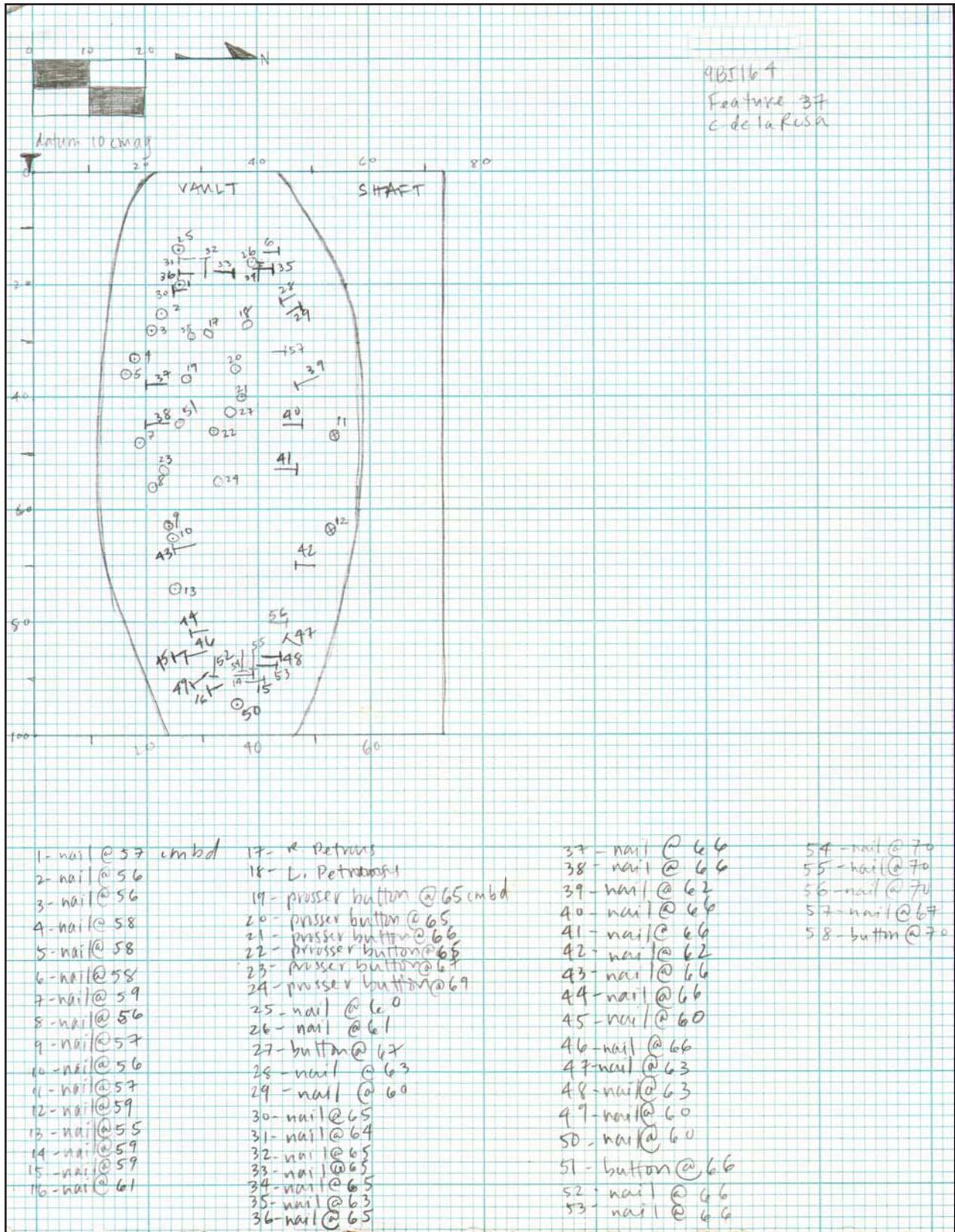
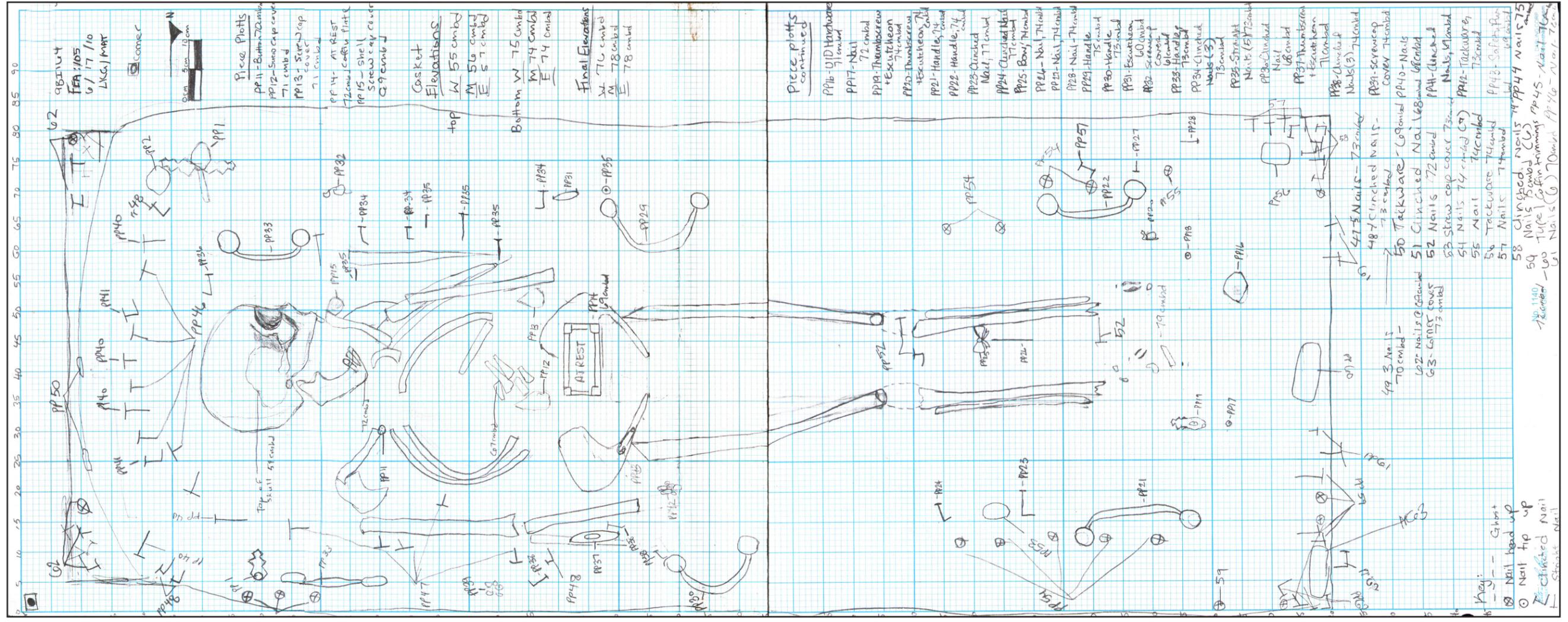








Figure 6.20. Representative Field Plan View of Feature 105





brushes and spoons. As grave structure, human remains, coffin features and other artifacts were exposed, their positions in the grave were carefully recorded. When fully exposed, maps and photographs of each exposed grave were made following standard archaeological recovery techniques. All soils removed from each grave were passed through a 0.25-inch mesh hardware cloth screen to retrieve any elements missed during the excavation. Soils removed from very young and pre-term infant graves were passed through a 0.125-inch mesh to recover all small skeletal elements. Among graves lacking human remains, the soil (soils containing organic residue) was retained for inclusion in the reinterment container.

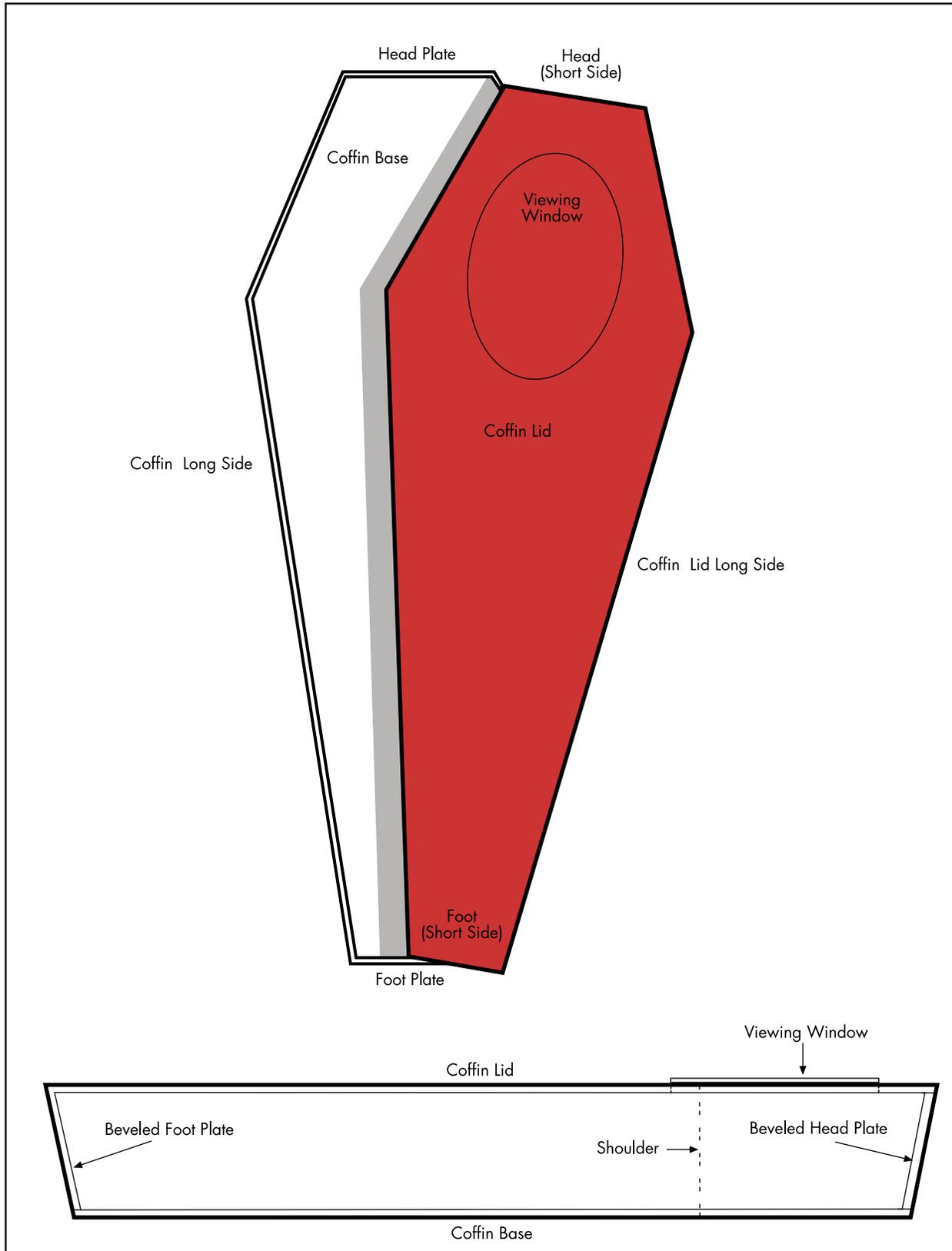
Excavations, particularly during the early phases of the recovery project, occurred during the summer and were challenged with preventing skeletal dehydration damage brought on by direct exposure to sunlight. Special care was taken to insure that shelters covered human remains during excavation or by boards, clothing and other shade sources during breaks, lunches, or recording phases. All remains were covered and secured overnight to prevent wind, water, and animal damage as well as to retard disturbance by the curious. Visitors to the site were reminded of the culturally sensitive nature of the work in progress.

Once exposed, a mortuary archeologist examined each grave's contents. Artifacts were divided by contexts, namely whether they were part of the grave shaft, the grave vault, part of or included in the casket, coffin, or wooden vault, or whether they were part of or were included with the individual. An in-field examination of these materials included identification of the number, type, and orientation of each artifact used to construct or decorate the coffin, identification of soil and wood stains, recording the shape and dimensions of each grave pit, and an examination of all artifacts included with the interment. Coffins were described using the landmarks outlined in Figure 6.21. In the absence of a standardized classification system, coffin hardware was classified according to a typological catalog developed by New South Associates to record variations in coffin hardware. In-field photographs were taken of remarkable artifacts. All grave-related materials were collected for reinterment.

## ANALYSIS OF HUMAN REMAINS

Skeletal materials recovered from the Avondale Burial Place were examined with two primary goals in mind. First, osteological and dental data was collected to understand the burial community as representatives of the past. While other cemeteries have been exhumed in Bibb County, the Avondale Burial Place contained the only historic period skeletal populations available for bioarchaeological examination. Second, skeletal data was recorded to aid future positive identification of each individual. Graves in the cemetery were unmarked, and there was a strong desire to have the information available to establish the identities of individuals buried there, should additional biographical information be forthcoming. The selected skeletal observations, structure of the data collection battery, and analytical procedures were designed to meet these two goals.

Figure 6.17.  
Basic Anatomy of a Coffin



Skeletal preservation was recorded for each skeleton while it was still in the field. A skeletal preservation battery tabulated for 10 skeletal sites including: the Vault, Face, the Seventh Cervical and First Thoracic Vertebrae (C7/T1), the Fifth Lumbar Vertebra (L5), Pubis, Ala, Tibia, Ulna, Hands, and Feet. Scoring procedures followed the criteria outlined in Table 6.6.

Table 6.6. Skeletal Preservation Battery

Score	Condition	Characteristics
1	Pristine	-Bone is in perfect condition -Periosteum is undamaged -100 percent recovered
2	Near Pristine	-No more than 1 cortical break is present -Periosteal flaking may be present -No earth pressure warping -About 100 percent recovered
3	Settled	-Cortex is firm but broken in 2-4 pieces -Very slight surface erosion present -Some earth pressure warping may be present -Very slight loss of trabeculae -90-100 percent recovered
4	Eroded	-Cortex is cracked or broken in several places -Surface erosion or pitting present -Less than 50 percent of trabeculae is missing -10-25 percent of bone is not recoverable
5	Decomposed	-Cortex is shattered into square or rectangular pieces -Marked surface erosion and pitting present -More than 50 percent of trabeculae is missing -25-50 percent of bone is not recoverable
6	Severely Decomposed	-Cortex is shattered and incomplete -Severe longitudinal pitting is present -Trabeculae is missing -50-90 percent of bone is not recoverable
7	Disintegrated (Ghost)	-Only a light scatter of small decomposed fragments is present -Skeletal outline faintly visible. Individual bones may not be distinguishable -Over 90 percent of bone is not recoverable
8	Stain/Not Present	-Bones have completely decomposed -No evidence of human or animal removal of these bones -Organic stain present
0	Disturbed	-Archeological evidence indicates that the bones have been removed by human or animal activities.

Skeletal examination commenced after field archaeologists exposed the interment. The remains were carefully recovered by the project's osteologists (Davis and Matternes) to reduce breakage or trauma to the bones. Each element was recovered singularly or in anatomical groups (such as the vertebral column, hands, and feet). Osteologists then prepared in-field inventories of all remains. In-situ analysis was conducted on those individuals considered too fragile to examine after removal.

The bones were then wrapped in acid-free tissue paper and again with heavy-duty aluminum foil, placed in acid-free transfer containers, and then transported to New South Associates' laboratory to await reinterment.

At the laboratory, grave contents were re-inventoried to insure that all materials from the field arrived in the lab. All bones were allowed to air for several hours and were subsequently dry brushed clean. The remains were subjected to metric and morphological analyses to verify field observations and to obtain more precise observations under controlled laboratory conditions (these are discussed below). Remains exhibiting notable features were photographed. With the exception of remains set aside for genetic and isotope analysis, no artifacts or human remains were subjected to destructive examination as part of these analyses nor were they retained past reinterment.

In consultation with the University of Oklahoma's Molecular Anthropology Laboratory, a sample collection regimen was established to recover skeletal samples for genetic testing. New South Associates' primary concern was to insure that the samples were as contamination-free as possible. This required identification of human remains that were: (1) going to yield the greatest potential for preserved DNA; (2) could be predictably located in a grave prior to full exposure; and (3) could be recovered with a minimum of damage and exposure to recovery team member's DNA (or contamination from their recovery tools). The presence of strong cortical bone as well as dental tissue, both of which could be used for DNA extraction, as well as being located underneath most crania made the mandible the optimal target skeletal element. When possible, mandibles were left encased in their original soil matrix to avoid exposure to modern genetic contaminants. These soil blocks were immediately transferred to an acid-free tissue wrap, sealed in unused heavy-duty aluminum foil and segregated from other skeletal material to avoid unintentional exposure and contamination. Each set of remains were forwarded to the University of Oklahoma for genetic extraction and the remaining materials were then returned to New South Associates for reinterment with the rest of the original individual.

Each skeleton was examined following a standardized battery of metric and morphological observations. This database was capable of addressing both complete and fragmentary remains in single and commingled assemblages. Measurements were made using a Mitutoyo Digimatic sliding caliper, a Paleotech spreading caliper, a fiberglass tape measure, and an osteometric measuring board. Use of these tools to obtain reliable measurements followed the procedures outlined in Bass (1987) and Moore-Jansen et al. (1994). The collection of morphological or non-metric observations required no special equipment. Morphological and metric observations were compiled by skeletal element, observation type, and general anatomical location.

As they were removed from the graves and again in the laboratory, bones and teeth of each individual were inventoried. Inventory records included presence of individual skeletal elements and their general state of preservation. Complete bones (>75 percent represented) were scored as "1". These elements provided near-complete to complete sets of measurements and observations. Fragmentary remains (50-75 percent present) were scored as "2," indicating that some measurements and observations were available, but the full complement was not obtainable. A score of "3" indicated that less than 50 percent of the element was represented. Information was restricted mostly to presence or absence, as no measurements could be obtained. Elements scored

with an "X" indicated the bone was not present within the grave or was so badly decomposed that no information could be attained. Most bones were scored relative to their developmental segments to address subadult representations. Teeth, both deciduous and permanent, were inventoried as complete, incomplete, resorbed (pre-mortem loss), missing (post-mortem loss) or agenetic (genetic absence). Skeletal inventories were compiled into a master list along with the other skeletal data including metric analysis, morphological observations and health information. Dental inventories were organized with other dental data in the same manner (see Appendix F).

The individual's sex was determined from a suite of sexually dimorphic skeletal characteristics. Sex was ascertained for adults and older adolescents using a composite estimate, based on pelvic, sacral, cranial, and limb morphology. Pelvic morphology was assessed, and sexual dimorphism described, following the standards outlined by Anderson (1962), Bass (1987), Iscan and Derrick (1984) and Phenice (1969). Sacral curvature was assessed using illustrations provided in Anderson (1962:142). In the cranial vault, particular attention was paid to the nuchal, temporal, frontal and mandibular aspects as sources of reliable sexually dimorphic features. Evaluations followed the patterns noted in Bass (1987) and Krogman and Iscan (1986) and were recorded using the format outlined in Buikstra and Ubelaker (1994). Post-cranial metric data was also obtained as a means of evaluating sex. Measurements of the glenoid cavity length (Stewart 1979:98), humeral head (Stewart 1979:100), femoral head (Stewart 1979:129; Thieme 1957) and midshaft diameter (Black 1978:229) were used. Stature determinations for the tibiae were based on formulas given by Trotter and Gleser (1952, 1958, 1977).

The age at death was determined for preterm fetuses, infants, children, and adolescents using dental and skeletal development. Individual teeth were examined to determine the amount of crown and root development among both deciduous and permanent dentition. These observations were compared with results reported by Moorees et al. (1963a, 1963b), Thoma and Goldman (1960), and Smith (1991). The appearance and fusion of epiphyseal and diaphyseal elements were used to estimate the degree of maturation. These observations were compared to the ranges reported in Bass (1987), Krogman and Iscan (1986), Scheuer and Black (2004) and McKay (n.d.). Because of their sensitivity to young adult ages, particular attention was paid to anterior iliac crest and medial clavicular epiphyses (see Webb and Suchey 1985). Development of the occipital bone (Suchey n.d.) and tympanic plate stages (Weaver 1979) were used to assess cranial maturity. Measurements of the limb diaphyses were compared to results obtained by Fazekas and Kosa (1978), Scheuer and Black (2004) and Baker et al. (2005) to determine age based on skeletal size.

Age estimation among adults tended to reflect chronic skeletal responses to everyday stress. The pubic symphysis was evaluated following the observations noted by Todd (1920, 1921), Brooks and Suchey (1990), and Katz and Suchey (1986). Since the auricular surface was one of the more commonly preserved skeletal regions, the age-related changes in morphology outlined by Lovejoy et al. (1985) were extensively used. Rates of suture ossification were also considered. Approximate ages for various aspects of suture closure were obtained from Meindl and Lovejoy's (1985) ectocranial ossification data as a means of identifying age ranges from the cranial vault.

Ages for endocranial suture closure were based on data presented by McKern and Stewart (1957), and comments by Cobb (1955). Closure of the maxillary palatine sutures were recorded and evaluated following Mann et al. (1991). Osteophytosis of the vertebrae followed Stewart (1958).

A determination of ancestral origin was based on two lines of evidence. First, the morphological characteristics of adult skulls including texture, prognathism, zygomatic projection, and nasal and dental shape, were assessed following the standards outlined in Bass (1987), Rhine (1990), and White and Folkens (2000). A second approach focused on cranial measurements, which were taken following the standards outlined in Moore-Jansen et al. (1994). These were then compared to known samples via canonical analysis.

Oral health was scored using a series of observations including visual observations and measurements. Dental inventories and health assessments were adapted from Hillson (2001) following a data collection regimen established by de la Rosa (2007). Teeth were scored as present or lost antemortem or mortem. As noted earlier, each tooth was recorded as to its presence or absence, and if missing, the cause behind it. The presence and scoring of the amount of alveolar resorption and location and severity of calculus deposits were recorded. Mesio-distal and bucco-lingual measurements used definitions provided in Buikstra and Ubelaker (1994). Dental attrition of the occlusal surface was recorded as in Smith (1984), and calculus accumulation was recorded as in Brothwell (1981). Macroscopic examination of enamel hypoplasias and periodontal disease was also done. Each enamel hypoplasia was measured with calipers from the cemento-enamel junction (CEJ) to the area affected. Similar growth deficiencies were noticed on the root cementum surfaces and recorded in the same way with the addition of a minus (-) sign in front to note it's presence on the root surface (i.e. below CEJ). Other morphological and cultural changes were recorded where present, including Carabelli's cusps, dental misalignment, cut marks and wear facets.

Following Jurmain (1991), classification of health conditions was based on macroscopic examination. Potential indicators of skeletal tissue stress were defined as morphological variations that fell outside the range of normal human variation and could not be accounted for by mortuary behavior or taphonomic processes. A battery of 11 macroscopic observations, including bowing, cartilage and other connective tissue ossification, cortical thinning, cortical and medullary volume increases, degeneration, density increase and loss, injury, and osteolysis, recorded the presence of osteological responses to stress by the specific location on afflicted skeletal elements. Data on location, general severity, degree of localization, and a brief description of each observed feature were also included.

Aspects of the metric and morphological databases were extracted and used to create a depiction of the individual's life prior to death including their age at death, sex, stature, ancestral affiliation and the general state of health. The results of each case's examination were presented with the feature descriptions (see Volume II). These data were then pooled to address the Avondale Burial Place as a skeletal assemblage.

## SUMMARY OF SURVEY AND RECOVERY RESULTS

Stripping, mapping, and burial excavation resulted in the identification of 106 cultural features in 9BI164 (Table 6.7). Of these, 100 were verified as human burials. One feature (F-40) was judged to be a possible burial. F-9 was identified as a nineteenth-century post mold, F-40 was an interment containing a dog, and F-80 was a slit trench containing portions of a cow. The net result was that 101 sets containing human remains or mool (organic burial soil) were identified, recovered, and reburied from this cemetery.

Skeletal preservation was marginal. Human remains with definable skeletal features were found in only 64.3 percent of the positively identified graves. No human remains were found outside of these features. The contrasting 35.6 percent of the burial assemblage contained unidentifiable, severely weathered bone or human remains that had been reduced to organic residue. The majority of these were found among the subadults.

The information recovered from the field analysis of the human skeletons as well as the identification and recording of mortuary and personal artifacts shed light on the nature of this community. These results indicated that Avondale Burial Place housed African Americans. The following chapters of this report present the analysis and interpretations of this deceased community.

*Table 6.7. Summary of Features*

Description	Total
Non-Mortuary Features	3
Mortuary Features	101
Non-Human Features	2
Feature Log Total	106
<b>Burial Features</b>	
Mool Only (i.e. No Remains)	36
Mortuary Features with Human Remains (N=1 per Feature)	64
Supplemental Individuals (Extra individuals encountered in Mortuary Features)	0
Potential Burial Features	1
Individual Total	101



## VII. CEMETERY POPULATION STRUCTURES

### INVENTORY AND TAPHONOMY

An examination of each set of human remains began with an inventory of the recovered bone and bone fragments. The purpose of this inventory was multi-fold. First, it provided a logistical base to document what materials were recovered and available for re-interment. These data were organized by general location in the body and then by skeletal element. Second, the inventory verified the number of individuals present in each grave. This helped provide a minimum estimate of the number of individuals represented in the cemetery. Finally, the inventory recorded the condition of each bone. Skeletal condition regulated what types and details of information were available for each individual.

A minimum number of individuals (MNI) was determined for each grave and for the cemetery using the techniques outlined in Ubelaker (1974). In general, bones were examined for element duplication and for major differences in age, sex, health, or morphology. Each set of unique, contrasting remains was treated as a separate individual. Since a number of graves were devoid of examinable human remains, aspects of grave morphology were used to define potential ages at death for the interment. These graves were assigned a minimum representation of one individual. A total of 101 individuals were present in the Avondale Burial Place. All interments containing human remains were deposited as single individual primary interments; no evidence was found that multiple individuals were present in a single grave.

Haglund and Sorg (1997) have documented that skeletal preservation is influenced by complex, interactive factors. Precise information about skeletal preservation was recorded as part of the Skeletal Preservation Battery (see Table 6.6). Individual interment scores were determined by adding all scores together and dividing them by the number of non-zero (i.e. non-missing element) categories. Individual interment scores ranged from 2.70-8.00, indicating that skeletons varied from near pristine to highly disintegrated representations (Table 7.1). A general indication of the state of preservation at the Avondale Burial Place was obtained by averaging primary interment's skeletal preservation scores. The average score from 101 non-zero score individuals was 6.004, reflecting bias towards more decomposed sets of remains.

Skeletal preservation exhibited a number of patterns. First, the least densely ossified portions of the skeleton tended to be more decomposed. The thin, more trabecularized bones of the vertebrae, the innominates, hands, and feet did not survive as well as other skeletal portions. It was also noted that the skeletons of younger and older individuals exhibited more decomposition. Therefore, skeletal density was considered an important component of bone preservation.

The distribution of average skeletal preservation scores across the cemetery demonstrated that the best-preserved graves tended to be on the summit (Figure 7.1). Graves placed towards the northern and northeastern sides of the site were notably less well preserved than those elsewhere in the cemetery. This adverse bias corresponded with several phenomena. Soils tended to transition from red clay to more sandy loams off the ridge's summit. Sandy loams were also noted along the western side of the site, however with less adverse effect on skeletal preservation. Soil did not appear to be the primary agent affecting preservation. Topographically, the ridge lost elevation towards the north to northeast, eventually transitioning into a low, marshy area. During recovery, it was noted that the high water table in this portion of the landscape meant that the base of grave shafts were more prone to constant water exposure than observed in graves at higher elevations. Constant exposure to moisture has been recognized as one of the more destructive agents to skeletal tissues (Rodriguez 1997:460). While the site's red clays and sandy loams tended to retain moisture at the level where most graves were encountered, those to the north and northeast were subjected to greater contact than elsewhere. Burial practices also help to contribute to water retention. The enclosing coffins and vaults promoted moisture retention by providing a hollow space surrounded by a water absorbent material (i.e. wood). Matternes et al. (2010:101) noted that viewing plates, even in their shattered state, trapped moisture and the human remains immediately beneath these structures tended to be less preserved than those from elsewhere in the same grave. Other deleterious agents, including length of time interred, length of exposure to biological agents, prior human activity, and position of the skeleton in the grave undoubtedly influenced skeletal preservation.

In general, skeletons in the Avondale Burial Place were incompletely recovered. There was substantial erosion of trabecular bone and many cortical surfaces were leached, leaving them pitted and broken. The ability to derive information from a skeleton was directly related to the presence and condition of the bones. Bones that were absent or poorly preserved were not able to provide the same degree of information as more completely represented specimens. To understand how preservation biases affected this assemblage, skeletal element representation was examined. Counts for complete and incomplete skeletal elements where information could be generated about the assemblage were tabulated and contrasted against the number of elements originally present when these individuals were alive. As outlined in Table 7.2, bones from the skull and legs tended to be the best represented. Elements such as the frontals, mandibles, temporals, humerii, femora, and tibiae, were largely composed of cortical bone. They were the best and most frequently recovered elements. Measurements and observations from these remains were among the most complete data sets for the cemetery population. In contrast, more delicate and highly trabecularized remains, including the ribs, pubis, and bones of the face, feet, and hands were the least represented. Unfortunately, some of the best indicators of age, sex, health and ancestry were found on these remains. The incomplete nature of these data sets had a negative effect on the quality of information obtained by forcing the examination to depend on less reliable skeletal estimators.

Figure 7.1.  
Skeletal Preservation Across the Avondale Burial Place







Table 7.1. Skeletal Preservation Scores for Avondale Burial Place

Individual	Score	Vault	Face	C7/T1	L5	Pubis	Ala	Tibia	Ulna	Hands	Feet
85	7.20	3	7	8	8	8	8	6	8	8	8
86	7.70	5	8	8	8	8	8	8	8	8	8
87	7.90	8	8	8	8	8	8	7	8	8	8
88	8.00	8	8	8	8	8	8	8	8	8	8
89	7.80	7	8	8	8	7	8	8	8	8	8
90	8.00	8	8	8	8	8	8	0	8	8	8
91	8.00	8	8	8	8	8	8	8	8	8	8
93	7.80	7	7	8	8	8	8	8	8	8	8
94	7.80	7	7	8	8	8	8	8	8	8	8
95	8.00	8	8	8	8	8	8	8	8	8	8
96	4.40	2	4	6	6	6	5	4	4	4	3
97	6.70	4	5	6	7	8	8	5	8	8	8
98	8.00	8	8	8	8	8	8	8	8	8	8
99	8.00	8	8	8	8	8	8	8	8	8	8
100	7.80	7	8	8	8	8	8	7	8	8	8
101	7.90	7	8	8	8	8	8	8	8	8	8
102	8.00	7	8	8	8	8	8	8	8	8	8
103	8.00	8	8	8	8	8	8	8	8	8	8
104	6.70	5	5	7	7	8	8	6	6	7	8
105	4.60	2	3	6	6	5	5	3	5	5	6
106	6.70	5	7	8	8	0	7	6	6	7	7

Table 7.2. Skeletal Representation Counts for Avondale Burial Place

Element	Original Representation*	Bones from Avondale Burial Place	
		Complete	Incomplete
Ethmoid	101	10	1
Frontal	101	32	13
Lacrimal	202	26	1
Mandible	101	25	19
Maxillae	202	51	16
Nasals	202	40	2
Occipital	101	26	16
Palatine	202	44	9
Parietals	202	62	32
Sphenoid	101	10	16
Temporals	202	57	46
Vomer	101	10	2
Zygomatics	202	44	4
Hyoid	101	3	1

Table 7.2. *Skeletal Representation Counts for Avondale Burial Place*

Element	Original Representation*	Bones from Avondale Burial Place	
		Complete	Incomplete
Cervical Vertebrae	707	114	74
Thoracic Vertebrae	1,212	111	93
Lumbar Vertebrae	505	61	38
Sternum	101	2	2
Ribs	2,424	63	195
Iliac	202	8	58
Ishia	202	6	18
Pubis	202	2	12
Sacrum	101	4	20
Coccyx	101	1	0
Clavicles	202	18	37
Scapulae	202	4	46
Humerii	202	34	42
Radii	202	15	45
Ulnae	202	16	49
Carpals	1,616	70	90
Metacarpals	1,010	87	103
Phalanges (Hand)	1,414	11	25
Femora	202	49	48
Patellae	202	21	11
Tibiae	202	36	54
Fibulae	202	18	31
Tarsals	1,616	49	140
Metatarsals	1,010	61	100
Phalanges (Foot)	1,414	6	5

\*Number of Elements per Individual x 101 Individuals

## ANCESTRY

Human skeletons exhibit micro-evolutionary change when populations occupy the same region for several thousand years (Relethford 1994). These phenotypic variations form groups of similar skeletal morphologies that vary, particularly in response to climate. While these adaptations can be detected across many parts of the skeleton, cranial morphology is especially sensitive to environmental variation (Howells 1973). Most American populations, particularly those east of the Mississippi River, have not occupied the continent long enough to reflect much influence from the local climate; these populations, therefore, tend to reflect morphological features that helped them survive in their ancestral homeland climates. This phenomenon is used to determine the potential genetic relatedness of crania of unknown ancestry to populations of known heritage.

A battery of non-metric observations recognized by human osteologists as being sensitive indicators of ancestral affiliation were made on each relatively complete and clearly adult skull available from the cemetery (Bass 1987; Rhine 1990; White and Folkens 2000). Crania were assessed particularly in terms of their affinity to the three major contributors to the late nineteenth-century Eastern North American gene pools (i.e. Caucasian or European American, African or African American, and Native American). Ancestral affinities were assigned based on the concordance of these features with representations found in assemblages of known ancestral background.

The first approach focused on non-metric examination of the crania. Observations of zygomatic projection, alveolar prognathism, cranial texture and contour, nasal shape, and the presence of prominent nasal sills and gutters were made based on their reliability in establishing ancestral affinity and in ease in scoring under field-laboratory conditions. Each observation was assessed relative to its conformity to ancestral forms (i.e. following a more 'Caucasian', 'African American' or 'Native American' pattern). A classification was then assigned relative to how the analyst felt the entire skull fit a particular pattern.

A second, less subjective strategy to assess ancestral affiliation entailed comparing the 'unknown', relatively complete crania from 9B1164 to modern anatomical and forensic samples identified by their ancestry. For each adult individual, cranial measurements were subjected to a discriminant function analysis using FORDISC 2.0 (Ousley and Jantz 1996). Samples of males and females of known Caucasian, African American, and Native American ancestry served as reference groups. Each test used a different combination of reference skeletons based on the number of skeletal measurements shared in common with the unknown specimen. The proportion of the reference sample correctly identified by measurements common to a given Avondale Burial Place skull was used to gauge the sample's reliability. Mahalanobis distances between the subject skull and the reference samples were calculated. The shortest distance between a skull and reference group helped define ancestral affinity. FORDISC 2.0 yielded a classification of each unknown skull into one of the groups in the reference sample. The reliability of the classification was evaluated via the posterior probabilities and ancestry assigned based on the greatest probability.

The results of these examinations are summarized in Table 7.3. Only 10 crania from 9B1164 were complete enough to be examined for ancestral affiliation. Among these, eight individuals were classified as African American, and the ancestral origins of the remaining two could not be reliably determined.

*Table 7.3. 9B1164 Ancestral Classifications*

Burial	Classified As	Nonmetric Assessment	Metric Assessment	Notes
5	African American	African American	African American	
16	African American?	African American	Caucasian/African American	

Table 7.3. 9B1164 Ancestral Classifications

Burial	Classified As	Nonmetric Assessment	Metric Assessment	Notes
18	Indeterminate	African American	Native American	Skull broken, so very few measurements possible - results are very suspect.
23	Indeterminate	African American	Native American	Skull broken, so very few measurements possible - results are very suspect.
24	African American	Caucasian/African American	Caucasian/African American	Individual may reflect Caucasian admixture.
26	African American?	African American	African American/Native American	Nasal infection may have influenced nasal dimensions.
31	African American	African American	African American	
33	African American	African American	Native American	
35	African American?	African American?	Indeterminate	Very few observations possible.
38	African American	Caucasian/African American	African American	Individual may reflect Caucasian admixture.

Non-metric evaluations were completed on all 10 individuals. In general, crania tended to exhibit well-defined post-bregmatic depressions and relatively smooth ectocranial surfaces. The faces were dominated by widened nasal apertures with well-developed nasal gutters that merged with moderately projecting zygomatics. These structures helped support prognathic oral cavities. In general, these features supported the belief that the Avondale Burial Place contained people whose prominent ancestral origins lay on the African continent.

Native American groups were also included in this examination, and while none of the Avondale Burial Place crania were clearly classified as Native Americans, several did exhibit Native American dimensions. Shovel-shaped incisors were observed in four individuals (F-1, F-27, F-53, and F-87) from 9B1164. This dental structure, an important component of the Mongolian Dental Complex, was commonly observed in Asian and Native American populations (Hanihara 1967). Shovel-shaped incisors were not unique to peoples of Mongoloid ancestry and their presence alone could not be used to conclude that a Caucasian or African individual was admixed. These teeth did suggest that genes with Mongoloid origins may be a component of the community genotypes.

Craniometric analysis was completed on 10 individuals from 9B1164 (Tables 7.4 and 7.5). Biological distances from each subject skull to each reference sample's centroid varied from very close to very distant. This was probably a reflection of secular, environmental, and breeding forces acting on the community gene pools. It was important to recognize that these data were probabilistic in nature and were not to be treated as absolute biological realities. One of the problems associated with discriminant function analysis was that it forced test cases into distinct categories relative to the data provided by the reference populations; these mathematical functions

did not efficiently account for inter-mixed group variation or assemblages reflecting differing ranges of variation that were present in the same population. The population in this case represented groups with identical ancestral origins. Populations reflecting intermixture with groups of differing ancestral origin frequently resulted in overlapping ranges of variations that rendered the classifications indistinguishable. While the calculated biological distances resulted in classifications into one form over the other, the magnitude of distance from each centroid was sometimes great and the overlap in variation so great as to consider accurate classification as a member of one ancestral group or another impossible.

*Table 7.4. Reference Sample Reliability Statistics for the 9B1164 Cemetery*

Burial	Caucasian Reference Sample		African Reference Sample		Native American Reference Sample	
	Sample Size	Percent Correct	Sample Size	Percent Correct	Sample Size	Percent Correct
5	114	98.2	88	94.3	46	93.5
16	117	99.1	89	95.5	46	93.5
18	137	81.8	107	86.9	28	75.0
23	169	53.8	116	62.1	29	75.9
24	114	98.2	88	94.3	46	93.5
26	115	95.7	88	93.2	46	93.5
31	115	95.7	88	95.5	46	93.5
33	96	82.3	85	72.9	29	79.3
35	159	61.0	115	76.5	29	72.4
38	81	95.1	82	90.2	28	89.2

A number of individuals expressed morphological variations that placed them outside and beyond the ranges of morphological variation expressed by the reference populations. This occurred if the comparative and reference samples were obtained from differing aspects of the same population. While in many cases, the distance obtained from sample comparison appeared to indicate a strong ancestral affiliation, the fact that variation fell outside the ranges of what was 'typical' for the reference sample also meant that the morphologies were probably not from the same breeding pools. Therefore, comparisons may not have addressed cranial variation as a reflection of the same climatic adaptations. Holloway (1990) noted that the ancestral origins of enslaved African Americans were not limited to a specific region in Africa rather that these people came from a wide variety of ecological and social environments. It was possible that these variations reflected different regions of African ancestral origin than those in the reference sample.

It was important to recognize that morphological characteristics followed a continuum of variation and that what separated populations were not distinct, diagnostic features, but proportionate representations of a suite of features. Within any population adapted to a particular part of the world, there were going to be ranges of morphological expression present in the gene pool.

Table 7.5. 9B1164 Ancestral Distance Statistics

Burial	Classified As	Caucasian Reference Sample			African Reference Sample			Native American Reference Sample		
		Distance	Posterior Probability	Typicality	Distance	Posterior Probability	Typicality	Distance	Posterior Probability	Typicality
5	African American	33.0	0.002	0.062	20.2	0.958	0.569	26.6+	0.040	0.228
16	Caucasian / African American	24.4	0.372	0.224	23.5	0.951	0.265	29.1	0.036	0.086
18	Native American	14.7	0.325	0.143	16.3	0.142	0.090	13.7	0.533	0.187
23	Native American	12.0	0.323	0.061	15.1	0.069	0.019	10.8	0.608	0.095
24	Caucasian / African American	47.2	0.095	0.001	42.8	0.844	0.005	48.0	0.062	0.001
26	African American / Native American	48.1	0.014	0.000	40.6	0.595	0.004	41.4	0.391	0.003
31	African American	89.7	0.000	0.000	69.4	0.999	0.000	84.7	0.000	0.000
33	Native American	10.6	0.309	0.303	12.7	0.111	0.178	9.4	0.580	0.405
35	Indeterminate	22.5	0.152	0.002	19.7	0.614	0.006	21.7	0.233	0.003
38	African American	25.1	0.001	0.069	9.9	0.982	0.870	18.0	0.017	0.322

In addition, skeletal variation and ancestral affiliation did not equate to the social concept of race, which was based more on social perceptions and not biological realities (Gill 1990:vii). Individuals may exhibit cranial features that were identical to one racial stereotype; however, the presence of an unrelated feature served as the primary criterion for social classification. In America, the single feature used to define race was generally considered to be skin color (Relethford 1994:167). Given the dominant representation of individuals with African American ancestry in the Avondale Burial Place, it seemed extremely likely that those individuals exhibiting non-African ancestral features were probably classified as part of the African American community, on the basis of other, non-skeletal biological features.

## POPULATION COMPOSITION

In recent decades, the use of skeletal evaluation methods for community/population analysis has come under severe scrutiny. Some paleodemographers recognize that skeletal morphology cannot provide the precision needed to firmly establish fundamental demographic parameters (Bocquet-Appel 1986; Jackes 1992; Konigsberg and Frankenberg 1992). In essence, these analysts acknowledge that by basing age, sex, and other biological characteristics on the skeletal morphologies expressed in a reference population, aspects of the reference population's demographic structure are embedded into the study sample's structure (Konigsberg and Frankenberg 1992). The resulting demographic structures in the study population are not independent of the study assemblage's demographic pattern, rather they are a reflection of the reference and study population's structure.

To overcome this bias, paleodemographers have sought statistical methods capable of splitting a study sample's skeletal morphology from the reference sample. While use of single observation sites to determine age or sex may fulfill important statistical requirements, they eliminate individuals from the study population who do not share that same feature. Even when demographic parameters are based on the examination and comparison of multiple observation sites (drawn from multiple reference samples), the result is still a combination of the study and each reference sample's structure. Perhaps even more damaging, Boldsen (1988:341) pointed out that the degree of preservation needs to be identical to employ these methods, otherwise these approaches reflect preservation distributions, not demographic structures. This latter point is especially critical to the Avondale Burial Place skeletal assemblage.

It is currently not possible to obtain unbiased demographic parameters directly from skeletal morphology and equally impossible to apply methods capable of extracting these biases. Recognizing that skeletal-based demographic parameters are flawed, methods were chosen that illuminated where biases were most represented. These methods were able to draw demographic parameter inferences from the morphology common to several reference samples.

## SEX STRUCTURE

The results of sex determination for the Avondale Burial Place were summarized in Table 7.6. Sex could be identified for 26 adults. A ratio of 1.6 males for every female was calculated, indicating that within the sexed sample, there was a bias towards male representation. A comparison with

other late nineteenth- and twentieth-century African American cemetery assemblages in the southern United States indicated that a greater female representation was the norm. Avondale Burial Place stood out as an exception to this pattern. A two-sided Fisher's Exact Test was conducted to learn whether the representation of males to females at the Avondale Burial Place and other cemeteries varied significantly. These results indicated that while proportionate fluctuations were present, the values did not differ dramatically enough to suspect that Avondale Burial Place's sex structure was statistically unique from other assemblages.

Table 7.6. A Comparison of Male-Female Compositions at the Avondale Burial Place and Other Historic Cemeteries in the Eastern U.S.

Site	Sex Ratio*	Males	Females	Fisher's Exact P Value
Avondale Burial Place	160	16	10	
9CH1168**	100	13	13	0.577
9CH875**	75	68	90	0.091
Dallas Freedman***	104	288	278	0.320
Cedar Grove****	71	15	21	0.197
Bibb County 1880*****	88	12,759	14,388	

\* Males/Females X 100    \*\*Matternes et al. (2010)    \*\*\*Tine (2000)    \*\*\*\*Rose (1985)  
 \*\*\*\*\* U.S. Bureau of the Census 1880

An examination of summary data from the 1880 census indicated that 53 percent of the Bibb County population was composed of females. In a model biological setting, sex ratios should approach near equal; the census data indicates a bias towards more women. One of the more common explanations provided for the male deficit has been the movement of African American males to urban areas to take advantage of work opportunities (eg. Johnson and Campbell 1981; Rose 1985; Shogren et al. 1989). While Macon may have served as a potential center, neighboring Savannah has long been recognized as one of the prime target urban areas particularly for emigrating post-Emancipation African Americans (Blassingame 1973; Gessel 2003; Perdue 1971). Loss of males may represent a loss based on work-related emigration. This, however, does not explain why males are more common at the Avondale Burial Place.

While systematic methodological biases (see below) cannot be eliminated, differences in gender birth rates and survivorship to adulthood, marital migration, religious affiliation, and other cultural practices were possible contributors to sex ratio imbalances. Another major contributor was preservation. Female remains tend to be smaller and more gracile than males and given their greater propensity to bone loss with increasing age, they would have stood a greater chance for disintegration in the acidic clays of the Avondale Burial Place. With over 27 percent of the adults from the Avondale Burial Place lacking the necessary skeletal materials to accurately determine their sex, it is likely that a goodly portion of these came from adult females. Natural decay is suspected to have biased the sex structure at the Avondale Burial Place to the point of questioning whether it offers any approximation of the living population's structure.

## AGE STRUCTURE

Part of each grave's analysis included an age estimate for every individual. These were evaluated and reduced to a single age range in a manner similar to that used in forensic analyses. Each observation's age estimate was assumed to have an equal chance of occurring during the period stipulated by the morphology. Given that multiple observations were employed, the period of overlap between age estimates was viewed as the most likely interval when death occurred (Siven 1991). A maximum age range, representing the greatest age estimate overlap agreement was assigned to each individual. Use of the maximum age range required several assumptions. First, it was assumed that the age-morphology correlation would be greater in multiple than single age estimators. Second, it was assumed that the physiological response to age observed at one observation site was independent of others and it was assumed that each age estimator correlated with age equally among all human populations. In this sense, the Avondale Burial Place's reference sample was the sum of all reference populations used to provide age-related morphology.

In Table 7.7, the primary observation sites used to estimate age were based on the morphology in no less than 12 distinct reference assemblages. Note that the proportions of age estimates employing each observation site varied. These indicated that the contribution each age estimator provided to the Avondale Burial Place age structure was not equal. Since age estimates were not based on the same reference sample, the influence of each reference population on the Avondale Burial Place age structures also was not equal. While the same battery was used to determine age, the resulting age structure did not rely on the same proportionate contributions. Some reference populations had a greater impact on the age structure simply because the reference sites observed were not equal. In particular, the Terry, Hamann-Todd, and twentieth-century American data were major influences on age structures (Hunt 2002; Cleveland Museum of Natural History 2012). Both the Terry and Hamann-Todd skeletal collections were based on approximately 2,000 anatomical, dissecting room cadavers, from which an extensive amount of information was gleaned (Hunt 2002; Cleveland Museum of Natural History 2012). These collections now form a worldwide reference base for skeletal research, particularly in research related to age and sex. Given that skeletal age indicators were valuable for indicating age only within a portion of the human life cycle, and not the whole life cycle, these biases were not uniform across the age structures. Certain reference samples affected components of the Avondale Burial Place age structure more than others. Anatomical collections, for example, were more influential among older individuals while developmental indicators were heavily based on pediatric and forensic data. In the absence of recorded age at death data, age structures for the Avondale Burial Place human assemblage must, like other skeletal assemblages lacking historical documentation, be grounded on age estimators that are not uniformly applied to the entire assemblage. Age structures will inherently reflect some of the structure of the original reference populations.

Table 7.7. *Distribution of Age Estimators in Avondale Burial Place Age Structures*

Observation	Avondale		Reference Collection
	Used	%	
Dental Eruption	44	43.5	Mostly 20th-Century Americans and Europeans Pediatric Data.
Skeletal Development	19	18.8	Mostly 19th- and 20th-Century American, Pediatric, Anatomical and Forensic Collections
Pubic Symphysis	2	1.9	Hamann-Todd Anatomical Collection, Los Angeles Medical Examiner
Auricular Surface	8	7.9	Hamann-Todd Anatomical Collection, Libben, Ohio Medical Examiner
Vertebral Osteophytosis	13	12.8	Korean War Dead, Terry Anatomical Collection
Ectocranial Suture Closure	38	37.6	Hamann-Todd Anatomical Collection
Maxillary Suture Closure	39	38.6	Terry, Louisiana State University and University of Tennessee Anatomical Collections

### SURVIVORSHIP

Jacks (1992) recognized that the reconstruction of biological structure from past populations must originate in evidence obtained from the archaeological record. Life tables represent one of the basic tools used to accomplish this. Bogue (1969) emphasized that life tables (also known as mortality tables) are mathematical constructs that describe the mortality structure of a population. Among cemetery assemblages, mortality tables portray the structure of death events among the dead placed in a given facility, not for an entire community. Mortality tables can infer the age structure of a community only as far as their underlying data can be demonstrated to represent valid samples of a community's living population structure. In an archaeological setting, this presents some important limitations.

First, the information provided by mortality tables are, at best, estimated features. These are grounded on other information about the population and what can be extrapolated from similar populations (Nam and Gustavus 1976). As a result, the exact state of a population at a given point in time is unattainable. The resulting age data is therefore limited to general classifications. An abridged mortality table is a construct able to provide information within this limitation.

In the Avondale Burial Place, the structure of birth cohorts is unknowable. The most applicable data structures therefore are synthetic or mortality-age cohorts. These classes assume that each generation undergoes the same life experience and thus can be pooled to represent the population's life experiences (Weiss 1973). There are a wide variety of biases that can dramatically influence a mortality table's accuracy, but without specific information on their influence in the community, these biases are virtually impossible to control. One means of reducing these biases is to ground the mortality table on a common norm. Lotka's Stable Population Theory, which assumes that all vital population growth rates are fixed, was used to achieve this goal (see Acsadi and Nemeskeri 1970:45; Bogue 1969:558; Weiss 1973:6). Social researchers universally recognize that human populations are dynamic and therefore the theory is fallacious, but its universal acceptance enables the results from different cemetery assemblages to be compared from a common reference point. Another means of reducing bias is to limit comparisons

to data sets obtained from analogous settings. In this regard, population data comparisons did not consider age structures obtained from living community samples, from those obtained from mortality records, or from cemetery assemblages influenced by unique population biases; including military and penal settings, epidemic, or mass disaster assemblages.

In Table 7.8, ages at death for the Avondale Burial Place assemblage were broken into 5- and 10-year increments. To reduce age reliability biases among older members of the assemblage, all age estimates over 50 years were compiled into the same increment (see Buikstra and Konigsberg 1985). Individuals with age estimates spanning more than one category were apportioned by the number of years represented. Following Asch (1976:27), these ages were broken into proportions and distributed across age categories by the appropriate person-year representation. Each age cohort was totaled and this value was recorded as Dx. For each age cohort, the percentage of deaths occurring (dx), survivorship to the next cohort (lx), and probability of death within the cohort (qx) was determined following the calculations provided in Acsadi and Nemeskeri (1970:33-35) and Weiss (1973:36-37). The resulting abridged mortality tables were calibrated into 10-year cohorts to allow comparability between the small and large sampled assemblages. These results were presented in Table 7.9.

*Table 7.8. Apportioned Age Distribution for the Avondale Burial Place*

5 Year Cohort	No. Individuals	10 Year Cohort	No. Individuals
0-4.99	29.1	0-9.99	35.6
5-9.99	6.5		
10-14.99	3.23	10-19.99	4.55
15-19.99	1.32		
20-24.99	1.46	20-29.99	3.31
25-29.33	1.85		
30-34.99	2.75	30-39.99	6.58
35-39.99	3.83		
40-44.99	3.15	40-49.99	7.26
45-49.99	4.10		
>50	5.64	>50	5.64
Total	63	Total	63

*Table 7.9. Area 1 Cemetery Mortality Table*

Cohort	Dx1	dx2	lx3	qx4
0-9.99	35.6	0.565	1.000	0.565
10-19.99	4.55	0.072	0.435	0.135
20-29.99	3.31	0.052	0.363	0.143
30-39.99	6.58	0.104	0.311	0.334
40-49.99	7.26	0.115	0.207	0.555
>50	5.64	0.089	0.092	0.967(1.00)

Dx1 = Count of Individual Deaths per Cohort

Lx3 = Proportion of Individuals Surviving to Next Age Cohort

Dx2 = Proportion of Individual Deaths per Cohort.

Qx4 = Probability of Death within an Age Cohort

Graphic representations of each cohort's proportion of the sample (dx) emphasized that over half of the age-able individuals were infants and children. The assemblage experienced a dramatic drop in age representation as young adulthood was approached and then increased with middle age (Figure 7.2). Around 20 percent of the assemblage consisted of people over age 40. The Avondale Burial Place skeletal assemblage's very high infant and child representation with comparatively few adults surviving into older age groups, was characteristic of a community that has not undergone the demographic transition (Relethford 1994:500-501). In these communities, health factors, including sanitation, disease control, and nutrition may not have been adequately overcome. As a result, the community's weakest members, the very young and very old, did not survive. Sample sizes were not robust enough to consider whether sex differences were present in the mortality data.

The Survivorship (qx) value was generally recognized as a very sensitive indicator of the cumulative life events within a given mortality table (Buikstra and Konigsberg 1985). The chance of a youthful death in the Avondale Burial Place community was considered very high. When examined within the 5-year cohort schedule, the vast majority of these deaths occurred among children under the age of weaning (usually around age 3). Surviving this transition virtually assured survival until the individual had reached their 30s. With the onset of middle age, survival became increasingly more perilous. The Survivorship Curve presented in Figure 4.2 emphasized this divergence in the chance of adult death between these two assemblages.

The Avondale Burial Place Survivorship Curve was compared to results from other late nineteenth- to early twentieth-century African American cemetery assemblages from the Freedman Cemetery (Dallas, Texas), the Cedar Grove Cemetery (Lafayette County, Arkansas) and Savannah, Georgia (9CH875 and 9CH1168), (Figure 7.3). While differences in acquiring and determining age estimates varied between studies, and thus, preclude any exact comparison between groups (see Ubelaker 1974:64), their general distributions indicate that the Avondale Burial Place assemblage reflected some of the same mortality patterns. In general, infants and children, middle age, and older adults exhibited a considerable risk for death. Community health conditions may be anticipated to be similar between these burial populations.

In the above analyses, the subadult sample was divided into age groups that were congruent to those of older age cohorts. While this approach provided equal units of measure for the adult age cohorts, it was too large to identify important age data among children. Subadults were broken into developmental age groups and adults were combined to keep the proportions on par with the adult data (Table 7.10). What becomes immediately apparent was that over 60 percent the population died before reaching age 20 and almost 20 percent of the entire human assemblage was composed of infants who died before completing their first year. A closer examination of the raw data emphasized that a great number of these children died prior to, or within several months of, their birth. From the survivorship data (qx), it became obvious that surviving early infancy meant that members of the population would not face similar chances of death until they reached their middle ages.

Figure 7.2.  
Proportionate Distribution of Cemetery Samples (dx) by Age Cohort

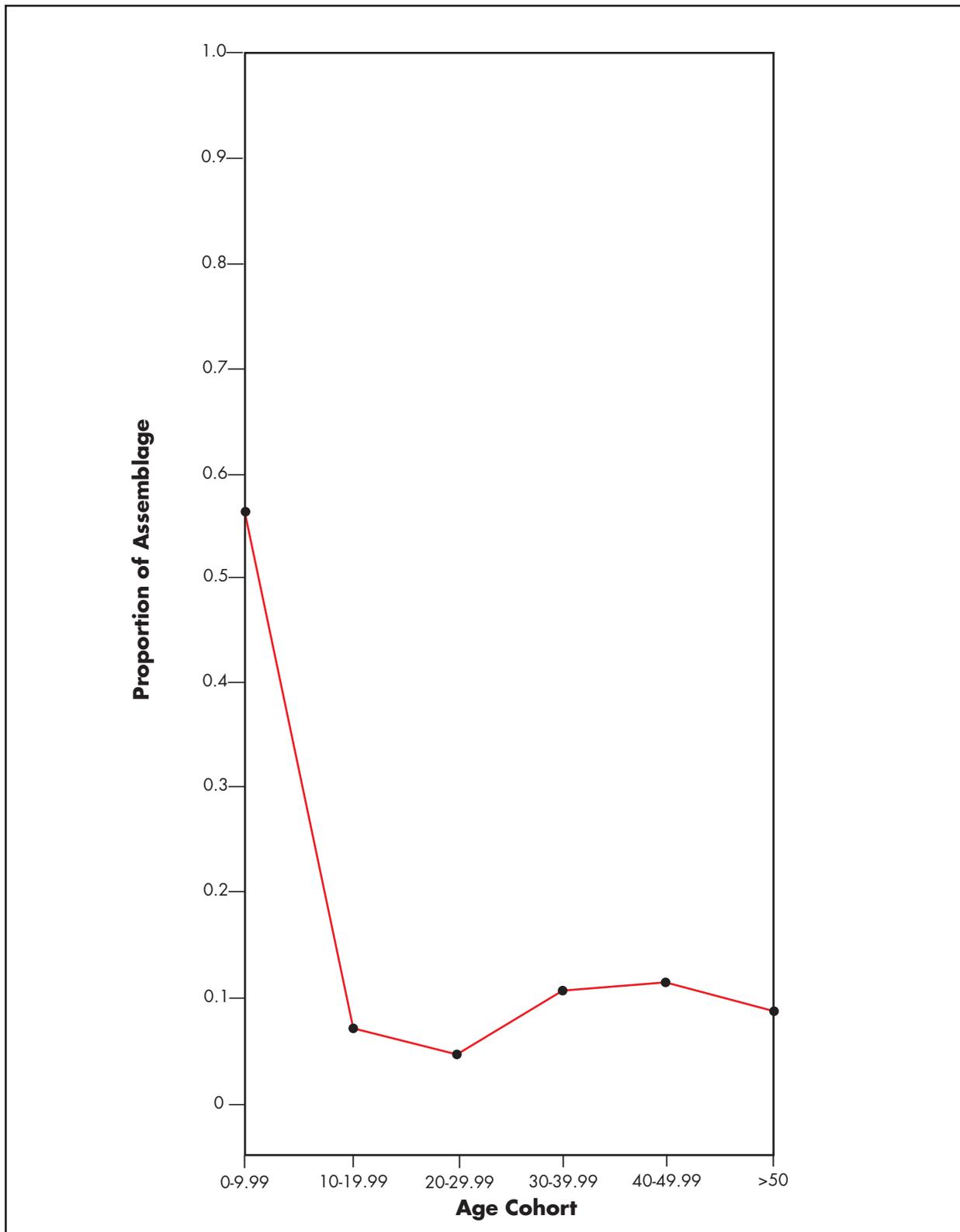
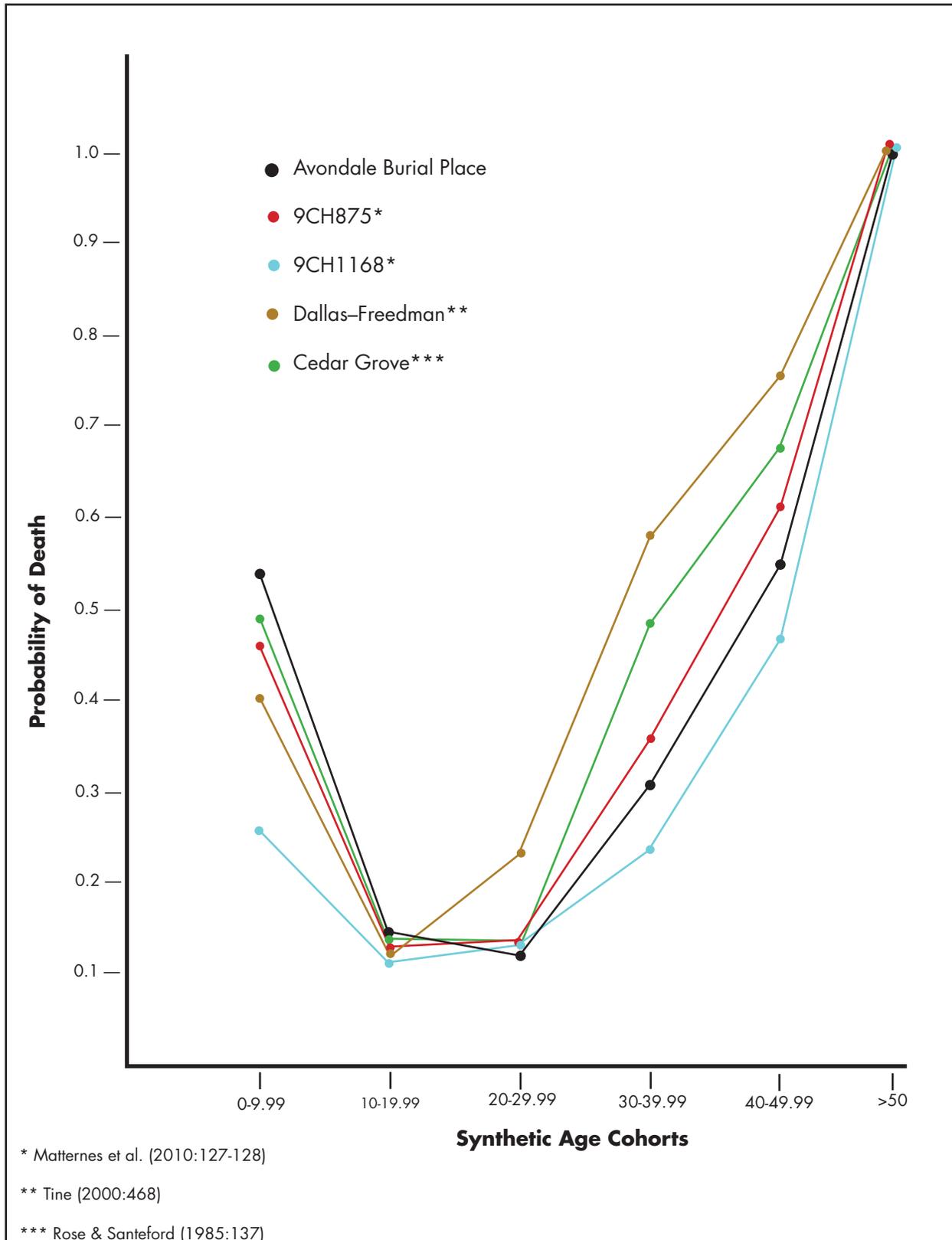


Figure 7.3.  
Survivorship Curve (qx) for Avondale Burial Place and Selected Cemetery Samples



Disease, malnutrition, and potentially adverse socio-economic environments were primary contributors to infant death. Johnson (1996:124) noted that communicable maladies including whooping cough, fevers, parasites, and lockjaw were among the common causes of nineteenth-century African American infant mortality. Gastrointestinal diseases were widely observed as major sources of illness and mortality among nineteenth-century infants (Steckel 1986:448-449). Steckel (1986:430) also attributed low birth weights, a result of maternal health and prenatal conditions, to early infant mortality among enslaved African Americans. Given that the Avondale Burial Place community did not appear to have undergone the demographic transition (see above), it was likely that these same basic health pre-conditions were present.

*Table 7.10. Avondale Burial Place Subadult Mortality Table*

Cohort	Dx1	dx2	lx3	qx4
< Birth	7.7	0.122	1.000	0.122
Birth-0.99	10.4	0.165	0.878	0.187
1-2.99	4.4	0.069	0.713	0.096
3-4.99	5.5	0.087	0.644	0.135
5-6.99	4	0.063	0.557	0.113
7-8.99	2.1	0.033	0.494	0.066
9-10.99	2.1	0.033	0.461	0.071
11-12.99	1.6	0.025	0.428	0.058
13-14.99	1.2	0.019	0.403	0.047
15-16.99	0.9	0.014	0.384	0.036
17-17.99	0.1	0.001	0.370	0.002
>18	23	0.365	0.369	0.989(1.00)

Dx1 = Count of Individual Deaths per Cohort

Dx2 = Proportion of Individual Deaths per Cohort.

Lx3 = Proportion of Individuals Surviving to Next Age Cohort

Qx4 = Probability of Death within an Age Cohort

## INDIRECT AGE ESTIMATION

As noted earlier, skeletal preservation in the Avondale Burial Place was extremely sporadic, with a great number of features containing little to no osseous remains. Whenever possible, ages at death were based on skeletal maturation and degeneration. However, the lack of skeletal material for the remaining individuals meant that ages and sexes could not be assigned. It also meant that biological perimeters could only be estimated from a sample and not from the whole assemblage. This lack of information inhibited major portions of the analysis and severely limited what conclusions could be drawn about the burial community. A paramount missing value was the approximate age that each decedent died. Indirect means of age estimation were used therefore to generate some sense of ages at death.

A useful observation toward indirectly determining age was that the Avondale Burial Place's grave furniture dimensions were not uniform; there were clear size variations that related to the decedent's age at death. These were explored as a means of providing some, albeit approximate, indication of each decedent's age. In the field, the relative size of the coffin was used as a subjective indication to separate subadults from adults, however these opinions were not based on any specific standard.

### MODELING INDIRECT AGE

In the past, researchers have noted that the length of the coffin can equate to a decedent's maximum developmental height and provide a general age for subadult individuals (Blakeley and Beck 1982; Matternes 1998; Matternes and Serio 2005; Pfeiffer et al. 1989). Coffin length was determined by measuring the distance between basal head and footplate nails or by measuring the distance between basal wood stains left by head and footplates. While many of the coffins exhibited outward beveling from the base, decedents found in supine positions indicated that they were fully resting on the base of the burial case. To relate coffin length to an age-at-death estimate, several phenomena needed to be recognized.

First, children change dimensions with age. The process of growth and development entails the child adding size and dimension at relatively predictable rates. Body dimensions change reliably enough to be used by the medical profession to track and gauge the growth of individual children (e.g. Kuczmariski et al. 2000). Among the more reliable measurements is stature (or body length); as children mature, they grow taller.

To complicate these issues, an individual's growth and development are based on complex interactions between their genetic programming and their environment (Relethford 1994:399). Individuals and biological populations exhibit minor deviations in growth and development trajectories that vary the speed and timing of growth. The ability to maximize the output of these genetic templates is largely based on access to needed resources in the environment. Limitations will result in the individual not fully attaining their growth potential. While other environmental factors are involved, children who are not adequately nourished and whose bodies must devote resources to counterbalance the effects of biological and psychological stress will be smaller than children who are free of these issues. Growth trajectories are predictable, but their rate and final products will vary both by individual and by population.

Coffin sizes varied. As noted earlier, coffins that were manufactured locally were often custom fit to the individual and those that were commercially produced were built to predetermined sizes that reflected the varying sizes of adults and subadults. When possible, it appeared that children were placed in burial receptacles that more or less coincided with their size; however, archaeological evidence consistently demonstrates that this was far from universal. In general, children were sometimes placed in burial cases that were too large for them; less commonly, a child may be found positioned in a coffin that was clearly too small for them. For the purposes of age estimation, these actions mean that coffin dimensions cannot be treated as biological absolutes. For most individuals, the length of the receptacle will be greater than the individual's body

length/stature (and hence greater than the calculated developmental age), but there will be a few whose true age will be slightly greater than the determined age. Coffin length ages therefore must be treated at best as approximations.

Comparison between coffin-length generated stature estimates and age-correlated living statures from the burial community would provide the most reliable results. It is highly unlikely that this type of data from the burial community was ever collected in the past. Stature to developmental age estimates for late nineteenth- and early twentieth-century African American children were not available and those addressing rural children in the American South could not be located. However, highly reliable age to body dimension data generated by the National Center for Health Statistics were extracted from Kuczmarski et al. (2000) for application to this project. Kuczmarski et al. (2000) drew on a national multi-ethnic sample of individuals who were aged from birth to about 20 years between 1964 and 1994. Data were presented in terms of proportionate representation, where a smoothed 50th percentile growth curve line indicated that half of the children were below the line for a given age and measurement and the other half were above it. Growth curves for the third and 97th percentile were also generated (Figure 7.4). Body length and stature were calculated following standard pediatric measurement procedures (Kuczmarski et al. 2000:3).

Technological innovations over the last century mean that modern American populations are better nourished and receive better medical care than those represented in the Avondale Burial Place assemblage. It is likely that secular changes in stature have also occurred between modern and past rural African American populations (Meadows-Jantz 1996). Stature for a given child in the Avondale Burial Place assemblage should therefore be different and probably less than modern American children. Modern data, however, can provide a conservative estimate of the maximum stature possible. We began by choosing the 97th percentile (indicating that 97 percent of the test subjects were shorter than a given height at a given age) to provide a conservative estimate of age. Individuals at or above this point would have been tall for a given age.

By doing this, we also recognize that modern individuals at the 97th percentile represent maximized genetic, nutritional, and medical potentials for a given age. Deficiencies in any or all of these factors would result in older individuals having shorter statures. We can model the contribution of agents hindering genetic, nutritional, and medical potential as reducing stature for a given age as following a linear pattern (Figure 7.5A). Children receiving a slight negative contribution would be slightly shorter while those receiving a more substantial negative contribution would be substantially shorter.

Lacking information to correct for variations in growth trajectories, including such factors as genetic timing, catch-up growth, cultural, and seasonal resource restrictions, developmental growth was treated as a constant. Since an enriched child would be taller than their less enriched identical counterpart at a given age, the less enriched child would remain shorter as both children aged. A child with substantial negative contributions to growth would be shorter than either children and would achieve a given stature at an older age. This relationship can be approximated by a line extending from the 97th percentile for a given height and age towards older ages (Figure 7.5B). On the growth chart provided in Figure 7.4, note that as one moved toward progressively older

Figure 7.4.  
Center for Disease Control (CDC) Growth Chart for Boys

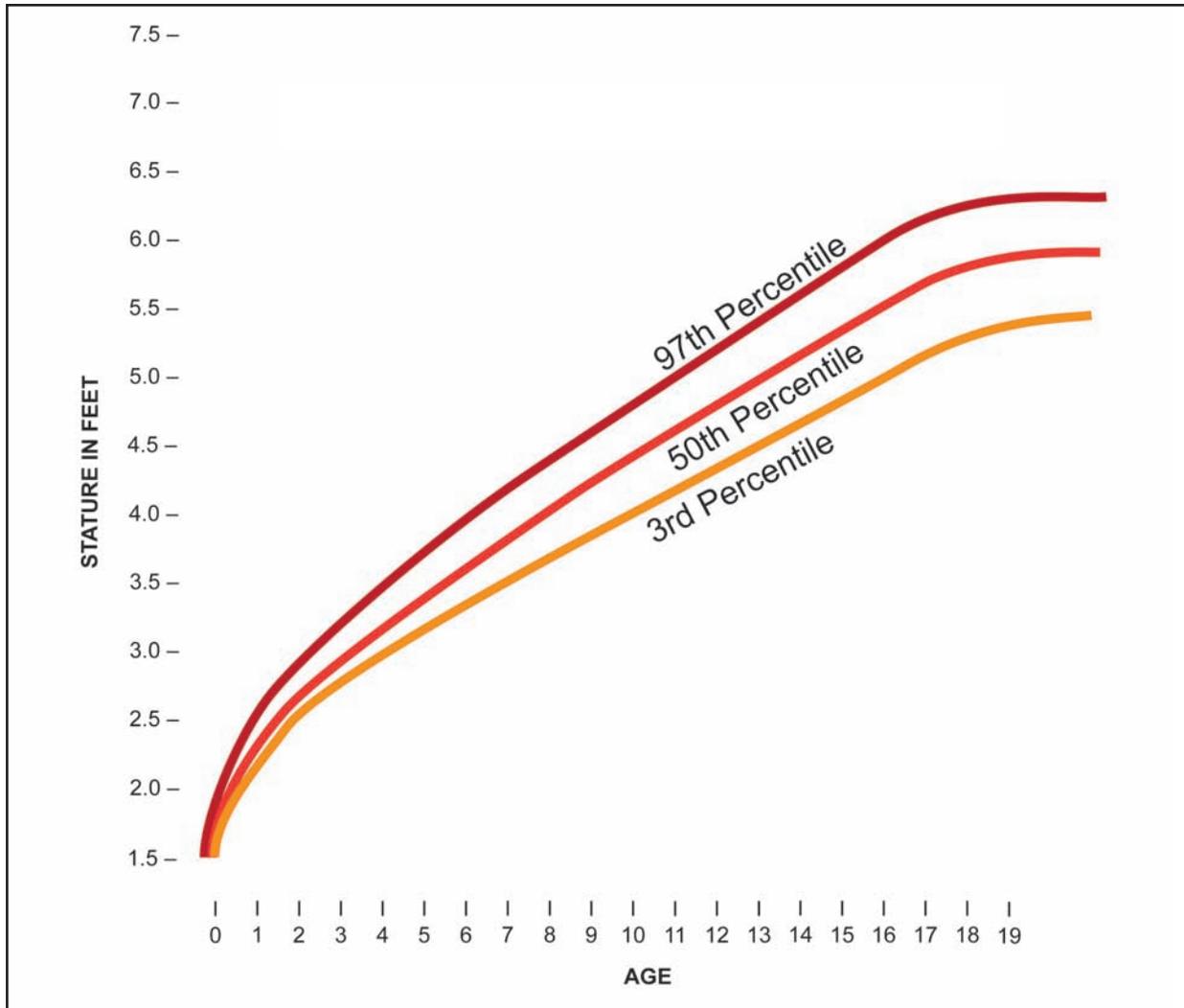
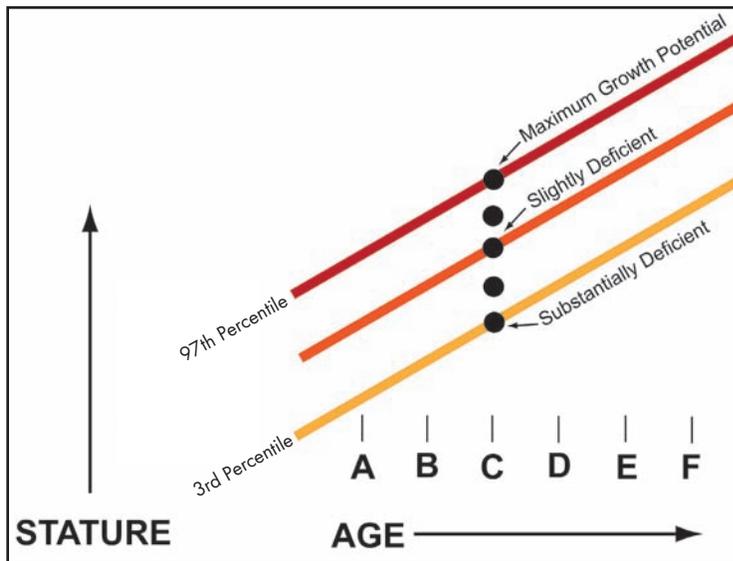
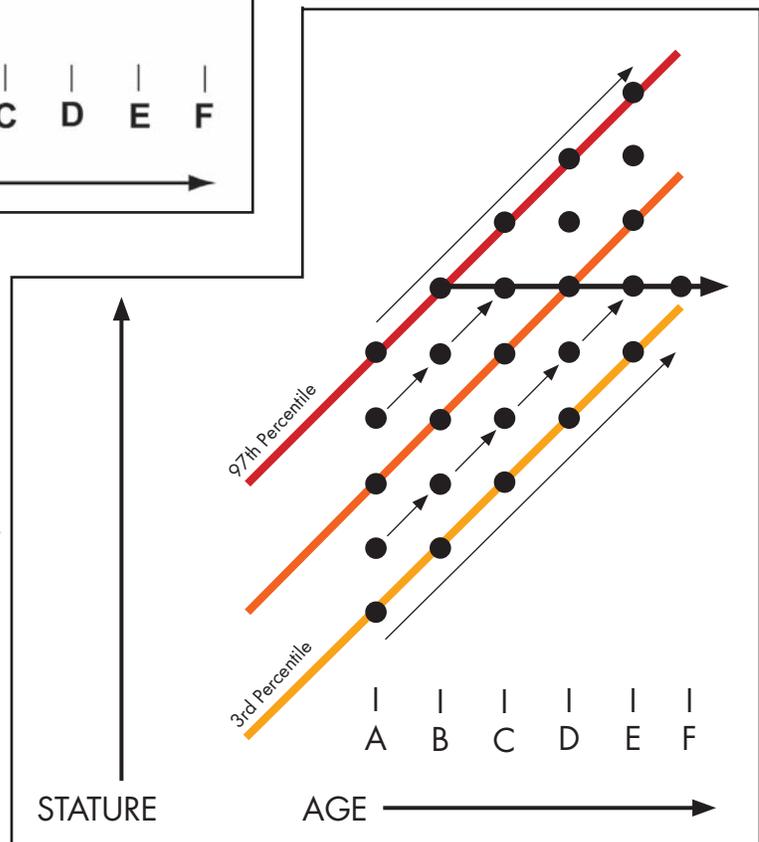


Figure 7.5.  
Modeling Avondale Burial Place Growth from Modern Growth Standards

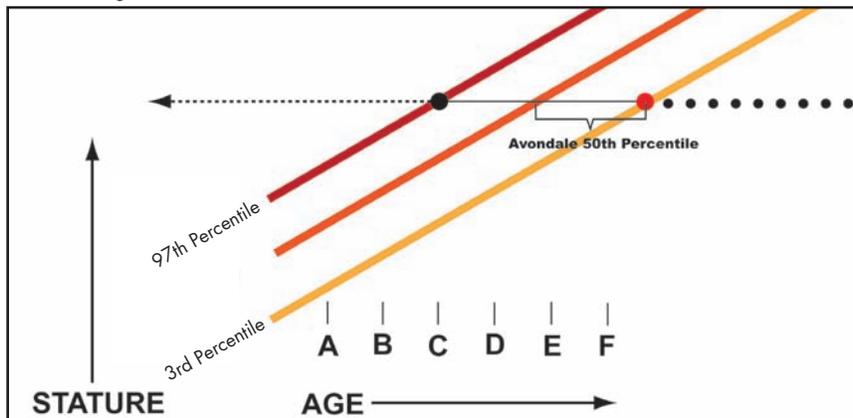


A. Modeled Growth Deficiency



B. Growth Deficiency Over Time

C. Estimating the 50th Percentile Position



ages for a given stature, a proportionately smaller representation of the age group is represented by each surpassed stature. Eventually (and after passing the third percentile), the representation would become negligible. In terms of providing a maximum age cut-off point for body length/stature, the third percentile provides a point beyond where very few individuals are represented.

This analysis recognized that the developmental and growth environments for the Avondale Burial Place community were less enriched than those of modern American children and that this would have a negative affect on stature, even if genetic codes for stature were the same for both groups. Values for the average (or 50th percentile) stature for a given age were not knowable but would be anticipated to be less than those of modern children (Figure 7.5C). They were not however believed to have fallen as low as the third percentile for modern children. Likewise the points defining extremely impoverished children in the Avondale Burial Place community, which were defined as those below the Avondale Burial Place's third percentile, could not be determined.

Without this information, indirect age estimation was unable to define a uniform likely potential maximum age cut off for the assemblage that was based on its own growth trajectories. To provide some approximation of a maximum age, this analysis assumed that most Avondale Burial Place children managed to attain a stature that was greater than the third percentile of modern children. The third percentile for modern children was chosen as a maximum potential age cut off point, recognizing that most Avondale Burial Place children at the given age would have been taller and that as age increased, a smaller and smaller proportion of the community's children would have reached the given stature at an older age.

It is emphasized that ages provided by this estimation method were at best approximate and that the 'pseudo-point maximum age estimate' was not based on a uniform proportion of the Avondale Burial Place population. Rather it represents an abstract value. They provide a point that is close to the maximum age but likely underestimates it. Since the true age at death for an individual is likely to be less than this maximum age point estimate, indirect age estimates were expressed as less than or equal to the maximum age estimate (Figure 7.5C). While general age patterns in a burial assemblage can be defined, the results are invalid for applications in any form of formal demographic modeling. It was used here only as a last resort and the data it provided were

considered to be less reliable than age at death estimates obtained elsewhere. Future implementation of this indirect age estimate should be considered only in the absence of documented and skeletal ages at death.

#### APPLICATION TO THE AVONDALE BURIAL PLACE ASSEMBLAGE

In general, boys and girls tend to follow different growth trajectories resulting in slightly varying growth curves (Relethford 1994:410-411). Kuczarski et al. (2000) chose to divide and present their growth data by sex. Because pre- and post-pubertal boys tend to be taller than that their female counterparts and sexes could not be determined from the available grave contents, growth charts for boys were viewed as more appropriate for determining maximum growth and potential age.

Coffin lengths were treated as maximum developmental heights and were initially plotted on the growth chart's 97th percentile. The corresponding third percentile for that height was determined and the age assigned as a potential maximum age. All available coffin lengths were plotted to enable an examination of the assemblage's distribution. Coffin lengths equating to statures greater than those attained at age 20 were plotted as individuals over age 20. A total of 95 features were addressed in this analysis. A bi-polar distribution of data was generated (Figure 7.6). Coffin lengths tended towards being short or long with relatively fewer individuals represented in between. From this, it could be inferred that the assemblage was composed largely of individuals who were either very young or adults when they died.

To test the reliability of this indirect age estimation technique skeletally derived ages at death were plotted by the feature's corresponding coffin length (Figure 7.7). Skeletal age estimates were derived for 85 individuals and the remains of an additional 12 persons identified only as adults. In general, skeletal age estimates corresponded well with the assumptions behind the age estimation model.

As anticipated, there were several individuals who appeared to have been placed in burial cases that were larger than modeled for their age. Sixteen children (F-2, F-13, F-14, F-15, F-19, F-37, F-54, F-56, F-57, F-58, F-78, F-79, F-82, F-83, F-91, and F-95) were interred in burial cases, whose lengths overestimated their skeletal age. This emphasized that burial cases may have been used based on availability and stressed why minimum age estimates were not assigned to coffin length derived potential ages.

Conversely, three individuals (F-4, F-7, and F-10) appeared to be older than this model predicted. The most notable of these outliers was the child in F-10. This child, whose age at death was between 3.5 and 6.5 years, was placed in a receptacle that was about 80 centimeters long. Examination of the remaining leg elements confirmed that the child was probably not placed in an extended position, rather that the legs were partially flexed at the knee. This posturing meant that the child could be placed in a smaller receptacle; as a result, coffin length considerably underestimated the child's stature. Use of non-extended burial positions may have also compromised the results obtained for F-4 and F-7. This discrepancy emphasized how the method was confounded if the decedent was not interred in a fully extended position.

While still partially fitting within the age estimation model, it was also noted that the skeletal age estimate for the teenager in F-25 (12.5-17.5 years) extended almost three years older than the potential maximum age estimate. A review of the decedent's health indicated there were numerous developmental stress and growth arrest responses. These emphasized that the subject lived in an impoverished environment and that these potentially older age estimates may reflect an individual whose stature was considerably stunted by living conditions.

When coffin lengths were plotted, a noticeable gap in the data emerged between 152 and 167 centimeters. The center point of this gap was identified as about 160 centimeters (5 feet 3 inches). Coffin lengths less than this point (and closest to it) exclusively corresponded with subadult skeletally derived ages while nearly all measurements greater than it represented adults. Following

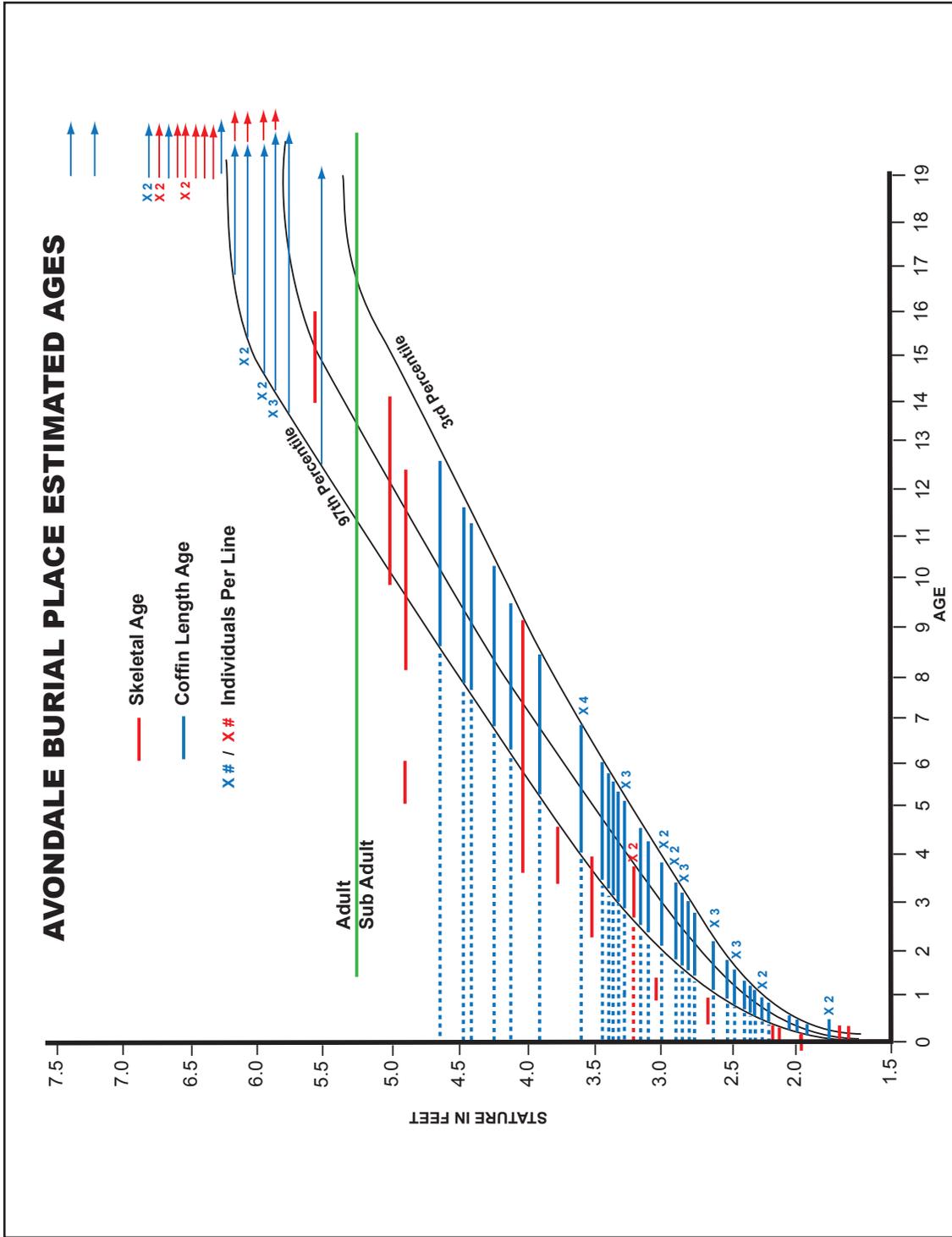


Figure 7.6. Distribution of All Coffin Length Age Estimates



this procedure, an additional 22 children were identified in the Avondale Burial Place assemblage. A total of 61 probable children representing 60 percent of the Avondale Burial Place assemblage were present.

The one outlier to this division, F-3, contained the remains of a teen-aged female. Since females undergo puberty before males, it is possible that she may have achieved most of her adult stature prior to death and was afforded a more adult-sized receptacle. While coffin lengths below 160 centimeters can be reliably defined as sub-adults, F-3 emphasizes that pre-pubertal teens may well have met or nearly attained their adult height. They were undistinguishable from adults and therefore not visible in this assemblage's age structure. Given the poor preservation conditions encountered in some of the graves, partial remains that were morphologically identical to adults may have also represented teenagers. A review of the skeletal data revealed that the remains from eight individuals (F-29, F-46, F-49, F-62, F-65, F-70, F-73, and F-100) contained no information indicting that full adult skeletal development had been achieved, suggesting that they may have also been teenagers.

## STATURE

Stature is viewed as the standing height of an adult individual. It is one of the most comparable forms of somatic information available to researchers. Stature reflects the cumulative effect of nutrition, disease exposure, work, and the physical environment on the individual (Steckel 1979; Tanner 1962). Statures reflect sexual dimorphism in a population and average population statures vary by ancestry and natural history. Some researchers view stature as a means of gauging living standards, particularly for communities where there are no other suitable sources of information (Steckel 1994).

Adult stature is also strongly related to the amount of sunlight an individual receives particularly during maturation. During insolation, cells in the epidermal layers synthesize Vitamin D from solar radiation and cholesterol (Carson 2009). Vitamin D is a critical component in the manufacture of bones and teeth. The amount of Vitamin D produced by the human body is therefore a major contributor the height that an individual will attain.

Stature among nineteenth-century African Americans has been examined by a number of researchers. Working with anatomical collections, Trotter and Gleser (1951a) noted that long bones lengths among African Americans fluctuated by birth cohort. These results were verified by examinations of living stature records, where it was determined that average African American stature increased during the latter portions of the ante-bellum period (Komlos [1996] and Komlos and Coclanis [1997] in Carson 2008:1). This change in stature did not appear to be related to nutrition or the individual's quality of life. Amount of exposure to the sun is suspected to have critically impacted Victorian era African American stature. Nineteenth-century lighter skinned African Americans tended to be taller than more darkly pigmented individuals; this was probably related to the amount of melanin in the individual's epidermal layers (Carson 2008:2, 5). African Americans living in the South were exposed to more solar radiation and tended to be taller than their Northern counterparts who were not as exposed to solar radiation (Carson 2008-3). Finally, African American prisoners, whose former occupations were listed as farmers, were taller than

prisoners in other former occupations (Carson 2008). These data suggest that African Americans working in rural, agriculturally-based communities like those around the Avondale Burial Place would have synthesized enough Vitamin D to maximize this portion of each individual's growth potential.

Living stature in the Avondale Burial Place can be estimated from the human remains. Several methods have been developed to determine stature from skeletal assemblages. In interments where the individual was placed in an extended position, the most accurate answer can be obtained by simply measuring the length of the grave and applying it to a standardized regression formula (Neumann and Waldman 1968). The stringent requirements for burials to have been placed in a fully extended position, possessing predictable grave-to-body size ratios, exhibiting an absence of archaeological pit variability, and a lack of post-depositional modification of the skeleton limit the use of this method among archaeological contexts such as those encountered at Avondale Burial Place. Highly precise means of determining the decedent's stature can be obtained by measuring bones contributing to the individual's height, frequently referred to as the Fully stature estimation method; however, they require that most of the skeletal remains be preserved and available for examination (Raxter et al. 2006; Sciulli et al. 1990). Stature can likewise be obtained from select long bone fragments, but the error ranges associated with this method tend to be substantial (Simmons et al. 1990).

Precise, highly reproducible results have been obtained from examinations of the relationship between complete long bone length and its contribution to stature in modern populations (Trotter and Gleser 1952). Stature estimates from these methods require that the sex of the individual be known, that skeletal development has terminated, and that the measured long bone is complete. These requirements were met by 11 individuals in Avondale Burial Place skeletal assemblage.

Long bone measurements were obtained using an osteometric board and followed the guidelines provided in Bass (1987). Since stature is known to vary from population to population, it was important to apply a formula that best approximated the phenotype of the study sample (Ubelaker 1978). Stature estimates were calculated from adult male and female African American formulas generated by Trotter and Gleser (1958:495). These formulas provided stature estimates that were expressed in height ranges. These were corrected for height loss associated with advancing age following the age correction formulas outlined in Trotter and Gleser (1951b). Since most age at death estimates were expressed in ranges, age corrections were averaged to express the average effect age would have had on the individual's height. The resulting stature estimates were provided in Table 7.11.

Table 7.11. Stature Estimates for Adult Individuals Buried in the Avondale Burial Place

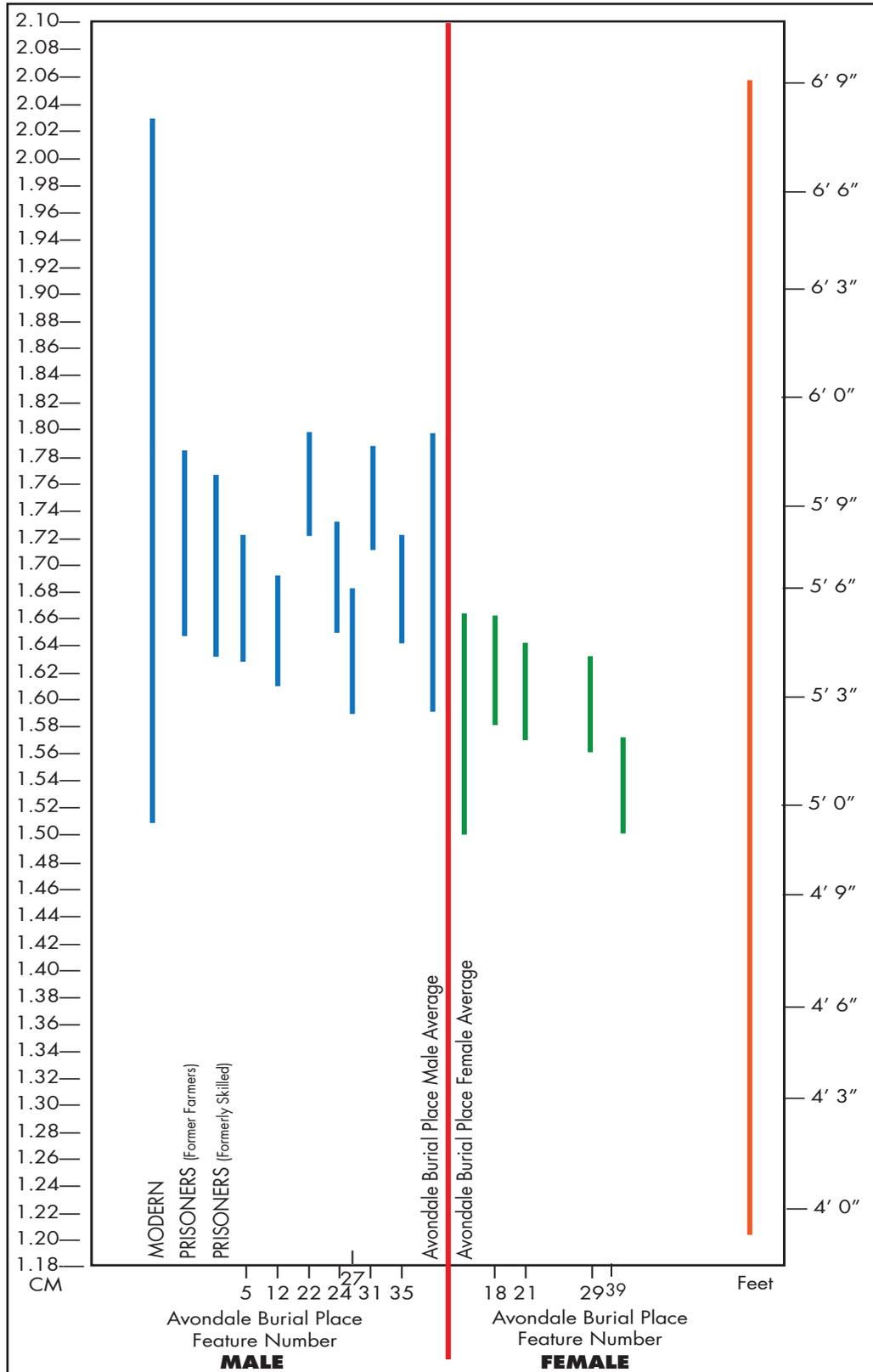
Feature Number	Sex	Age	Measured Element	Length (mm)	Stature in Feet	Stature in Meters
5	Male	35-40	Femur, Right	461	5'4"-5'7"	1.63-1.71
12	Male	50-59	Femur, Right	457	5'3"-5'6"	1.61-1.69
18	Female	30-50	Femur, Right	455	5'2"-5'5"	1.58-1.66
21	Female	35-45	Femur, Right	447	5'2"-5'4"	1.57-1.64
22	Male	30-34	Femur, Right	503	5'8"-5'11"	1.72-1.80
26	Male	39-45	Femur, Right	475	5'5"-5'8"	1.65-1.73
27	Male	>60	Humerus, Left	317	5'2"-5'6"	1.59-1.68
29	Female	Adult	Tibia, Right	357	5'1"-5'4"	1.56-1.63
31	Male	20-30	Femur, Right	498	5'7"-5'10"	1.71-1.79
35	Male	45-49	Femur, Right	468	5'4"-5'7"	1.64-1.72
39	Female	38-52	Femur, Left	418	4'11"-5'2"	1.50-1.57

By far the most common elements available for stature estimation were the femora. These elements generated formulas with the least single-bone standard error and, hence, were probably the most accurate estimates available for the Avondale Burial Place assemblage. While the humerus exhibited a substantial standard error range, it was the most accurate of the arms bones. Females expressed an age adjusted stature estimate of 1.59 meters with a height range between 1.50 and 1.66 meters (4' 11"- 5' 5"). Their male counterparts tended to stand about 10 centimeters (3.94 inches) taller, with an age adjusted estimate of 1.69 meters and a stature range between 1.59 and 1.80 meters (5' 2"- 5' 11"). The effects of age were more significant on the male component of the assemblage, where height was reduced by as much as 1.5 centimeters. Female stature was not reduced more than 0.9 centimeters. Even when accounting for age, stature would have been a highly visible form of sexual dimorphism in the Avondale Burial Place community.

Data published by the National Center for Health Statistics reveal that modern African American males and females possess an extremely wide range of statures (McDowell et al. 2008). These are the product of many genetic and health conditions within the American population. Avondale Burial Place's males stood on average about 10 centimeters (3.94 inches) shorter than the modern male average (1.78 meters or 5' 10"). Likewise, the average modern female stature of 1.63 meters (5' 4") was only about four centimeters (1.57 inches) taller than the Avondale Burial Place female average. Improvements in nutrition and better control over disease are primary factors enabling modern African Americans to meet their genetic potential.

Comparisons were made between Avondale Burial Place and living stature data (Figure 7.8). Males were compared to nineteenth-century African American male prisoner data reported in Carson (2008). Carson divided prisoners into those who were formerly employed as farmers, and reflected a considerable amount of exposure to sunlight, and those who were formerly skilled workers, and obtained a lesser amount of sunlight. Mean stature values for both prisoner samples were very close (1.71 and 1.70 meters or 5'7" and 5'6" respectively), but Avondale Burial Place male statures covered a range greater than the prisoner sample's standard deviation and the Avondale Burial Place mean stature was at least a centimeter less than either prisoner sample.

Figure 7.8.  
Comparison of Avondale Burial Place Adult Statures with Selected Living Populations



Several factors may have contributed to this. Avondale Burial Place's growing males may have experienced greater nutritional and/or health challenges than seen elsewhere. Their ancestral origins may have been from groups with genetic predispositions towards shorter statures and finally, they may have spent their youth in environments where exposure to sunlight was minimized. Average Avondale Burial Place male and female statures were compared to those from other African American skeletal assemblages to assess whether Avondale Burial Place differed strongly from them (Table 7.12). All these cemeteries dated from the mid-nineteenth through early twentieth centuries. Stature was determined from similar long bones and using the same Trotter and Gleser (1952) formulas. In general both males and female average statures from the Avondale Burial Place were very close to other average heights, but Avondale Burial Place's averages were consistently lower than other groups. These may be evidence that the Avondale Burial Place burial community was phenotypically shorter or more stressed during maturation than other African American communities in the South. A further examination of the health data revealed some insight.

Table 7.12. Comparison of Avondale Burial Place Adult Statures with Select Skeletal Populations

Site	Male Average (Meters)	Male Average (Feet)	Female Average (Meters)	Female Average (Feet)
Avondale Burial Place	1.69	5' 6"	1.59	5' 2"
Freedman Cemetery (Texas)*	1.71	5' 7"	1.59	5' 2"
Cedar Grove (Arkansas)**	1.77	5' 9"	1.63	5' 4"
Elko Switch (Alabama)***	1.70	5' 7"	1.55	5' 1"
38CH778 (South Carolina)****	1.67	5' 5"	1.60	5' 3"

\*Tine (2000)

\*\*Rose (1985)

\*\*\*Shogren et al. (1989)

\*\*\*\*Rathbun (1987)

## NON-METRIC OBSERVATIONS

A considerable amount of human genetic variation can be observed in any skeletal assemblage on par with those from the Avondale Burial Place. Bone follows the same basic patterns of inheritance and distribution within a population as other forms of tissue. It may therefore be examined as a pool of genetic variations. One of the principal areas of these investigations is non-metric variation.

Quantitative analyses of the distribution of discrete minor variations in skeletal tissue are capable of differentiating one population from another (Konigsberg 1988; Ossenberrg 1976). More importantly, non-metric variation separates kinship groups. With well-researched samples, marital practices and residence patterns can be identified (Bondioli et al. 1986; Konigsberg 1988; Lane and Sublett 1972). A review of the nonmetric variation recorded in the Avondale Burial Place demonstrated that morphological variations were present and offer the potential for considerable

research. Unusual variations, such as the occurrence of unfused acromial process (Os Acromiale), scaphocephaly, and variations in the neural arches of the spine offer the opportunity to examine distinct family traits within the two assemblages. Quantification and examination of more 'common' variations may also provide important details on social patterning within the cemetery. Unfortunately, these analyses are beyond the scope of this current project. However, it should be recognized that the data are present and capable of providing insights that may not be available through other archaeological and osteological means.

## VIII. A CRUEL BACKBONE: HEALTH AND QUALITY OF LIFE IN THE AVONDALE BURIAL PLACE ASSEMBLAGE

### DISEASE AND DEATH IN THE NINETEENTH-CENTURY SOUTH

Prior to Emancipation, the overwhelming majority of African Americans were brought to the Americas as a labor force, not for humanitarian purposes. The health and amount of wellbeing provided to slaves were the responsibilities of their owners. Slave health care ultimately boiled down to an economic strategy. Slave owners had an investment in a slave that would be lost if the slave was not healthy enough to work. However, care was frequently minimized as the capital expended on a slave's welfare ultimately came out of the profits generated by a slave's output. While conditions varied, slaves required a diet that enabled them to survive, enough clothing and shelter to provide minimal protection from the elements, and enough medical care to ensure that they could continue work. Steckel (1986:432) suggested that labor demands were greater in larger, more corporate plantations resulting in poorer slave health than seen in smaller operations.

No records of health conditions among the slaves living in southern Bibb County appear to have been recorded. In general, disease and labor loads were both high during the southern summer months; as a result, almost 35% of all deaths among adult slaves (age 15-49 years) occurred during the June, July, and August period (Steckel 1986:442). Respiratory infections were major threats in the winter and parasitic infections were issues during the summer (Haunton 1968:285). Tuberculosis was also a common malady. Scurvy was a common nutritional ailment (Haller 1972:241). Conditions were demanding for both European and African American residents. In Savannah, for example, black mortality was only slightly higher than whites prior to the Civil War (Haunton 1968:285).

Some communities recognized that maladies, particularly communicable diseases that ran rampant among slaves, adversely affected their ability to produce and served as a health threat to the dominant European American communities. Augusta and similar towns, where a large portion of the population was composed of slaves, devoted hospitals and other health care facilities specifically to treat the slave (Starobin 1970:71). Black health was therefore inexorably linked to white health. Infant mortality among both groups was relatively high. If an African American could survive childhood, they had a greater chance to survive to old age than white because whites were more susceptible to malaria and yellow fever than blacks (Haunton 1968:285).

Many slaves complained that their teeth hurt them (Jones 1925:140). Owsley et al. (1987) confirmed high rates of tooth decay and periodontal disease in urban slave populations. They relate these to a diet composed of refined carbohydrates and sugar. Inadequate dental care was

likely also a major contributor. Hypoplasias, malocclusions, and other dental factors in Barbados slave populations indicate that slave communities were not properly fed, some living on the edge of starvation (Lange and Handler 1985:20-21). Salt, pork, corn/cornbread and molasses were slave food stores commonly supplied by the planter (Haller 1972:241). Along the Georgia coast, these staples were often supplemented by vegetables grown in house gardens and locally procured wild game (Braley and Moffat (1995:82). Some planters allowed chickens to be raised in the house yards, and beef would occasionally be substituted for pork (Joyner 1984:171; Kulikoff 1986:392). Similar dietary standards appear to have been followed on plantations that were further inland. Slaves living in Georgia's interior did not have access to coastal estuary resources and the demand for cropland to grow cotton impacted the size of house gardens (Braley and Moffat (1995:82). Their diets were considered to be less enriched than their coastal counterparts.

Following the Civil War, the long established theme of hard physical labor and poor health continued to plague the newly freed African American farmers. The old large agricultural tracts were subdivided into smaller tenant farms (or the freedmen became sharecroppers) often for their old masters. Though a few farmers had their own horse and plow, many were reliant on their landlords to furnish equipment. Most sharecroppers and tenant farmers were also reliant on the landlords and the local stores for their food and other necessities (Bolton 2004). This form of farming meant that most families continued to be indebted to their landlords in an endless cycle of borrowing and deepening debt. The lack of extra money meant that feeding, clothing, and sheltering of their families was difficult (Jones 1985). In addition, the work was hard and the conditions were less than optimal. The lack of time and money needed to acquire additional supplies or to fish and hunt meant that many families subsisted on a substandard protein-poor diet. Sickness and death were constant sources of stress in the nineteenth century. Fertility rates during the late nineteenth century declined and the remarkably high child mortality rates were probably due at least in part to the poor health of rural women and their families (Jones 1985). A study conducted by W.E.B Du Bois in 1899 noted that country children in Dekalb County, Georgia were "poorly dressed, sickly, and cross," suggesting that poor nutrition and hard work took their toll at an early age (Du Bois 1899; Jones 1985). Researchers have considered fluctuations in mortality rates a basic measure of the standard of living, which includes the quality of available medical care, income, nutritional status, environmental quality, and cultural habits (Ewbank 1987). Breeden (1988:12) noted that, "black health problems... were in large part the result of the rise and spread of tenancy, the cruel backbone of post war southern agriculture".

Malaria, yellow fever, tuberculosis, and hookworm were the most significant diseases of the time for both African Americans and European Americans (Breeden 1988). These health maladies were likely present in southern Bibb County. Malaria, often referred to throughout history as "fever and ague," was a major affliction in the South during the nineteenth century (Duffy 1988). Malaria, a parasitic disorder spread by mosquitoes, takes three forms: two are mild and the third is often fatal (Duffy 1988). Symptoms include acute chills followed by high fever with headache, nausea, and profuse sweating (Duffy 1988). The most deadly form (falciparum malaria) blocks blood vessels and was known by several names including "blackwater fever," "congestive fever," "hemorrhagic fever," and "pernicious malaria" (Duffy 1988). In the decades prior to the Civil War, malaria was

on the decline, but in subsequent years, when the country was in the midst of reconstruction, the illness soared to record levels and reappeared in areas where it was previously under control (Breedon 1988).

Yellow fever arrived in the New World aboard slave ships from Africa around the turn of the eighteenth century (Carrigan 1988). The climate of the South made a natural niche for the virus and the mosquitoes that transmitted it. It became a permanent source of infection, and yellow fever epidemics recurrently swept through the southern states. The epidemic of 1878-1879 was the most widespread and virulent in U.S. history, and claimed the lives of 16,000 southerners (Breedon 1988). Symptoms included chills, fever, vomiting, and muscular pain. In severe cases, the sick became jaundiced and developed hemorrhaging from various parts of the body. In the terminal stage, people suffered from violent delirium, convulsions, or coma with death resulting from damage to the liver, kidneys, heart, and blood vessels (Carrigan 1988).

Tuberculosis is an infectious respiratory disease that was commonly known as consumption in the nineteenth century. It is a contagious disease caused by *Mycobacterium tuberculosis*, and can affect almost any part of the body, but it is most commonly associated with the lungs (Cramer and Frey 2006). It was not until 1882 that microbiologist Robert Koch discovered the tubercle bacillus (Cramer and Frey 2006). At the turn of the twentieth century more than 80 percent of the U.S. population was infected before their 20th birthday, and it was one of the leading causes of death (Cramer and Frey 2006). Tuberculosis spreads through the air and is transmitted by droplet infection, which occurs when an infected person exhales, coughs, or sneezes (Cramer and Frey 2006). Pregnant mothers can also pass the disease along to their unborn children, reducing the chances of a healthy live birth. Tuberculosis hit African Americans particularly hard (Breedon 1988; Braley and Moffat 1996; Cramer and Frey 2006). The low socioeconomic status and poor living conditions likely promoted infection, as close, frequent, or prolonged contact with infected individuals was needed to spread the disease (Cramer and Frey 2006). Braley and Moffat (1996) noted that tuberculosis was widespread among rural African Americans during the late nineteenth and early twentieth centuries as evidenced by a 15-percent mortality rate in adjacent Jones County, Georgia. One particularly virulent form of tuberculosis affected African Americans so greatly that it became known as "Negro consumption" or Struma Africana (Savitt 1988). It was characterized by extreme difficulty in breathing, unexplained abdominal pain around the navel, and rapidly progressing debility and emaciation, usually resulting in death (Savitt 1988). Savitt (1988) noted that in all likelihood, most cases of "Negro consumption" were miliary tuberculosis, the most serious and fatal form of the disease. He also suggested that the reason African Americans were more greatly affected by the disease than their European American counterparts was that the latter developed a strong immune response to the infection over the previous several hundred years in Europe, while the former was newly introduced to it by way of the slave trade (Savitt 1988). Other factors such as malnourishment, preexisting illness, or general debility also contributed to the apparent predisposition of many African Americans to tuberculosis (Savitt 1988). By 1937, tuberculosis was still one of the leading causes of death for African Americans in Georgia (Gordon 1937).

Hookworm was a disorder that is caused by an infestation of roundworms. These nematodes thrived in wet, warm climates like the American South, and were acquired through contact with soil contaminated with human fecal matter, usually through bare feet (CDC 2011). The general absence of sanitary facilities placed many southerners in close proximity to infected soils; also the proclivity of children to go without shoes gave the worm easy access to the skin (Marcus 1988). In the nineteenth century, hookworm infected an estimated two million southerners (Marcus 1988). The victims were anemic, often had excessive diarrhea, a slight fever, and were sometimes known to eat clay or dirt, a condition known as geophagia (CDC 2011; Marcus 1988). A severe infestation rendered the victim incapable of performing rudimentary physical tasks, though it was generally not fatal (Marcus 1988). However, the disease often indirectly caused the deaths of children by lowering their immunity to other infections (PubMed Health 2011).

By the late nineteenth century, germ-based medicine was still in its infancy. Prior to that time epidemic and endemic disease were still inexplicable. Physicians were still debating the existence of specific diseases, with some arguing that all clinical symptoms stemmed from one basic malady (Duffy 1997). Lacking an understanding of germ theory, doctors used a variety of descriptive terms to diagnose and categorize symptoms such as fevers (Duffy 1988). Though fevers were a common feature of many illnesses, nineteenth-century doctors were at a loss to explain them. They were alternately described as "slow fever, nervous fever, continued fever, pernicious fever, putrid fever, and malignant fever" among others depending on their overall characteristics (Duffy 1988:33). Though a few discoveries, such as vaccinations for smallpox led to some improvements in health conditions, the origin and transmission of most diseases and illnesses were as incomprehensible as ever, and people did not yet understand how to cure their sick (Duffy 1997). Comparatively primitive medical technology contributed to the virulence of diseases and illnesses that are easily controlled with modern intervention.

## HEALTH AND DIET

Bacteria and other parasites were not the only cause of death for poor nineteenth-century tenant farmers and sharecroppers. Inadequate sources of nutrition and limited access to healthy foods were major contributors to poor health. The primary source of nutrition in the post-Emancipation rural south came from pork and corn. The favored diet, especially among poor Southerners, consisted of the 'three M's:' meat, meal, and molasses (Bollet 1992; Ethridge 1988). This pattern was established decades before the Civil War. Slaves had a diet that consisted primarily of pork and corn meal; while high in calories, this diet was insufficient for the level of work they performed. Slaves were able to supplement the pork and corn with molasses, sweet potatoes, cabbage, collard greens, turnips, and turnip greens, largely grown from their personal gardens. Some also fished from lakes and streams, hunted the local forests, and gathered other foodstuffs. Molasses, a tasty syrup that added flavor to meals, also added valuable calories and provided an additional source of iron. Unfortunately, even the additional nutrients were not able to produce adequate amounts of necessary vitamins. Enslaved African Americans were susceptible to anemia, protein malnutrition, and other diseases caused by vitamin deficiencies. In addition, their diet was high in cholesterol and triglycerides, which predisposed them to coronary artery disease, heart attacks, strokes, and complications from vascular blockage (Byrd and Clayton 2000).

The change in legal status from slave to freedman did not necessarily mean a change in diet. A ledger list of provisions sold to the tenants of George Lowe's plantation in neighboring Jones County from 1891-1900, lists meat (a generic term for pork in this instance) and corn meal as the predominate provisions, while sweet potatoes, syrup and molasses, peas, flour, coffee and sugar, rice, and peanuts were additional, though much less frequent, purchases (Braley and Moffat 1996). This relatively restricted diet likely contributed to malnutrition and a high mortality rate for the tenants on the Lowe's farm (Braley and Moffat 1996).

W.O. Atwater and Charles Woods conducted a study of African American families and their food habits near Tuskegee, Alabama intermittently over the course of several weeks from the summer of 1895 to the spring of 1896 (Dirks and Duran 2001). They followed 18 African American farm families that were thought to be representative of many families in the "Black Belt" of Alabama, Georgia, Mississippi, and Louisiana. The study noted that farmers devoted most of their land to cotton production. The small portions of the remaining land were dedicated to family gardens in which they grew corn, sweet potatoes, sugar cane, and sorghum for food. A few families also grew collards, turnips, and other vegetables. Rarely, however, did they raise enough to meet their annual needs. Atwater and Woods observed that the African American farmers subsisted off a staple diet of fat salt pork, cornmeal, and molasses, along with lard and wheat flour. The farming families prepared simple meals, slicing the salt pork thin and frying it over the fire. The grease was then mixed with molasses to make "sap", which people ate with cornbread. Atwater and Woods noted that this was the standard meal three times a day, 365 days a year. However, there were some exceptions to this routine. Sometimes during the late fall or winter, families served fresh pork and sweet potatoes. Hunting supplemented their usual fare and occasionally an opossum was served for dinner. Collards and turnips were boiled with pork fat every so often, which was said to make the vegetables taste "rich." Atwater and Woods noted that from a yearly perspective, vegetables other than sweet potatoes were marginal additions to the diet. During the lean winter months, food consumption and variety declined even further (Dirks and Duran 2001).

This staple southern diet provided the foundation for maladies that emerged from severe vitamin deficiencies. The heavy reliance on pork and corn commonly led to a niacin deficiency known as pellagra (Bollet 1992; Park et al. 2000; Prinzo 2000). Don Pedro Casal of Spain first described the condition in 1735, when he observed that the disease was often associated with poverty and the diet of pellagrins (those who suffer from pellagra), which consisted largely of cornmeal and a little meat (Bollet 1992). Pellagra produced characteristic skin and mucous membrane lesions, diarrhea, and mental changes. The condition was often referred to as consisting of the 'three 'D's': dermatitis, diarrhea, and dementia. Without treatment, the victim often died (Bollet 1992). Pellagra seasonally reappeared year after year in the same individuals, often in late spring and early summer. Researchers in the early twentieth century suggested the cause for this seasonal occurrence was linked to insufficient quantities of nutritious foods in the winter season, and/or the effects of stronger sunlight in the spring and summer (Prinzo 2000). This latter event may have prompted skin rash outbreaks. Atwater and Woods made no medical observations of the 18 families they studied in Tuskegee, Alabama. If they had, it was unlikely that they would have recognized the skin rashes, gastrointestinal issues, and mental illnesses as being associated with diet. Pellagra did not come to the attention of physicians until the early twentieth century. However, pellagra, or at least the symptoms attributed to the niacin deficiency, was likely a condition well known in the rural south (Dirks and Duran 2001). There were accounts that pre-

Emancipation slaves suffered from pellagra, but often referred to it as “black tongue” (Byrd and Clayton 2000). The “pellagra epidemic” did not arrive until the 1910s through 1940s, when new milling machines began degerminating seeds and in the process removed half of the tryptophan (the precursor to niacin) from the corn meal. After that, the disease became a plague, especially among tenant farmers towards the end of the winter when the lack of available vegetables was at their lowest (Dirks and Duran 2001). Today, vitamin fortification of most foods and consumption of a varied diet has virtually eliminated pellagra.

Other common vitamin deficiencies included scurvy, rickets, and anemias related to iron and other vitamin deficiencies. Scurvy was a medical condition caused by the lack of vitamin C (Aufderheide and Rodriguez-Martin 1998; Crosta 2009). Typically associated with sailors in the sixteenth to eighteenth centuries, the condition was found in many places where nutritional deficiencies were common and where people consumed few fruits and vegetables (Crosta 2009). Kiple and King (1981) noted that scurvy was acknowledged by physicians of the time as the result of too much meat and corn and not enough vegetables. Scurvy grass, which contains vitamin C, was used as a

home remedy to treat scurvy in the early nineteenth century (Covey 2007). Symptoms include poor weight gain, diarrhea, fever, swelling of the arms and legs, bleeding of the gums, and loosened teeth (Crosta 2009).

Rickets is a condition caused by a lack of Vitamin D (Aufderheide and Rodriguez-Martin 1998). The skin produced 90 percent of the body’s Vitamin D requirement (Roberts and Manchester 2005). African Americans were particularly susceptible to the disease due to their dark pigmentation, which reduced the Vitamin D production of the skin (Harris 2006). Rickets caused softening and weakening of bones in children, which resulted in bowed legs and sometimes the arms (Mayo Clinic 2011). Rickets often started early in life when mothers were chronically underfed and produced calcium-deficient milk (Roberts and Manchester 2005). It was observed that in the United States, Vitamin D deficiency rickets occurred most often in breastfed infants with dark skin that received no supplemental Vitamin D (eMedicine 2011). Historically, the disease was associated with deficient diets, faulty environments (poor hygiene, lack of fresh air and sunshine), and lack of exercise. Cod-liver oil was often the recommended cure (Rajakumar 2003). A diet of meat and corn would not have provided tenant farmers with the necessary levels of calcium usually acquired through dairy products and green vegetables to prevent the condition (PubMed 2011).

Anemia was a medical condition where the body did not have enough healthy red blood cells to provide oxygen to body tissues (PubMed 2009a). There were a number of factors, which caused anemia; these included chronic diseases such as cancer or rheumatoid arthritis, kidney failure, and poor diet (PubMed 2009a). In the “poor diet” category, iron deficiency is the most often cited cause. Iron deficiency is often described as one of the most frequently encountered nutritional deficiencies in the world, with as many as two billion individuals across the world suffering from its effects (Poskitt 2003). Symptoms of anemia include fatigue, lethargy, loss of appetite, depression, pallor, and breathlessness on exertion (Poskitt 2003). Small children and women of childbearing years were the most susceptible to iron deficiency anemia (Ramakrishnan and Semba 2008). Nutritional sources of iron were meat and dairy products (Ramakrishnan and Semba 2008). The tenant farmer’s diet, low in green vegetables and milk, but high in meat and molasses, was often

insufficient, and many people suffered from the effects of low iron intake. Additionally, the presence of gastrointestinal parasites (such as hookworms) reduced the absorption of iron and contributed to overall anemia (Ramakrishnan and Semba 2008).

Unlike malaria, yellow fever, hookworm, and pellagra, these vitamin-deficiency related diseases leave indelible marks on the skeleton. Though many of these maladies can be treated with dietary changes or supplements, tenant farmers of the rural south did not have the knowledge or access to foods that would have treated these conditions.

## DEATH AND DYING IN BIBB COUNTY

As stated above, germ-based medicine came into fashion in the mid- to late nineteenth century. Local physicians such as J.C. Johnson and J.W. Shinholser (white attending physicians listed on the Rutland District Mortality Schedule) were restricted to the knowledge of their time. Medical practice during most of the nineteenth century was carried out in the patients' homes, particularly in rural areas like the Avondale and Walden communities. Hospitals for African Americans were relatively unknown in the area until Saint Luke's Hospital was established in Macon in 1928 (Dyer and Dyer 1941). Yet, even into the late 1930s, there was still a lack of hospitals and doctors in Georgia that catered specifically to African Americans (Gordon 1937). Until then, nineteenth-century physicians traveled on foot or horseback in a wide geographic area, and were expected to treat a myriad of illness from toothaches to fevers to major respiratory infections (Rose Melnick Medical Museum 2009). Following this approach to medical practice limited the number of tools and medicines that the doctor was able to carry with him. Examinations usually included general observations of the patient's body; use of a stethoscope to the chest, lungs, and digestive tract; or the analysis of bodily fluids such as blood and urine (Rose Melnick Medical Museum 2009). Principal treatments included specific diet instructions, bed rest, baths, massages, and prescriptions for anti-inflammation creams or herbal pills (Rose Melnick Medical Museum 2009). As noted above, the use of herbal remedies in the form of infusions and poultices were also prescribed. Often, the physician was only present to pronounce the patient as deceased and record their passage on the local death schedules. Sometimes, they were never summoned, but notified of the decedents name and cause of death later. The 1879-1880 Rutland District Mortality Schedule noted that 11 of 18 African Americans died without benefit of an attending physician.

The 1880 Federal Census Mortality Schedule for Bibb County chronicles the history of death and disease for the county, which includes the Avondale and Walden communities among others nearby (Table 8.1). In addition to malaria, tuberculosis (listed as Consumption and Pulmonary Phthisis), and worms, the individuals from Bibb County also suffered from a number of other respiratory, gastrointestinal, fungal, and childbirth related illnesses. Several individuals died from accidents such as falls or cuts, and one woman, Catherine Maxison-aged 54, was listed as murdered.

*Table 8.1. Causes of Death Listed for African Americans and Mulattos on the 1880 Federal Census Mortality Schedule for Bibb County, Georgia*

Cause of Death	Modern Diagnosis	Number of Individuals Listed
Aneurysm		1
Apoplexy	Sudden loss of Consciousness; Stroke	2
Asthma		1
Bladder Disease		1
Congestion of the Bowels *		2
Inflammation of the Bowels		1
Obstruction of the Bowels		1
Brain Congestion	Swelling of the Brain	6
Brain Disease		2
Brain Fever	Meningitis or Typhus?	2
Brain Inflammation		1
Bronchitis		1
Burned		5
Cancer – Leg		1
Cancer-Unspecified		1
Cerebral Spinal	Unknown Meaning	2
Change of Life	Menopause?	1
Child Birth		2
Cholera *		6
Colic		2
Colitis	Swelling of the Large Intestines	1
Congestion		2
Consumption*, Pulmonary Phthisis	Tuberculosis	33
Convulsions*		7
Cramps		1
Croup *		6
Cut		1
Debility	State of Being Weak; Feebleness; Decay of Strength	5
Diarrhea		2
Diphtheria		2
Dropsy-Heart	Edema, the presence of abnormally large amounts of fluid in the heart	3
Dropsy-Chest	Hydrothorax-excessive fluid build-up	1
Dropsy-Unspecified *	Edema, the presence of abnormally large amounts of fluid in the body	10
Dysentery		4
Enteritis	Inflammation of the Intestines	3
Erysipelas *	Contagious skin disease caused by streptococcus bacterium, St. Anthony's Fire	1
Exposure		1

*Table 8.1. Causes of Death Listed for African Americans and Mulattos on the 1880 Federal Census Mortality Schedule for Bibb County, Georgia*

Cause of Death	Modern Diagnosis	Number of Individuals Listed
Fell		1
Fever		4
Heart Disease *		8
Hepatitis		1
Hernia		1
Hives		3
Inanition	Exhaustion caused by lack of nutrition	3
Influenza		3
Kidney Inflammation		1
Liver Inflammation		1
Lung Congestion		1
Lung Hemorrhage		1
Malarial Fever, Congestive Chill	Malaria	4
Marasmus	Progressive emaciation and general wasting away due to malnutrition that occurs in infants and children	2
Measles		6
Meningitis		1
Murdered		1
Old Age		4
Pneumonia		18
Pneumonitis	Inflammation of the Lungs	1
Poisoned		3
Premature		2
Prostatitis	Inflammation of the Prostate	2
Puerperal Fever	Elevated fever or septic poisoning associated with child birth	4
Remittent Fever	A fever that shows significant variations in 24 hours without a return to normal temperature	4
Smothered		1
Spasms		5
Still Born		5
Sun Stroke		1
Teething, Dentition		10
Thrush *	A fungal infection that is characterized by whitish spots and ulcers of the mouth and tongue. Common in infants.	2
Typhoid *		11
Unknown *		10
Uterine Hemorrhage		1

*Table 8.1. Causes of Death Listed for African Americans and Mulattos on the 1880 Federal Census Mortality Schedule for Bibb County, Georgia*

Cause of Death	Modern Diagnosis	Number of Individuals Listed
Whooping Cough		9
Worms *		2
Total Individuals		261

\*Cause of death listed on the Rutland District Mortality Schedule (1879-1880).

### INFANT MORTALITY

The chances that an infant would survive past weaning were low in the late nineteenth century. Before the recognition that bacteria caused illness, rates of infant mortality were much higher than they are today (Gale 1998). Toward the end of the nineteenth century, about 20 percent of the infants died before reaching their first birthday. Mortality rates for children between one and five years of age were even higher (Gale 1998). Ewbank (1987:106) estimated that the proportion of children dying by age five was constant at about 264 per 1,000 live births for the period of 1880 to 1900. Poverty and inadequate prenatal care are among the top factors associated with infant mortality (Gale 1998). Widespread malnutrition that was commonplace among the poor southern farmers was likely one of the top factors in infant mortality in the rural south. A study focused on slave child mortality noted that often babies entered the world with nutrient deficiencies because their mothers were already undernourished and vitamin deficient from the effects of pregnancy and the traditional slave diet (Kiple and King 1981). Because diet and obstetric medical care changed little between pre- and post-Emancipation periods, it was likely that freedmen's children suffered just as acutely as their predecessors. The 1880 Federal Census Mortality Schedule provides a list of causes of death for many infants and young children.

The pre-Emancipation issues of poor diet and malnutrition caused many children to die of "convulsions". The cause was probably tetany, a condition caused by hyper-irritation of the neuromuscular system, which caused convulsions, spasms, and cramps (Kiple and King 1981; MedicineNet 2011). Tetany was linked to lack of calcium, magnesium, and Vitamin D. Symptoms could be caused by a deficiency in one or a combination of these substances (Kiple and King 1981; MedicineNet 2011). Of the individuals listed on the 1880 Bibb County Mortality Schedule, 10 infants (less than one-year-old) were listed as having died from spasms, convulsions, or cramps. It was possible that these children developed tetany and succumbed to its effects.

Neonatal tetanus (*trismus nascentium*), a common cause of death among newborn slaves throughout the South may also have been the root of spasms noted as the cause of death (Savitt 1988). Writings of slave owners and physicians of the time recognized the origins of neonatal tetanus as improper care to the umbilical base. *Colstridium tetani*, which causes tetanus in older children and adults, also infected infants and newborns through the unwashed and frequent handling of the umbilical base. A doctor in 1853, noted that an eight-day-old black child first refused its mothers milk, gave a few convulsive hand jerks, turned completely rigid, and then died within days (Savitt 1988). Often children would survive the first few 7-10 days of life before

succumbing to the infection (Savitt 1988). Due to the lack of knowledge of the affects of unwashed hands and poor hygiene, the chances of a child dying from neonatal tetanus as late as the turn of the century was quite possible.

A cause of death not associated with an infection or disease was "smothering" or "suffocation". Early nineteenth-century observers noted that the "disease" occurred almost exclusively among slave populations. It was thought to happen when the sleeping mothers rolled onto or pressed their infants against them during sleep, thereby cutting off the child's air supply. Modern medical evidence, however, strongly indicates that most of these smothering deaths were not the result of careless mothers, rather from a condition currently known as Sudden Infant Death Syndrome (SIDS) or "crib death" (Savitt 1988). SIDS affects African Americans more than European Americans for as yet to be explained reasons. SIDS targeted children under one year of age, usually between two and four months, and 90 percent of deaths occurred by age six months (PubMed Health 2009b). One 1-year-old child was listed as smothered on the 1880 Bibb County Mortality Schedule. While slightly outside the risk age group, it is possible that this child died from SIDS.

Thrush is also listed as the cause of death for two children (aged five months and one year) on the 1880 Bibb County Mortality Schedule. Thrush is a fungal infection that presented itself as whitish spots on the tongue and mouth (Goldman and Bennett 2000; PubMed 2009c). A small amount of the fungus *Candida* lives in the mouths of humans, however, in cases of lowered immunity, the fungus can grow leading to sores in the mouth and on the tongue (Goldman and Bennett 2000; PubMed 2009c). It is commonly seen in infants and is rarely serious. However, if the individual has a weakened immune system, *Candida* can spread throughout the body causing infection in the esophagus, brain, heart, joints, or eyes (PubMed 2009c). It is possible, however, that in the case of the two children from Bibb County thrush may have been a secondary, and more visible infection rather than the actual cause of death. Children, who are malnourished, possess congenital defects, or exhibit immunodeficiencies have lowered resistance systems (Anaissie et al. 2009). These conditions may account for the deaths of these two children.

Many conditions listed as the causes of death are now recognized as non-life threatening infections or normal growth processes that, under normal circumstances, would not cause a person to perish. One such condition worthy of note was teething (or 'dentition') among infants. Teething is a normal growth process that begins around six months of age. However, in the late nineteenth century, it was cause for parental anxiety. The common thought was that children suffered from "itching gums, fever, convulsions, and diarrhea" when cutting teeth (Gibbons and Hebdon 1991; Markman 2009:e60). It was also thought that because an infant's nervous system was so sensitive, that teething altered homeostasis, resulting in illness and death. Common nineteenth-century remedies included opiates, lead, mercury salts, bromide, honey, and salt (Markman 2009). Doctors were also known to lance the gums of the child to aid dental eruption; it was thought to be a life saving technique (Gibbons and Hebdon 1991; Markman 2009). It was likely that the use of poisonous drugs and infections from surgical procedures ultimately took the lives of some children. Deciduous dental eruption coincides with weaning, a peak stress period when the child is removed from the highly nutritious and immune agent-rich mother's milk diet and learns to consume more

solid (and rarely as nutritious) foods. It is possible that the reduction of nutrients and stresses contributed to the child's overall poor health. Teething (or dentition) was listed as the cause of death for 10 infants in the 1880 Bibb County Mortality Schedule.

### MATERNAL MORTALTY

Until the late twentieth century, the risks of maternal (and subsequently infant) mortality were substantial. Childbirth was a difficult and dangerous time for some mothers and their infants. Women gave birth at home, often with the help of a midwife from their community, or occasionally an attending physician. In fact, it was during the nineteenth century that a clash between physicians and midwives began to manifest, with each blaming the other for high maternal mortality (Fraser 1998). The most common causes of maternal death today are severe bleeding, infection, eclampsia, unsafe abortions, seizures, and obstructed labor (Gee 2011). Most, if not all, of these causes were also present during the nineteenth century. Other conditions recorded during the nineteenth century include convulsions, retention of the placenta, ectopic pregnancy, breech presentation, premature labor, and uterine rigidity (Savitt 1981). At times, the life of the mother or child had to be sacrificed to save the life of the other. Often, both were lost due to extensive complications.

One of the most commonly quoted causes of maternal death was "childbed fever" or puerperal fever. This infection of the reproductive organs, caused by the bacterium *Streptococcus pyogenes*, occurred during or after parturition (Encyclopedia of Children and Childhood in History and Society 2009; Savitt 1981). It affected woman within the first three days of giving birth, and progressed rapidly, causing acute and severe abdominal pains, fever, and debility (Hallett 2005). It was often the result of poor antiseptic practices, such as hand washing, and the use of dangerous obstetrical interventions like the forceps and crochet hooks (Encyclopedia of Children and Childhood in History and Society 2009; Schwartz 2006). Several doctors, including Oliver Wendell Holmes, Charles White, and Ignaz Semmelweis, independently discovered the connection between unwashed hands and puerperal fever in the 1840s (de Costa 2009). They all noted in their private and public journals that they feared they (and their colleagues) were responsible for spreading the disease as they often attended a woman in labor shortly after having attended someone who had erysipelas or after having performed an autopsy (de Costa 2002, 2009; Wainwright 2005). The fevers were also spread when a doctor delivered one woman after another without washing his hands, thus transmitting the disease from mother to mother (Savitt 1981). Unfortunately, these gentlemen were met with skepticism from their peers. A fourth physician, Joseph Lister, began again in 1865 to apply the principles of antiseptics in his surgeries. Though he too campaigned for cleaned hands and sterilized instruments, it was the beginning of the twentieth century before many physicians began to accept the idea. The use of sterilized conditions dramatically reduced maternal death rates, but it was not until the introduction of sulfa drugs in the 1930s that the virulence of the streptococcus bacterium significantly decreased maternal deaths.

In the 1880 Bibb County Mortality Schedule, DeQuilla Woolfolk and her child (listed as DQ's child, Woolfolk) both died from complications of childbirth. DeQuilla's cause of death was listed as puerperal fever and the child was listed as stillborn. Three other women were also listed as dying from puerperal fever, while an additional two died from "childbirth." Martha Young died of uterine hemorrhage, which may have been a complication of childbirth.

### TRAUMATIC INCIDENTS AND THE ROAD TO OLD AGE

Not every one in the nineteenth century died from the complications of infectious disease, nutritional and vitamin deficiencies, or childbirth. Of the individuals listed on the 1880 Bibb County Mortality Schedule, five were noted as burned, one died from a laceration, three were poisoned, one gentleman died of sunstroke, and one unfortunate woman (Catherine Maxison) was listed as murdered. Accidents resulting in death were far more common in the unsafe and unhealthy conditions of the nineteenth-century farm and rural workplace than they are today in the age of occupational safety regulations.

Of the 261 individuals that died in 1880, only four survived to old age. Two gentlemen and two women reached the ripe old ages of 75, 80 (N=2), and 88. An additional 19 individuals survived past 60 years of age. They died from a variety of causes including pneumonia, heart disease, dropsy, cancer, consumption, typhoid, and general debility. The three individuals that lived to 60 (and one to 65) that died of debility, also likely died of natural causes. Debility was listed as a general state of being weak, feeble, or a decay of strength; all of which, suggested that the individuals had outlived their bodies and gradually succumbed to the effects of a long-lived life.

In a 1987 study, Ewbank focused on child mortality and life expectancy for African Americans in the United States. A portion of his study focused on census survival records from 1880-1900 (Ewbank 1987). For that time period, he noted that at birth individuals could expect to live to about age 35. However, if a child lived to the age of 10, they could expect to survive into their late 30s or early 40s. The 23 individuals listed above lived extraordinarily long lives for people whose daily lives were full of demanding physical labor, injury, and ample opportunities to succumb to illness or disease.

## APPROACHES TO HEALTH STUDIES

Humans are constantly exposed to tangible and intangible forces that inhibit normal cellular function. These forces can collectively be referred to as health risks. Human genotypes produce the basic physiologies needed to overcome many environmentally selective forces, but unfortunately, they are not capable of meeting every challenge. People still manage to live far short of their potential limits. Understanding why human physiologies are incapable of attaining maximum life span defines the limits of phenotypic expression and identifies what aspects of the socio-biological environment tax the human phenotype.

Differences in health can be attributed to variations in phenotype and contact with environmental risk agents (Wood et al. 1992). These agents interact to interfere with the body's ability to maintain homeostasis. Forces that divert the body's energy away from normal physiological

functioning are referred to as stress agents. Gilbert (1985:340) noted that stress agents can be divided into three general types: Direct Environmental Factors, brought about when the body comes in direct, injurious contact with the stress agent; Indirect Environmental Factors, which are physiological consequences brought about by a stress agent's presence in the environment; and Psychosocial Factors, which include stresses generated from real or perceived inability to communicate with the social environment in a manner that allows the victim/host to obtain what they need or desire. Within each of these broad groups are a variety of different forms of stress (Table 8.2). It is important to recognize that any stimuli producing a non-homeostatic response can at some level be thought of as a potential stress agent.

Table 8.2. *Stress Agents Requiring a Biological Response (Source: Sheldon 1988:65)*

Stress Agents	
Hereditary	Chemical
Traumatic	Metabolic
Physical	Nutritional
Infectious	Psychological
Inflammatory	Iatrogenic
Congenital	Idiopathic
Vascular	Tumorous

Human bodies initially respond to stress by the release of epinephrine or norepinephrine (Tortora and Angagnastakos 1978:413-414). These compounds act on various organ systems to increase energy by altering the amount of oxygen and glucose available. This initial response is followed by physiological resistance to the stress agent and concludes with the body either successfully removing the stress agent as an energy draining force, adapting body functions to the stressor's presence, or exhausting the body's capacity to withstand the stress agent (Selye 1978:37-38). Failure to overcome a stress agent allows the malady to continue drawing energy away from the host's other functions and introduces the opportunity for new stress agents to affect the body. Disruption of growth, loss of physiological function, decreased work capacity, lowered fertility, disruption of the socio-economic structure, and death are often the ultimate result of unbridled stress responses (Goodman 1991:32).

Relationships between good health and stress agents are not simply features observable in living populations; they can also be established for non-living populations. Some health risks leave a detectable impact on the human skeleton; therefore, archaeologically recovered human remains, can be used to infer past human activity. By combining archaeological data with osteological observations, inferences can be made about the impact these behaviors had on the individual's ability to maintain homeostasis. The study of stress in skeletal populations has undergone a dramatic shift in epistemology over the last several decades. Traditional examinations have applied a clinical approach to health and disease features in bone (Buikstra and Cook 1980:439). These studies sought to specifically diagnose risk agents. Unfortunately, analysts rarely provided detailed descriptions of the observed phenomena or clearly identified the criteria used to reach a

given diagnosis. As a result, the comparative capacities of these studies were extremely limited. The issue of poorly defined diagnosis criteria has been addressed by a number of analysts and pathological skeletal morphology was explicitly outlined (c.f., Hackett 1976; Ortner and Putschar 1981; Pindborg 1970; Steinbock 1976; Zimmerman and Kelley 1982). These texts emphasized the commonality and variability in skeletal responses to specific pathological agents, as well as the limitations of dry bone diagnosis and need for clear descriptions of specific skeletal stress responses.

## APPROACHES TO HEALTH SCREENING

Very few of these health risks followed a disease progression that led to chronic infection and those that did frequently did not leave a mark on the skeleton (Ubelaker 1978:77). As a result, identification of the specific cause of death could not be reliably accomplished solely from the skeletal tissues. Chronic conditions that were visible on the skeleton, however, allowed some insight into the stress factors acting to retard human health.

Determination of health in a population is inherently linked with the ability to detect a health hazard's effect on the host. Diagnosing health is based on the application of a screening procedure. The presence and frequency of diagnostic signs that indicate ill health are recorded within the test group and health is judged relative to these findings. The goal or 'gold standard' for health screening is to divide the test population into discrete groups representing truly healthy and unhealthy people (Fletcher et al. 1996:45). This standard is rarely attainable. Limitations in a diagnosing criterion's ability to differentiate healthy from unhealthy individuals frequently lead to errors in health classification. The validity of health assessments, therefore, is grounded on the amount of error in the screening procedure. This error can be reduced by ensuring that the procedures reliably discriminate healthy and unhealthy people, and that the same criteria were used to judge each subject's state of health.

For unrecorded and poorly documented human groups the only available indices of health are skeletal remains (Goldstein 1957:299). Health data from past populations, however, are very prone to misinterpretation. Work by Wood et al. (1992) concluded that anthropologists tended to make several assumptions: (1) that static, stable population structures are present; (2) that differences in individual phenotype imparted differences in risk; and (3) that the population available for study represented only those who died and not the entire population at risk. These applications result in unrealistic views of disease process and misdiagnoses. By steering away from arguments relating specific disease forms to their distribution in living and in skeletal population samples, questions of good health, as represented in the skeletal assemblage, can be addressed. The health data available must be recognized as flawed information and at best, only a conservative estimate of health status can be estimated.

Recognizing inherent weaknesses in epidemiological data can lessen potential sources of interpretive error, particularly when applied to skeletal assemblages. There are four fundamental weaknesses in skeletal health data.

1) *Lack of Information about the Unafflicted Population.*

Good health cannot be demonstrated. Currently, there are no objective methods that determine whether an individual is (or was) in good health; there are only tests that identify stress responses. Good health, therefore, is defined by a lack of evidence for disease. This definition is valid only in terms of the screening method applied to a population. The state of a subject being universally 'unafflicted' by health risks is assumed.

2) *Lack of Information about Who is Represented in the 'Negative Test' Sample.*

As noted, very few hazard agents actually target the human skeleton. Bone represents one of several tissues designed to respond as a unit to defend, nourish, and mechanically support the body (Junqueira et al. 1989:91). Since bone serves as a storage and structural mainstay, defense against biological and mechanical hazards initially falls on the structures surrounding it. Osseous tissue is not normally exposed to external environmental stimuli; hazard agents must reach bone by passage through these other tissues (Aegerter and Kirkpatrick 1975:251). Representations of health conditions in bone are usually the result of inability in the surrounding tissues to withstand or control the invading hazard. When a hazard precipitates an osteological response, there can be little doubt that a stress agent has affected the host's homeostatic balance.

But, this does not represent all the disease that is present in the original community. The sample of information available concerning physiological stress is limited only to those agents that leave some indication of their presence in bone. In short, a stressor must act on the body long enough for it to effectively alter some aspect of skeletal tissue. Most virulent stressors do not follow this pattern (Zinvanovic 1982:221). The availability of information about health is limited to that preserved in the skeletal record. It relays little about non-skeletal stress agents and about the true health status of those individuals not exhibiting a skeletal response. This is an error that cannot be corrected. At best, it must be recognized that the skeletal data in Avondale Burial Place cemetery can provide only a conservative approximation for the living populations' true health status.

3) *Lack of Objective Standards for Disease Diagnosis.*

Analysts studying health in skeletal populations rely on observational analogy for health diagnosis (Putschar 1966:57). Histologically, stress triggers skeletal tissues to respond by the deposition of matrix by osteoblastic cells and osteoclastic resorption of damaged or stressed tissues (Ortner and Putschar 1981:38-39). Bone does not differentiate between hazards; rather, it provides a generalized response to stimuli (Frost 1963:42). Discrete skeletal responses to risk agents, therefore, cannot always be differentiated, leading to misdiagnosis. These problems can be reduced substantially by grounding the health screening methodology on well-documented observation features.

#### 4) *Lack of Control Over Observation Sites.*

Observation sites are defined as the anatomical place or physiological system where health features are located. In living population studies, health analyses typically use the individual as both the unit of observation and unit of measure. While specific aspects of an individual's anatomy may be examined, subjects are more or less whole individuals and missing observation sites are rare occurrences. Unlike living individuals, skeletons are composed of independent elements. Archeologically derived skeletons are often incomplete, so the number of individuals rarely equals the number of observations. To further complicate the issue, skeletal elements themselves are often incomplete representations. If more than one observation site is scored for each individual in a skeletal assemblage, the number of individuals represented is generally greater than the number of observation sites scored. This incongruity means that diagnoses cannot be based on the same set of features if all subjects of a study are to be included. When quantitatively approached, controlling for portions of a skeletal element observed ensures that missing data does not confound 'healthy' and 'unhealthy' observation frequencies.

### HEALTH REGISTRIES

As represented in a skeletal assemblage, the true state of a living population's health represented in a skeletal assemblage is usually unknown, largely because the true range of potential health risks cannot be determined from skeletal tissue alone. Features recorded in the osseous tissues during life, however, can be used to identify some of the risk agents responsible for ill health. Screening skeletal materials can identify cases where skeletal tissue morphology has deviated away from a homeostatic balance.

Achieving accurate classification requires a detailed screening of complete or near-complete skeletons. In less than perfect specimens, the ability to accurately identify risk agents is heavily dependent on the materials observed. Health responses frequently follow distinctive patterns of involvement across the skeletal system and these patterns can be used to infer the presence of specific risk agents in the environment. Stress responses are frequently organized into a health registry. These registries are not designed to identify all agents acting on the living population, only those leaving a trace on the observed tissues.

Health registries were compiled for the Avondale Burial Place cemetery. As a compromise between data gathering and project requirements, only relatively complete elements (score of '1') were used for comparative purposes. This conservative approach ensured that analogous observation sites were observed. The resulting data was not confounded by using incomplete specimens, where a tendency to score an element as 'healthy' could easily be obtained from an observation site that was actually missing and not observed. Observation sites were scored according to the skeletal condition. Long bone representation was defined in terms of bone thirds.

All elements containing a complete third (proximal, central or distal) were included in the health sample. Scoring for more irregularly shaped bones in a similar manner would have required dividing them into observation quadrants, a procedure that would have considerably curtailed an

efficient assessment in the field recovery environment. The health of the bones was considered in terms of their overall skeletal condition. Exception to the skeletal condition criteria were made only on those cases where clear evidence of a health response was found in a fragmentary specimen and these fragments were to be used to help diagnose a health condition. These individual responses were included; however, they were not considered as part of the comparative health assemblage for any other response. The ramifications of this approach were two fold. First, sample sizes were not the same for each observation site; rather they were rendered unique for each health observation. Second, and perhaps more importantly, inclusion of health responses from outside the same population used to select a 'healthy sample' provided a better idea of the true count and diversity of health responses, but it also biased the data by over-representing responses in a given statistic. Health response estimates should, therefore, be considered on the high end of the true value.

Classification of health conditions in the field meant that only macroscopic observations were possible. Potential indicators of skeletal tissue stress were defined as morphological variations that fell outside the range of normal human variation and could not be accounted for by mortuary behavior or taphonomic processes. A battery of macroscopic observations, as outlined in Table 8.3, recorded the presence of osteological responses to stress by the specific location on afflicted skeletal elements. Osteoblastic and osteoclastic reactions to stress were organized into 11 skeletal responses. Data on the severity, degree of localization, and a brief description of each observed feature were also included. When possible, this information was modified to fit the standards outlined in Buikstra and Ubelaker (1994).

*Table 8.3. Health Observation Battery Used to Evaluate the Avondale Burial Place Skeletal Collections*

Observation	Definition
Bowing	See General Bone Responses.
Cartilage Ossification	
Cortical Thinning	
Cortical Volume Increase	
Degeneration	
Density Increase	
Density Loss	
Injury	
Medullary Volume Increase	
Ossification of Connective Tissue	
Osteolysis	
Severity:	
Slight (SL)	Health response affects less than 10 percent of the observation site. Condition is detectable only on close observation. Each response is judged to have engendered only minor biological impairment.
Moderate (M)	Health response affects 10-50 percent of the observation site. Condition is immediately detectable by the presence of large readily identifiable features. Mechanical and/or metabolic activities in the bone would have been impaired.

Table 8.3. Health Observation Battery Used to Evaluate the Avondale Burial Place Skeletal Collections

Observation	Definition
Severe (SEV)	Health response affects more than 50 percent of the observation site. Health responses have deformed the bone and there are indications of major systemic compromise. Stress agents have reduced the bone to a dysfunctional state.
Distribution:	
Localized (L)	Health responses are limited to singular or isolated occurrences.
Widespread	Reactions to stress form a network of responses across the observation site.

## HEALTH REGISTRY RESULTS

The health sample was composed of 2,821 individual bones or bone fragments. Element representation was not equal across the skeletal assemblage. Elements from the skull and legs were more comprehensively represented in the health assemblage than those from the arms, chest, spine, and pelvic girdle.

Hard, durable elements composed of high amounts of cortical bone, such as the long bones and cranial vault tended to be the best represented. These comparisons also emphasized that observation sites from the center of all limbs were better represented than from those at either end. The most poorly represented areas were the ribs and innominates, whose bones are composed largely of trabecular bone beneath a cortical shell. Their structure may have prevented their survival in subsurface environments as they frequently failed from ground pressure.

The distribution and morphological features of elements in the health samples influenced what stress agents were most likely to be detected. Structurally, the samples reflected thick cortical bone deposits, large medullary regions, major muscle attachment sites and large joint surfaces. These aspects of the skeleton were important for structural support, movement of the body, hematopoiesis, and material storage. Stress agents affecting bones in the health samples would be expected to target one or more of these features.

Did these health samples provide evidence of stress responses? A total of 235 distinct health responses were recorded on 143 skeletal elements (Table 8.4). For the purposes of this analysis, skeletal elements are defined here as a single bone such as a femur or a grouping such as ribs or vertebral segments. In terms of sheer quantity, the torso had the largest representation; however, many of these observations came from single individuals and there was considerable redundant representation, largely because of the great number of individual elements located in this region. Proportionately, the pathological sub-sample was dominated by bones from the spine, arms, and legs. The vertebrae represented the most afflicted bones in the skeleton.

Table 8.4. Pathological Observation Sub-Sample Summary Statistics

General Locality	Observations (N=)	Individuals (N=)
Skull	15	9
Arms	32	6
Chest	34	6
Spine	95	8
Pelvis	9	4
Legs	50	10
Total	235	

### GENERAL BONE RESPONSES

Health responses tended to target a specific tissue or bone layer. Skeletal reactions to a stress agent were frequently anything but simplistic. It was not uncommon for a health response to engender both osteoblastic and osteoclastic responses, as well as responses over different regions of the same bone or even across many bones. Adequate documentation of a complex response often required multiple classifications. These invariably were scored as separate responses.

Health responses were initially classified as bone losses or increases relative to observations made at periosteal, cortical, or endosteal stress sites (Table 8.5). Some responses such as skeletal bowing could not be accurately classified as either an increase or decrease and were recorded as 'None.' When examined by region, loss rates were more than double the increase responses in the chest and arms. Conversely, bone increases were more than twice that of loss responses in the spine. Stress agents targeting on these two former body regions required vastly different responses. Osteoblastic losses in bone accounted for 59 percent of the observations, while only about 39 percent were recorded as bone increases. These data indicate that responses to stress were not uniform across the skeleton and that the patterns were dramatically different between losses and increases. To further illuminate these patterns, the skeletal assemblages were initially screened for evidence of 11 distinct health responses. Select examples of these health responses in the Avondale Burial Place skeletal assemblage are illustrated in Figure 8.1. General health responses and potential maladies are addressed in the rest of this chapter. Specific conditions as they relate to the individual have been outlined as part of Volume 2's feature descriptions.

Table 8.5. Bone Loss and Increase Rates Among Health Response Observations

General Locality	Bone Loss	Bone Increase	None
Arms	22	9	1
Legs	46	1	3
Skull	8	7	0
Chest	24	10	0
Pelvis	5	4	0
Spine	34	61	0
Total	139	92	4
Proportion (N=235)	0.591	0.391	0.017

Figure 8.1.  
Health Responses in the Avondale Burial Place Skeletal Assemblage



A. Bowing in Femora of F-36



B. Degeneration (Eburnation) in F-5's Elbow



C. Density Loss (Osteoporosis) in Skull of F-39



E. Skeletal Injury (Depressed Fracture) in F-21's Skull



D. Muscular Injury (Myositis Ossificans) in F-1's Right Femur



G. Connective Tissue Ossification (Enthesophyte) on F-26's Ulna



F. Medullary Volume Increase (Mastoiditis) in F-5's Skull



H. Osteolytic Lesion (Schmorl Node) in F-5's Vertebrae

## Bowing

Bowing is defined as abnormal bone curvature. It can emerge from three distinct phenomena. True bowing occurs when mechanical forces are greater than the bone's structural integrity and the bone bends from constant pressure. Bowing of this nature tends towards the weakest structural plane (Jaffe 1972:393). Among the legs, medio-lateral deformation is the most common form (Mann and Murphy 1990:122-123). This condition is usually associated with nutritional or metabolic disorders (Jaffe 1972; Ortner and Putschar 1981; Rathbun 1987). Developmental bowing occurs when the growth of one bone is hindered by its attachment to others (Jaffe 1972:921). Differences in growth speeds are accommodated by allowing growth to occur in the plane experiencing the greatest amount of cell activity (hence bowing). Pseudo-bowing is a condition where accelerated bone deposition on one surface (usually the anterior) accentuates the bone's curvature (Jaffe 1972:937; Webb 1994:157). Bones with this condition frequently appear to be bowed anteriorly and flattened medio-laterally (Mann and Murphy 1990:116). In actuality, posterior and medio-lateral dimensions are often unaffected. Developmental bowing and pseudo-bowing can occur together to form sabered tibiae (Hackett 1976:420; Rogers and Waldron 1989:619). Without radiological aids, bowing can be extremely difficult to define in terms of pure osteoblastic or osteoclastic responses. For the purposes of this examination, cases of bone bowing were noted but not classified as a loss or increase in bone (treated as 'None'). Bowing was noted in one humerus and three femora. The child interred in F-36 exhibited bowed arms and legs that are consistent with those from children who suffer from rickets.

## Cartilage Ossification

Cartilage ossification refers to irregular osseous growths or lips in or around articular surfaces. These are ultimately the result of minor irritation in cartilaginous portions of the joint capsule (Ubelaker 1978:78-79). Cartilage ossification is categorized by lipping along articular margins and osteophytosis of the joint surface. Lipping is an osseous replacement of cartilage extensions out from the sides of a joint. Both cartilaginous and osseous lips are physiological efforts to relieve joint pressure (Bourke 1967:354; Johnson 1959:229-230; Sokoloff and Hough 1985:383). These conditions frequently reduce joint movement. Osteophytes are recognized as raised protrusions or 'bumps' in the articular surface. They represent a localized replacement of avascular cartilage for vascularized bone (Johnson 1959:1227). This condition occurs when cartilage can no longer nourish itself through diffusion. The size, shape, and position of a given articular surface osteophyte depend on the degree of instability in the joint capsule (Bullough 1998:8.8.6). Cartilage ossifications were the most commonly observed health responses. There were 101 cases reported across the Avondale Burial Place population.

## Cortical Thinning

Identified along broken margins, the osteoclastic removal of cortical tissue resulted in a thinned cortical surface. Cortical thinning was noted in five lumbar vertebrae and one sacrum, all from F-38. Surface remodeling and increased bone formation on the endosteal surfaces suggested that these responses were affiliated with other health responses. It is likely that this condition was active at the time of death.

### Cortical Volume Increase

Any expansion of surface volume from the deposition of additional bone on the exterior surface was scored as a cortical bone volume increase. Much of this activity can be attributed to osteoblasts located in the periosteum's cambial layer (McLean and Urist 1968:12). Health responses were differentiated from normal cellular activity by the distinct patchy development of woven or lamellar bone on the original bone's surface. Woven bone and porous lamellar surfaces are indicative that the condition was active at the time of death, while uninterrupted sheets of sclerotic or lamellar bone infer an inactive or chronic skeletal response (Janssens 1970:72; Steinbock 1976:115). Nineteen cortical volume increase observations were recorded in the Avondale Burial Place assemblage. They were primarily associated with craniosynostosis, scoliosis, and muscle increase, among other unknown causes.

### Degeneration

Degeneration is principally a feature of articular surfaces. This loss is primarily associated with contact surfaces between hard tissue and other mediums. Bone is gradually removed leaving a depressed surface when osteoblastic and osteoclastic activities can accommodate for tissue loss, or rubbed and polished surfaces when mechanical pressures outstrip the body's ability to repair these tissues. If loss is greater than replacement, joints frequently develop eburnated surfaces. Joint surface porosity is another result of gradual breakdown in the joint capsule. These features are indicative that cartilage and other joint capsule components have deteriorated (Bullough 1998:8.8.3-8.8.4). Joint modification, due to trauma resulting in a loss of movement, was also considered a form of degeneration. All observed conditions were active at the time of the host's death. Degeneration was noted in 41 responses and was almost exclusively associated with osteoarthritis, though activity stress, injury, and osteoporosis were also noted.

### Density Increase

Augmentation of bone density within the existing tissue matrix is usually the result of abnormal osteoblastic mineralization processes. Sometimes weight and radio-opacity differences can identify this condition, but these responses are more precisely detected through chemistry and ionizing techniques (see Willey et al. 1997). Avondale Burial Place's soil and taphonomic conditions preclude detailing density increases without using destructive methods. Density increase was, therefore, not scored for these health assemblages.

### Density Loss

Density loss was defined as the removal of extra-cellular matrix within the cortical or trabecular structure. This phenomenon was a normal homeostatic function in the human body, although usually this osteoclastic activity was balanced by osteoblastic deposition. Left unchecked, however, osteoclastic removal could lead to osteoporosis. Radiographically, density loss was best identified by a distinct decrease in cortical radio-opacity and trabecular rarefaction. In extreme cases, density loss could be detected by an unusually lightweight among affected bones. This latter observation was what was scored in the Avondale Burial Place assemblage. Taphonomic conditions, including earth pressure and leeching, tended to shatter thinned bone, precluding

accurate scoring of density loss responses. There was a single response recorded as density loss in F-39, which was associated with osteoporosis. This should be viewed as a minimum representation in the Avondale Burial Place.

## Injury

Merbs (1983:160) identified injuries as the result of any traumatic encounter with an environmental hazard. Injuries are characterized as health response to an agent whose impact on the skeleton is acute, if not instantaneous, and whose objective is not to secure energy or nutrition from bone and soft tissues. Skeletal responses often entail losses and increases of connective tissue.

Bones shatter when strained beyond their tensile strength. They may be broken before or after archaeological deposition. Conical or spiraling fractures are diagnostic indications of perimortem injury (Villa and Mathieu 1991). These differ significantly from the flat, linear fractures common in archaeologically broken bone. These latter forms are not evidence of an injury.

Perimortem fractures imply that injury may have contributed to a host's death. Broken bones frequently exhibit biological responses, including woven, lamellar, and compensatory remodeled cortical deposits. Well-healed fractures are identifiable by abrupt changes in bone angle and resorption of the fractured margins.

F-21, an adult female, exhibited a depression fracture on her forehead. The injury showed very smooth callous formation indicating the wound was well healed at the time of death.

The passage of uncontrolled energy through a joint can result in dislocation of the bones. Joint injuries are detected by atrophy of existing joint structures, formation of new articular surfaces, and changes in articular surface orientation. It is likely that some of the individuals recorded as having osteoarthritis/degenerative joint disease had joint dislocations as precipitating joint loss events.

Large irregular nodules of connective tissue ossification (*Myositis Ossificans traumatica*) at muscle attachment sites are indicative that the connective tissue tore away from the point of insertion (Zimmerman and Kelley 1982:49). The child recovered from F-1 exhibited a very large exostosis on the proximal end of the right femur. In the case of this child, the quadratus femoris muscle at the intertrochanteric crest ossified leaving a protruding segment of bone. This ossification was likely due to a significant subluxation (partial dislocation) of the femur. The injury was not significant enough, however, to cause the femur to pull completely out of joint. Numerous individuals from the Avondale Burial Place population also exhibited small connective tissue ossifications on the muscle attachment sites of the long bones. These changes are likely responses to less catastrophic soft tissue injuries.

Other potential injuries include Schmorl's nodes on the vertebrae. Schmorl's nodes, or depressions, are caused by a slipped or herniated disc and are believed to be associated with trauma, especially in the thoracic or lumbar vertebrae (Pate 1991). They can also be associated with degenerative disc disease (Mann and Hunt 2005:94-95). When associated with traumatic events, the event likely precipitates the actual formation of the Schmorl's node (Pate 1991). Some researchers have suggested that a congenital defect of the vertebral end-plate may create weak

spots, allowing the intervertebral disc to extrude (Pate 1991). Three individuals exhibited Schmorl's nodes. Most were found on the thoracic and lumbar vertebrae, but the individual in F-12 exhibited a lesion on the second cervical vertebrae.

Finally, the young man recovered from F-22 suffered from a potential injury to his skull. Some years prior to death, the young man developed a major infection (osteomyelitis) and subsequent lesion on his skull. The large lesion, approximately 69.3 millimeters total in diameter, was observed in the right parietal. The edges were eroded and pitted, and the ectocranial surface and diploë were thinned along the margins leaving an opening, 46x50 millimeters in diameter. In addition, the entire right parietal appeared slightly depressed as observed along the sagittal suture. The most likely etiology of the lesion is a wound to the skull. If the young man was injured and the subsequent wound was not cared for properly, he could have developed an infection that spread from the skin to the underlying osseous tissue.

### Medullary Volume Increase

Volume increases resulting from swelling within the bone, were identified as medullary cavity volume responses. If medullary volume increases are gradual, cortical bone remodeling enables expansion without irritation of the periosteal membrane. This can result in a swollen bone with an otherwise unremarkable cortical surface. Medullary cysts are defined radiographically by pockets surrounded by sclerotic bone. Rapid increases in medullary volume can result in cortical necrosis and ultimately the development of sequestra. Pressure release can also be accomplished by cloaca or drainage channels from the medullary cavity to the bone's surface. These responses are diagnostic of inflammation by an organic stress agent. The etiology of medullary volume increases in the Avondale Burial Place assemblage was poorly understood, but at least one case was recorded in F-5, which was associated with mastoiditis, an inflammation of the temporal bone's mastoid process.

### Ossification of Connective Tissue (Enthesophytes or Enthesopathies)

Ossifications of tendons or ligaments at attachment sites are included in this category. These are skeletal responses to chronic tension at connective tissue attachment sites (Rehoy et al. 1998:6.13.2). The morphology of enthesophyte growth reflects whether the demand was a perimortem response or something that was formed considerably earlier. Jagged, irregular projections indicate accelerated growth triggered to alleviate an immediate environmental pressure, while smooth edged 'pillowy' projections infer a more fulfilled environmental demand and opportunity for remodeled growth. Enthesophytes tend to be thinner, more irregular, and project away from the bone than normal tubercles. Enthesophyte development was identified in 13 skeletal responses from seven individuals. Most of these observations exhibited remodeled lamellar bone, suggesting that the response was inactive by the time death occurred.

### Osteolysis

Osteolytic responses were localized excavations that resulted in the loss of hard matrix. Osteolytic lesion morphology varied by the speed of excavation. Rough, poorly remodeled bone margins inferred that lesion formation was faster than osteoblastic responses (Ortner and Putschar

1981:38). Likewise well-remodeled lesion edges indicated a slowed excavation. Osteoclastic and/or stress agent induced excavation areas possessed remodeled bone surfaces and thus were differentiated from peri/post-mortem trauma that lacked these features. Osteolytic activity was observed in 42 responses from three individuals. Most of the lesions were Schmorl's nodes.

### HEALTH RISK DIAGNOSIS

The simplistic responses of bone to a particular agent limit the number of morphological variations possible and, as a result, responses from a wide range of agents may appear the same at a given observation site. One unfortunate result of this phenomenon is that very few responses can be attributed to a specific health risk. To further complicate issues, a given agent may not affect all target sites in the same manner. Determining possible risk agents requires the analyst to consider the distribution and form of health responses from an entire skeleton, not just from individual observation sites. Diagnosis of specific medical conditions, as a means of identifying health agents in the Avondale Burial Place assemblage, was accomplished by reviewing all health responses listed in the health registry for each individual and correlating these with known health response distributions to specific health risks. As is the nature of most skeletal diagnoses, these were based on incomplete skeletal sample sets and not assigned using the same uniform criteria in every case. While the diagnoses lack empirical validity, they linked different health responses together as part of a common malady that could not be easily accomplished through more quantitative means. These conditions were explored to illustrate how these agents affected the host and the Avondale Burial Place community.

#### Activity Stress

Workloads that tax tissue structure are common stress agents. Hyperextension of the tissues from over-use frequently results in discomfort and temporary reductions in the muscle's effectiveness, additionally tissue damage can occur from continued over-use. When the host demands a greater physical activity than the body is capable of producing, mechanical failure can be prevented by changing tissue structure. Plastic responses to work include the addition of more cells, changes in metabolic output and efficiency, transformation in cell size, and consumption of previously stored materials. By themselves, these conditions are not directly attributable to degenerative processes, diseases, or biochemical imbalances (Kennedy 1989:156). Stress responses to work are more closely allied with physiological acclimitizations. The presence of these responses indicates that the host was able to overcome any immediate danger imposed by increased work demands. They also indicate that work was a chronic stressor.

The skeletal system is not immune to activity-based stress, it too can be modified in order to satisfy environmental demands (Merbs 1983:147-157). Most skeleto-muscular stress responses fulfill mechanical demands. If an activity is prolonged, tension at tendon and ligament attachment sites stimulate ossification as a means of more firmly anchoring tissues to bone. These enthesophytes are the end product of very prolonged exposure to mechanical stress. Intense occupational exertion has been suggested as the probable agent responsible for tendon ossification in the arms and shoulders of slave populations (Kelley and Angel 1987:207-208; Owsley et al. 1987:191).

An important contributing factor to enthesopathic development is age. Hayflick (1978:32) noted that with increasing age, tissues generally operate at a reduced capacity and gradually lose their ability to replicate effectively. As a means of compensating for these losses, ossification of connective tissue reduces age-based soft tissue impairment. Enthesophytes rarely occur in infant and subadult skeletal materials, where changes in tissue structure can be accomplished as part of developmental maturation (Galera and Garralda 1993:250). They are a common observation among adult and geriatric skeletal remains, where activity demands are greater than the developed skeleton has been designed to handle (Mann and Murphy 1990:72).

### Craniosynostosis

Cranial suture closure typically occurs during later adulthood between 30 and 40 years on the endocranial surface and approximately 10 years later for the ectocranial surface (Aufderheide and Rodriguez-Martin 1998:52-54). However, there is a large range of variation seen in suture closure. Craniosynostosis is considered the normal process of suture fusion that occurs at an abnormally early age. The nature and degree of the deformity depends on the number of sutures involved, the order of fusion, the age of the individual, and the underlying causes of the early fusion (Aufderheide and Rodriguez-Martin 1998:254). There are various forms of primary craniosynostosis including simple (single suture) nonsyndromic, compound, and syndrome related among others (Kabbani and Raghuvver 2004).

Three individuals in the Avondale Burial Place exhibited scaphocephaly, a condition that occurs when there is a premature fusion of the sagittal suture. This form of craniosynostosis is characterized by a high, narrow vault, which becomes elongated in the anteroposterior dimension (Kohn et al. 1994:385). It is the most common of the craniosynostosis forms, and is responsible for over half of the cases observed in modern day children (Skull Base Institute 2009). A variety of studies, including one carried out by Lajeunie et al. (1996:284) found that early sagittal synostosis occurred more often in males than females. They also found that an autosomal dominant pattern noted in vertical and male-to-male transmission. Numerous causes have been cited for the occurrence of premature suture closure, including a primary anomaly of the cranial base (Bennett 1967:2-3), prolonged constraint of the fetal skull in utero (Graham et al. 1979:747), metabolic, and teratogenic disorders (Cohen 1986). Scaphocephaly occurs often among infants who are born prematurely (Skull Base Institute 2009). Experts disagree on whether a decrease in mental function occurs as the result of increased intracranial pressure (Arnaud et al. 1995:478-479).

### Cribræ Orbitalia

Cribræ orbitalia is a condition commonly associated a number of illnesses including iron-deficiency anemia, malnutrition, scurvy, epidemic diseases, intestinal worms or gastrointestinal problems (Mann and Hunt 2005:31; Stuart-Macadam and Kent 1992). The lesions are similar to those of porotic hyperostosis but occur on the orbital roof. They are predominately found in the anteriolateral portion, and 90 percent are bilateral. The lesions are found most often in infants and younger children (Aufderheide and Rodriguez-Martin 1998:348). In children, the bone may be thickened and sponge-like, while adults usually exhibit only the remnants of the holes or pits (Mann and Hunt 2005:31). At least one child, F-17, exhibited pitting along the orbital roofs. Among the

most likely causes are iron deficiency anemia, sickle-cell anemia, or nutritional deficiencies. Because preservation was so poor, this should be viewed as a minimum representation in the Avondale Burial Place.

### Degenerative Joint Disease (Osteoarthritis)

Degenerative Joint Disease (DJD) is characterized by the gradual deterioration of synovial joints, frequently in association with advancing age; however, since this syndrome is also a function of physiological wear, phenotype, and use, it is usually diagnosed as a separate health risk (Jurmain 1977:354). DJD is largely a soft tissue malady. As a synovial joint is exposed to wear and tear, cartilage and associated membranes lose their ability to produce new cells and chemically balanced synovial fluid. These limitations place greater demands on the remaining tissue, stressing their ability to support and maintain the joint. The stimulation of osseous activity is an indication of advanced cartilage deterioration. Skeletal responses include replacement of overstressed cartilaginous articular surfaces with bone (surface osteophytes), development of synovial fluid filled cysts in and below the joint surface, sclerotic thickening of the underlying trabecular structure (pitting), and endochondral replacement cartilage along the margin with osteophytes (lipping). In addition to these responses, if cartilage loss exceeds replacement, contrasting bone surfaces may become eburnished, triggering intensive sclerotic bone formation within the articular surface. Among weight bearing joints, progressive remodeling of the articular surfaces tends to decrease the available joint surface area as a means of further accommodating for these changes (Johnson 1959:1225-1229). DJD commonly results in joint swelling, pain, and reduced joint movement.

DJD is most commonly associated with weight bearing joints and those receiving a considerable amount of use. These include the knees, hips, temporomandibular joints, shoulders, fingers, and toes (Ortner and Putschar 1981:419; Steinbock 1976:279). Joint capsules rarely respond to DJD with a unified tissue response. Instead, joint tissues attempt to isolate and adapt local tissues to fulfill mechanical demands at points of compromise. Multiple independent skeletal responses often occur within a single joint. Some of the syndromes classified as Activity Stress may also be components of Degenerative Joint Disease Syndrome.

While all human populations are susceptible to DJD, the distribution of the condition across the skeleton varies by social context. Jurmain (1977:363) has attributed varying activity levels to differences in osteoarthritis. Differing social roles within a culture may also be responsible for varying degrees of DJD (Ortner 1968:139). For example, activities entailing extensive flexion of the arm joints, such as cotton picking, coal mining, foundry work, or bus driving are capable of producing extensive osteoarthritis (Kellgren and Lawrence 1958:395; Lawrence 1961:270, 1969:388; Lockshin et al. 1969:25; Mintz and Fraga 1973:78; Naira 1932:214-215). Blacks are more prone to shoulder degeneration (Bridges 1992:71). Jurmain (1980:149) suggested that within individuals, differences in osteoarthritis of the elbow may be due to handedness.

### Osteoporosis

Osteoporosis is the thinning of bone tissue and loss of bone density over time, and is the result of the upset in interactions of bone and other internal systems as they attempt to satisfy their needs for calcium (Stini 1990). The cause of osteoporosis is complex and is dependent on the interaction of

nutritional, endocrinological, and local factors that are influenced by a variety of genetic and environmental conditions (Stini 1990). Osteoporosis has been divided into Type I and Type II Osteoporosis. Significantly diminished bone mass due to a longstanding imbalance between bone growth and bone resorption is known as senile osteoporosis or Type I and is often associated with menopause in women ages 51-75 years old (Aufderheide and Rodriguez-Martin 1998; Ortner and Putschar 1981:55). As the individual ages, the bone formation cannot keep up with the amount of bone resorption, resulting in the diminishing of the entire bone mass. Osteoporosis is defined as a loss of 30 percent or more of overall bone mass (Ortner and Putschar 1981:18, 38). The disease usually manifests itself during the fifth decade of life, and affects women more than men. The most affected elements in the skeleton are those richest in spongiosa such as the vertebrae, ribs, sternum, and pelvis. The long bones are affected much later. The resorption of the cortex of the major long bones follows a two step pattern: first, endosteal resorption, which leads to an increase in the medullary cavity, and second intracortical resorption which results in an increased numbers of unfilled or partially filled Haversian resorption spaces. The second portion of the process leads to increased porosity of the cortex, which may appear as a cancellous lesion.

Type II affects both genders above age 60 and shows loss of both the trabecular and cortical bone with hip and vertebrae fractures (Aufderheide and Rodriguez-Martin 1998). Type II has a number of causes, which include dietary factors, Type I diabetes, Rheumatoid arthritis, and reproductive history among others. A woman's reproductive history can have very positive or very negative effects on her ability to maintain a healthy level of calcium in her system. Stini (1990) noted that there is an increased absorptive efficiency during pregnancy overall if there is a sufficient level of calcium in the diet. Additionally, since lactation creates an extended demand on the mother's calcium reserves, it is essential to maintain a positive balance to reduce later bone loss. Also, short interbirth intervals or early births followed by longer periods of breastfeeding have been shown to be associated with lower postmenopausal bone densities (Stini 1990).

Osteoporosis manifests itself in the skeleton as greatly reduced weight of the bones, or as a collapse or fracture of various elements. The vertebrae, the most affected elements, can become extremely porous and collapse due to the mechanical pressure of weight bearing (Aufderheide and Rodriguez-Martin 1998:314-315). The collapse can be uniform across the centrum, or the anterior portion may collapse producing a wedge-shape. This wedge results in a forward bending of the spine known as kyphosis. The most commonly affected area is the segment between the midthoracic and upper lumbar vertebrae. The long bones are very prone to fracture. The loss of cortical bone and the increase in the medullary cavity weaken the bones, leaving opportunity for weight induced, or fall induced fractures. The femur and distal radius are the most commonly fractured long bones (Aufderheide and Rodriguez-Martin 1998:315). The skull also exhibits changes in the form of biparietal thinning (Aufderheide and Rodriguez-Martin 1998:316). The skull can become very thin, fragile, and translucent (Mann and Hunt 2005:57). Only one individual exhibited cranial thinning and loss of cortical mass, as evidenced by an extremely lightweight and very thin calvarium. The individual recovered from F-31 likely exhibited senile osteoporosis. As preservation was so poor, this should be viewed as a minimum representation in the Avondale Burial Place.

## Periostitis

Technically, periostitis is a descriptive term that refers to any nonspecific infection of the bone (Ortner and Putschar 1981:137). Following Mann and Murphy (1990:109), its use here has been limited to inflammation of the exterior surfaces only. This tissue primarily acts as a barrier, helping to protect the bone's material stores from biological and mechanical stress agents (Peacock and Van Winkle 1976:578; Sigerist 1962:49). Irritation of the periosteum triggers migration of osteogenic cells to the stress site where they proliferate, transform into osteoblastic cells, and secrete collagen, all in an attempt to isolate the irritating agent within bone matrix. The results are sheet-like deposits of fibrous or lamellar bone on the affected bone's surface.

Since bone is not normally exposed to the external environment, pyrogenic bacteria generally reach the periosteum by either the vascular or lymphatic systems (Aegerter and Kirkpatrick 1975:251). The transition from soft to hard tissue on the bone's surface inhibits circulation, providing excellent places for biological agents to accumulate and grow (Eisenberg 1986:91). Since tissue irritation is a function of where an agent is carried by the vascular system, these types of periosteal infection can occur anywhere on a bone's surface (Gehweiler et al. 1970:500-501). Steinbock (1976:115) noted that periosteum covering the tibiae, fibulae, clavicles, radii, and ulnae are extremely vulnerable to these types of infection.

Infection can also set in from the surface. Skin ulcerations can allow infectious agents to 'seep' through the tissue and come in contact with the periosteum (Aegerter and Kirkpatrick 1975:251). Skin ulcers and psoriasis represent two agents associated with surface originating periosteal infections (Brown and Middlemiss 1956:213; Goupille et al. 1996:1553).

Periostitis can also be caused by injury. This results when physical stress, such as blunt force or mechanical strain, is passed through the overlaying tissues, dislodging the periosteum. Bones lacking thick layers of insulating muscle tissue are particularly vulnerable to this type of stress (Wells 1964:76). Modern clinical studies also associate traumatic periostitis with shin splints (Onieal 1994:214-228).

Periosteal infections are generally associated with low levels of chronic stress or disease conditions (Ortner and Putschar 1981:40). Clinically, the condition must be present for at least three weeks before it can be radiographically detected (Bergener and Korman 1997:35). Minor cases are usually remodeled without leaving a skeletal signature. The forms present in dry bones represent recently acquired or more serious cases.

There were two individuals with periostitic lesions. Most cases appeared as smooth, linear, or oval surface deposits of lamellar bone, implying that the infection was inactive and the surface remodeled. F-12 exhibited a periostitic-like lesion on the distal epiphyses of both femurs. The individual interred in F-22 exhibited a lesion on the right clavicle. The etiology of the lesions of both individuals remains unknown. Severity was recorded as moderate and respectively. Given the location and inactive state of these responses they probably represent non-fatal localized sites of injury or infection.

## Porotic Hyperostosis

Porotic Hyperostosis is a condition caused by an increase in blood cell production, which can be related to infection, metabolic disease, or several types of anemia including iron deficiency or sickle cell (Aufderheide and Rodríguez-Martín 1998:348; Mann and Hunt 2005:22-23; Ortner and Putschar 1981:258-259). Symmetrically distributed cranial lesions on the outer table of the frontal and parietal bones, and less frequently the occipital, are characteristic of the condition. In minor, or healed, cases the outer table of bones is incompletely resorbed, resulting in multiple, discrete pinhead sized perforations (Aufderheide and Rodríguez-Martín 1998). In fully developed cases, the cranial vault is thickened by the expanded diploic layer and often takes on a “hair-on-end” appearance in radiographic images (Aufderheide and Rodríguez-Martín 1998:349).

## Scoliosis

Scoliosis refers to one or more lateral deviations (Mann and Hunt 2005:104; Ortner and Putschar 1981:280) or a rotation of the spine (James 1955:414). Scoliosis typically exhibits a double curvature that permits the individual's head to sit close to the midsagittal plane despite the lateral deviations (Ortner and Putschar 1981:280). The deviations create an abnormal pull of tendons and ligaments accounting for the bone changes by means of modified growth and remodeling. In severe, long-term scoliosis, additional bone changes may occur. The vertebrae can develop bone fusion at the apex of the curvature. Overexpansion of the disc on the convex side can lead to bony replacement of the disc itself and ossification of the various spinal ligaments and ankylosis can occur particularly on the concave side of the apex (Ortner and Putschar 1981:278). The ribs, which are firmly attached to the spine and the sternum, must adapt their shape and curvature to the deformed spinal curve. Generally, the ribs spread on the convexity, and press together on the concavity of the spinal deformity. Length, width, and curvature are altered. If the changes are extreme, ankylosis of costovertebral joints and formation of pseudoarthrosis can occur. Scoliosis has multiple causes including congenital and idiopathic, or it can occur in association with osteochondropystorphy, paralysis, neurofibromatosis, condrodysplasia punctata, pseudoachondroplasia, parastremematic nanism, osteodysplasia, Marfan's syndrome, osteogenesis imperfecta, untreated infantile hypothyroidism, and trauma (Aufderheide and Rodríguez-Martín 1998:367-368). The individual recovered from F-38 exhibited scoliosis. In this case, the scoliosis was functional in form as it likely developed as the result of the individual's leg-length discrepancy.

## Treponematosi/Syphilis

Treponematosi is a chronic or subacute infection spread by spirochetes of the genus *Treponema* (Aufderheide and Rodríguez-Martín 1998:154). Infection is divided into four types based on clinical and geographical variation including pinta, yaws, bejel, and venereal syphilis. Opinions differ on whether these represent different diseases caused by different bacterial species or whether they represent different manifestations of infection by a single species (Aufderheide and Rodríguez-Martín 1998:154-155). Venereal syphilis is the most common modern form of the three; it occurs in urbanized populations and is caused by *Treponema pallidum pallidum*. The disease is characterized by primary and secondary lesions, which are frequently destructive to both the skin and bone. Four individuals in the Area 2 cemetery exhibited syphilis like lesions or dental anomalies on their remains.

Acquired or venereal syphilis can be acute, subacute, or chronic and is characterized by a primary lesion, a secondary rash, and late lesions affecting the skin, bones, viscera, cardiovascular, and central nervous systems. These lesions are seen in 20-50 percent of the untreated cases (Aufderheide and Rodriguez-Martin 1998:157-159). It is a sporadic, worldwide urbane malady and is one of the most commonly diagnosed transmittable diseases. Prior to the introduction of antibiotics, the prevalence in civilized, urban areas was estimated at approximately five percent (Steinbock 1976:110-111). There are three stages of acquired syphilis. The primary stage corresponds with the initial genital infection, the second stage is the addition of a rash, and the tertiary stage can occur several years later and affects the skeletal system.

The most commonly affected bones (in decreasing order) are the tibia, frontal and parietal, nasal-palatal region, sternum, clavicle, vertebrae, femur, fibula, humerus, ulna, and radius (Aufderheide and Rodriguez-Martin 1998:158-163). Syphilitic lesions are often separated into two categories including nongummatous and gummatous osteoperiostitis. Aufderheide and Rodríguez-Martin described the nongummatous variety as having extensive periosteal and cortical thickening leaving the bone thick and heavy. The outer surface of bone is often rough and hypervascular. In late stages, the marrow cavity can become completely obliterated by sclerotic trabeculae. Cranial periostitis is common in the earlier stages of syphilis, and in most syphilitic cases, the tibia is approximately 10 times more often the site of lesions than any other long bone of the extremities. The most significant pathology in syphilitic cases is the severe, incapacitating, and frequently fatal circulatory and nervous system involvement (Aufderheide and Rodriguez-Martin 1998:160, 107). Three individuals in the Area 2 cemetery exhibited signs of skeletal involvement, where lesions were observed on the tibias, cranium, clavicles, scapulae, and other bones.

There is a very slight possibility that the individual recovered from F-22 suffered from syphilis. Some years prior to death, the young man developed a major infection (osteomyelitis) and subsequent lesion on his skull. The large lesion was observed in the right parietal. The edges were eroded and pitted, and the ectocranial surface and diploë were thinned along the margins leaving an opening, 46x50 millimeters in diameter. It is possible (though much rarer a cause than as the result of an injury) that the gentleman suffered from syphilis. It has been observed that, in rare cases, osteomyelitic lesions can develop on the skull in early-stage syphilis. In these cases, there is an absence of other syphilitic lesions on the skeleton (Huang et al. 2007). It is impossible to state definitively the cause of the infection, however it likely attributed to the gentleman's early death.

## Tumors

Tissue formation as a result of abnormal increases in osteoblastic and other mesenchymal cell activity result in tumors. Despite origination in the host's tissue, tumors compete for space and resources at the expense of other tissue systems. There are a number of tumors that impact the skeleton (Jaffe 1958). The exact neoplasm present in a given response is attributable to the type of originating cell, the specific location within the osseous environment, and the metabolic state of the host (including their age, sex, and general state of health). Tumors often possess unique growth signatures that differentiate them from other health responses. These include hyper-sclerotic surface deposits (hamartoma or ivory buttons), irregular growth trajectories, and endosteal cysts lined with sclerotic bone. Tumors tend to grow in predictable locations; however, dry bone tumorous growths are exceedingly difficult to differentiate without clinical backgrounds or destructive analyses.

A small (2.56 mm) button hamartoma was observed just above the left brow ridge of the individual buried in F-12. Button hamartomas (commonly referred to in paleopathological literature as button osteomas) are generally small ivory-like growths that occur on the ectocranial surfaces of the skull (Aufderheide and Rodríguez-Martín 1998:375; Eshed et al. 2002:217-218; Ortner and Putschar 1981:368). They can occur individually, in small clusters, or spread across the calvarium, and appeared to be localized exaggerations of intramembranous bone formation (Eshed et al. 2002:217-218). Theories as to their etiology have been proposed which suggest developmental, traumatic, and infections as the root cause, though none have yet been agreed upon (Eshed et al. 2002:217-218). In addition, a small, smoothed area of cortical bone on the posterior aspect of F-1's femur may be a response to a localized soft tissue growth (such as a small tumor) that pressed against the neighboring bone. All surrounding bone appeared to be unaffected.

### Non-Diagnostic Responses

Several skeletal responses exhibited distinctive patterns of tissue involvement but were not diagnostic to a particular syndrome. Confirmation of the suggested diagnosis frequently required some examination of the entire skeleton, which was in many cases unavailable. A causal agent(s) is suggested for each potential form.

### Possible Developmental Bowing/Rickets

Some bones exhibited bowing, which can result from chronic mechanical load placed on a bone that is greater than the bone's architecture was capable of withstanding, yet controlled enough to prevent failure. Bowing can also develop from developmental constraints placed on the bone's growth. This latter form forces the diaphysis to bow in order to meet growth demands within the element. One child and one adult (F-36 and F-31 respectively) exhibited limb bowing. The limb bowing observed in the child probably resulted from early infections or metabolic disorders such as rickets, while the bowed left tibia of the adult may have been a response to a congenital defect that resulted in a leg-length discrepancy. Abnormal bowing weakens the bone's ability to displace weight and force properly, providing a precursor for mechanical failure.

Though limb preservation was relatively poor, bowing of the femora and right humerus of the child recovered from F-36 was observed. Though they all exhibited lateral bowing, the femoral bowing was more exaggerated. Bowing can be physiological or pathological. Physiological bowing begins in utero due to the constriction of the uterus and will correct itself over time, usually by three years of age. Pathological bowing tends to worsen over time and is caused by a variety of genetic conditions, malnutrition, or diseases (Pediatric Orthopaedics 2011). The two most common diseases known to cause bowing are Rickets and Blount's disease (American Academy of Orthopaedic Surgeons 2011; Pediatric Orthopaedics 2011). A comparison of this child's femora to those of modern radiographs makes a compelling argument that this child may have suffered from rickets. As noted earlier, rickets is a disease caused by a deficiency of Vitamin D that is necessary for the absorption of calcium and phosphorus (Aufderheide and Rodríguez-Martín 1998; Roberts and Manchester 2005). The deficiency leads to a softening of the bones due to mineralization failure in growing cartilage and bone (Stuart-Macadam 1989). The weight-bearing bones, like the femora, become bowed when the child begins to walk (Roberts and Manchester

2005). Roberts and Manchester (2005) also noted that the arm bones might also become deformed during the crawling phase. This may explain the bowing observed on this child's humerus. The ends of the long bones expand to resemble the widened end of a trumpet. This deformity reflects the excessive unmineralized cartilage causing an increase in the overall size of the growth plates (Roberts and Manchester 2005; Steinbock 1976). The distal femora of this child reflect this trumpet-like shape. Additionally, excessive demineralization causes a thinning of the cortex and the trabecular bone becomes sparse and thin (Steinbock 1976). This child's femoral cortex was much thinner than normal and the trabecular bone was very fragile. Additionally, gastrointestinal, kidney and liver conditions, such as chronic diarrhea, metabolic insufficiency, and renal failure may result in the malabsorption of the vitamin (Mann and Hunt 2005; Roberts and Manchester 2005; Steinbock 1976). It is possible that this child's mother was chronically malnourished and that the child often suffered from diarrhea and/or malnourishment.

## STATE OF HEALTH IN THE AVONDALE BURIAL PLACE COMMUNITY

This examination was able to confirm the presence of some health risks that impacted the Avondale Burial Place community's quality of life. These risks include invasion by several infectious microorganisms, over-exertion/deterioration of connective tissues, mechanical failure, and physiological disorders. Most of these conditions represent chronic maladies and most resulted from indirect environmental factors. A few, including injury, indicate a more direct environmental influence.

The single greatest health stress recorded in the skeletal remains was labor. These individuals displayed a wide variety of damage, repair, and accommodation related to a considerable amount of physical exertion. The work they engaged in required considerable physical effort and it was considerably greater than their bodies were genetically designed to handle for the period of their life. Joints suffered the most. Parts of the body designed to address heavy labor – such as the knees, pelvic girdle, shoulders, and elbows – all exhibited signs of deterioration from use and overuse as the individual aged. While work may not have played a primary role in the individual's death, it clearly negatively impacted the host's quality of life and taxed the body's available energy, leaving the host more susceptible to other, more lethal agents.

Many health responses recorded the presence of non-specific infections. These are recognized as important indicators of general health in a community (Webb 1994:126). Since they record chronic levels of infection, they provide a crude estimate of long-term disease effects in the population (Mensforth et al. 1978). Low levels of skeletal response to stress agents are believed to reflect a high mortality rate from acute disorders or from acute phases of chronic disorders (Ortner 1979:596).

While numerous responses were active at the time of death and may have contributed to the host's weakened physiological state, cause of death could be attributed to only a few specific risk agents. The traumatic event that left the man in F-21 with catastrophic head injuries may be the most likely contributor to his early death.

Health data from the Avondale Burial Place paint a rather grim picture of life. Skeletal data indicate that the community was challenged with limited nutritional resources. The results were maladies that affected subadult development and taxed adult physiologies to maintain homeostasis. Chronic mechanical stress and strain, the result of repetitive hard labor, resulted in bodies that eventually were unable to withstand the physical demands. When viewed against the backdrops of nineteenth-century southern health, health in Bibb County, and African American health, skeletal stress response data in the Avondale Burial Place offers little hope that conditions there were any better or worse than seen elsewhere. While lacking the more comprehensive information that historical records can provide, the skeletal data offers hints that many of the same maladies challenging African Americans in central Georgia were agents impacting this burial community.

In many respects the Avondale Burial Place community appears to have survived on the brink of biological collapse. When the possibility that smallpox appeared in the Avondale Burial Place community in 1901, an immediate medical response was called to prevent a community tragedy (*Macon Telegraph and Register* 1901:6). Fortunately in this case, the true malady was less serious. Other terrors including the boll weevil, an insect capable of destroying an entire season's cotton crop, were more real. The failure of a crop, natural disaster, influx of a communicable disease, or similar unforeseen event would have been enough to push most community members into a position of true mortal peril. When reduced to the point where survival was not possible, the options available to community members were either extinction or emigration. The abandonment of the Avondale Burial Place may not have been based on purely social factors alone; there are biological indications that exploring opportunities elsewhere may have been a simple matter of life or death.



## IX. THE ENAMEL TAPESTRY: A VIEW OF HEALTH FROM THE ORAL CAVITY

Teeth are formed principally from enamel and dentine; two of the hardest substances made by the human body. These durable compounds enable teeth to survive in some of the harshest archaeological environments. In acidic soils, like those found at the Avondale Burial Place, they are often the only remaining elements of the skeleton. Teeth can therefore be relied on to provide important information about the state of an individual's oral health and general wellbeing. They can provide evidence of diet and dental diseases that lead to insights about biological, socioeconomic, and behavioral aspects of a community's way of life. Nutritional stress may also be recorded in the teeth. They provide evidence of social habits and can illuminate biological responses to environmental factors.

For every tooth, there is a story and the teeth from the people buried at Avondale Burial Place told tales of hard, challenging lives. Of the 101 individuals in the cemetery, the oral cavities of 47 individuals were preserved well enough for examination. Out of a total of 659 potential teeth, only 495 (75 percent) were preserved well enough to be examined. Amazingly, each of these teeth exhibited some form of environmental distress. These maladies included dental caries, calculus, enamel hypoplasias, and attrition. Select examples of these health responses in the Avondale Burial Place dental assemblage are illustrated in Figure 9.1. General health responses are addressed in the rest of this chapter. Specific conditions as they relate to the individual have been outlined as part of Volume 2's feature descriptions.

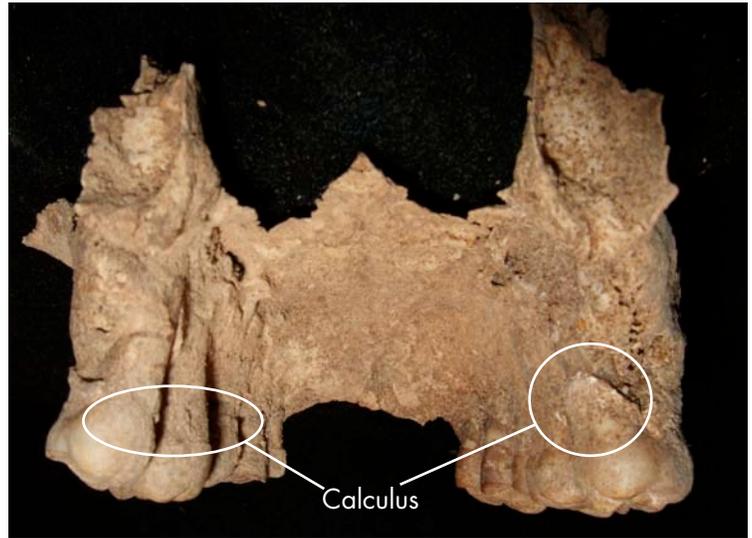
### PERIODONTAL DISEASE

The tissues that support and surround teeth include the bones of the maxilla and mandible, the periodontal ligament, cementum, gingivae (gums), and mucosa. The portions of maxilla and mandible that hold the dentition are referred to as the alveolar process, which incorporates the tooth sockets (alveolae) and the periodontal ligament that surrounds and holds each tooth in place (Hillson 1996). Microorganisms constantly threaten these tissues, either directly or indirectly. Numerous bacteria including Gram-negative and Gram-positive streptococci and filaments are present in the mouth within hours of birth (Hillson 1996). It is these bacteria, along with injuries, that trigger inflammatory responses. The site of the inflammation is referred to as the "lesion." The development of a lesion is broken down into four phases. The first three are classified as initial, early, and established gingivitis; they involve only the gingivae. The last stage, periodontitis, is a deeper lesion that involves all the periodontal tissues (Hillson 1996).

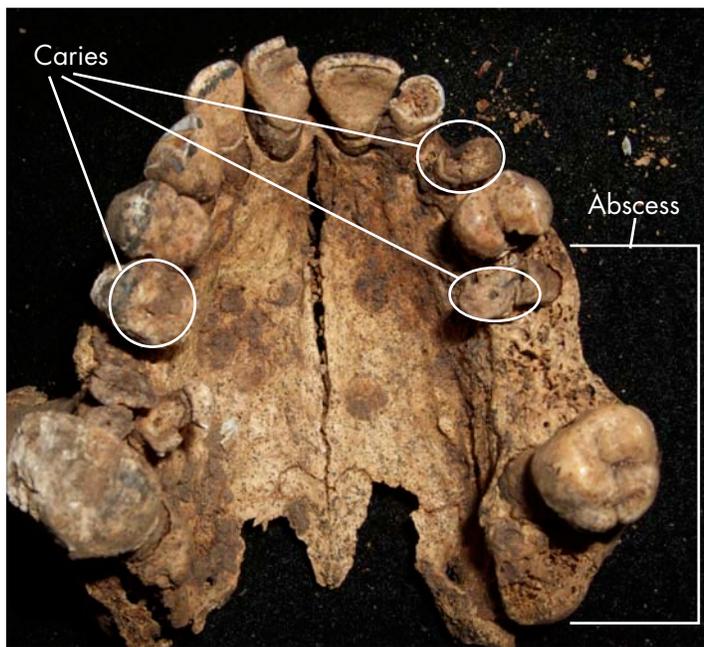
Figure 9.1.  
Health Responses in the Avondale Burial Place Dental Assemblage



A. Severe Alveolar Resorption and Dental Loss in the Palate of F-106



B. Calculus on F-52's Maxillary Molars



C. Caries and Abscesses in F-18's Maxilla



D. Labial Wear on F-5's Anterior Maxillary Teeth



F. Periradicular Banding in F-36's Maxillary Molars



E. Enamel Hypoplasias in F-52's Maxillary Canine

Periodontal disease, the chronic form of periodontitis, is triggered by bacteria and bacterial deposits. These deposits, collectively referred to as plaque, form along the gum line. Over a period of successive weeks, the gingival lesion grows as the body attempts to defend itself against the bacteria. The periodontal ligaments loosen as the lesion continues to expand causing pockets to develop beside the afflicted teeth. Sub-gingival plaque accumulates in these pockets. At this stage, the lesions may stabilize for many months and occasionally they can heal. Unfortunately, they can also escalate into more severe infections leading to further resorption of alveolar tissue. At the chronic stage, the process is punctuated with periods of growth and rest over the course of many years; this cycle is common among adults over 30 years of age.

Periodontal disease is not limited to adults. Other forms include prepubertal periodontitis, which occurs with eruption of the deciduous teeth, and juvenile periodontitis, a condition that arises with the eruption of permanent first molars and incisors (Hempton et al. 2011; Hillson 1996). Another form, rapidly progressive periodontitis, arises in late childhood or early adulthood and is responsible for destroying the bone surrounding afflicted teeth. These conditions however, are relatively uncommon (Hillson 1996).

In archaeological and dry bone settings, periodontal disease is recognizable by slight to significant alveolar resorption. During active phases of periodontal disease, the living alveolar bone resorbs both vertically and horizontally leaving the dental roots exposed. Resorption usually exposes only the cemento-enamel junction (CEJ) in minor cases and the majority of the root in more significant infections. Compounding the issue, teeth continue to erupt throughout an individual's lifetime in a biological attempt to counter act the effects of dental wear (Hillson 1996). This is where the term "long in the tooth" originated. Continued eruption translates into more root exposure and a greater opportunity for periodontal infections. Because periodontal disease is a chronic condition, it is more prevalent in older members of a given population. Periodontal disease can affect one tooth or a series of adjacent teeth. It often tends to be symmetrical, forming on corresponding areas in the maxillary or mandibular arcades. Periodontal disease particularly affects the incisors, first and second molars, and then adjacent teeth as the disease progresses. The disease can also form at trauma sites when the tooth or surrounding bone is significantly injured.

In the Avondale Burial Place population, F-1, a child aged  $12 \pm 2.5$  years, exhibited slight alveolar resorption around the mandibular left first and second permanent molars. Slight deposits of supra-gingival calculus were also noted on the surrounding teeth. This loss may represent the juvenile form of periodontitis, which forms around puberty, ages 11-13 (Hempton et al. 2011). Juvenile periodontitis can be divided into generalized and localized forms. In contemporary America the highest prevalence of localized juvenile periodontitis occurs in African Americans, and is also more common among females than males (Hempton et al. 2011). The rate of bone loss in this form of periodontitis is three to four times faster than in chronic adult periodontitis (Hempton et al. 2011). This is probably the form visible in F-1. Generalized juvenile periodontitis, which targets all the teeth, affects most infants at birth; it is considerably less common than the localized form. It is unlikely that this form is visible in the Avondale Burial Place burial population.

A second child (F-25, aged 15 years  $\pm$  2.5 years) likely developed rapidly progressive periodontitis. This form of periodontitis is seen most commonly in young adults but can occur in any post-pubertal individual. Destruction of the alveolar bone and gingival tissues is very rapid, with damage occurring within a few weeks or months (Page et al. 1983). Individuals with this condition can suffer from a variety of symptoms, including general malaise, weight loss, and depression (Page et al. 1983). The disease can progress to complete tooth loss or remain dormant for indefinite periods of time. Because all forms of periodontal disease are caused by bacterial infections gaining a foothold over the host's immune system, physiological assaults on bacteria colonies may not be effective. This is especially true if one's constitution is compromised by disease and malnutrition. For the children of the Avondale Burial Place community, the combination of malnutrition and infection likely provided an excellent environment for growing bacterial colonies. These would have allowed an early onset of periodontitis and eventually periodontal disease.

Of the 27 adults with observable alveolar bone, 13 exhibited some form of periodontal disease. Males (N=8) were slightly more affected by periodontal disease than females (N=5), though there did not appear to be distinct differences in the level of severity between the two groups. The majority of cases were judged to be moderate to severe infections with significant losses of alveolar bone. An adult female (F-23) aged 25-35 years, developed such significant periodontitis that her maxillary alveolar process was reduced to half its height and length. Alveolar resorption was severe and she lost most of her teeth in the years before she died. This significant loss of dentition would have compromised her ability to eat, weakening her constitution and potentially contributing to her early death. Similarly, an adult male (F-26) aged 39-45, exhibited extensive alveolar resorption and retained only his maxillary right canine at the time of his death. While adult periodontal disease is primarily caused by plaque (see below), several risk factors can aid in the progression of the disease. These include misalignment of teeth, smoking, diabetes, pregnancy, nutritional deficiencies, blood diseases, and genetic factors, among others (Intelligent Dental 2011; Wilson 1999). Some of these agents may have contributed to F-26's dental losses and may reflect cultural and biological risk features in the burial community.

## CALCULUS

The oral cavity is one of the primary sources of entry into the human body. The mouth is moist, warm, and frequently bathed with nutrients. It is continually colonized by a variety of bacteria, fungi, yeasts, viruses, protozoa, and other microbes. These microbial communities grow in fissures, tissue margins, and gingival crevices that are protected from the rinsing and cleaning aspects of saliva, lips, tongue, and cheeks (Hillson 1996). Dental plaque is deposited in and around colonies established by these invading agents. Though plaque bacteria obtain the majority of this sustenance from saliva, substances dissolved in it, and from gingival crevice fluid; a small portion comes directly from masticated food such as fermentable carbohydrates (starches and sugars), and casein, a dairy protein (Hillson 1996). Left unchecked, dental plaque accumulates faster when the host consumes high protein and carbohydrate diets (Roberts and Manchester 2005).

Dental calculus is mineralized plaque attached to the surface of a tooth (Hillson 1996). Calculus is relatively resistant to soft tissue decomposition and it is readily recognizable in dry bone settings. In addition to diet, calculus deposits indicate ineffective or non-existent measures to remove plaque (Roberts and Manchester 2005). These measures would have included tooth brushing, dental rubbing, flossing, and consumption of abrasive foods. Calculus deposits are often found at sites that are close to salivary glands, specifically the lingual surfaces of anterior teeth and buccal surfaces of the molars. Two types of calculus, supra-gingival and sub-gingival, are recognized (Hillson 1996). Supra-gingival calculus, the more common of the two, attaches to the enamel of the cervical tooth crown, and on dry bone specimens it usually appears as a band marking the position of the gum line. Established deposits can develop into elaborate, overhanging growths, and left unchecked are capable of spreading from one to several teeth throughout the mouth. Sub-gingival calculus grows on the root surfaces as the gums recede. It is thinner and harder than supra-gingival calculus making it more likely to survive in archaeological environments. Unfortunately it is also more difficult to differentiate from normal root cement in a dry tissue state (Hillson 1996).

The size and speed of development for both types of calculus varies by individual, largely from differences in disease load, constitution, genetic predisposition and type of pathogen. Though plaque formation is required for calculus development, large plaque deposits do not necessarily lead to large calculus deposits (Hillson 1996). Plaque can be extensive, yet leave little to no calculus deposition. However, initiation of mineralization, a key part of calculus formation, is linked to the presence and distribution of plaque. Factors including poor dental hygiene or carbohydrate consumption are critical agents governing how thick and extensive the deposits will develop (Hillson 1996). Sub-gingival calculus typically follows the advance of periodontal disease and spreads down exposed root surfaces deepening the periodontal pocket (Powell and Garnick 1978).

Supra-gingival calculus deposits were common in the Avondale Burial Place community. A total of 15 individuals (31.9 percent), from a sample of 47 subjects with observable dentition, exhibited these deposits. This number included one adult (F-102), four females (F-18, F-21, F-33, and F-51), nine males (F-5, F-22, F-27, F-31, F-35, F-38, F-45, F-52, and F-106), and one child (F-1). Of the 495 observable teeth from those subjects, 153 (30.9 percent) possessed at least minor calculus deposits. Men showed a much higher propensity (60 percent) of developing calculus than women (26 percent). This is consistent with Beiswanger et al.'s (1989) finding that men in living populations often had more and larger supra-gingival calculus deposits than women. The frequency and extent of calculus deposits also tend to increase with age (Beiswanger et al. 1989). Unfortunately, age estimates among Avondale Burial Place's adults with calculus were not precise enough to fully realize this relationship, but the cemetery's data does not contradict the living population observations. Though Avondale Burial Place men were more likely to develop calculus deposits than women, women tended to exhibit a higher frequency of moderate to advanced deposits than men. And, surprisingly, the two largest deposits on single teeth were from older women (F-18, 30-50 years old and F-33, 50-59 years old). It is likely that dental hygiene was not a stressed health measure in the Avondale Burial Place community.

## HYPERCEMENTOSIS

Hypercementosis is the massive overproduction of cementum, a substance designed to help affix a tooth's root to the surrounding alveolar tissues. Unlike other dental hard tissues, it can be deposited at any point in a subject's lifetime. Hypercementosis probably helps to attempt to stabilize and support weakened mechanical structures in the oral environment. Hypercementosis typically results in a swollen irregularly bulbous dental root (Hillson 1996). The affects of hypercementosis can be localized to a single tooth or involve several teeth. When more than one root of a multi-rooted tooth is affected, the swollen roots can unite into on large singular mass. These features make hypercementosis easily recognizable in dry bone specimens.

Researchers do not fully agree on what agents are behind hypercementosis. It is probably a biomechanical response to multiple agents with excessive wear or malocclusion being the most likely causes (Hillson 1996). Other researchers have identified multi-factorial combinations of advanced periodontal disease, vitamin deficiency, and malnutrition as likely sources (Corruccini et al. 1987). In a study of Barbados slave remains, Corruccini et al. (1987) concluded that a diet dominated by corn, which contributed to the host's vitamin and mineral deficiencies, and punctuated with seasonal periods of nutritional improvement (availability of specially procured, butchered, or grown foodstuffs) likely contributed to a high incidence of hypercementosis. Very little is known about hypercementosis in the American south.

Of the 31 adults with observable oral environments, two (6.4 percent) exhibited hypercementosis (one male and one female). F-23's (female) maxillary right third molar and F-26's (male) maxillary right canine each possessed swollen, bulbous roots. Both individuals exhibited extensive dental loss among teeth immediately surrounding both hypercemented teeth. It is very likely that these two teeth developed extensive cement due to advancing periodontal disease and subsequent surrounding tooth loss. As discussed in the previous chapter, aspects of the same dietary patterns observed in the Barbados slave sample were also common in nineteenth-century African American communities. Malnutrition and vitamin deficiency due to a nutrient-poor pork and corn diet was widespread among the tenant farmers and sharecroppers of the rural American south. Hypercementosis observed in the Avondale Burial Place population may also have been related to these factors.

## ABSCESSSES

Dental abscesses are infections that have numerous etiologies. Typically, an abscess occurs because bacteria are able to invade soft tissues deep below the CEJ through infections of the dental pulp chambers. These pulp chamber infections are usually the result of dental caries, attrition, or trauma (Hillson 1996; Martin and Ufberg 2011; Roberts and Manchester 2005). Typically, the human immunological system can combat these infections, making underlying medical conditions or weakened immune systems necessary conditions for abscess development (Martin and Ufberg 2011). Abscess formation can also be caused by periodontal disease and the accumulation of calculus between the gums and teeth (Hillson 1986). No matter the cause, abscesses ultimately form when micro-organisms trigger inflammatory responses. The inflammation generates exudate, which in turn creates a toxic environment inside the pulp chamber that ultimately kills the

surrounding tissues. This process eventually leads to suppuration or pus production (Hillson 1996). Lacking a means of drainage, pus and exudates accumulate in spaces formerly filled by living tissues. Without medical intervention the inflammation attacks the root canal triggering an immunological response in the surrounding periodontal tissues. If these tissues can successfully combat the infection, the abscess can remain dormant for years with no outward signs (Hillson 1996). However, as the pus accumulates, pressure from the build-up causes a fistula, or drainage sinus, to develop which allows the pus to escape into the surrounding soft tissues (Roberts and Manchester 2005). At this point, the infection spreads, often causing the surrounding teeth to die and decay. These teeth are eventually lost; further compromising the individual's ability to consume foods. Depending on their severity, dental abscesses can induce pain, swelling, and redness of the surrounding tissues, as well as causing nausea, vomiting, fevers, chills, and sweats (Martin and Ufberg 2011).

Only abscesses that formed fistulas are visually recognizable in dry bone assemblages. They are often difficult to comprehensively identify in a skeletal assemblage without the aid of radiographic techniques (Roberts and Manchester 2005). Of the 47 individuals with observable dentition, 10.6 percent exhibited at least one abscess. Of these, three males (6.4 percent), one female (2.1 percent), and one child (2.1 percent) were affected. A total of seven abscesses were observed in the Avondale Burial Place population. The two males (F-27 and F-35) each had two abscesses. The presence of abscesses in the Avondale Burial Place population appeared to be low relative to the amount of periodontal disease, number of carious lesions, and amount of calculus observed throughout the assemblage. It is likely that other, less advanced and therefore unrecognized abscesses were present beneath the alveolar surfaces. It is emphasized that the seven abscesses at Avondale Burial Place should be considered a minimum estimate.

## DENTAL CARIES AND DIET

Caries, commonly referred to as cavities, are the most frequently cited cause of oral pain (Waldron 2009). They are infections that result in the progressive destruction of tooth structures. Caries form by the demineralization of enamel dentin, and other dental hard tissues by organic acids. These acids are produced by the bacterial fermentation of carbohydrates, especially sugars (Larsen 1997). Demineralization is initiated by microbial activity on the tooth's surface (Pindborg 1970). Macroscopically, lesions are divided into two types: progressive or acute and arrested or chronic (Pindborg 1970). Acute lesions are often associated with younger individuals and tend to have a white chalky appearance (Ortner and Putschar 1981). Chronic lesions can occur at any age and appear as yellow to dark brown cavities or pits in the tooth's surface. Chronic caries can progress slowly between alternating periods of active decay and remineralization (Featherstone 2004). These caries can remain dormant for months or even years (Hillson 1996). Alternatively, they can aggressively destroy a tooth in a relatively short period of time. Left untreated, however, both acute and chronic caries may result in the destruction of the entire crown and significant portions of the roots. Once the pulp chamber is exposed, the risk of infection runs high; localized abscesses form and the supporting alveolar bone is gradually destroyed (Ortner and Putschar 1981).

Caries development follows several predictable patterns. Molars are the most commonly affected teeth; these are followed in caries frequency by premolars, canines, and finally the incisors (Hillson 1996). Lesions can be found either on the crown or root surfaces; these are typically classified as

pit and fissure, occlusal, mesiodistal (interproximal), and root surface caries. Caries that develop in the fissure systems that run across the occlusal surfaces of molars and premolars are most common in populations with westernized diets. Sometimes referred to as coronal caries, they are typically found in children. The incidence of coronal caries rises steadily to around age 15 and then decreases during early adulthood (Hillson 1996). Girls are more commonly affected than boys. Interproximal caries, which form in the spaces between adjoining teeth, and root surface caries are more prevalent among adults. The distribution of caries may be similar between family members over several generations suggesting that there may be genetic propensities for caries development (Hillson 1996). However, common factors including environmental factors, cleaning routines, cultural habits, and diet also play critical roles in caries formation.

Several bacteria have been shown to be capable of inducing carious lesions. *Streptococcus mutans* is recognized as the most cariogenic, followed by members of the *Streptococcus oralis*, *Streptococcus milleri*, and *Streptococcus salivarius* groups, as well as *Actinomyces naeslundii*, *Actinomyces viscosus*, and *Lactobacilli* (Hillson 1996). *Streptococcus mutans* and *Lactobacilli* are the most common agents and are able to rapidly convert sugars into acids. These microbes thrive in acidic conditions that are toxic to many other microorganisms (Hillson 1996).

By themselves, these microbes are unable to produce the devastating effects associated with caries. Sugar consumption considerably enhances their ability to demineralize teeth. In descending order of importance, sucrose, glucose, and fructose are the most commonly consumed sugars responsible for carious growth (Sheiham 1983). Brown sugars appear to be as cariogenic as the more refined white forms. High sugar consumption is cited as the principal cause of caries, making dental caries the most common disease found in industrialized countries (Sheiham 1983). Sugar alone is not responsible for carious lesions. Proteins and other carbohydrates may also affect caries growth, but their roles are as yet unexplored (Hillson 1996).

Examinations of dental caries across many cultures have emphasized the role that diet, principally sugar consumption, plays in the development of carious lesions. Caries frequency appears to have been low among hunter-gatherers (Hillson 1996; Ortner and Putschar 1981). This was likely the result of a varied diet that balanced proteins and carbohydrates with the consumption of less refined and more abrasive foods. However, as communities began to cultivate maize and other crops the incidence of caries more than doubled (Hillson 1996; Larsen 1997; Ortner and Putschar 1981). Among agriculturalists, malnutrition, higher carbohydrate intake, and a reduction of dental attrition, the result of eating more refined, less abrasive foods, have been cited as the explanation for this higher frequency (Larsen 1997; Ortner and Putschar 1981). Maat and Van der Velde (1987) found a negative correlation between the degree of dental wear and the frequency of occlusal surface caries. A reduction in dental wear allowed cariogenic bacteria to gain a foothold in the fissures and grooves of unworn teeth. Studies by Brothwell (1963) and Owsley et al. (1987) found that caries frequency increased when refined sugar and flour were added to the diet of industrialized societies.

Despite their rural settings, the diet of most southern African American communities exhibited many commonalities with industrialized food consumption patterns. The standard diet of nineteenth- and early twentieth-century farmers in the rural South was heavily weighted in favor of corn, a high carbohydrate-bearing food. Cornmeal, and dishes made from it, were one of the three 'Ms:' meat,

meal (cornmeal), and molasses typifying the classic rural southern diet. According to the United States Department of Agriculture's National Nutrient Database (2010), one cup of degerminated, unenriched, yellow cornmeal contains approximately 125 grams of carbohydrates and 2.53 grams of these are from sugars. Phillips (1929) noted that the basic food allowance during the early part of the nineteenth century on many plantations consisted of a quart of cornmeal and a half-pound of salt pork per day for each adult. The amount of cornmeal appears to have been substantial and contributed to the daily intake of carbohydrates and sugar. Further, molasses, a significant by-product of the sugar cane refining process, was frequently added to add flavor to an otherwise bland meal. One tablespoon of molasses contains approximately 15 grams of carbohydrates and 11 grams of these come directly from sugar (USDA National Nutrient Database 2010). Even the meat, which in most cases meant pork, came from livestock raised on a diet of corn (Etheridge 1988). Some of these sugars and carbohydrates would have been directly translated into the meat. A diet so profoundly composed of sugars made the widespread occurrence of caries an inevitability.

### FREQUENCY RATES

A high sugar diet is strongly implicated by dental caries distribution at the Avondale Burial Place. Out of the 495 deciduous and permanent teeth observable within the assemblage, 190, or slightly over a third of all teeth, exhibited at least one carious lesion (Table 9.1). Of those, 85 teeth came from males, 48 were from females, 2 originated in unsexed adults, and 55 were from children. Of the 17 males with observable dentition, over 94 percent exhibited carious lesions, and 80 percent of the females exhibited lesions. The excessive numbers of caries in the adult population suggested that most individuals were exposed to the same, or at least similar, external factors. Following that, over 68 percent of subadults also exhibited lesions. The most obvious culprit for the excessive numbers of carious lesions may have been a diet high in sugars. As discussed earlier, a diet high in simple sugars (molasses) and carbohydrates (cornmeal) likely contributed significantly to the development of destructive lesions.

*Table 9.1. Caries Distribution in the Avondale Burial Place Population*

	Number of Individuals	Total Number of Teeth	Total Carious Teeth	Percent Carious Teeth	Number of Individuals with Caries	Percent of Individuals with Caries
Males	17	217	85	39.10	16	94.10
Females	10	126	48	38.00	8	80.00
Adult (Unsexed)	4	28	2	7.10	1	25.00
Subadults	16	124	55	44.35	11	68.75
Total	47	495	190	38.30	36	76.50

When comparing males and females in the Avondale Burial Place population, females were more likely to be affected by carious lesions than males. Males exhibited a total of 123 carious lesions over 85 teeth, while females exhibited 70 caries over 48 teeth. The total number of caries divided by the total number of affected males revealed an average of 7.6 caries per individual. Females, conversely, showed 8.7 caries per individual. These data suggested that though there were fewer females in the sample, they were more profoundly impacted by cariogenic activity.

Lesion rates were then examined by sex and tooth count. Of the 16 males with caries, six had more than three carious teeth. While the total number of teeth bearing caries was high, only about a third of the males were greatly affected. In contrast, among eight of the females with caries all but one had more than three lesions (87 percent). In actuality, most women had 6-8 carious teeth. This again revealed that though females had fewer caries overall, when they had caries they exhibited a much higher lesion rate.

In the past, some anthropologists have attributed sex differences in caries rates to social behaviors such as a woman's close proximity and easy access to food supplies and to snacking during food preparation and between meals (Walker and Hewlett 1990; Lukacs and Largaespada 2006). Others felt that the disparity related to earlier dental eruption among females (Hillson 1996). While these concepts may still play minor roles, a growing number of clinical studies have found that saliva, hormones, and pregnancy may have more to do with the disproportionate number of caries in females than was recognized earlier (Ferraro and Vieira 2010; Lukacs and Largaespada 2006). Saliva is a complex fluid that coats the oral cavity, especially the teeth, creating a protective barrier against caries producing bacteria. Studies have shown that females tend to have less saliva, and that their saliva is of a poorer quality (meaning that the saliva has less antibacterial, buffering agents, and factors that affect mineralization) than males (Lukas and Largaespada 2006). The lack of high quality saliva creates an environment conducive to caries growth. Studies have also shown that estrogen fluctuations at various points during a female's life cycle (including puberty, menarche, and menopause) negatively impact the immune system (see Lukacs and Largaespada 2006). In particular, bacteria have greater opportunity to gain a foothold on the teeth during periods of heightened estrogen production. Finally, Vadiakas and Lianos (1988, in Lukacs and Largaespada 2006) examined the correlation between caries and pregnancy. They identified changes in mouth fluids and saliva, vomiting, neglected oral hygiene, and nutritional changes as major factors that influenced the development of oral health problems. Increases in gingivitis and extensive tooth loss during pregnancy have been blamed throughout history for declining oral health (Fields et al. 2009; Lukacs and Largaespada 2006). Greater caries rates in Avondale Burial Place females may be a byproduct of fertility and child bearing.

Caries were not limited to Avondale Burial Place's adults. Eleven subadults exhibited a total of 55 carious teeth among both permanent (N=29) and deciduous (N=26) arcades. Affected children ranged from approximately 3-15 years of age. Most had caries exclusively on either the deciduous or permanent dentition, rather than both at the same time. An extensive literature review by Harris et al. (2004) revealed 106 factors that significantly affected caries rates among children. They found that the infrequency of tooth brushing (i.e. poor oral hygiene), a diet of cariogenic foods, establishment of *Streptococcus mutans* colonies in the mouth, and the presence of enamel hypoplasias greatly increased the risk of developing carious lesions. These factors likely contributed to cariogenesis among Avondale Burial Place's youth.

Seven of Avondale Burial Place's 11 carious children exhibited lesions in their deciduous dentition indicating that they were exposed to cariogenic agents at a young age. However, close scrutiny of the Avondale Burial Place population's dentition revealed that children less than three years of age appeared to have escaped the deleterious effects of caries producing factors. There may be

several reasons for this delay in caries development. The highly significant correlation between the consumption of sugar and the increased incidence of caries is likely the most critical factor. As discussed earlier, a tenant farmer's diet typically relied heavily on corn and molasses, both of which contain high amounts of sugar and likely increase the frequency of caries. Since weaning, the transfer of a child's main source of nutrition from breast milk to more solid foods, generally occurs by age three, younger children may not have been exposed to this high sugar/carbohydrate diet. Caries may not have formed because the necessary carbohydrates were lacking in their diet.

Additionally, several studies have shown that children who are exposed to *Streptococcus mutans* before dental eruption appear to have increased immunity against the bacteria (Aaltonen 1991; Aaltonen and Tenovou 1994; Law et al. 2007). These researchers have noted that the frequent transfer of saliva to the mouth of the baby from the mother is actually a protective agent. Nurturing habits, including pre-tasting of food before it is given to the child and cleaning pacifiers by putting them in the mother's mouth have been emphasized. Children who are exposed to a higher frequency of maternal salivary contact before tooth eruption develop natural immunities and, as a result, they had fewer caries than those with less contact. Cultural practices such as these may be why young children at Avondale Burial Place were spared early tooth decay until well after their deciduous teeth erupted. However, once children were exposed to a more adult-like diet, this early immunity was not capable of withstanding aggressive growth by bacteria colonies. Carious lesions on the permanent dentition of older children were likely influenced by the same factors that affected their adult counterparts (i.e. poor diet, poor oral hygiene, and hormonal fluctuations).

## DENTAL LOSS

Loss of teeth from the dental arcade is a complex and multi-causal process (Lukacs 2006). It can be the end result of a history of poor oral hygiene, long-term exposure to cariogenic factors, trauma, extraction, metabolic and nutritional diseases, hormonal fluctuations, extreme attrition, or the effects of extensive calculus buildup leading ultimately to periodontal disease (Cucina and Tiesler 2003; Hillson 1996; Larsen 1997; Lukacs 2006; Waldron 2009). The most commonly recognized causes however are the development of caries and the presence of periodontal disease (Owsley et al. 1987; Okumura 2010). Researchers do not agree which agents are the primary ones responsible for ante-mortem tooth loss (Cucina and Tiesler 2003; Larsen 1997).

Recognizing when tooth loss occurred in a skeletal population is not difficult if the surrounding bone is well preserved. If a tooth was lost just prior to or immediately after death (i.e. perimortem loss), the surrounding alveolar bone appears pristine with no evidence of remodeling. However, if the tooth was lost months to years before death, the alveolar margin exhibits partial to extensive remodeling; it can even appear smooth. Extensive tooth loss often results in the complete remodeling of the mandible and maxilla. In many cases root sockets may be completely resorbed. The bones of edentulous individuals, those who have lost all of their teeth, tended to lose considerable volume. Maxillary alveolar processes may be flattened to the level of the palate and the mandibular body may lose over half of its height. To meet the biomechanical demands of mastication, the mandibular body frequently curves superiorly, creating a condition commonly referred to as 'rocker jaw.'

Throughout the world and across time, tooth loss has been recognized to increase with age; tooth loss has more often been associated with women than men (Jurmain 1991; Lukacs 1996; Rathbun 1987; Waldron 2009). Extensive tooth loss interferes with mastication and the inability to adequately mechanically reduce foods frequently results in malnutrition (Waldron 2009). Analysts often divide the teeth into geographic classes, the posterior teeth (molars and premolars) and the anterior teeth (incisors and canines), to understand the processes associated with dental loss. In general, molars and premolars are much more likely to be affected by abscesses and carious lesions as they are harder to clean (Hillson 2001). As a result, they tend to be more vulnerable to dental loss.

Oral cavities were examined in the Avondale Burial Place assemblage for evidence of ante-mortem tooth loss. Emphasis was placed on the condition of the alveolar bone so as not to confuse ante-mortem with peri/postmortem tooth loss. Teeth were initially divided into anterior and posterior teeth (Table 9.2). Pre-mortem resorption was detected in 136 individual tooth losses among 22 individuals. In general, posterior teeth were twice as likely to suffer loss than anterior teeth, emphasizing that efforts to practice dental hygiene were more effective for anterior than posterior teeth.

*Table 9.2. Dental Loss by Arcade Position*

Dental Position	Number of Potential Teeth	Number of Surviving Teeth Present for Analysis	Number of Teeth Resorbed	Percent Resorbed
Anterior Teeth	264	152	41	26.97
Posterior Teeth*	352	181	95	46.96
Total	616	333	136	40.84

\*Third molars were not included to prevent confounding dental loss with agenic development.

Close examination revealed a total of 136 resorbed teeth from 13 males, 5 females, and 4 unsexed adults. All observable individuals were dentate at the time of death, meaning that they had at least one tooth present in occlusion. None were edentulous. Two adult males (F-12 and F-26) were the closest to being edentulous as they retained only one tooth (a mandibular second premolar and a maxillary canine respectively) each at the time of death. Both exhibited considerable reduction in the mandibular and maxillary bone heights with some curvature noted in the mandible. The numbers of resorbed teeth were contrasted by sex (Table 9.3). While the sample size was admittedly small, males tended to have less tooth loss and females appeared to have more catastrophic tooth loss per person. This weak pattern is consistent with the observed trend. Avondale Burial Place's women were proportionately more impacted by dental loss than men.

Table 9.3. Numbers of Resorbed Teeth by Sex

Sex	Number of Individuals	Number of Resorbed Teeth				
		1	2-5	5-10	10-15	15+
Males	13	2	6	2	1	2
Females	5	1	1.5*	0.5*	0	2
Adult (Unsexed)	4	0	0	0	0	0
Total Individuals	22	2	7.5*	2.5*	2	4

\*One tooth apportioned across developmental age range.

The number of resorbed teeth was also examined by age, but no clear patterns emerged. These results suggested that factors other than age were acting on the teeth. In Okumura's (2010) study of disease patterns in enslaved Africans brought to the Americas from Suriname, there were no appreciable differences in the relative ages of decedents between the sexes. The youngest female in Okumura's study population had the highest frequency of dental pathologies. Okumura attributed differences in oral health to a variety of factors including distinct susceptibilities to oral pathogens, differential access to cariogenic food, different physiological injuries, or cultural behaviors, as well as hormonal levels (see also Slaus 2000, Lukacs and Largaespada 2006). Lacking living case histories for archaeological populations, like the Avondale Burial Place assemblage, severely compromises any attempt to specify etiological factors to any given case of tooth loss (Lukacs 2006). It is not possible to determine the exact cause of tooth loss for each individual at the Avondale Burial Place. However, the presence of extensive calculus, periodontal disease, and numerous caries imply that oral pathogens were likely agents.

## TOOTH WEAR

The loss of dental structure is not caused by caries alone. Imfeld (1996) noted that non-carious loss of dental hard tissue is hardly ever caused by one process; rather, it is almost always multifactorial. Some of these agents are typically grouped together as dental wear. Dental wear can be viewed as the result of abrasion, demastication, attrition, abfraction, resorption, and erosion. Abrasion is the mechanical wearing away of the enamel through repeated grinding, rubbing, or scraping of the teeth against non-food or foreign objects, such as pipe stems, sewing pins, or leather. It can be localized or diffuse. Demastication is the process of wearing away the enamel through chewing. Wear is influenced by the amount of abrasive foods consumed or the accidental introduction of abrasive substances such as sand or nutshells with food. Attrition refers to the physiological wearing away of dental hard tissues as the result of tooth-to-tooth contact (i.e. grinding of teeth). This can occur during swallowing, speech, sleep, or when lifting heavy objects. Abfraction is a special form of wedge-shaped defect at the CEJ; it is thought to be the result of eccentrically applied occlusal forces that lead to tooth flexure and ultimately fracture, usually as the result of malocclusion. Resorption describes the process of biological degradation and assimilation of the enamel or root structures back into the body. Finally, erosion is the gradual destruction of the surface of the enamel, usually by chemical processes, such as the introduction of acidic foods. Erosion causes the enamel surface to soften rendering the tooth more susceptible to the effects of abrasion, demastication, and attrition (Imfeld 1996).

All teeth available for observation in the Avondale Burial Place population were macroscopically examined for the presence of wear. The extent and severity were recorded for each tooth following standards set forth in Smith (1984:45-46) (Tables 9.4 and 9.5). For the purposes of this analysis, only permanent teeth lacking gross caries or extensive calculus were included. Observations focused on mandibular and maxillary central or first incisors and on the first molars. These two tooth types allowed for a simplified and contrasting analysis of anterior with posterior teeth. Since first molars and incisors tend to erupt at the same general developmental period (around 6-7 years of age), these teeth have been exposed to the same agents for about the same lengths of time. A comparison of right versus left incisors and molars indicated that no difference in appreciable wear was present. As result, the right central incisor and first molar were examined. If a right tooth was missing, the left was substituted. A total of 18 incisors and 20 molars were examined from 27 individuals.

*Table 9.4. Dental Observation Battery Used to Evaluate Wear of Incisors (After Smith 1984:45-46)*

Score	Definition
0	Missing or Cannot be Coded
1	Unworn to Polished or Small facets (no dentin exposure)
2	Point or Hairline Dentin Exposure
3	Dentin Line of Distinct Thickness
4	Moderate Dentin Exposure No Longer Resembling a Line
5	Large Dentin Area with Enamel Rim Complete
6	Large Dentin Area with Enamel Rim Lost on One Side or Very Thin Enamel Only
7	Enamel Rim Lost on Two Sides or Small Remnants of Enamel Remain
8	Complete Loss of Crown, No Enamel Remaining; Crown Surface Takes on Shape of Roots

*Table 9.5. Dental Observation Battery Used to Evaluate Wear of Molars (After Smith 1984:45-46)*

Score	Definition
0	Missing or Cannot be Coded
1	Unworn to Polished or Small facets (no dentin exposure)
2	Moderate Cusp Removal (Blunting)
3	Full Cusp Removal and/or Some Dentin Exposure Pinpoint to Moderate
4	Several Large Dentin Exposure Areas, Still Discrete
5	Two Dentinal Areas Coalesced
6	Three Dentinal Areas Coalesced or Four Coalesced with Enamel Island
7	Dentin Exposure on Entire Surface, Enamel Rim Largely Intact
8	Severe Loss of Crown Height, Breakdown of Enamel Rim; Crown Surface Takes on Shape of Roots

Initially, the dental population was examined by tooth form for amounts of visible wear (Figure 9.2A). Data from the molars and mandibular incisors reflected a bimodal distribution, possibly indicating that select individuals used their teeth differently. Cumulatively, this also meant that the

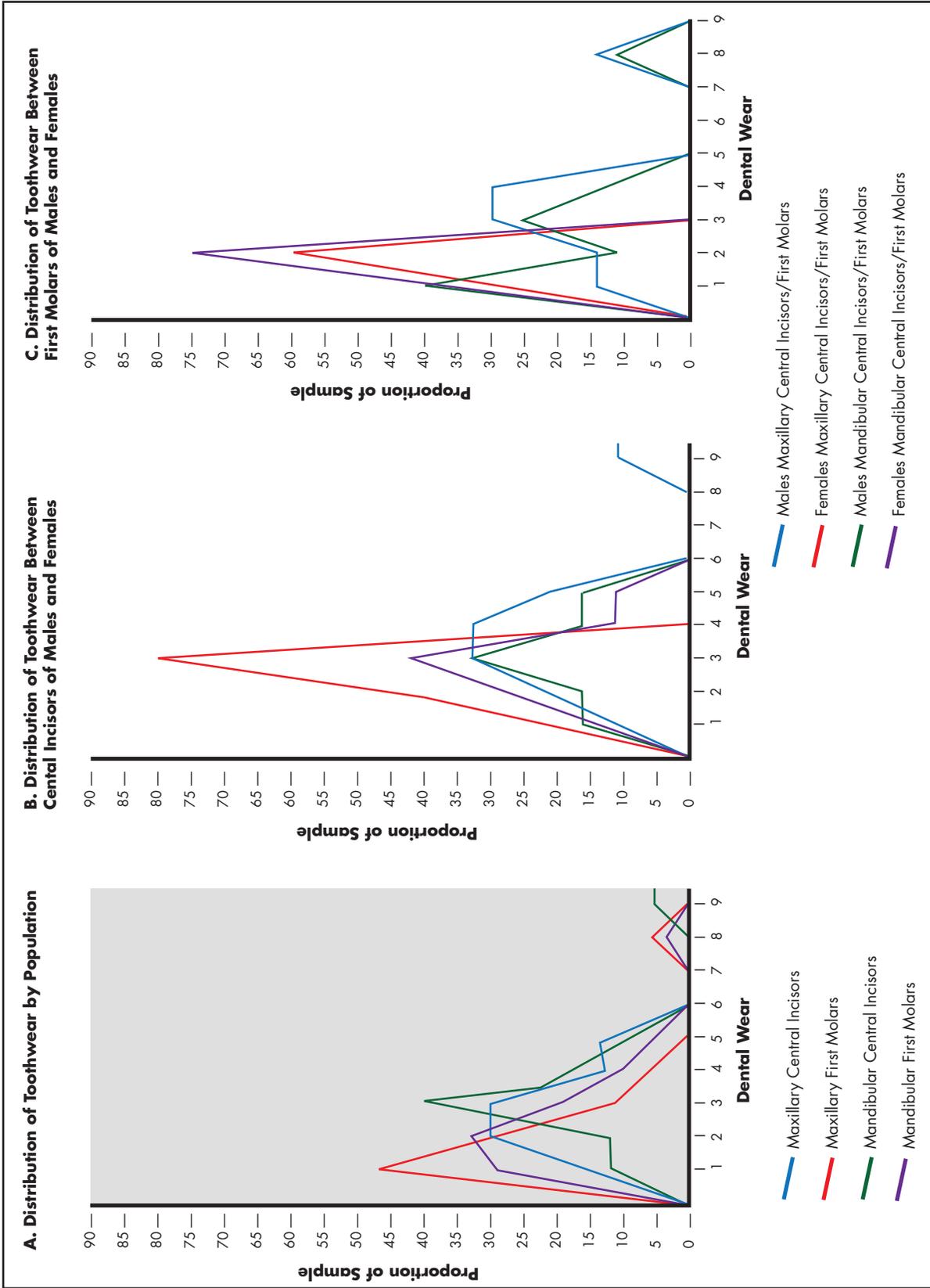


Figure 9.2. Dental Attrition by Population and Sex

maxillary central incisor exhibited the least wear, although first molars wear modes were less than those of the incisors. The corresponding mandibular central incisors exhibited the greatest wear among all sampled teeth. Incisors seemed to be more susceptible to wear agents than molars.

Some insight can be gained from the dental literature. Researchers have noted that bite structure has shifted over the last several thousand years; it is possible that the variable wear seen in the anterior teeth is a result of biomechanical differences between maxillary and mandibular arcades (Kaifu et al. 2003). Biomechanical stress on the maxillary incisors may be different from other teeth; this is reflected in a single-peak distribution. Posterior teeth exhibited similar wear patterns suggesting that arcade (maxillary or mandibular) was not a factor that greatly affected wear.

Using the teeth as tools may also lead to uneven wear patterns. Studies have shown that using the teeth as a 'third hand' often creates atypical wear patterns such as occlusal facets, occlusal excessive load, and labial striae, among other features (Molnar 2008). Evidence of this at Avondale Burial Place may lie with F-38. This 20-30-year-old man exhibited unusual wear on the labial surface of his maxillary central incisors. This area is not typically used for chewing and no evidence could be found for an underbite or other natural causes for facet formation. It is likely that the gentleman was using his teeth to perform some action where only the maxillary labial surface was exposed to abrasion. Currently, no cultural practices are associated with this particular type of wear. Bimodal wear distributions may be indications that some individuals at Avondale Burial Place were using their teeth as tools.

The dental sample was examined by sex (Figure 9.2B and C). Individuals whose sex was unknown were not included. A comparison of the wear on maxillary and mandibular central incisors and molars showed that males exhibited a slightly greater amount of wear than females. Other incisors exhibited analogous wear distributions implying that these teeth were exposed to similar wear agents. Males appear to account for the bimodal distribution in maxillary incisors. Males exhibited a greater amount of molar variation than females. While female mandibular molars revealed a tight unimodal distribution and their maxillary counterparts displayed a bimodal pattern, the range of variation was considerably less than the broad male bimodal and trimodal patterns. Differences in these patterns probably lie in cultural habits. Bowels et al. (1995) noted that the amount of abrasives present in tobacco products was a possible factor in dental attrition. They noted that people who habitually chew foreign materials, consume a coarse, abrasive diet, or are repeatedly exposed to air with high levels of dust (such as miners) can develop dental attrition. Their study showed that cigars, snuff, and chewing tobacco all held particulate matter (such as silica) that would likely cause dental abrasion. Lingual wear on the anterior teeth from F-27 may be related to these activities. It is possible that the males at Avondale Burial Place used these or similar tobacco products. F-31, an adult male, was buried with a well-used ball clay pipe, indicating that tobacco products were in use among the individuals of Avondale Burial Place.

Many studies have emphasized the variability in tooth wear between different populations as a result of dietary differences. Molnar et al. (1989) noted slight variations between male and female tooth wear in their Australian Aboriginal population. Though they had no direct explanation, they posited that wear could be related to occlusal loading variability and facial robusticity. In earlier studies, some researchers suggested that sexual dimorphic variability in wear may reflect differences in diet (see Molnar et al. 1983). They suggest that females exhibited greater wear

because their diet consisted of the least desirable portions of each meal; hence, they were consuming tougher and more abrasive foods (Campbell 1939; Heithersay 1959). While it is impossible to determine the quality of food available to the individual family member at Avondale Burial Place, it is possible that this difference in wear between males and females reflects variations in the amount and quality of food in their diet. In Avondale Burial Place, males appear to be slightly more susceptible to wear than females; it is unclear if these differences are related to diet. Molnar et al. (1983) warned that the processes that produce wear are on a time continuum. They noted that shifts in occlusal loads during dental arch growth, an increase in muscle mass, and the development of posterior teeth all contribute to the amount of wear a certain individual suffers, which can create patterns that are confusing and likely mimic other processes. Variations by sex in Avondale Burial Place dental wear are likely idiosyncratic and not part of a specific cultural pattern.

The dental wear sample was examined and contrasted across three age groups: 0-20 years, 20-50 years, and 50+ years (Figure 9.3). Individuals whose age was not known (i.e. recorded only as 'adult') were screened from this examination. Individuals with age estimates spanning more than one category were apportioned following techniques outlined in Asch (1976:27). Results show that, in general, younger individuals exhibited the least amount of wear, while older adults exhibited more wear. This is a basic biological trend, indicating that the longer the tooth was in occlusion the more time it had available for wear to occur. This was generally the case among incisors from 0-20 and 20-50 year olds and to a lesser extent among the molars. Elderly individuals (those above 50 years of age), however, did not follow the trend. Major components of the elderly sample reflected as much and even less wear than their younger counterparts. For every age group, with the exception of the mandibular central incisors, dental wear from elderly individuals exhibited multiple peaks. Elderly teeth reflected the widest range of variation, from very little to significant amounts of wear.

Dental wear at the Avondale Burial Place is a complex subject. Factors, including age, sex, and location in the mouth, influence wear but the patterns of wear do not definitively point to these as the primary wear agents. What seems to emerge are hints that individual habits and behaviors, like tobacco consumption, use of the teeth as tools, or how food was prepared, are major contributors to dental wear variation.

## ENAMEL HYPOPLASIAS AND CHILDHOOD STRESS

Living individuals are constantly exposed to tangible and intangible stresses that inhibit normal growth patterns. Human genotypes produce the cells and tissues that are needed to overcome many stressors, but unfortunately they are not capable of meeting every challenge. If periods of stress are long lasting, severe, and uncontrolled, they can have devastating effects on the individual and leave permanent stress markers in the skeleton. Markers including Harris lines, stature, bone length, and porotic hyperstosis leave records of metabolic insults during development. Hypoplasial bands in the dentition are an indelible record of stress-induced growth interruptions that are exclusive to the teeth. Hypoplasias result from an arrest in enamel development; they can form on the crown of both deciduous and permanent teeth. Hypoplasias are considered by many to be one of the most valid indicators of stress on the skeleton (Goodman et al. 1980; Slaus 2000). Once formed, they remain visible for as long as dental enamel is present.

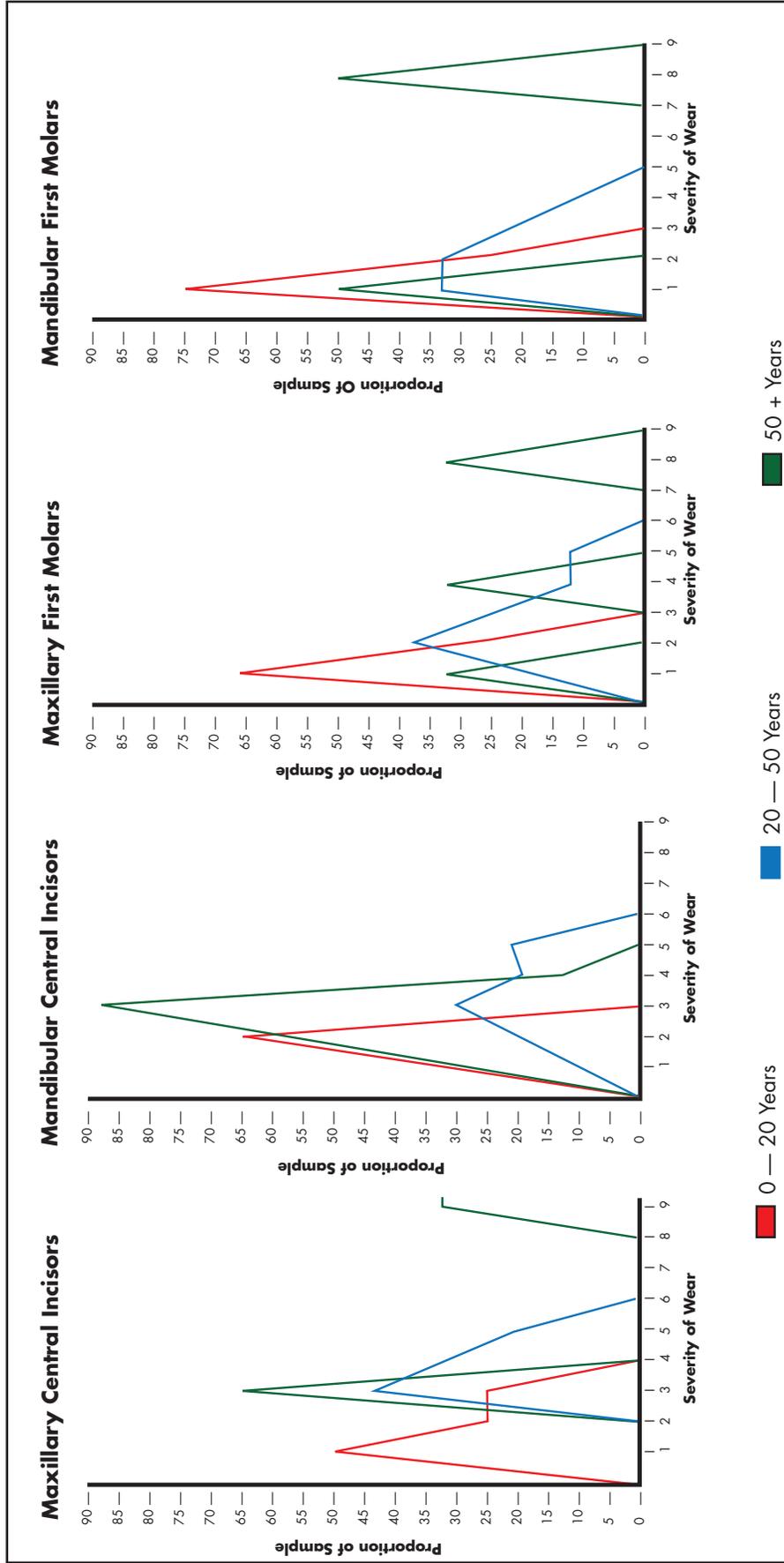


Figure 9.3. Distribution of Wear by Tooth Class and Age Cohort

Unfortunately, the development of enamel hypoplasias cannot be attributed to a single specific disease or stress episode in an individual's life without a detailed medical history. They appear to be generalized responses and are not diagnostic to a single agent. Physiological stresses including malnutrition, infectious disease, psychological or physical trauma are among the metabolic disruptions recognized as responsible for dental enamel hypoplasias (Cutress and Suckling 1982; Goodman et al. 1980; Lanphear 1990; Slaus 2000). Studies of living children have noted that poor nutrition and low socioeconomic status correlate positively with high frequencies of hypoplasias (Goodman et al. 1991, 1992).

Enamel disruptions can take many forms, such as discolorations, lines, pits, or groups of pits (Pindborg 1970). The etiologies of these various forms are still the subject of considerable debate. In the Avondale Burial Place population, hypoplasial bands and pits were the only observed disruptions. They appeared as transverse areas of depressed enamel, typically forming a line, pit, or band. Periradicular bands were observed in some molar roots from F-36. These poorly understood defects were noted but were too rare to fully explore. In order to quantify when stress events capable of causing hypoplasial defects occurred across the population, analysis focused on permanent teeth. Hypoplasial defects were noted in some deciduous teeth, but sample sizes were too small to draw any substantive conclusions. Because the timing of their growth is less predictable and thus constitute a poor record of when stress events took place, third molars were excluded from this examination.

Hypoplasial defects were translated into half-year periods of disruption ranging from birth to seven years of age. The period of disruption was calculated by converting a measurement from the CEJ to the inferior margin of the defect to the period of development estimates provided by Goodman et al. (1980) and following the recommendations put forth by Massler et al. (1941) and Swärdstedt (1966). Occurrence of a single hypoplastic band at any given half-year period may reflect local disturbances specific to an individual tooth, such as an injury. These were eliminated from the current analysis. A half-year period was considered positive for systemic growth disruption if two or more teeth exhibited bands formed during the same developmental period. The timing of developmental disruption was examined across all of an individual's teeth to establish patterns of systemic growth and growth arrest through time. Out of a total of 136 hypoplastic bands on 15 individuals, 86 were recorded as positive defects. Positive defects were encountered on the permanent dentition (N=54) of eight individuals. The remaining seven individuals reflected negative growth disruptions. The hypoplastic bands observed on these individuals may reflect instances of injury or isolated illnesses.

Among the Avondale Burial Place dental sample, periods of stress occurred in both annual and biannual increments (Table 9.6). This pattern suggested that two different types of stress were triggering growth arrest. Goodman et al. (1980) suggested that yearly periods of disruption may be due to seasonal stress, particularly periods of reduced nutrients or scarcity of food during the winter months. These yearly periods of disruption show up as one positive stress episode each year. This can be seen in Table 9.6. The individual interred in F-52, for example, exhibited single periods of positive stress like those recorded for ages 4.5 and 6. Conversely, continuous periods of stress across half-year increments may reflect an ongoing illness or chronic malnutrition. These half-yearly periods of disruption show up as two positive stress episodes a year. This is also illustrated in F-52, when the individual experienced an ongoing stress event from 2-3 years of age.

These data demonstrate that at least some individuals in the Avondale Burial Place sample were subjected to periods of developmental stress that lasted long enough to leave permanent records on their teeth.

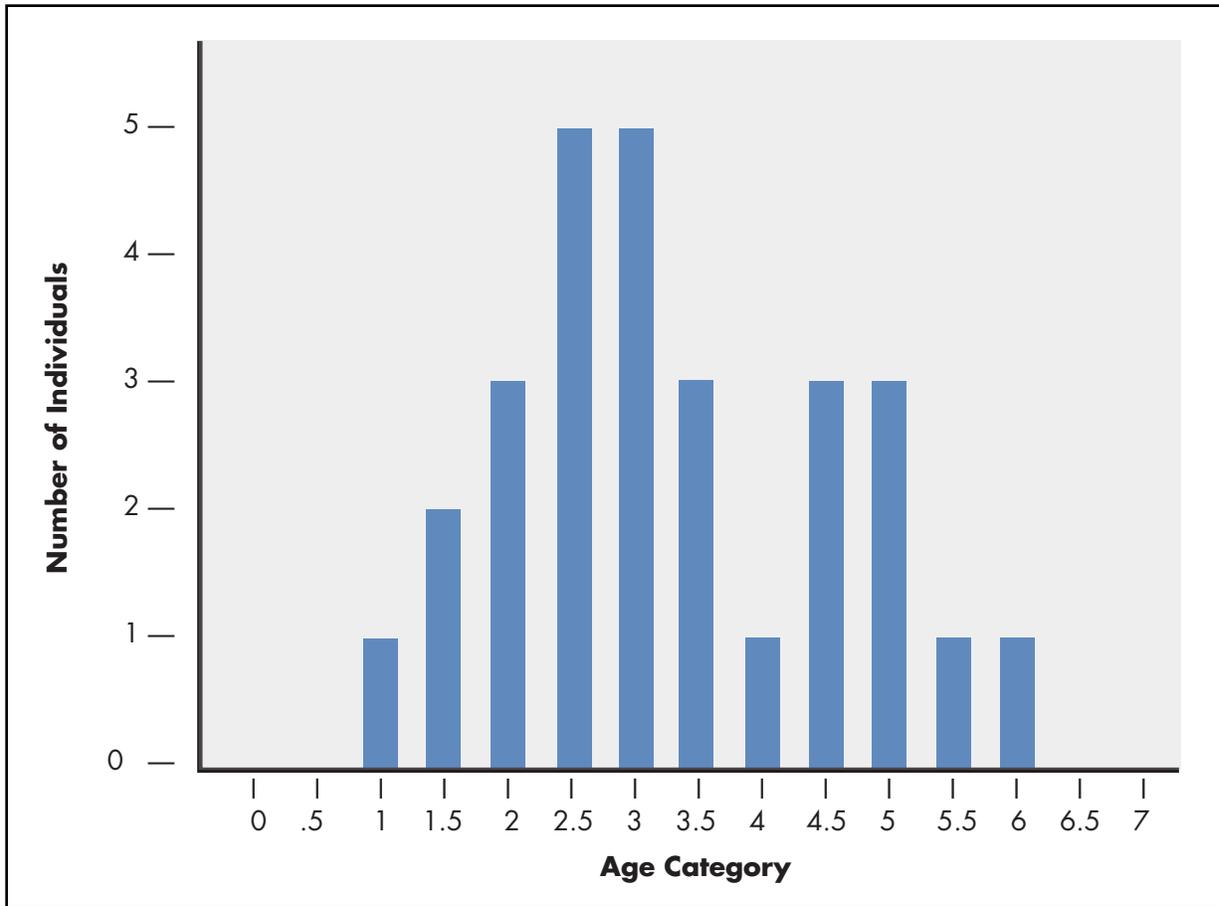
*Table 9.6. Positive Stress Episodes by Half-Year Increments*

Individual	Years	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7
3							X	X	X		X					
17					X	X	X	X	X		X	X				
22										X		X	X			
24						X		X								
25							X	X	X							
52						X	X	X			X			X		
53					X											
87				X			X									
Total Number by Half-Year		0	0	1	2	3	5	5	3	1	3	3	1	1	0	0

Two peak periods of stress were observed (Figure 9.4). The first peak occurred between 2 and 3.5 years of age. A second smaller peak occurred at 4.5-5 years. The first peak corresponded with a period that most researchers associate with weaning (Lanphear 1990). Weaning and post-weaning periods are universally recognized as times of increased stress for a child (Clark 1980; Underwood and Hofvander 1982; Moggi-Cecchi et al. 1994; Relethford 1994). Weaning entails a gradual loss of nutrients and a reduction in immunity, both of which were provided by the mother's milk. The switch to foods originating outside of the mother increases contact with pathogens from the external environment. Weaning is an extremely stressful transition and without adequate nutrition, a child's growth can be disrupted, resulting in dental hypoplasias.

Enamel hypoplasias can be used to define when weaning occurs in populations that are stressed. In Lanphear's (1990) study of the Monroe County Poorhouse she noted that the peak age at stress for individual was between 2.5 and 4 years of age. A second study of pre-industrial, low socioeconomic individuals in nineteenth-century Florence, Italy also recorded a peak in stress between 2.5-3 years of age (Moggi-Cecchi et al. 1994). When the author compared his sample to hunter-gathers and early agriculturalists, who weaned their children between 3-6 and 2-6 years respectively, he noted that weaning likely occurred earlier in the life of low socioeconomic status infants from the late nineteenth century than among children from less complex societies (Lanphear 1990). In the case of economically deprived individuals in the nineteenth century, which would have included Avondale Burial Place's burial community, the inadequate amount and poor nutritional quality of the supplemental food was not enough to sustain growth and development at peak efficiency. These data imply that weaning occurred in the Avondale Burial Place burial community around 2.5-3 years of age and that it represented a major insult to a child's development. The presence of a second stress event peak between ages 4 and 5.5 is more perplexing. Currently, no satisfactory answer has been found among the literature to adequately explain this second peak.

Figure 9.4.  
Positive Stress Episodes by Half-Year Increments



Enamel hypoplasias were also examined relative to the individual's age at death. Five children under age 15 and three adult males exhibited hypoplastic bands. This age distribution emphasized that the majority of individuals with positive episodes of developmental stress were children, and that the presence of stress episodes meant that they were less likely to survive into adulthood (Table 9.7). Slaus (2000) noted this same pattern in the Nova Raca cemetery in Croatia. He observed that subadults consistently exhibited higher frequencies of hypoplastic teeth than adults. In many populations, dental attrition may have worn away enamel limiting the number of observable areas and skewing rates in favor of fewer hypoplasias. However, Slaus' population generally exhibited only slight attrition. As discussed earlier, attrition was relatively light in the Avondale Burial Place population. Minor to moderate amounts of dental wear served to preserve much of the sample's dental enamel. Slaus (2000) also noted that fewer adults had hypoplasias than children and the afflicted adults had fewer defects per person than those who died as children. He suggested that the incidence of hypoplasias was a potential precursor to early death. While the number of individuals with hypoplasias in the Avondale Burial Place assemblage was relatively small, a general trend for children to express more enamel defects was consistent with Slaus' findings. This suggests that they were subjected to more physiological stresses than they were able to withstand. The presence of hypoplasias among only male adults may reflect a pattern of surviving hypoplasia-inducing stress events that favored boys.

The results of this investigation suggest that the occurrence of hypoplasial defects in an individual may be related to chronic malnutrition, illness, and possibly workload. The added demands of labor often forced some of the body's functions to run at a deficit. While scaling back on allocations to development may have long-term repercussions, it enabled the individual to survive their current stress event. Malnutrition lowered the individual's resistance to infections, which in turn interfered with nutrition by altering absorption in the digestive system and increased physiological needs for nutrients (Hutchinson and Larsen 1988; Mogg-Cecchi et al. 1994; Wood 1996).

*Table 9.7. Ages of Individuals with Enamel Hypoplasias*

Feature	Age at Death	Number of affected Half-Year Increments
3	12-14 years	5
17	10-12 years	7
22	30-34 years	3
24	45-49 years	2
25	15 years +/- 2.5 years	3
52	30-50 years	5
53	9 years +/- 2 years	1
87	10 years +/- 2.5 years	2

When viewing these data, it is not possible to differentiate the etiology of hypoplasias in archaeological assemblages. Patterning of the hypoplastic bands imply that seasonal food shortages and weaning were likely triggering events among systemic representations and that injury and illness prompted more localized responses. These precipitating events likely had devastating effects on many of the children in the Avondale Burial Place population.

It must be emphasized that enamel hypoplasias were only recorded on individuals that survived biological stress events. Some children did not survive these nutritional stresses or illnesses. Wood (1996) warned that death eliminated individuals that could not overcome the stress event, thereby leaving only their bones as an interpretable record of the event. This is reflected in the high number of subadults found in the Avondale Burial Place population. The record of stress events impacting the burial community's children is an incomplete and disturbingly minimal representation.

## CONCLUSIONS

The oral cavity is one of the primary sources of entry into the human body, and as a result, the dentition face constant attack from agents introduced through the process of both digestion and respiration. Fortunately, the human body has evolved to counter these insults with a variety of immunological defenses. Unfortunately, however, microbes have also evolved to counteract these defenses. Additionally, human behavior does not improve the situation. Humans eat foods that promote bacterial destruction of the oral tissues, they ineffectively maintain their teeth, and constantly expose their teeth to foreign objects. It is a wonder that teeth survive at all. In these respects, the teeth recovered from the Avondale Burial Place were no different than those of other human populations. There are, however, important distinctions that surface from examination of these tissues.

The impact of diet was reflected not only in the skeleton but also in the dentition. A high sugar, high carbohydrate diet not only deprived the individual of necessary nutrients but promoted the growth of bacteria in the oral cavity. Combined with ineffectual dental care, the result was catastrophic. Periodontal disease, abscesses, and caries destroyed the teeth, gums, and supporting bone, rendering many parts of the mouth ineffective for mastication.

Survival seems to be at least partially related to the state of the oral environment. Since dentition's primary purpose is to physically break down food so that the digestive system may more efficiently extract nutrients, factors that impeded this process also reduce the amount of nutrition consumed. While lessened amounts of dental wear are associated with survival to old age, it should also be recognized that the pain and mechanical inability to masticate foods brought on by caries, abscesses, and dental loss also hinder food consumption. Food must be either swallowed in less reduced forms, thereby retarding the amount of nutrition extractable, or avoided completely. In either case the results are the same – less nutrients. Fewer nutrients translate into fewer resources for the body to use. Over time the cumulative effect of fewer resources would have a devastating effect on the body and contributing to the shortening of an individual's life. Individual habits including the types of food that were consumed, personal hygiene, and the nature of non-food objects that came in contact with the teeth, would have had considerable affect on dental wellbeing. Being able to maintain a healthy, or at least functioning, oral environment was a factor that enabled some people to survive to old age.

One feature that is important to recognize is that adults with hypoplasial bands represent only a portion of a stress event's survivors. While death took the lives of children who were not strong enough to overcome a stress event, those who survived did so at a cost to their dental development. Children who were lucky enough to skirt the full effects of a stress event or whose constitution was strong enough to withstand it were among the survivors. The relatively few adults with hypoplasial bands in the assemblage indicate that natural selection favored these individuals. Survivors with weaker constitutions or who were unlucky enough to face multiple stress events during their childhood may have survived one event; however, the onslaught of other stress events served to weaken their physiology to a point where another malady was able to place the body in mortal peril. The number of events survived and recorded in an individual's teeth may serve as a relative gauge of the strength of their constitution and dangerous nature of the environment that they lived in.

When a person smiles, they reveal a host of details about their lives. Vestiges of their early childhood are recorded, aspects of their diet are exposed, details of their personal hygiene are uncovered, and prospects of their death can be surmised. Most of these features are permanent records, capable of surviving in even the harshness of archaeological environments and enabling the researcher to understand a little more about the world in which the decedent lived. The teeth preserved in the Avondale Burial Place were a tapestry of an individual's life. The smile of a child in the burial community spoke of how they were survivors of a demanding environment. That of an adult emphasized how dietary and personal care factors stressed the individual; the smile of the elderly betrayed the physical deterioration that was hidden beneath their skin. Prominently placed for all to see, teeth from the Avondale Burial Place skeletal assemblage wove records of demanding lives with few resources available and many factors working against survival. These teeth provide some of the best information available about the challenges faced by the burying community.

## X. ARTIFACTS

The durable remains recovered from historic burial grounds, such as the Avondale Burial Place, can provide a wealth of socio-cultural and historical information about how the mortuary assemblage was formed (Brown 1995; Warner 1959). The mortuary artifacts encountered during this project were examined to identify what material culture was used as part of the depositing community's burial program. Given that the community dynamics surrounding development of the mortuary facility have not been extensively recorded, the artifact data was a critical resource for narrowing down the temporal and social affinities needed to define these assemblages. Artifacts were broken into three general categories – Burial, Funerary, and Personal Artifacts – with 48 specific types of materials represented.

### BURIAL ARTIFACTS

Burial artifacts are those associated with the actual placement of the dead into a subsurface receptacle, funerary rituals associated with the grave, and any related post-funerary activities. This grouping includes both surface and subsurface materials. Subsurface burial artifacts convey social meaning only during the preparation of the grave and any gravesite funerary rituals. Their value as a communication medium is restricted to the period when the grave is physically open and their audience is limited to those who are present during construction, deposition, and subsequent backfilling of the grave. Surface burial artifacts have a wider period of transmission. They communicate information about the dead during gravesite funerary rituals and all times after burial has taken place. Their audience includes all who may encounter (and recognize) the grave until it is no longer part of any community's memory. Burial artifacts included surface decorations, grave shafts, grave markers, and vault liners.

#### SURFACE DECORATIONS

Surface decorations are defined as artifacts and plants intentionally placed on or around the surface of a grave. They are among the more distinctive features of southern folk cemeteries. Like grave markers, they serve multiple purposes. Functionally, surface decorations help identify the exact position of a grave in the landscape. They clarify exactly how much space has been reserved for the placement of underlying interments. Indirectly, they serve as a means of passive landscape maintenance; surface decorations retard unwanted plant growth and help control soil erosion. More importantly, surface decorations are a means of social communication. Surface decorations communicate largely through non-literate means; the reviewing audience (both living and nonliving) is expected to understand the meaning expressed by the presence of objects bearing specific forms, conditions, and symbols. The objects left on a grave identify critical social features of the dead, their place in the worlds of the living and the dead, and the means by which these worlds still interact. Though the community may no longer exist, the meanings of some surface artifacts can still be interpreted by their form.

Surface decorations were recovered primarily during the survey and surface removal phases of this project. A wide variety of post-mortem activities at the cemetery displaced objects left on the original grave surfaces and probably eliminated any botanical decorations that were present. Unfortunately, none of these objects could be directly attributed to a particular feature. This limited our interpretations to generalities about the entire burial field.

## Glass and Pottery

Approximately 76 percent of the artifacts identified as surface decorations at the Avondale Burial Place were made of glass or ceramics. These materials were manufactured in a wide variety of different forms and were generally recovered as incomplete wares.

Some fragments from the Avondale Burial Place were complete enough to identify their original form. Glass objects included a great number of containers, including beverage, spirit, panel, and medicinal bottles. Only one fragment of clearly handblown glass (Piece Plot 17) was observed (see Figure 10.1A). This olive green glass bottle top exhibited crude applied lipping tool marks indicating that it was made between the 1850s and 1880s (Baughner-Perlin 1982:267-268). Many glass fragments exhibited a variety of seam molds. In general, these indicated a manufacturing date after the mid-nineteenth century (Baughner-Perlin 1982:263). Screw topped canning jars, which were manufactured after 1858, were also recovered (Baughner-Perlin 1982:275).

Press molded glass sherds were recognized among the many fragments. A single piece of solarized selenium glass was also found; mass production of this material began as early as 1915 and generally fell out of general use by the start of World War II (Evans 2010). Some press molded glass sherds were manufactured from amethyst glass, which was produced from the 1880s to 1915 (Lockhart 2006:51, 54). When manufactured and initially distributed amethyst glass was clear. It assumed its purple color after prolonged exposure to the sun. The glass would have originally been clear when used and most likely when they were deposited.

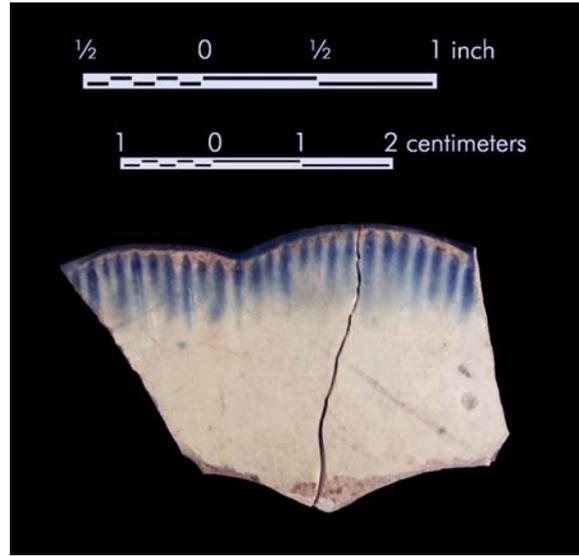
Recovered glass was examined to see if any color patterns were present. Clear container glass dominated the collection (Figure 10.2). Amber glass accounted for about 21 percent of all the glass found at the Avondale Burial Place and several times more than any other colored form. When sunlight strikes clear glass the sherds provided a minimum of two refractive surfaces—one from the interior and the other from exterior surface. Curves, changes in shape, margins, bubbles, and imperfections in the glass provided additional reflective surfaces. The surfaces of cut or pressed glass provided even more reflective planes. The lack of color, with its ability to reflect light, may have been a factor influencing selection of the type of glass used as a symbolic surface decoration.

Over 85 percent of the glass was identified as bottle glass (Figure 10.2). One unbroken amber pharmaceutical bottle was recovered from the cemetery's surface. These bottles may have served as a form of edging or represented objects needed by the dead and left as a form of spiritual appeasement. Given the symbolic ties between bottles and mortuary decoration, it is possible that these bottles were left by descendents long after the interments had been deposited. Two fragments, probably from windowpanes, were also noted. Other forms of glass, including bowls,

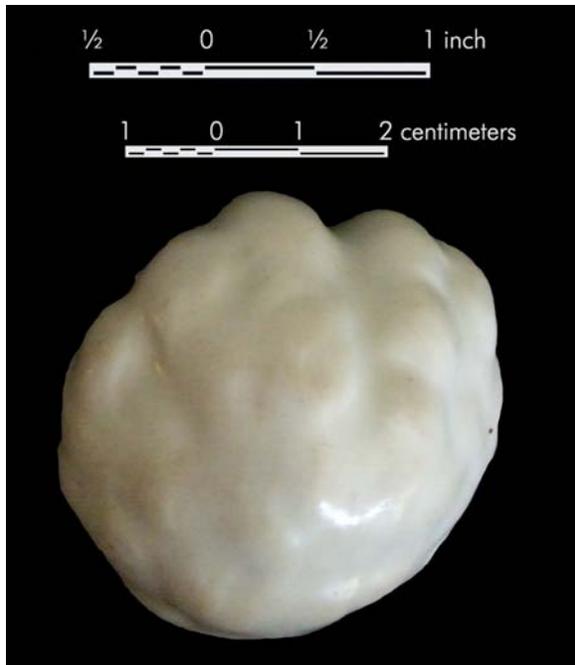
Figure 10.1.  
Artifacts Recovered from Cemetery Surface



A. Hand Blown Bottle Top



B. Edgeware Rim Sherd



C. Dorsal Doll Head

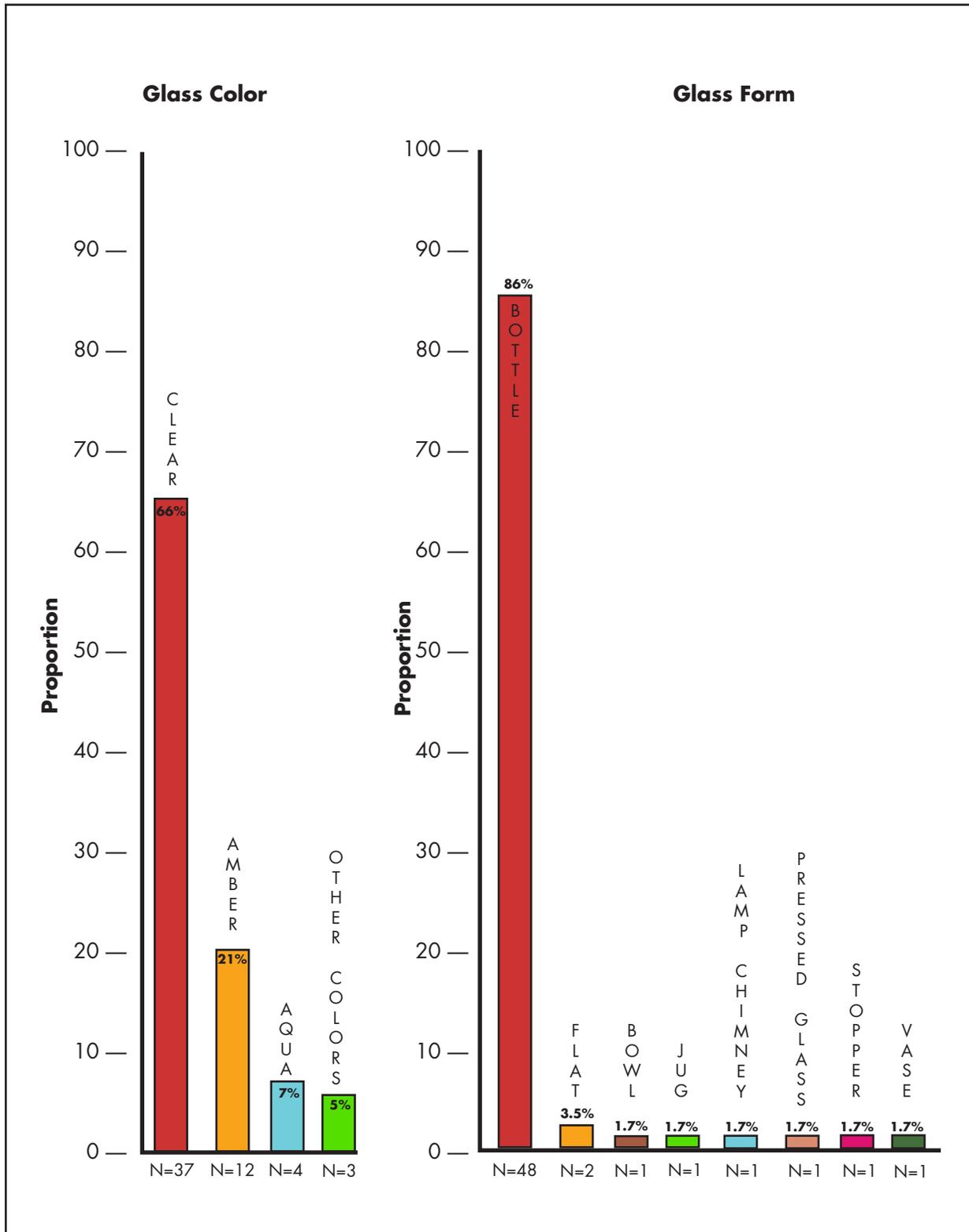


D. Figurine Fragments



E. Marble Marker Fragment

Figure 10.2.  
Glass Form and Decoration



jugs/carboys, pressed glass, stoppers, and vases, were represented by single fragments. Also of particular note was the recovery of a lamp chimney sherd. The presence of lamp chimney glass at the Avondale Burial Place probably resulted from placing oil lamps (or oil lamp parts) on graves as a means of symbolically lighting the way to the spirit world (Thompson 1984:139).

Among ceramics, ironstones dominated the collection (Figure 10.3). Ironstones were generally manufactured from the 1830s through the end of the nineteenth century (Miller 1991:9-10). A blue scalloped, straight-lined whiteware rim sherd (Piece Plot 1) was made as early as the first quarter of the nineteenth century (Figure 10.1B) (Miller and Hunter 1990:116). A pearlware sherd indicated that artifacts made between the 1780s and 1830s were also present (Miller 2000:13). Non-diagnostic ceramics, including porcelains and refined earthenwares, comprised just under 20 percent of the surface assemblage. Decal printing on some porcelains indicated manufacture dates after 1890 (Miller 2000:33).

Plates, saucers, flower vases, and figurines were among the fragments recovered. The overwhelming majority of these were undecorated. Miller (1991:1) noted that undecorated ceramics were typically the least expensive. The great propensity towards undecorated wares may reflect the burial community's economic status. White, undecorated ceramic sherds dominated the assemblage (Figure 10.3). Color (or lack of color) may have been a factor in selection for use as surface decorations. In general, the glass and ceramic artifacts recovered from the surface of the Avondale Burial Place were consistent with the form and symbolism found in surface mortuary decorations in southern folk cemeteries.

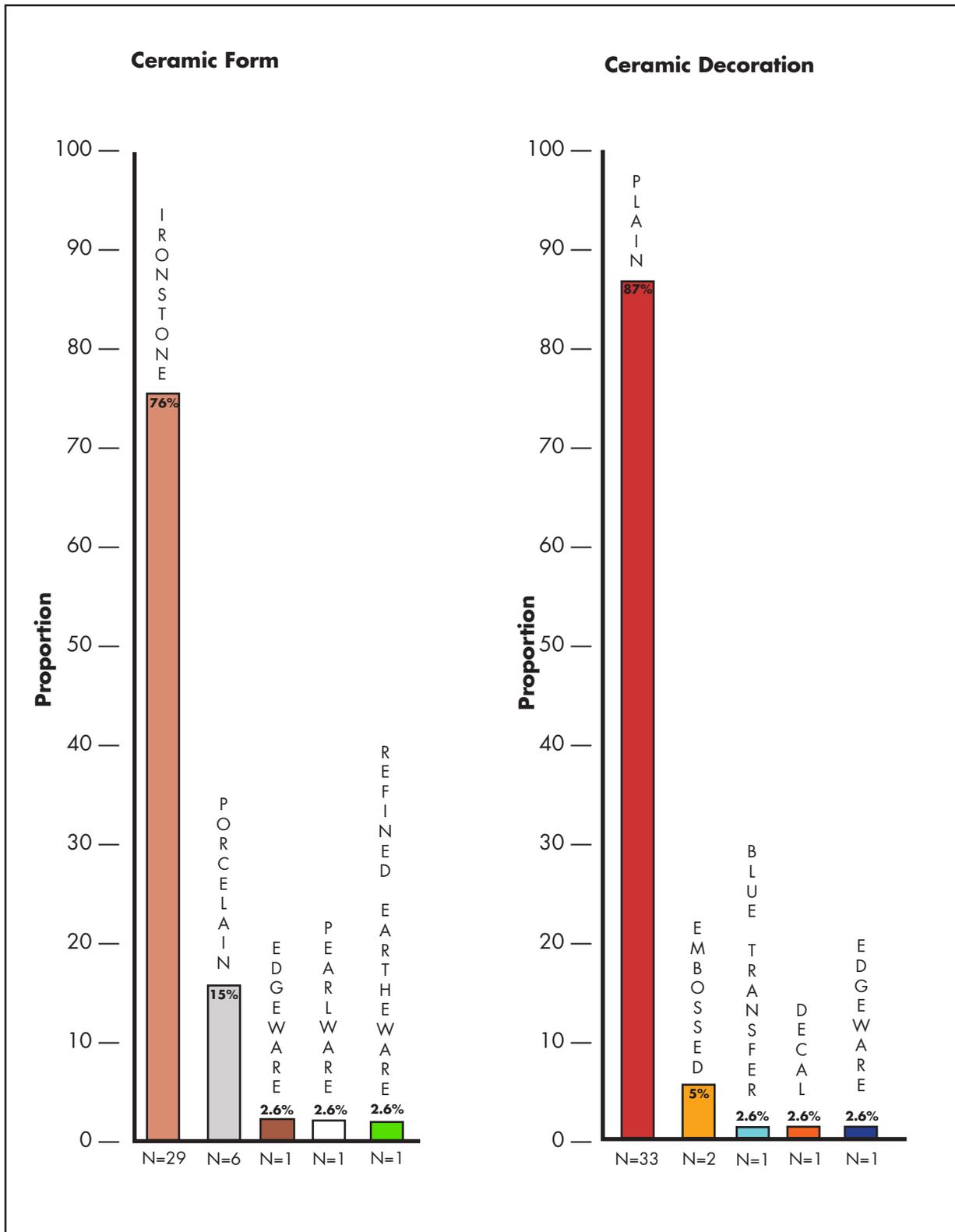
### Ceramic Tile

Glazed and pigmented architectural tile may have provided a means of adding permanent color to graves; tiles were frequently added to markers to create patterns and break up the marker's uniform surface. Tiles were also used in places like kitchens where flowing water was found; this association has been carried over to the mortuary context, where it is used as a symbol for water (Fenn 1985:45). New South Associates has observed the use of tiles on graves in the American Southeast and in the Caribbean. A single blue architectural ceramic tile was found on the surface of the Avondale Burial Place. This square tile was originally 51 millimeters (two in.) on a side. While commonly observed in nineteenth- and twentieth-century homes, it is not temporally diagnostic (Designboom 2010). The blue color of the tile may also have symbolic connotations. Blue was a color commonly used as protection from supernatural forces (Gundaker 1998:79; Thompson and Cornett 1981:180).

### Toys and Figurines

Most artifacts used as surface decorations were utilitarian; this, however, was not ubiquitous among all graves within Southern folk cemeteries. Jeane (1978:900, 1989:168) noted the presence of marbles, toys, stuffed animals, character figurines, and animal figurines among the objects found on the graves of subadults. These artifacts were indications that personality qualities associated with being a child were communicated and emphasized by the placement of playthings on graves.

Figure 10.3.  
Ceramic Form and Decoration



Several potential age-related surface decorations were found at the Avondale Burial Place. The most undeniable toy was the dorsal portion of a porcelain doll's head (Figure 10.1D). The fragment sports a short molded hairstyle that was originally painted black. A glossy glaze was noted beneath the paint. The lack of maker's marks or portions of the shoulder precluded any temporal affiliation; the doll could easily have been made in the late nineteenth and early twentieth centuries. The head was recovered from the northeastern quadrant of the site where numerous child and infant graves were located.

Two two-part seam molded hollow-ware figurine fragments were recovered from the northern surface area (Figure 10.1E). One of these artifacts was molded into a floral design and may have been part of a pedestal or support for a larger, unknown form, possibly a small vase. The other fragment appeared to be from the wing, perhaps of an angel or cherub. Both objects had glazed exterior surfaces. Ceramic figurines are common adornments on southern folk cemeteries and the tradition is still in use today. Figurine fragments have been recovered from the surface of the late nineteenth to early twentieth-century African American cemetery at 9CH875 (Matternes et al. 2010:198).

### Miscellaneous Objects

As noted earlier, not all objects found on the surface of the Avondale Burial Place could be related to the cemetery; many were deposited there or in its vicinity as modern trash or unwanted materials. Classifying objects as mortuary versus non-mortuary are more problematic with newer, more recently made materials. Objects placed on the surface of many African American folk cemeteries communicated aspects of the individual's personality (Matternes and Richey 2009). They may convey knowledge of the person's age, gender, employment, religious philosophy, hobbies, and other interests. Surface objects recognized as having the potential to relay these aspects about the decedent included a plow blade, iron bars and equipment fragments, a ceramic electrical insulator, a wet cell carbon battery insert, a brass and red paper shotgun cartridge, and a large V-strap door hinge. If not part of the mortuary assemblage they indicated other activities occurring in the area. These would have included agriculture, hunting, outbuilding construction, and heavy equipment maintenance.

### GRAVE MARKERS/EDGING

Perhaps the most universally recognized architectural feature in American cemeteries are grave markers. At the most basic level, they are vehicles of communication that allow the living to locate graves. Grave markers also communicate information through writing, symbols, or mnemonics about the person who is buried in a given location. They provide a material representation that the living can use to remember the dead long after their physical form has left the community.

Grave markers can be divided into two basic forms; formal or informal markers. Their morphology of formal markers most closely follows the general norms of the dominant culture. They communicate information that members of that society would anticipate learning from a gravesite. In the Eastern United States, nineteenth- and early twentieth-century interpretations of the western cultural tradition established the use of professionally manufactured markers. The vast majority of

these markers were made of milled stone, usually marble, slate, granite, soapstone, or sandstone. Stones were inscribed with at least the name, initials, or status ("Unknown", "Confederate Soldier", "Chinese Sailor") of the deceased. Very few formal markers in America can be dated before the mid-seventeenth century (Crissman 1994:119). They were a traditional European grave decoration, and their use in the American South largely followed the path of colonization. Commercially produced formal marker forms are currently the dominant modern cultural expression. A single milled, non-local marble fragment (Piece Plot 522) was identified as a formal marker fragment (Figure 10.1E). It was manufactured from a low-grade, coarse-grained marble and milled to a uniform thickness of 17 millimeters (about 0.75-inch). Though professionally inscribed markers are commonly observed in late nineteenth- and early twentieth-century African American cemeteries, part of a hand-inscribed marble marker was found in the surface of Savannah's 9CH875 cemetery (Matternes et al. 2010:190). The fragment from Avondale Burial Place was unfortunately not inscribed. This marker chip was evidence that formal grave markers were part of the cemetery's original surface landscape.

Unlike formal markers, informal markers do not follow the dominant cultural norms of the day. Substitution of the professionally manufactured marker with an alternative form, and frequent reliance on non-written communication to convey important information about the dead, are the hallmarks of the informal grave marker. Informal grave markers were manufactured from a wide variety of materials. In the Eastern United States, these would have included (but are not limited to) fieldstone, construction materials, wood, shell, ceramic, concrete, and metal. They are very commonly observed in African American folk cemeteries (Richey et al. 2008). Jeane (1992:116) described the informal marker as a "make do" monument; different materials were substituted to imitate the formal marker or the formal marker ideal was rejected in favor of an alternative creative expression. While writing was frequently used, the informal marker did not rely on it as the primary means of conveying information to a poorly educated audience. The marker's presence, form, composition, and associated symbolism served as significant avenues of communication. Minimally, these served as mnemonic devices to tap into the community's oral history about the dead (Clouser 1994:5). Temporal affiliations for these types of markers are problematic. They date as far back as the frontier/colonial periods and continued among rural and lower socioeconomic communities into the twentieth century (Jeane 1978, 1987; Matternes 2001, 2004).

Edgings are objects used to outline the borders of a grave. In southern folk cemeteries, edgings are often made of the same materials commonly used for informal markers. More formal forms, usually drawn from stocks of ceramic gardening tile, have been noted in African American cemeteries in Savannah, Milledgeville, and Beaufort, South Carolina (D'Angelo 2008:55-57; Matternes et al. 2010:193). Fenn (1985:43) suggested that the use of decorative borders among African American graves may be linked to the lumbu or mystical enclosures built around graves among the Kongo to provide spiritual protection.

When displaced or removed from a mortuary context, defining objects as informal markers or edging is extremely challenging. Their meaning is directly tied to the context in which they were deposited; when removed, their meaning cannot be differentiated from their original functions. At

least four possible objects were identified on the surface of the project area that could represent informal markers or grave edgings. One handmade brick fragment (Piece Plot 22) and 10 machine made bricks were analogues to bricks observed in other Southern cemeteries as markers and grave edgings. Technically, machine-made brick can date to as early as the 1790s, but the production of machine-made brick did not surpass handmade forms until the 1870s (McKee 1972:44). They could easily be contemporaneous nineteenth-century objects. All bricks were made from dense red clay, similar to that found on site and they were probably locally made. A large clear glass jug or carboy (Piece Plot 5) may have also been used to identify a grave. As noted earlier, its use as a vessel capable of containing water has specific ties to African American mortuary traditions. It was likely a late nineteenth- through twentieth-century object. Finally, a small piece of hand-molded cement (Piece Plot 15) was recovered. Cement and concrete were frequently used to manufacture grave markers, ledger stones, and surface accessories. As a potential mortuary artifact, it also would be a late nineteenth- through twentieth-century object.

### GRAVE SHAFTS

The grave shaft is an archaeological phenomenon that has not seen the recognition that it deserves. As a result, very little is understood about its characteristics. All Avondale Burial Place grave pits were linear with most assuming a more or less rectangular shape at the ground surface. While minor variations were noted, all graves were positioned in an east-west orientation. These placements would have been consistent with both Judeo-Christian and West African burial traditions. This pattern carried over within the grave as nearly all individuals were placed with their heads at the west end.

One individual, a child placed in F-42, was interred with its head to the east. Since the individual was placed in a linear hexagonal coffin, the likelihood of confusing which side bore the head was low; the orientation was probably a deliberate act. While the circumstances surrounding the F-42 child's life and death were unclear, this aberrant orientation was evidence that the child's demise was probably unusual and required a symbolic response from the burial community.

Grave shafts were more than just simple holes in the ground. In general, grave shafts in the Southeastern United States tend to be straight sided, rectangular structures with flat floors. In the South, there was a tendency towards brick or stone lined shafts in the graves of the more prosperous or socially elite, while less prominent peoples were buried in unadorned pits. These practices extended from the Colonial period through the nineteenth century (Bromberg and Shephard 2006:70). There were numerous variations to this basic pattern; only two of these, the simple and the vaulted (two-stage) grave shaft, were present in the Avondale Burial Place (Figure 10.4).

#### Simple Grave Shafts

The simple grave shaft bore a plain, rectangular shaft morphology (Figure 10.5). The base of the shaft was cut flat so that the burial case and other furniture could be placed on a level surface. Most shafts were too narrow to accommodate a coffin and attendants. In keeping with other nineteenth-century traditions, burial cases were placed on wooden rails extending over the grave and presumably lowered into the pit using ropes that were slipped out once the burial case was placed.

Figure 10.4.  
Profile Views of Avondale Burial Place Grave Shafts

**A. Simple >**



Long Axis



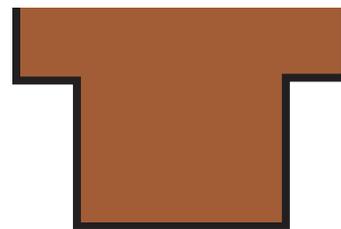
Short Axis



**< B. Vaulted**



Long Axis



Short Axis



Figure 10.5.  
Tomographic View of Vaulted Grave Shaft

Only 14 graves exhibited simple grave shafts. They tended to be intermingled with other graves on the north and western portions of the site (Figure 10.6). Simple grave shafts were evenly divided between coffins (N=6) and caskets (N=6) (see below for the distinction between coffins and caskets) with two burial case forms not being accurately identified. Only three males and two females were interred in simple shaft graves. The remaining nine simple shafts were overwhelmingly in favor of subadults, with most (N=6) found among infants and probable infant interments. There may be a functional basis behind this distribution. Excavation of a pit appropriately sized to hold a small child requires working in a confined space, which becomes increasingly more confined as greater depth is achieved. Construction of the more complex vaulted grave shaft may have been deemed too cumbersome to apply to such small interments. Graves typically commissioned by twentieth-century funeral directors followed the simple grave shaft form; it is also possible that Avondale Burial Place's simple shaft graves represent the work of commercially paid laborers.

### Vaulted Grave Shafts

The two-stage or 'vaulted' grave shaft was the dominant structure used at the Avondale Burial Place. These features exhibited rectangular, primary shafts dropped several feet from the ground surface (Figure 10.4B). The floor of the shaft was then leveled off and a secondary shaft (or 'vault') was dug in its center (Figure 10.5). Burial cases were located at the base of this secondary burial chamber. The vaulted grave shaft was ubiquitous among folk cemeteries in the Upland South and Midwest (e.g. Mainfort and Davidson 2006; Matternes 2001; Matternes and Serio 2005; Larsen et al. 1995; Wood et al. 1986; Garrow et al. 1985). They have occasionally been seen in coastal contexts (Matternes et al. 2010:197-199). While generally recorded in rural environments, Dickens and Blakeley (1978:305) discovered this form among the graves explored in Atlanta's Oakland Cemetery.

Vaulted grave construction is a predictable find among southern African American graves. Most notably, they were encountered in graves from the 9CH875 cemetery (Chatham County, Georgia), Elko Switch Cemetery (Madison County, Alabama) and at Cedar Grove (Lafayette County, Arkansas) (Davidson 2006:100; Matternes et al. 2010:197-199; Shogran et al. 1989:5-10). While not specifically mentioned in the report, vaulted graves were clearly visible in field plan photos of graves from the Sam Goode Cemetery in Mecklenburg County, Virginia (see Crist et al. 2000).

Davidson (n.d.) has argued that the vaulted shaft has its origins in western Africa and that its spread in America resulted from interactions between African and European American communities. The earliest use of the vaulted grave shaft can be traced to at least the late eighteenth and early nineteenth centuries (Matternes 2001; Swauger 1959). Davidson dated the peak use of vaulting in Dallas, Texas Freedman Cemetery to between 1869 and 1884, with minor use of the form extending into the early twentieth century (Davidson 2006:100). Vaulted graves require considerably more skill and care to construct than a simple single shaft form. They cannot be dug solely by heavy equipment. Their extinction seems to follow the transition from family-based to

Figure 10.6.  
Distribution of Simple and Vaulted Grave Shafts in the Avondale Burial Place



more professionally based funeral care. During the late nineteenth and twentieth centuries, many church and commercial cemeteries required interments to be placed in prefabricated metal, concrete, or plastic burial vaults. These large rectangular enclosures could not be installed in a vaulted grave shaft. This industry shift would have contributed substantially to the demise of the vaulted grave. It is unlikely that vaulting continued after the start of World War II.

Vaulted graves were noted in 84 graves in the Avondale Burial Place. A considerable amount of variation was noted in vault morphology. Vaults were dug as rectangular, hexagonal, taper-to-foot, oval, or oval-rectangular structures (Figure 10.7). Rectangular and hexagonal shapes were the most frequently used. Vault shape did not necessarily imply coffin shape. While hexagonal vaults tended to contain hexagonal coffins, these burial cases were also found in oval and rectangular chambers. Rectangular caskets were generally found in rectangular vaults, although at least two caskets (F-78 and F-83) were found in hexagonal vaults and one (F-84) occupied an oval chamber. F-1's taper-to-foot receptacle was found in a rectangular vault. While burial case morphology may have guided the shape of a vault, neither vaults nor burial cases appeared to have dictated how the other was constructed.

Burial chambers were generally dug deep enough to encapsulate the deposited coffins. While the exact height of coffins used at Avondale Burial Place could not be accurately determined, surviving examples of adult coffins indicate an average height between 30 and 40 centimeters. Subadult burial cases could be anticipated to have been shallower. A review of vault depths indicated that most vaults were between 20 and 48 centimeters deep (Figure 10.8). Adults tended to be interred in vaults that were over 30 centimeters deep including two vaults recorded at 61 and 85 centimeters deep. Among vaults that were less than 20 centimeters deep, infants and young children dominated the sub-semblage. In contrast, vaults dug for F-29 (an adult female) and F-24 (an adult male) were recorded as only six and 16 centimeters deep. These chambers were too shallow to realistically enclose a coffin. Two potential interpretations are suggested for this phenomenon. First, the vault may have only been partially constructed as a gesture towards a tradition with West African ties. From a more functional perspective, these vaults and potentially some of the other interments placed in vaults that were less than 20 centimeters deep were more or less large enough to fit the base of the coffin inside it. These graves may have been dug as simple grave pits, with shallow 'vaults' installed to help secure the coffin to the floor.

Sometimes, wood planking was laid across the base of the primary shaft as a means of separating the underlying vault from the overlying grave fill. These were typically placed perpendicular to the grave's long axis, resting on the ledge formed by the primary shaft's floor (Figure 10.9). In upland communities, shaft floor planking was viewed as a means of supporting fill dirt over the secondary chamber to retard grave slumping (Campbell in Dickens and Blakeley 1978:305; Crissman 1994:62). Wood shaft floor planking for the vault has been observed in archaeological contexts (Davidson 2006:101; Matternes and Serio 2005:77-78; Matternes et al. 2010:197). Planking can range from a comprehensive cover over the entire shaft floor to selective coverage over just the burial chamber. Wood planking was positively identified in F-14, F-36, and F-52. The less than durable nature of wood in the Avondale Burial Place graves indicated that this count should at best be treated as a conservative estimate. Nails were recovered in wood planking from F-52,

Figure 10.7.  
Distribution of Vaults By Shape

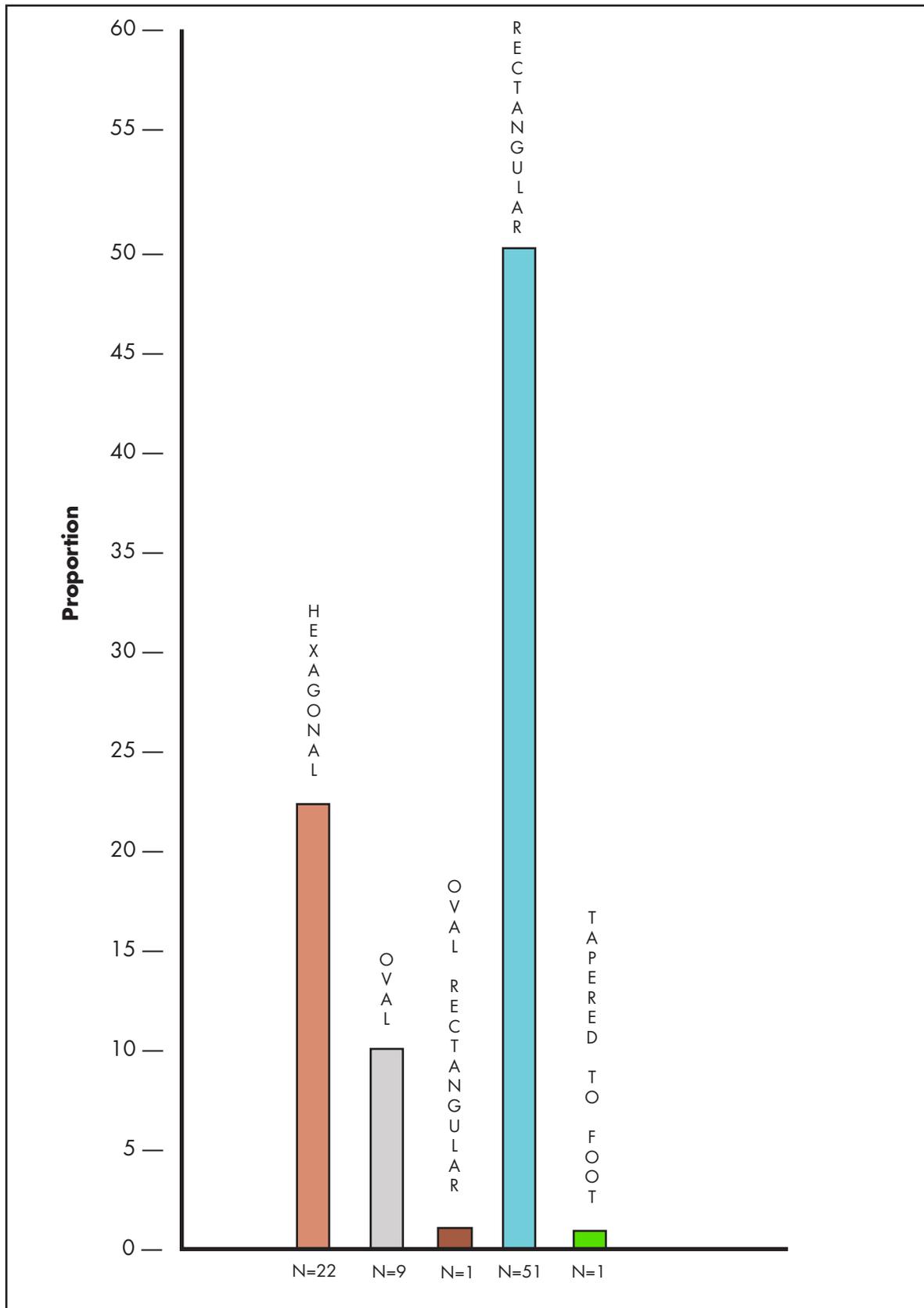


Figure 10.8.  
Distribution of Vault Height from Shaft Base to Vault Base

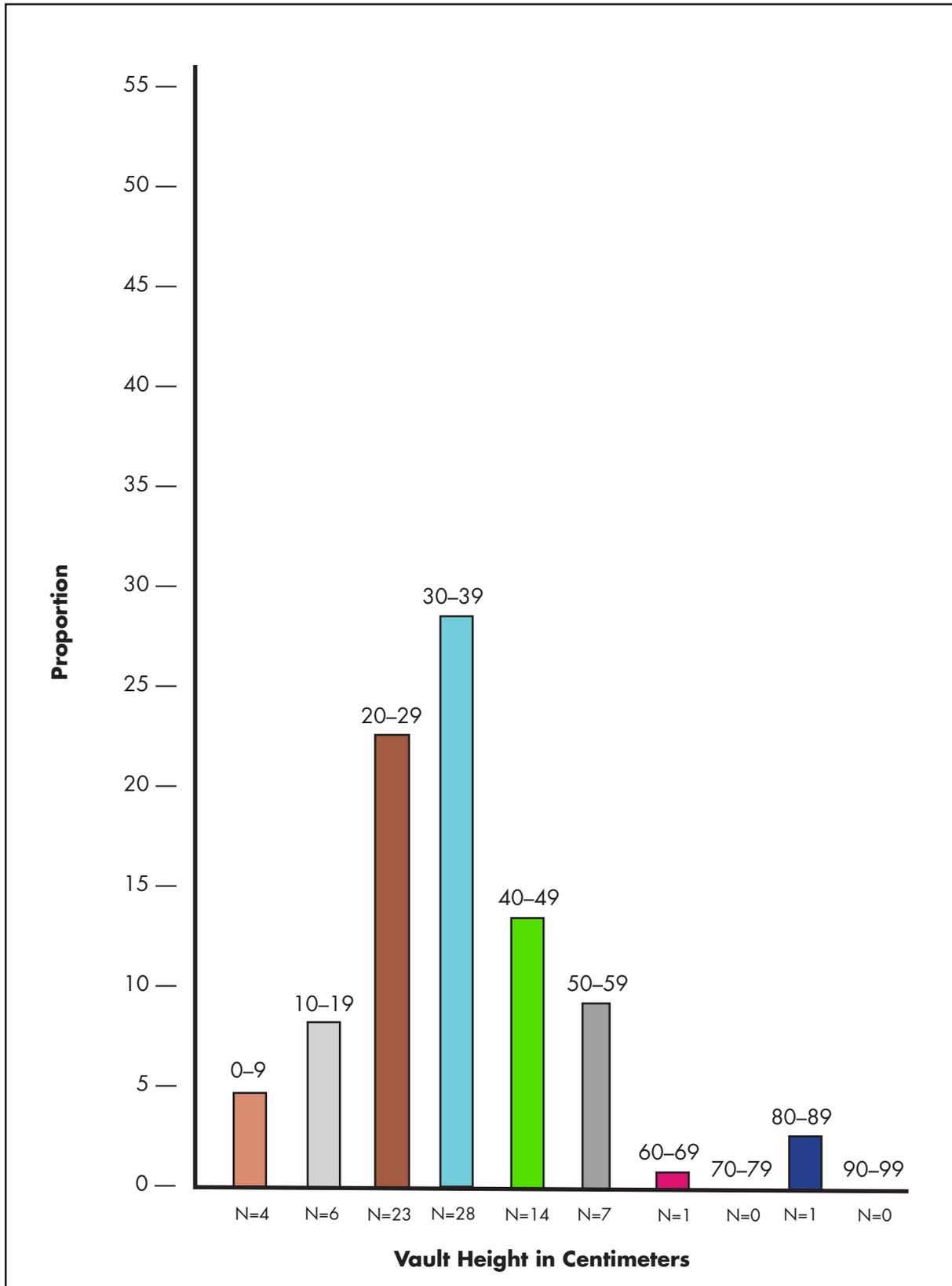


Figure 10.9.  
Modern Reconstruction of a Vaulted Grave with a Wood Plank Cover



confirming that the boards were either secured onto the primary shaft floor or were salvaged materials with the old nails still in place. It is likely that the nails found on the primary grave shaft floors from F-2, F-18, F-52, F-55, F-72, F-77, and F-85 indicated the presence of fully decomposed wood planking.

## Dimensions

Grave pits were traditionally excavated to a size and depth that fully encapsulated the interment. This prevented the grave from being disturbed; it controlled the biohazards associated with natural decomposition processes; and it allowed diggers and pallbearers the space needed to complete their tasks. Other factors, including depth of the water table, compactness of the soil, motivation of the gravediggers, and presence of underlying bedrock greatly influenced the depth and dimensions of a given grave. Graves at the Avondale Burial Place were not constructed to a uniform size. A variance of almost 29,000 square centimeters were noted between the largest and smallest grave surface areas.

Graves are three-dimensional constructs and their depths in particular are guided by cultural notions. Traditions originating in the British Isles held that interments were placed six feet under the ground surface (Habenstein and Lamers 1975:119). This concept was probably the foundation for the 'six feet under' concept in American mainstream culture. In Appalachia, this depth was believed to retard animal intrusion (Crissman 1994:62). Closer to the project area, nineteenth-century graves installed in Macon's Cherry Street Cemetery were mandated to be dug, "...to a depth of not less than five or six feet" (*Georgia Messenger* 1833, in Thomas 2009:2). This directive would have applied to both European and African American interments.

Southern traditions held that if at all possible, the dead were buried the same day or by sundown the day following death (Courlander 1996a:82; Shepard 1888:249). Accomplishing this task may have resulted in slightly shallower graves. Early twentieth-century funeral descriptions from Sumter County, Alabama, for example, noted that Amy Chapman's grave was dug four feet below ground surface (Tartt 1939). Archaeological evidence tends to favor grave depth placement at the shallower end of these estimates. Average grave depths for rural upland cemeteries tended to be between four and five feet (Matternes 2001; Matternes and Serio 2005). Spanish colonial burials in Florida had an average depth of about three feet while their British counterparts were slightly deeper (Koch 1983:225). The shallowness of these graves was in part due to the region's high water table. While the original ground surface was lost, African American graves in Savannah's 9CH875 and 9CH1168 cemeteries were close to these depths, probably also in response to high water tables (Matternes et al. 2010). Estimates for the amount of time needed to dig a grave using hand tools have not been found, but it is likely that excavation, deposition, and backfilling a six-foot deep grave may have frequently required more time than allotted. Graves, therefore, may not have been dug deep enough to achieve this cultural standard in favor of meeting other norms.

Grave construction would have begun with some preconceived notions of what the end product should look like. The closest approximation available to these ideas would have been preserved in the grave's uppermost surface area. The shaft outlines indicated that they started out as

rectangular facilities. Unfortunately, the exact surface dimensions at Avondale Burial Place were lost when the cemetery was reclaimed by the forest; but they could be approximated by using average lengths and widths. These were then contrasted by general age and sex (Table 10.1). There were 88 grave pits capable of providing suitable data for this analysis. Over 91 percent of the adults were placed in pits ranging from 15,000-32,000 square centimeters. Pit dimensions for males and females did not differ substantially, although grave pits for females occupied a slightly narrower range (19,000-30,000 square centimeters). One female (F-39) was interred in a pit with an area of only 10,380 square centimeters. Subadult pit sizes tended to fall below the adult mode, with dimensions between 6,000 and 11,000 square centimeters being the most common. In general, smaller sizes tended to reflect more infantile remains while larger graves contained more mature individuals. These data indicated that gravediggers applied a uniform shape but not uniform dimensions to all interments. Age, or more correctly put, developmental size was an agent influencing how big a grave pit area was excavated.

Table 10.1. Grave Pit Surface Area from the Avondale Burial Place

Grave Pit Area in Square Centimeters	Children	Male	Female	Unsexed Adult	Total
2,000-2,999	2				2
3,000-3,999	4				4
4,000-4,999	0				0
5,000-5,999	1				1
6,000-6,999	9				9
7,000-7,999	8				8
8,000-8,999	6				6
9,000-9,999	5				5
10,000-10,999	8		1		9
11,000-11,999	2				2
12,000-12,999	0				0
13,000-13,999	1				1
14,000-14,999	0				0
15,000-15,999	2	1			3
16,000-16,999	0	1			1
17,000-17,999	2			1	3
18,000-18,999	2	2		1	5
19,000-19,999	0	1	1	1	3
20,000-20,999	0	2	1	1	4
21,000-21,999	1			1	2
22,000-22,999	0	1	1	1	3
22,000-22,999	0				0
23,000-23,999	0	1	1	1	3
24,000-24,999	0	1	1		2
25,000-25,999	0	1	1		2

Table 10.1. Grave Pit Surface Area from the Avondale Burial Place

Grave Pit Area in Square Centimeters	Children	Male	Female	Unsexed Adult	Total
26,000-26,999	0	1			1
27,000-27,999	0	2	1	1	4
28,000-28,999	0				0
29,000-29,999	0		1	1	2
30,000-30,999	0	1		1	2
31,000-31,999	0	1			1
Indeterminate Surface Area	11		2		13
Total	64	16	11	10	101

The depth in which grave pits were dug was examined for differences by type of decedent. Elevations from internal grave structures were subtracted from the average gravesite surface elevation to determine the grave's original average depth. Base of grave pit measurements were obtained for 101 graves (Table 10.2). Grave pits ranged in depth between 0.56 (1.84 ft.) and 1.9 meters (6.23 ft.) below ground surface. On average, children were interred 1.17 meters below ground surface and adults, slightly deeper at 1.42 meters. An examination of the depth values revealed a relatively tight distribution among children. It is likely that gravediggers did not believe that a child's grave needed to be dug as deep as their adult counterparts. The range of adult grave depths was more widely dispersed with more interments placed deeper than children. A mean depth of 1.48 meters indicated that males were buried slightly deeper than females, however the range for both sexes overlapped considerably. These variations may not represent meaningful differences in behavior. As noted earlier, developmental size was probably a major influence on grave dimension.

In general, adult graves were dug about two feet shallower than the American perception of an appropriate grave depth, but given the extremely dense clay on the hill's summit and high water table along the northeastern side of the cemetery, depth alterations may have been a reflection of local conditions. Children tended to be buried in the shallowest graves in the cemetery. These data implied that the rules governing grave depth among children were not the same as those for adults. There was probably a functional explanation for this. Grave excavation required that the digger have access to a large enough work area to effectively manipulate excavation tools. As one digs deeper, the earthen walls of the grave pit limited this space. As demonstrated, the grave pits constructed for children were smaller than those of adults and, hence, reflected a more limited work area. As grave pits were dug deeper, they became more difficult to construct; excavation would have terminated when the threshold between meeting a cultural norm and degree of difficulty was crossed. It is likely that the grave pits for children were dug shallower than for adults because the adult depth was less feasible with the space available.

Other aspects of grave shaft depth were examined (Table 10.2). The distribution of simple shafts depths was virtually identical to that of the vaulted shaft base. Mean values however indicated that vaulted grave shafts were 35 centimeters shallower than simple vaults. This meant that the shafts of vaulted graves were not being dug to the same depth as simple shafts.

Table 10.2. Grave Depth Distribution

Depth Meters (Feet)	Children	Male	Female	Unsexed Adult	Simple Shaft Base	Vaulted Shaft Base	Vaulted Vault Base
0.4-0.49 (1.31-1.61)						2	
0.5-0.59 (1.62-1.94)						2	
0.6-0.69 (1.95-2.26)	1					6	1
0.7-0.79 (2.27-2.59)	1					8	1
0.8-0.89 (2.60-2.92)	7				1	11	5
0.9-0.99 (2.93-3.25)	7			1	1	13	7
1.0-1.09 (3.26-3.58)	8		1		2	17	9
1.1-1.19 (3.59-3.90)	11	3		1	4	13	11
1.2-1.29 (3.91-4.23)	10	1	3		1	4	14
1.3-1.39 (4.24-4.56)	8		2	2	3	3	9
1.4-1.49 (4.57-4.89)	8	4	2	1	1		13
1.5-1.59 (4.90-5.22)	4	4		2		1	10
1.6-1.69 (5.23-5.54)		2	1	1			4
1.7-1.79 (5.55-5.87)		1	1				2
1.8-1.89 (5.88-6.20)				1			1
1.9-1.99 (6.21-6.53)		1		1	1		1
Total	65	16	10	10	14	84	84
Mean Depth	1.173 (3.85)	1.48 (4.86)	1.39 (4.56)	1.47 (4.82)	1.26 (4.13)	0.91 (2.99)	1.22 (4.00)

While the vault base of many vaulted graves were considerably deeper than the base of many simple shaft bases, the mean depth value differed by only four centimeters (1.57 inches). Vaulted graves were not that much deeper than graves with simple shafts. Simple and vaulted graves were built following a common concept that the grave needed to be about 1.25 meters (4.07 feet) deep; they just differed in how to get there. This depth corresponded roughly with adult male waist heights. Depths greater than this would have made it increasingly difficult for a gravedigger to exit the pit unassisted.

When viewed in terms of volume, comparable amounts of soil were removed in the construction of simple and vaulted graves (Table 10.3). Mean volumes indicated that vaulted primary shafts initially had slightly less soil removed from them during construction than simple shafts. This difference however was subsequently removed when the vault was installed. Vault volumes, by shape of the vault, exhibited a slight tendency for more volume to be removed among rectangular vaults than other forms (Table 10.4). This, however, was more a reflection of the age or size of the occupant than the construction method.

Table 10.3. The Distribution of Graves By Volume and Pit Form

Cubic Meters	Simple Shaft	Vaulted Primary Shaft	Vaulted Shaft and Vault (Combined)
0.00-0.49	2	4	3
0.50-0.99	4	24	25
1.00-1.49	4	12	10
1.50-1.99		9	5
2.00-2.49	2	10	8
2.50-2.99	1	6	5
3.00-3.49		4	6
3.50-3.99		1	4
4.00-4.49			4
4.50-4.99			
5.00-5.49			
5.50-5.99	1	1	1
Indeterminate Volume		13	13
Total	14	84	84
Mean Volume*	1.533	1.288	1.584

\*Indeterminate volumes not included.

Table 10.4. The Distribution of Grave Vaults By Volume and Vault Form

Cubic Meters	Hexagonal Vault	Oval Vault	Oval-Rectangular Vault	Rectangular Vault	Taper- to-Foot Vault
0.00-0.49	21	7		36	1
0.50-0.99	1	2	1	12	
1.00-1.49				3	
Total	22	9	1	51	1
Mean Volume	0.241	0.231	0.554	0.029	0.162

These data demonstrated that the primary factor influencing grave pit construction was the decedent. Developmental size, and to a lesser extent sex (as it relates to size), affected overall dimensions of the grave pit. While the base of graves reflected a considerable amount of variability, these differences were insubstantial in the amount of volume removed. Construction of vaulted graves would have required slightly more planning and 'shovel skill' to execute than simple shafted graves; however, it is dubious whether there were any true differences in physical exertion.

#### VAULT LINERS

Changes in ideology, community health codes, and the rise of the commercial funeral industry were driving forces for change in grave shaft furniture. Placement of the burial case in a container that separated it from earth acted as an additional agent to buffer not only the living but also the dead from the natural decay agents. Subterranean burial chambers or vault liners tended to prevent or delay grave slumping. The maintenance benefits and shelter from another reminder of death's

outcome were aspects of a vault liner advertised by funeral industry suppliers (Columbiana County Vault Company n.d.). Burial case containers insured that undisturbed space for the dead was reserved below the ground surface. Fear of contamination from the effluences of the dead was eased by placement of the dead in a sealed container. Vault liners, whose origins in America can be traced to wood-lined, colonial-period structures, may also have been viewed as a form of status (Bromberg and Shephard 2006:57-58). Throughout most of the nineteenth century, wooden vault liners were available to be commissioned from woodshops; lead versions designed to encapsulate the wooden coffin could be obtained from local plumbers (Clarke 1903). By at least the late nineteenth century, enclosures to encompass the coffin became fashionable and funeral industry distributors began listing mass-produced wooden vault liners among the mortuary products available (Bromberg et al. 2000:471; Trinkley and Hacker-Norton 2007). While these may represent substitutes for the more lavish eighteenth- and nineteenth-century brick vaults and later period concrete versions, Howarth (1997:122) suggested that use of the wooden liner or 'double coffin' may have also served as a means of deterring resurrectionists.

Late Victorian and Edwardian era wooden vault liners in the South may not have been limited to commercially made products. In rural Cobb County, Georgia graves were frequently lined with planks to provide a chamber for the coffin (Sam Hamby, Personal Communication 2010). Coffin shipping boxes or crates were other potential alternative vault liners. Commercially produced coffins brought or shipped to the Avondale Burial Place from Macon or other distribution points would have undoubtedly arrived packaged in these containers. Appropriately sized non-mortuary related shipping crates used to distribute other large objects, such as farm equipment or household furnishings may also have been pressed into service as vault liners.

Grave shaft liners are notoriously difficult to identify in an archaeological setting. In the absence of wood preservation, a simple plank liner would leave little evidence of its presence. The possibility that these were present at the Avondale Burial Place cannot be dismissed, but unfortunately, they generally could not be confirmed. The presence of a double line of nails with or without a wood stain outside of a coffin wood line was treated as evidence that a wooden shaft liner may have been present. Potential wooden vault liners were noted in 13 graves (Table 10.5). Liners were distributed slightly in favor of adults over children, and they were more commonly associated with adult males than females. The distribution of liners by burial case revealed a near equal division between coffins and caskets.

*Table 10.5. Distribution of Potential Wooden Vault Liners*

Feature No.	Age Group	Sex	Burial Case	Shaft Form	Vault Shape	Number of Hardware Forms	Vault Hardware
3	Child	(Female)	Coffin	Vaulted	Rectangular	6	
5	Adult	Male	Casket	Simple		5	Type 9 Trimming, Untypeable Screw Caps
12	Adult	Male	Coffin	Vaulted	Rectangular	0	

Table 10.5. *Distribution of Potential Wooden Vault Liners*

Feature No.	Age Group	Sex	Burial Case	Shaft Form	Vault Shape	Number of Hardware Forms	Vault Hardware
45	Adult	Male	Coffin	Vaulted	Rectangular	5	Untypeable Trimming
50	Child		Indet.	Vaulted	Taper-to-foot	0	
54	Infant		Indet.	Vaulted	Rectangular	0	
62	Adult	Female	Casket	Vaulted	Rectangular	4	
70	Adult?		Casket	Vaulted	Rectangular	7	
77	Child		Coffin	Vaulted	Hexagonal	0	
103	Child		Coffin	Vaulted	Rectangular	0	
104	Adult	Male	Casket	Vaulted	Rectangular	5	
105	Adult	Male	Casket	Simple		6	Type 62 Trimming
106	Adult	Male	Casket	Vaulted	Rectangular	4	

A number of highly decorated burial cases probably represent commercial products; their transport would have required use of a container, such as a shipping crate, to protect them from transport damage. While several highly decorated receptacles were noted to have potential liners, a goodly portion of the well-adorned burial cases also lacked them. A near equal number of wood lined graves held coffins with no hardware. While shipping crates may have been used as liners, their use was not consistent with the level of decoration. Some manufacturers like the Chicago Coffin Company marketed undecorated, commercially produced coffins to the general public (Chicago Coffin Company 1896). These data may also imply that undecorated coffins were probably also delivered in shipping crates.

All potential liners were found in graves bearing vaulted grave shafts with most earthen vaults exhibiting rectangular and rectangular-like taper-to-foot chambers. The low representation of liners in simple shafts indicated that the shaft liner was not simply used as a substitute for the vaulted chamber. All rectangular and taper-to-foot vaulted graves bore liners that had been secured together with nails. The one potential liner lacking nails was found in F-77, the only lined grave with a hexagonal vault chamber. It was likely that this vault was lined with loose planking and implied that other hexagonal chambers may also have had similar linings.

Cheek et al. (2003:223) and Davidson (2004a:395) were able to define hardware differences between coffins and wooden vault liners recovered from archaeological contexts; however, no diagnostic vault liner hardware was recovered from the Avondale Burial Place. Wooden liners however offered some form of visual appeal to the ritual, as decorative screw caps and coffin trimmings were clearly present on vault liners for men in F-5, F-45, and F-105. It was possible that these represented commercially-made wooden vault liners or were hardware applied to the liner. If coffins were placed in a liner prior to being lowered into the grave, these decorations would have made the liner a more visually appealing container. The presence of the wooden vault may have emphasized the family or community's commitment to honor these gentlemen.

## FUNERARY ARTIFACTS

The container(s) used to enclose the dead can serve as a medium of social communication. Funerary artifacts include these containers and the material components used to construct them. These would have included coffins and caskets, viewing plates, coffin hardware, nails, screws, tacks, staples, and braces. Funerary artifacts conveyed social messages when they were viewed with the dead. The dead, however, did not have to be visible for funerary artifacts to carry meaning; in many cases, the object itself was capable of providing important information about the decedent.

### COFFINS AND CASKETS

The functional and symbolic foundations for the use of burial containers, such as coffins and caskets, in American culture are extremely complex. Coffins enable the dead to be displayed with a minimum of mortuary symbolism and with a greater emphasis placed on efficient transport of the dead. They are distinguished from caskets by the amount of anthropomorphism present. Coffins are designed to follow the general contour of the human body and, as a result, they tend to form oblong hexagons (Farrell 1980:171). On the other hand, caskets represent a conscious effort to divert attention away from human death by assuming non-human shapes. Caskets are designed to maximize the amount of material mortuary symbolism associated with the dead. They retain their functional purpose to aid in transporting the dead, but decoration is their primary focus. For the purposes of this discussion, all rectangular-shaped containers (as seen in silhouette and from above) have been referred to as caskets.

Detailed discussions of the temporal, symbolic, and stylistic trends are more comprehensively addressed in Davidson (2006), Farrell (1980), Lang (1984), and Litton (1992). Common American use of the hexagonal coffin, also referred to as a 'shouldered' coffin or 'toe-pincher', dates as early as the 1700s (Lang 1984:97). Old World analogues to these receptacles predate American colonization. Eighteenth-century African American coffins recovered from the New York African Burial Ground revealed that while hexagonal coffins were the most common, rectangular and taper-to-foot containers with both flat and gabled lids were also used (Howson and Bianchi 2006). Coffins used by free African Americans in Philadelphia were exclusively flat or gable lidded hexagonal constructs (Parrington et al. 1989:144-145). The flat lid appears to have replaced the gabled lid by the start of the Civil War. In some cases, flat lids were bisected across the shoulder to allow viewing of the deceased while in the coffin (sometimes referred to as a 'half couch' lid). Accessory hardware, including hinges, thumbscrews, escutcheons, lid locks, and stabilizers have been observed on some archaeological and surviving specimens, while others appear to have had no additional hardware applied. Another viewing option was provided by inserting glass portals or viewing plates into the lid. In Virginia, LeeDecker (2010) noted that these lid variations were in vogue during the mid- to late nineteenth century, with a return to simpler plain lidded forms by the early twentieth century.

While hexagonal coffins generally fell out of style by the late nineteenth century, coffin/casket manufacturers continued marketing them into the 1920s (Davidson 2006:109). There is an important distinction to these temporal trends, noted by Davidson (1999), where the use of hexagonal coffins increased in popularity at the turn of twentieth century among African Americans. While not unheard-of, their use was exceptionally rare after the start of World War II. Use of the hexagonal coffin, in late nineteenth- and early twentieth-century African American burial contexts, was documented in the Savannah area by Matternes et al. (2010).

The casket made its first commercial appearance with a patent issued to Charles Richardson in 1859 (Davidson 2000:245-246). By the 1860s and 1870s, the popularity of the hexagonal shape began to wane in favor of the more rectangular casket-like forms commonly seen today. A variety of intermediate forms were introduced. Surviving examples frequently exhibit eight or 10 side panels, with or without curved shoulders. Some of the most widely distributed forms were generally referred to as 'octagonal caskets.' Patented in 1861, the octagonal form was most heavily marketed in the late nineteenth and early twentieth centuries (Davidson 2006:107).

These temporal changes in part reflected shifts in American mortuary ideology. Hijiya (1983:354) noted that the mid- to late nineteenth-century American mainstream culture deemphasized death's role as a mediator in the relationship between man and God in favor of viewing death as a means of emphasizing the relationship between the living and dead people. Fear (or joy) of the afterlife was replaced with memorializing the life of the departed. Material responses to these concepts can be observed in burial containers. The coffin transformed into the more elaborate casket and decorative elements emphasized the social identity of the dead rather than the stark reality of death and impending fate of the soul.

The roots of coffin making and undertaking as a professional trade can be traced to at least the seventeenth century in Great Britain, while American wood workers did not specialize in coffin making until the eighteenth century (Leedecker 2001:6). As Africans arrived in America, they entered a world where burial in a wooden receptacle was part of an established mortuary tradition. In America's rural and culturally segregated communities, coffin making was handled by local woodcrafters or by family members. In the American South, this pattern continued up to the late nineteenth and early twentieth centuries (Crissman 1994:49; Wigginton 1973:312). Burial cases, however, were not exclusively a burial tradition with European ties. Accounts indicate that coffin use may have spread to West Africa as early as the eighteenth century, but this has not been archaeologically verified (Howson and Bianchi 2006:252). Enslaved African Americans frequently participated in European American funerary rituals and were provided with materials to construct their own burial cases. The concept of coffin making was clearly a part of their culture.

The type of timber used to construct coffins varied widely; however, locally available woods were generally employed. African American graves from the New York African Burial Ground yielded no less than 14 different types of wood, nearly all harvested from softwood trees (Howson and Bianchi 2006:262). A similar pattern was noted in the early nineteenth-century cemetery at First African Baptist Church Cemetery in Philadelphia, Pennsylvania. Locally available pines and poplars dominated that assemblage, with some container panels constructed from black walnut

(Parrington et al. 1989:141-144). Most burial cases from the Phillips Memorial Cemetery in Galveston County, Texas were made from available southern hard pine, cottonwood, willow, and ash (Powell and Dockall 1996:109-110). In the southern uplands, pine, oak, poplar, chestnut, cherry, walnut, cedar, maple, and locust, as found in the immediate environment, were put to use (Crissman 1994:49). Traditionally, coffins from coastal South Carolina tended to be made from cedar, southern pine, or bald cyprus (Rauschenberg 1990:34; Zierden 1986:4-36).

By the mid- to late nineteenth century, enough milled lumber was available so that the coffin maker did not have to rely on timbers they personally procured. Selection of appropriate wood was based on stocks available from a distributor. These would have included non-local or exotic timbers. Choice of wood was at least partially related to the amount of capital available to invest in the coffin (Lang 1984:20). Leedecker (2001:52) noted that expensive or exotic woods, including walnut and mahogany, were specifically chosen by those who could afford an expensive coffin. 'Lesser' grade woods were accordingly more moderately priced. Pine seems universally to have been deemed as the lowest quality and, therefore, the cheapest to use.

### Construction Sequence Model

A variety of sources were consulted to develop a model outlining the general steps and techniques used to construct late nineteenth- and early twentieth-century coffins and caskets (Cheek et al. 2003; Howson and Bianchi 2006; Lang 1984; Leedecker 2001; Litten 1992; Matternes et al. 2010; Matternes and Serio 2005; Matternes and Gillett 2007; Parrington et al. 1989; Rauschenberg 1990; Reeve and Adams 1993). In southern Georgia, those responsible for providing the coffin would have come to the house of the dead and measured the deceased determine the receptacle's proper dimensions (Georgia Writer's Project 1972:143, 174). Once determined, the lumber needed to construct the receptacle was obtained and individual pieces were cut following a predetermined template. When possible, lid and base panels were cut from wide single planks. Coffin lids were frequently templated several inches larger than the base panels to increase surface area at the top of the receptacle and perhaps to give the coffin's interior a more spacious appearance. Short ends for the head and footplates were appropriately beveled to provide the coffin with a tapered, trapezoidal appearance and were nailed into the base.

In order to follow this construction sequence, the side panels of straight-sided receptacles were cut long enough for the sides to be flush with the exterior surfaces of the head and footplates. Typically, these panels came together at a simple butt joint. To provide single, seamless surfaces around the coffin's shoulders, side panels were soaked in water to soften wood fibers and deeply scored (or 'kerfed') on the interior. The side panels were then bent around the base and secured in place along the base, headplates, and footplates. Some multi-sided coffins and caskets simply relied on joining individual board panels at each bend to accommodate for changes in angle. Technological innovations, including the wide spread availability of high temperature steam meant that some manufacturers could bend side panels without kerfing (Bromberg et al. 2000:175). Cross beams have been observed at the base of the coffin, supporting the head feet, and middle (Thomas et al. 1977:416). As to be expected, individual variations in construction styles abound.

A variety of pitches or sealants were applied along the various interior joints to trap or prevent inward (or outward) fluid leakage and probably to help hold the various panels together. Gimlet holes were at least partially drilled through the lid and into the vertical panels to guide placement of coffin or thumbscrews. A variety of finishes were applied to the exterior surfaces of these receptacles including paint, stains, wax, cloth, and possibly varnishes or shellacs. Painted coffins frequently exhibited a reddish undercoat, which helped to seal the coffin and emphasize the topcoat's color. In Columbia, South Carolina, black finished coffins were more common among males, while white and pink were common female colors (Trinkley and Hacker-Norton 2007). Silver was used equally among males and females. Courlander (1996a:226) noted that white paint was a preferred finish for the coffins of children. Red undercoats served to help seal the coffin and promoted the brilliance of the overlying paint color. Thin white, silver, and black accent lines were frequently added. Some colors, such as the observed blue highlights discussed earlier, tied color choice to the African American belief that the color blue helped protect against the supernatural (Matternes et al. 2010:210-211). Hardware as appropriate would then be attached.

The wooden interiors of coffins commonly remained unfinished. The bases frequently contained a layer of sawdust, wood shavings, charcoal, or similar absorbent (and fragrant) materials that were then draped or sealed by a cloth cover (Lang 1984:20-22; Wilson 1983:55). There are many surviving nineteenth-century coffins that exhibit coarse unbleached cotton fabric that was tacked and draped down the sides of the coffin. Pillows, blankets, and cotton batting were also added to prop or cover the body in appealing manners. Wood shavings, sisal, and possibly seaweed fillers were noted at 9CH875 (Matternes et al. 2010:219). In some southern communities, the living made quilts specifically for use as a liner upon their death (Crissman 1994:58). Commercially produced coffins and caskets could be obtained 'pre-upholstered' with decorative (and sometimes stuffed) liners, pillows, and cloth drapery installed.

### Receptacles at the Avondale Burial Place

Evidence for the use of coffins took on several forms. Some of Avondale Burial Place's subsurface environments produced conditions that promoted marginal wood and metal preservation. Frequently, however, little more than an organic stain and nails coated with an appreciable layer of iron oxide were all that remained of the burial cases. The distribution of these objects within an individual grave was consistent enough with known receptacle morphologies to infer that they represented coffins. In other environments; particularly, those where soils appeared to drain especially well, no direct evidence of wood was noted. The presence of a coffin was inferred solely from the recovery of nails and other related hardware.

Burial receptacles were initially defined in terms of the silhouette produced by their general shape. When the actual coffin wood was not preserved, nail outlines and wood stains were used as guides. Coffins were measured in terms of their base length, maximum width at the shoulder, and minimum width, which was defined as the width at the foot of the coffin. Taper-to-foot coffins were defined as relatively straight-sided receptacles where the head plate was perceptibly wider than the foot plate. The lack of definable shoulders and a wide head plate distinguished this form from hexagonal or more rectangular forms.

A total of 100 coffins or caskets were detected among cemetery features (Table 10.6). Hexagonal forms dominated the assemblage, accounting for over 60 percent of the identified forms. They were about evenly divided between adults (N=26) and children (N=34). Use among males (N=11) slightly outnumbered females (N=7), but the significance of these values was compromised by the high number of un-sexable adult interments.

Table 10.6. *Observable Coffin Forms in the Avondale Burial Place*

Form	Quantity Observed
Rectangular	32
Hexagonal	60
Hexagonal?	1
Taper-to-Foot	1
Indeterminate Form	6
Total	100

Rectangular caskets constituted 32 percent of the observable sample. They were more common among infants and children (N=20) than among adults (N=12). Use among adults was equally divided by sex (N=3 for males and N=3 for females) and skewed by unclassifiable adults (N=6).

All coffins and caskets were constructed using nails. Nails tended to be located along the base, attaching the sides into the base. Other nails were placed along the base of the head and footplates with these panels abutting the ends of the side panels. When mixed nail sizes were used, there was a tendency for the larger nails to fasten head and footplates. Nails were sometimes used alone or to supplement lid attachment. Nail patterns were used to identify that four coffins and one casket (F-23, F-24, F-30, F-42, and F-89) had rails attached from one side panel to the other, across their bases. Rails would have prevented the burial case from resting directly on the base of the grave shaft; during the funeral, rails would have allowed the lowering ropes to be removed without dislodging the receptacle.

There were nine caskets and 14 coffins sporting wood screws; most of these were associated with lid fastening. Side panels tended to be vertical or slightly beveled outward. More pronounced beveling, definable by location differences in base, side, and lid fasteners, was noted among head and foot plates. These forms implied a skilled or commercial construction. Other forms followed much simpler designs and may have indicated the presence of homemade forms. Lack of any non-fastener hardware was noted especially among the hexagonal coffins used to house children. A single unadorned taper-to-foot style coffin (F-1) was found containing a subadult. In general, these data indicated that coffins were the receptacle of choice for the Avondale Burial Place burial community. The sample probably contains both handmade and commercial cases with forms ranging from the simple and unadorned to the elaborate.

Information on coffin surface treatments could be discerned from a few specimens. The exterior finish of most coffins and caskets were not preserved; however, white paint was noted on the surface of four burial cases (F-46, F-65, F-90, F-105) and three of them (F-69, F-70, F-90) exhibited a red-colored residue believed to be iron oxide undercoat paint. While cloth from coffin liners could not be definitively identified, tacks recovered from 12 interments indicated that some cloth liners were used. Crissman (1994:60) noted that many southern coffins contained unattached or draped linings. These forms would leave no archaeological signature and may well represent the interior decor of the remaining containers.

Coffin lids and bases tended to be the least preserved portions of the receptacles, which unfortunately meant that their forms were not well defined. Traditionally, hexagonal coffins were fitted with flat or gabled lids, the latter form having fallen out of style during the early to mid-nineteenth century. No definitive evidence of gable lidded coffins or caskets were noted at the Avondale Burial Place. Flat coffin lids were typically made from single panels, although examples of multiple tongue and groove joined panels have been observed in African American interments (Matternes et al. 2010:212). Nails observed on top of skeletons in F-25 and F-51 may be evidence that a joined lid construction was used at the Avondale Burial Place. Sometimes, a wooden frame pedestal was mounted underneath the flat lid to provide a surface for mounting to the sides. The use of composite lids was extensively explored by commercial coffin manufacturers in the late nineteenth century. Davidson (2006:111) noted the use of terms including "double top," "Ogee Top," and "Round Top" lids to describe a variety of non-flat hexagonal coffin lid forms. In all likelihood, most of the coffin lids in the Avondale Burial Place were built as single unit constructs. In general, burial receptacles reflected a considerable amount of construction variation. They were undoubtedly obtained from a wide variety of commercial, local professional, and local non-professional sources.

### Folk and Formal Receptacles

It is important to recognize that material trends in coffins are most visible among commercially or professionally produced receptacles. The shift from more vernacularly made burial containers to their commercially produced counterparts parallels what Landerman (1996:164-175) recognized as a delegation of the decedent's remains into the hands of mortuary professional. This is a paramount consideration when addressing southern mortuary behavior, as the presence of local and commercial burial cases in the same assemblage can skew and even compromise other considerations of the coffin. Many of Bibb County's African Americans did not have access to the economic resources needed to obtain burial containers reflecting nineteenth- and twentieth-century mainstream American norms. Their reliance on nonprofessionally constructed or 'make-do' receptacles reflected a desire to meet a cultural norm where placement of the dead in a container may have been a more paramount concern than the container's origin, shape, and allied symbolism.

Social, economic, and cultural isolation in the South contributed to a tradition of non-professionals utilizing or modifying locally available resources to satisfy cultural norms. This pattern has a long standing recognition among social scientists as an important part of the mortuary landscape

(Clauser 1994; Jeane 1978, 1989; Jordan 1982; Milbauer 1989). Only recently has this been seen as extending below the cemetery's surface (Matternes et al. 2008, 2010). The 'folk' artifact is defined here as an object designed by non-practitioners to meet cultural needs or expectations through the use of alternative mediums, means of construction, and/or symbolism. The resulting artifacts stand in contrast to the methods, concepts, and materials normally used by the society to meet those needs. Burial receptacles are among the objects where evidence of folk and formal forms can be found in the archaeological record.

Some analysts have dismissed the possibility of non-mainstream coffin forms among American cemeteries as archaeological misidentification because the forms do not show up in commercial catalogs (Davidson 2006:107). They do not recognize that non-professionals are not always steered by template and fashion into following a regimented style and form. Some of the best examples of folk coffins were recovered from the Phillips Memorial Cemetery in Galveston County, Texas. Powell and Dockall (1996:105-106) described a taper-to-foot coffin made of crudely hewn pine. Davidson (2006:106) attributed use of these unfinished boards to construction by a local nonprofessional manufacture. "Poorly constructed" hexagonal coffins were noted among the remaining assemblage, leading Powell and Dockall (1996:108) to suspect that local nonprofessionals made other coffins. Use of unusual, unmarked, and/or archaic coffin forms, observed at the late nineteenth- to early twentieth-century Cedar Grove Cemetery in Lafayette County, Arkansas, and at 9CH875 in Chatham County, Georgia stand out in contrast to the hexagonal and rectangular forms; they may well also represent non-commercially produced burial cases following an extinct eighteenth-century style (Matternes et al. 2010; Rose and Santeford 1985). The simple, unsophisticated construction observed among some of the rectangular burial containers from the New York African Burial Ground implied that the makers were not professional woodworkers (Howson and Bianchi 2006).

Historical data indicates that during the late nineteenth and early twentieth centuries, American culture relied on commercially made enclosures or those made by skilled woodworkers in the local community to fulfill their body case needs. As demonstrated in archaeological and historical records, these coffins and caskets tended follow a common construction method and relied on a range of regionally procurable materials. Alternatively, within the communities, there were long-standing traditions of meeting the cultural need for burial in a container by utilizing resources that were outside of the commercial or professional venues. Enclosures built by unskilled woodworkers, made with rudimentary tools, drawn from non-professional grade materials, or originally made for other purposes and subsequently drafted into service as a burial case were material evidences that alternative sources were utilized. These potential 'folk' receptacles were identified in the Avondale Burial Place using the following criteria:

1. *Crude Construction.* Coffins exhibiting a simplistic, less than standardized use of raw and/or unrefined materials may be considered folk coffins. Choice and use of the basic materials may reflect a lack of manufacturing knowledge or use of materials based on immediate availability, not suitability. Receptacles made from unfinished or roughly finished materials, materials not commonly used for a given template, use of mismatched lengths or widths, poorly cut, or reliance on construction techniques that do not follow more standardized forms were considered potential evidence of folk coffins.

2. *Nonskilled Woodworking Techniques.* Not only may the manufacturer exhibit unsophisticated use of materials, their abilities to use these materials may be rudimentary. These reflect construction by a noncommercial source and potentially without the skills or tools to produce a refined marketable product. These may be reflected in the use of inappropriate fasteners to join pieces of the container together, use of a wide variety of fastener sizes and forms to perform the same functions, poor joining as evidenced by the addition of ad hoc braces and other forms of stabilization, use (and non-removal) of fasteners that were bent or damaged during construction, and presence of visible, poorly addressed patches.

3. *Recycled Containers.* Sometimes, containers that were not originally designed for use as a burial receptacle were pressed into service as a makeshift coffin. Shape, manufacturing methods, lettering, and aberrant hardware are among the features that were used to identify non-mortuary oriented burial containers.

4. *Unusual Shapes or Dimensions.* The makers of late nineteenth- and early twentieth-century mass-produced coffins universally assumed that the dead would be interred in an extended position; they therefore relied on the linear shape as a construction mold. Use of a receptacle where the dead could not be placed in an extended position, or a burial case that follows a non-linear model or the addition panels within the receptacle to make the enclosed space linear, or those that deviated from a standardized model may be indications of construction by a nonprofessional or use of a recycled container. Enclosures whose form reflected a desire to enclose the body with little to no attention given to following a standardized template would fall within this category.

5. *Ad Hoc Hardware.* This was defined as the substitution of non-mortuary specific materials to fill functions normally served by specifically designed mortuary hardwares. Hardwares, for example, that were clearly designed for automotive, furniture, industrial, or maritime purposes may have served as substitutes on coffins and caskets, much the same way building materials were sometimes used for memorials. Temporal considerations were recognized as some forms, including furniture brackets and hinges were interchangeably used as mortuary fixtures in the early to mid-nineteenth century. Substitution for one form of mortuary hardware for another (such as thumbscrews for cap lifters or trimming used as coffin plates) was not considered ad hoc hardware.

Burial containers that expressed one or more of these features, and did not conform to the types of professionally or commercially produced enclosures typically used or available in Georgia, were considered potential folk receptacles. Their form and distribution was considered as part of the coffin assemblage. Table 10.7 provides a list of burial receptacles with morphological attributes implying a non-standardized, less than professional level of skill production.

Folk-style burial cases tended to be associated with rectangular containers and/or the very young. Construction among these containers consisted of little more than attaching rectangular side panels and plates to a base. Minimal, easily obtained, and inexpensive hardware was used to decorate

the outside of these containers. Among infants, container dimensions were diverse and forms including extremely narrow rectangular and square shapes implied use of a non-standardized template or possibly recycling of a existing containers. Many of these infants were extremely young at the time of death; it was possible that these diverse containers reflected a lowered opportunity for social investment.

*Table 10.7. Potential Folk Burial Receptacles from Avondale Burial Place*

Feature	Age	Sex	Observation
F-1	Child	Indet.	Archaic coffin form and simple construction using a mix of both cut and wire nails.
F-8	Infant	Indet.	Odd, simple construction technique suggested it was a handmade box or former shipping container.
F-13	Child	Indet.	Wide variety of nail sizes used non-systematically to construct casket.
F-16	Adult	Male	Simple casket design and non-systematic use of a wide variety of nail sizes to construct the casket.
F-19	Infant	Indet.	Very narrow, small box made using very simple construction techniques.
F-22	Adult	Male	Wide variety of nail sizes used non-systematically to construct casket
F-23	Adult	Female	Wide variety of nail sizes and recycled nails used non-systematically to construct casket
F-26	Adult	Male	Wide variety of nail sizes used non-systematically to construct casket
F-27	Adult	Male	Simple casket design and non-systematic use of a wide variety of nail sizes to construct the casket.
F-36	Child	Indet.	Simple casket design and non-systematic use of a wide variety of cut and wire nail sizes to construct the coffin.
F-46	Adult	Indet.	Wide variety of nail sizes and recycled nails used non-systematically to construct casket
F-51	Adult	Female	Non-standardized bracing used to secure shoulders (both inside and outside) and lid
F-55	Child	Indet.	Simple casket design and non-systematic use of a wide variety of nail sizes to construct the casket.
F-77	Child	Indet.	Simple casket design and non-systematic use of a wide variety of nail sizes to construct the casket.
F-86	Adult	Indet.	Sparse and non-systematic use of a wide variety of nail sizes to construct the coffin
F-89	Child	Indet.	Wide variety of nail sizes and recycled nails used non-systematically to construct the coffin
F-97	Child	Indet.	Simple casket design and non-systematic use of a wide variety of nail sizes to construct the coffin.
F-98	Child	Indet.	Simple casket design and non-systematic use of a wide variety of nail sizes to construct the casket.
F-99	Child	Indet.	Simple casket design and non-systematic use of a wide variety of nail sizes to construct the casket.

The use of the folk burial receptacle emphasized that placement in a burial container was a paramount component of the burial ritual. While it was likely that economics probably played an important role in the choice to use a folk receptacle, other factors including immediate availability, status, community investment in the deceased, and rejection of mainstream forms by the deceased

or the presentation team, may well have played important roles in their use. Demonstration of the folk receptacle in the Avondale Burial Place may indicate a dimension of resource acquisition and elaboration not fully recognized (or appreciated) in African American communities.

### VIEWING PLATES

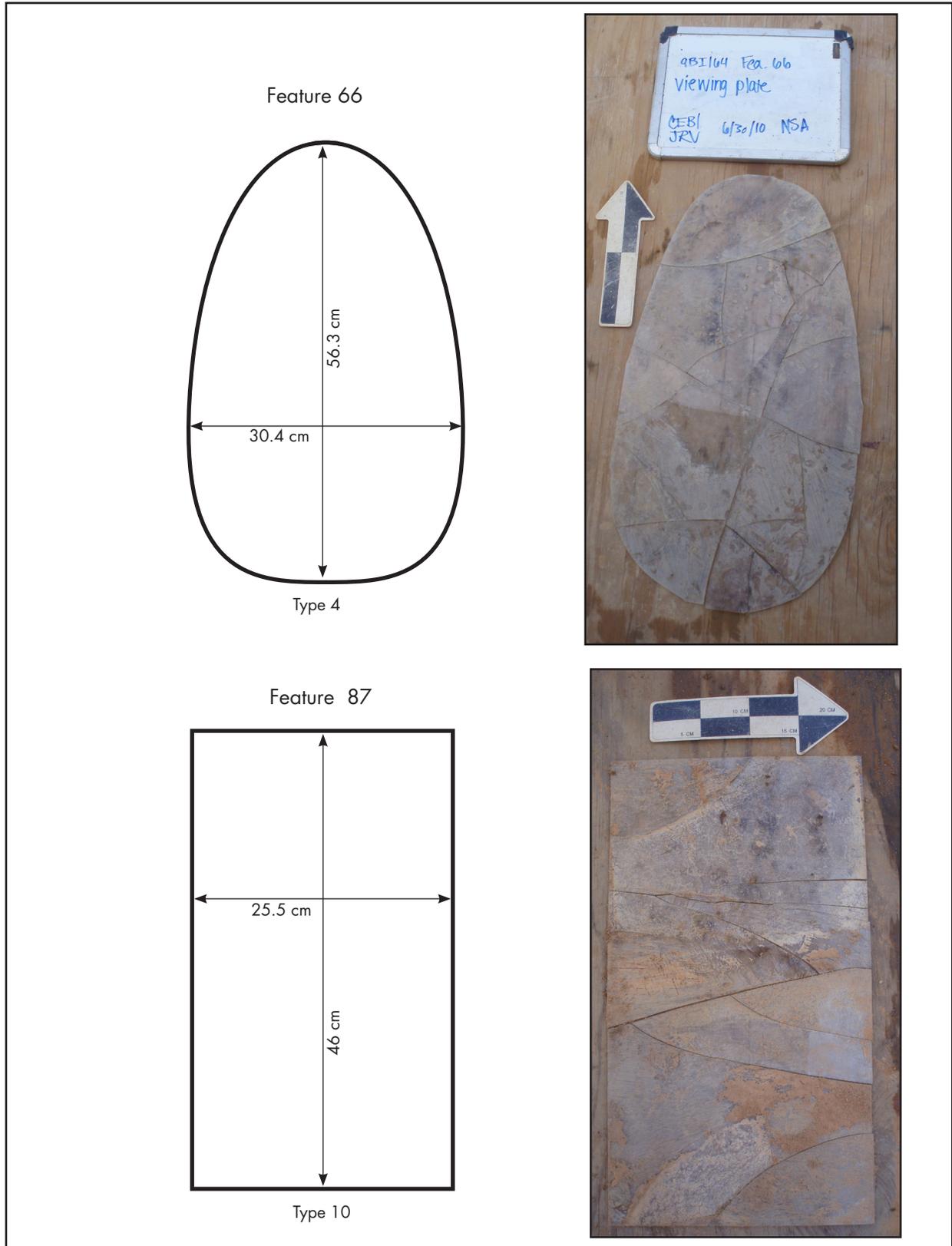
Viewing plates, also referred to as viewing windows or ports, are sheets of glass affixed to the coffin lid to allow mourners to view the deceased without directly exposing them to any of the unpleasanties that might be associated with the physical remains. Viewing plates allowed the dead's mortal remains to retain a prominent place in the funerary presentation (Habenstein and Lamers 1975:273). They are an important transition between use of the receptacle as a means of emphasizing and de-emphasizing the role of the corpse as a communication device. Manufacture and use dates for viewing plates have not been firmly established. Lang (1984:104) placed their appearance in the eighteenth century, while Bell (1990:58) stated that commercial production emerged after 1848. An examination of mortuary supplier catalogs by Davidson (2006:155-157) indicated that viewing plates saw their greatest use in the mid-nineteenth through early twentieth centuries. Shogren et al. (1989:178) placed their height of popularity around 1885. Because viewing plate glass was not manufactured the same as windowpane glass, its thickness does not appear to be chronologically sensitive (Davidson 2006:161-162). Davidson (2006:163) suggested that picture frame glass may have been used for viewing plates. Matternes et al. (2010:224) noted that some viewing plate shapes conformed to the same glass templates used in wall-sized picture and mirror frames.

Bromberg et al. (2000:429) noted that double paned glass viewing plates were the most popular form, however those most commonly observed in Georgia were single paned fixtures. Viewing plates were typically mounted in a wooden frame that fit over an aperture on the lid of the coffin. A wooden cover was frequently affixed over the top of this frame to cover the dead during appropriate phases of the funerary ritual. Bits of glass caulk and glaziers points have been recovered from coffins in Savannah indicating that the panes were set tightly to eliminate glass vibration, and sealed to prevent the release of decomposition odors (Matternes et al. 2010:220). Presence of the viewing plate entailed a greater material and labor investment than is found in a solid-surfaced coffin lid of the same form. These plates imply that a deeper monetary and presumably social investment was conferred to intended interments. Archaeologically, viewing plates are recognizable by the presence of flat glass plates, cap lifters, and occasionally by plate latches immediately above the decedent.

Decomposition of the coffin and earth pressure conspired to shatter all the viewing plates found in the Avondale Burial Place. Each viewing plate was photographed as exposed in the field and then immediately reconstructed to obtain morphological and metric information. Viewing plates were then categorized following the typology outlined in Matternes et al. (2010:Appendix C). The term, 'top' described margins of the viewing plate closest to the coffin's head plate, while 'base' referred to the end closer to the coffin's foot plate.

The eight viewing plates recovered revealed only two distinct forms (Table 10.8, Figure 10.10). The glass used to make these plates was universally a clear flat glass of varying thicknesses. The margins appeared to be cut, sometimes irregularly, following templates and then lightly ground.

Figure 10.10.  
Silhouette Views of Viewing Plate Types



Seven of the eight plates followed the Type 4 form. The Type 4 viewing plate was oval-shaped with width-height indices between 45 and 60 centimeters. The maximum width spanned at least the central half of the plate with uniform rounded arcs present at both the top and basal ends. The form was similar to the Dallas Freedman Cemetery Type N (in Davidson 2006). A similar form from the Becky Wright Cemetery came from a grave interred between 1890 and 1900 (Davidson 2006:162). Similar forms have been identified at 9CH875, 9CH1168, and Redfield cemeteries (Braley and Moffat 1995:66; Matternes et al. 2010:225). Type 4 Viewing Plates were exclusively found with adults. There were no preferences by sex (Male=3, Female=2, Indeterminate=2) or by receptacle form (Coffin=3, Casket=5). Glass dimensions were close enough to suggest that they may have all come from the same source.

The rectangular shape and width-height index of 55.4 centimeters indicated that the viewing plate recovered with F-87 followed a Type 10 morphology. These viewing plates had a width-height index ranging between 55 and 66 centimeters. The sides were cut straight and the corners approximated 90-degree angles. Similar forms have been documented at 9CH875 in Chatham County, Georgia. The Avondale Burial Place example was found in the coffin of a 7.5-12.5-year-old youth and its size meant that most of the child's head and trunk were exposed.

Proportionate representations were compared between the Avondale Burial Place and the circa 1870-1920 9CH875 and 9CH1168 cemeteries from Chatham County, Georgia. The differences observed between Avondale Burial Place and the Hunter Cemeteries were profound enough to imply fundamental differences between these two assemblages. All three of these cemeteries were formed during periods when viewing plates were in full fashion; the proportionate differences may indicate that cultural differences (acceptability versus an aversion to viewing the dead), as well as economic differences (less investment in coffin features at the Avondale Burial Place) may be present. The significant reduction in variability of the Avondale Burial Place cemetery may imply limited availability of commercial products to more isolated communities.

Table 10.8. Distribution of Viewing Plate Types by Cemetery

Viewing Plate Type	Quantity		
	Avondale Burial Place	9CH875	9CH1168
1	0	2	1
2	0	0	1
3	0	1	1
4	7	4	1
5	0	0	1
6	0	3	1
7	0	0	1
8	0	0	1
9	0	0	1
10	1	3	0
11	0	3	0
Indet.	0	4	0
Total	8	20	9

## COFFIN HARDWARE

Coffin hardware refers to metal objects attached to the exterior surfaces of a coffin or casket to serve decorative, functional, or quasi-functional purposes. They are generally thought of as objects specifically manufactured for use on burial receptacles. While technically hardware should include such utilitarian artifacts as nails, wood screws, hinges, and locks, the term 'coffin hardware' is limited in this report to those objects with a substantial decorative component to their forms. These other hardware forms are addressed as separate artifact forms.

Coffin hardware has its ultimate origins in the development of the burial container. Very few body receptacle forms could be created without the use of additional components to secure or lock lids in place, to provide a means for carrying the receptacle, or hold the receptacle together. The addition of these components provided an opportunity to embellish and decorate their surfaces with visually pleasing and meaning-laden symbols. Early forms were often little more than furniture fittings, locally made or obtained from furniture industry distributors. Particularly during the Victorian period, and associated with what Hijjiya (1983:352-358) referred to as a rise in Monumentalism in gravestone architecture, coffin hardware proliferated into a wide variety of forms. Coffin hardware served to draw attention away from the realities and spiritual outcomes of death and provide some focus and emphasis on the dead as individuals. During the Victorian period decorative fittings designed with no real specific purpose other than the decoration of the coffin began to emerge. While hardware was meant to capture the viewer's eye, it was generally discretely sized so as not to distract the viewer from the principal subject (i.e. the deceased). During the late nineteenth century, however, some relatively large forms of purely decorative hardware emerged, emphasizing a more modern shift away from the individual's mortal remains as the primary focus of the funerary display. The decline of coffin hardware occurred at the same time as the rise in the African American use of the funeral service industry and their use of modern plain style gravestones. While not completely abandoned today, modern use of coffin hardware is a very minor component of the ritual display.

The market for late nineteenth and early twentieth-century coffin hardware was very different than it is today. During the early to mid-nineteenth century, when the manufacture of coffins was predominantly done by individuals or by small cottage industries, coffin hardware was largely available from the same distributors that provided furniture hardware. Hardware was not the focus of these industries, rather was a sideline probably more intended to provide a useful product than to serve as an important money making enterprise. This changed with the rise in Victorian ideals. Over a span of about 30 years, roughly between 1830 and 1860, coffin hardware rose to become a major commercial venture with many independent manufacturing and distribution companies developing solely to supply the demand for mortuary products. Coffin hardware was universally available to the general public. Consumers could purchase hardware from local coffin makers, from catalogs made available from the manufacturers, and from larger general merchandise distributors including Sears, Roebuck, and Company and Montgomery Ward. Commercially produced coffins could be purchased with or without hardware, enabling the private consumer the opportunity to decorate the coffin to suit their individual tastes. There were hundreds, if not thousands, of coffin hardware forms and styles generated during the mid-nineteenth through

early twentieth centuries, implying that the industry was extremely competitive. In the twentieth century, the private and local coffin makers were largely replaced by the more corporate funeral service industry. The demand for hardware shifted away from consumers and distributors and focused more on the manufacturer. Caskets tended to be shipped to funeral homes as final finished products. In keeping with trends that deemphasize embellishment of mortuary-related objects, hardware evolved into simpler, less eye catching and more functional forms. Modern hardware is styled to almost be invisible to the viewer, thus further removing the association of death's physical reality from the casket.

Traditionally, mortuary analysts have considered the presence of coffin hardware as a symbol of status; however, work by Bell (1990) demonstrated that coffin hardware was so ubiquitous and inexpensive that it was available to virtually all segments of the American society. While enslaved African Americans clearly occupied some of the lowest positions in America's pre-Emancipation era, some of their coffins were embellished with these hardware. Most notably, handles were among the materials recovered from the New York African Burial Ground (Howson and Bianchi 2006:279). The absence of hardware among early to mid-nineteenth-century free and enslaved African American graves may be indicative of a lack (or denial) of access to these materials. Absence may also be a rejection of more secular mortuary displays in favor of the traditional emphasis on the fate of the soul. This latter form was an important component of many southern epistemologies and may be related to the relative scarcity of early to mid-nineteenth-century hardware in many Southern cemeteries. Hardware is a common find among many post-Emancipation African American cemeteries (e.g. Crist et al. 2000; Davidson 2000; Dockall et al. 1996; Matternes et al. 2010; Rose and Santeford 1985; Shogren et al. 1989). This is partly an acceptance of Victorian ideals among African American communities. It symbolized that their lives had a value worthy of memorializing and commemoration at the time of their death. Working closely with period hardware catalogs, Davidson (2000) demonstrated that variation in hardware forms were tied to changes in hardware fashion and thus could be used as temporal indicators. While well beyond the scope of this current report, the wide variation in hardware forms and styles found at the Avondale Burial Place offers a potential for dividing the burial ground into temporal subsets through use of similar archeological seriation.

Hardware comprised a considerable portion of the Avondale Burial Place artifact assemblage. Among a sample containing at least 596 complete and fragmentary objects identified in the field as potential hardware elements, there were 357 artifacts that could be positively identified as coffin hardware. The rest represented less diagnostic bits of hardware. While hardware is commonly encountered in mortuary contexts, there has been no standardization of the various forms, and comprehensive typologies have yet to be published. This research impediment has been partially resolved by the development of a catalog of all hardware forms encountered by New South Associates during its mortuary investigations. Hardware types from the Avondale Burial Place were identified according to existing types in this catalog or added if no previous matching type was found. New South Associates identified a total of 66 different hardware forms at 9B1164. Coffin hardware was classified into seven forms: Cap Lifters, Screw Caps, Coffin Trimmings, Thumbscrews, Escutcheons, Handles, and Coffin Plates.

### Cap Lifters

Cap lifters were hardware designed to raise, lower, or move panels used to allow the dead to be viewed in the receptacle. Their presence implies that some form of viewing aperture was present in the coffin. These apertures would have included both viewing plates and removable coffin lid panels. Cap lifters were in general use between the 1870s and 1920s (Davidson 2006:164). Three cap lifter forms were identified in the cemetery assemblages (Table 10.9), (Figure 10.11). All cap lifters were white metal two-piece objects, usually composed of a base with a stylized grasping knob. They were recovered in the western central quarter of the receptacle and were associated with viewing plates. Cap lifters were found exclusively among adults buried in caskets. Descriptions of cap lifter forms are provided in Appendix C.

Table 10.9. Distribution of Features Containing Cap Lifters

Form	Number of Features	Receptacle	Age	Sex	Element Count*	Minimum Number of Appliances
Type 2	1	Casket	Adult	Indet.	1	1
Type 6	1	Casket	Adult	Indet.	2	1
Undefined Type	1	Casket	Adult	Male	1	1
Undefined Fragments	1	Coffin	Adult	Indet.	1	1
Total	3**				5	4

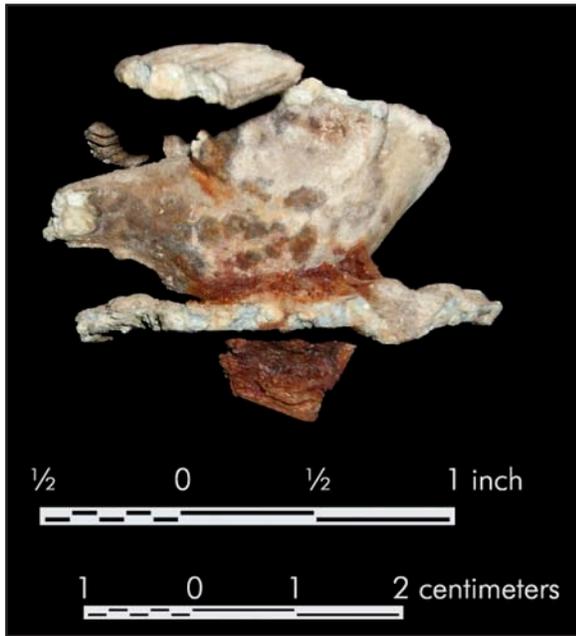
\*Includes Complete and Fragmentary Elements \*\*Type 2 and 6 were from the same feature.

### Screw Caps

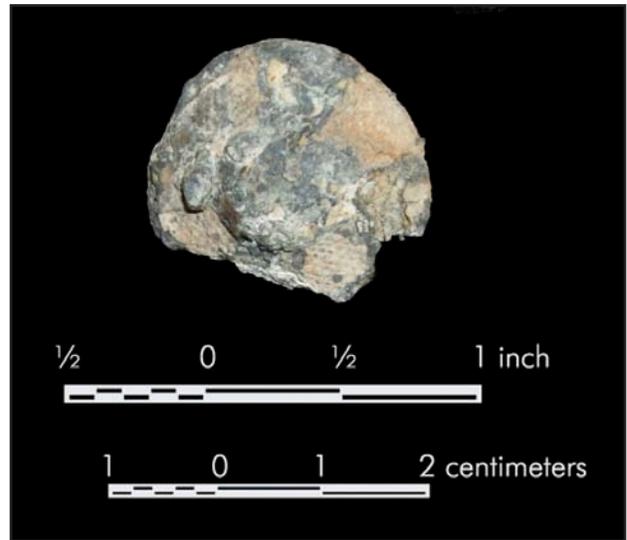
Screw Caps (sometimes referred to as 'studs') represent ornamental covers originally designed to hide an underlying fastener. Screw caps exhibit a raised central circular area, which could be attached with a soft mallet to snugly fit over the head of a coffin screw. Decorative hardware items lacking this central raised area were defined as coffin trimmings. Screw caps were typically made from tin and tin-cupreous alloys. Screw caps can arguably be classified as coffin trimmings (see below). Their primary intended function in a mortuary setting as a functional cover for coffin screws was viewed as a significant departure from the solely decorative concept employed to define coffin trimmings.

Screw caps first emerged in the American market place in the 1860s along with the coffin screw, an appliance designed to affix lids to the sides of coffins (Davidson 2000:273). With the passage of the nineteenth century, their employment shifted away from construction and towards more ornamental uses. Manufacturers frequently sold screw caps as part of a coffin screw assembly. Cheek et al. (2003:232) noted that these were common finds in cemeteries dating from the 1880s and 1890s. All of the screw caps encountered in the Avondale Burial Place lacked the underlying screw (or any other form of fastener) indicating that they were not functional, but decorative appendages. While some forms may have had their margins malleted into the wood, others were probably glued onto the coffin's surface. Some specimens from Chatham County, Georgia had iron pegs soldered to their interiors to allow attachment to the coffin and a few in this assemblage may have had similar attachments (Matternes et al. 2010:226). In the absence of preservation conditions allowing a clear separation of 'pegged' from 'unpegged' appliances, both forms were simply classified as screw caps.

Figure 10.11.  
Cap Lifters and Screw Caps from Avondale Burial Place



A. Type 2 Caplifter from F-70



B. Type 6 Caplifter from F-70



C. Undefined Caplifter from F-66



D. Type 3 Screw Cap from F-104

Objects that could most reliably be classified as screw caps were invariably diamond-shaped (Figure 10.11D). They were found almost exclusively along the tops of side panels and the margins of the lids. The long sides of diamond shaped versions always ran parallel with the coffin's length. Most screw caps found on a burial case were of the same form. There were 34 complete screw caps recovered. Soil conditions at 9BI164 were not favorable to the preservation of these artifacts; many specimens were recovered in fragmentary form, so the true number of screw caps recovered served only as a minimum estimate. There were four artifact types assigned to the screw caps grouping (Table 10.10). Type 1 and Type 18 were the most common forms. They tended to be placed on adult caskets and subadult coffins. Descriptions of screw cap forms are provided in Appendix C.

Table 10.10. Distribution of Features Containing Screw Caps

Form	Number of Features	Receptacle	Age	Sex	Element Count*	Minimum Number of Appliances
Type 1	2	Casket	Adult	Male	9	9
Type 1	1	Casket	Adult	Indet.	15	2
Type 2	1	Coffin	Subadult	Female	48	7
Type 3	1	Casket	Adult	Female	29	3
Type 3	1	Casket	Adult	Male	94	4
Type 18	1	Coffin	Child	Indet.	20	11
Undefined Fragments	2	Casket	Adult	Male	8	6
Undefined Fragments	1	Casket	Adult	Indet.	>1	>1
Undefined Fragments	2	Coffin	Child	Indet.	3	3
Total	11**				227	46

\*Includes Complete and Fragmentary Elements \*\*Type 1 and 3 contained caps from the same feature.

### Coffin Trimmings

Coffin trimmings, also referred to as 'ornaments,' refer to artifacts defined by manufacturers (and subsequently by archaeologists) as a form of embellishment or decoration that were attached to a coffin (Cheek et al. 2003:232). They were stamped into abstract or symbolically meaningful shapes that frequently expressed appropriate mortuary sentiments. Beyond communicating mortuary-related ideas, trimmings often had no utilitarian functions.

Trimmings recovered from the Avondale Burial Place were mostly associated with lids and upper side panel surfaces. They tended to emphasize structural features with complimentary aspects of their own morphology. For example, linear trimmings were frequently attached beside the long side margins or placed parallel to the head and footplate lines. On the sides, they occasionally filled space between handles. Other forms were designed to draw attention to themselves. They tended to be located in portions of the receptacle where they could be prominently displayed.

Large and/or complicated designs were centered along the midline around the knees. Some forms were singularly applied to the head and footplates. Nearly all trimmings were composed of molded white metal or tin alloys.

A total of 15 hardware forms were assigned to the trimmings grouping (Table 10.11, Figure 10.12). Trimmings were identified on coffins, caskets, and vault liners. They were more commonly associated with children and adult males. The Type 1 and 9 forms were by far the most numerous forms recovered accounting for almost 35 percent of the coffin trimming variation observed at the cemetery. Descriptions of coffin trimming forms are provided in Appendix C.

*Table 10.11. Distribution of Features Containing Coffin Trimmings*

Form	Number of Features	Receptacle	Age	Sex	Element Count*	Minimum Number of Appliances
Type 1	1	Casket	Adult	Male	1	1
Type 1	1	Coffin	Child	Indet.	6	5
Type 1	1	Casket	Infant	Indet.	4	3
Type 1	1	Casket	Indet.	Indet.	1	1
Type 8	1	Coffin	Child	Indet.	4	3
Type 9	1	Casket	Adult	Male	39	6
Type 13	1	Indet.	Infant	Indet.	1	1
Type 19	1	Casket	Adult	Male	4	4
Type 33	1	Casket	Adult	Male	1	1
Type 35	1	Coffin	Adult	Indet.	1	1
Type 36	1	Casket	Adult	Indet.	1	1
Type 40	1	Casket	Adult	Male	1	1
Type 41	1	Indet.	Infant	Indet.	4	4
Type 61	1	Coffin	Child	Indet.	1	1
Type 62	1	Vault	Adult	Male	4	3
Undefined Type 1	1	Casket	Adult	Male	1	1
Undefined Type 2	1	Casket	Adult	Male	2	2
Undefined Fragments	1	Coffin	Subadult	Female	8	1
Undefined Fragments	1	Casket	Adult	Female	2	2
Undefined Fragments	1	Coffin	Adult	Male	2	1
Undefined Fragments	1	Vault	Adult	Male	3	2
Undefined Fragments	1	Casket	Adult	Indet.	>6	1
Undefined Fragments	1	Coffin	Child	Indet.	2	2
Total	14**		>99	48		

\*Includes Complete and Fragmentary Elements \*\*Multiple Representations in Features F-5, F-6, F-45, and F-105.

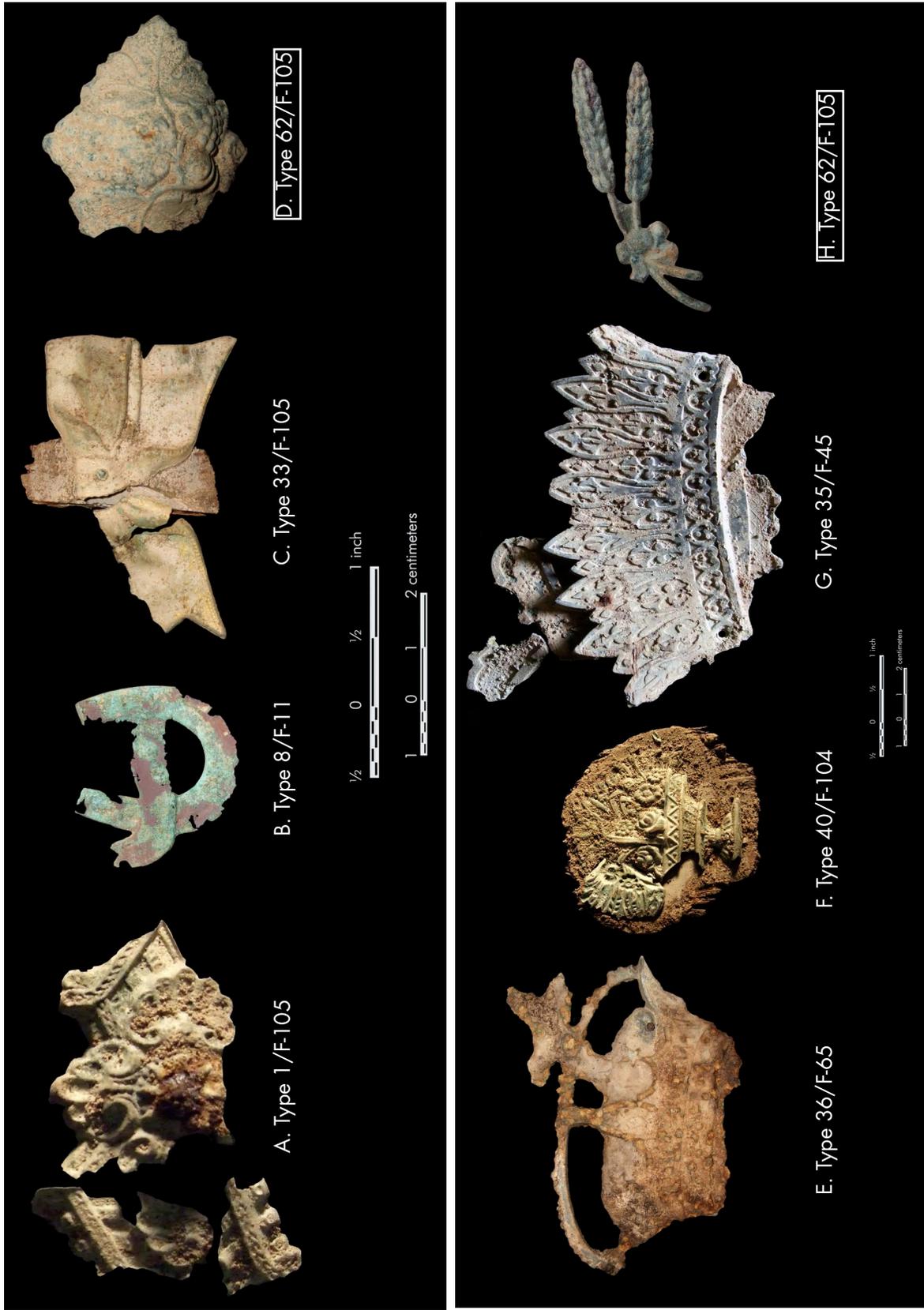


Figure 10.12.  
Selected Coffin Trimmings from Avondale Burial Place

## Thumbscrews and Escutcheons

Thumbscrews represent specially manufactured hardware, functionally designed to attach the lid of a coffin to its underlying sides. While the iron screw portion of the fixture may have been tapered to provide a tight fit, they were frequently blunt tipped and required a gimlet hole for installation. Some thumbscrews may have also employed metal posts or dowels to secure the lid to the sides. Thumbscrews were frequently attached through a metal escutcheon. These appliances protected the surface of the lid, helped reduce the possibility of splitting during installation, and helped secure a tight fit between the lid and the underlying wood. These objects also provided a means for decorating the coffin with socially appropriate symbols and further deemphasized the coffin's appearance as a receptacle for the dead.

Thumbscrews were introduced in the 1870s (Garrow 1987:37). They were presented as an alternative product to the earlier and less showy white metal coffin screw. Thumbscrews fell out of use during the early twentieth century as internal casket latches became more prevalent (Davidson 2006:134). Davidson (2006:146-147) noted that escutcheons were introduced in the 1860s and were largely abandoned by the 1920s.

Thumbscrews and escutcheons from the Avondale Burial Place exhibited a wide variety of styles. They were uniformly found on the coffin lid, with the vast majority of forms arranged in opposing pairs along the long sides of the receptacle. Adults frequently exhibited three or four pairs and subadult graves included two to three pairs, relative to the size of the coffin. On a few rare occasions, thumbscrews and escutcheons were also placed above the head and footplates. Thumbscrews and escutcheons occasionally served as viewing plate cover hardware. They would have secured the plate cover to the coffin lid and may have acted like a handle in much the same fashion as cap lifters. In general, like hardware types were found along the sides of the coffin, while those associated with viewing plates were of a different type, emphasizing that they served a different function.

Thumbscrews and escutcheons were frequently sold as sets, and matching pairs are commonly found but they may also have been purchased as separate items. All escutcheons from 9B1164 were found in association with thumbscrews, indicating that they were purchased or viewed as complementary forms of hardware. Use of the thumbscrew, however, may have followed a different perception. Some thumbscrews were marketed (and probably designed) for use without escutcheon plates. This pattern was observed in the Avondale Burial Place, where sets of thumbscrews were found lacking escutcheon plates.

### Thumbscrews

Eighteen different thumbscrew forms were identified among the 114 thumbscrews recovered (Table 10.12, Figure 10.13). Type duplications were relatively uncommon with only Types 8, 18, 45 and 46 used multiple times. The remaining screws exhibited a diverse range of styles, shapes, and symbolism. Their distribution by burial case form, age, and sex did not vary substantially. Most were used to secure lids, but Types 4, 8, 9, and 37 thumbscrews were also used on viewing ports. Descriptions of thumbscrew forms are provided in Appendix C.

Table 10.12. Distribution of Features Containing Thumbscrews

Form	Number of Features	Receptacle	Age	Sex	Element Count*	Minimum Number of Appliances
Type 3	1	Coffin	Adult	Male	9	9
Type 4	1	Casket	Adult	Female	6	6
Type 8	2	Casket	Adult	Male	11	11
Type 9	1	Coffin	Subadult	Indet.	9	9
Type 10	1	Casket	Adult	Indet.	4	4
Type 17	1	Coffin	Subadult	Female	6	6
Type 18	1	Coffin	Child	Indet.	4	4
Type 18	1	Casket	Infant	Indet.	4	4
Type 20	1	Coffin	Adult	Indet.	6	6
Type 22	1	Casket	Adult	Male	6	6
Type 24	1	Coffin	Child	Indet.	3	3
Type 31	1	Coffin	Child	Indet.	5	5
Type 37	1	Casket	Adult	Female	5	5
Type 42	1	Casket	Adult	Male	5	5
Type 45	1	Taper to Foot	Subadult	Indet.	4	4
Type 45	1	Coffin	Child	Indet.	1	1
Type 46	1	Casket	Adult	Male	6	6
Type 46	1	Casket	Adult	Indet.	6	6
Type 47	1	Coffin	Child	Indet.	4	4
Type 48	1	Casket	Adult	Indet.	6	6
Type 49	1	Coffin	Child	Indet.	5	4
Total	21**		115	114		

\*Includes Complete and Fragmentary Elements \*\*Multiple Representations in Features F-10.

#### Escutcheon Plates

There were 58 complete and incomplete forms, representing eight different types of escutcheons (Table 10.13, Figure 10.14). The thin stamped tin matrix of these artifacts made them especially prone to corrosion and shattering from earth pressure in the grave. These numbers should therefore be considered very conservative estimates of the true number of escutcheons present. Types 6 and 17 represented the only duplicated forms; all the rest were unique representations. They tended to be slightly more common among adults and casket interments. Descriptions of escutcheon forms are provided in Appendix C.

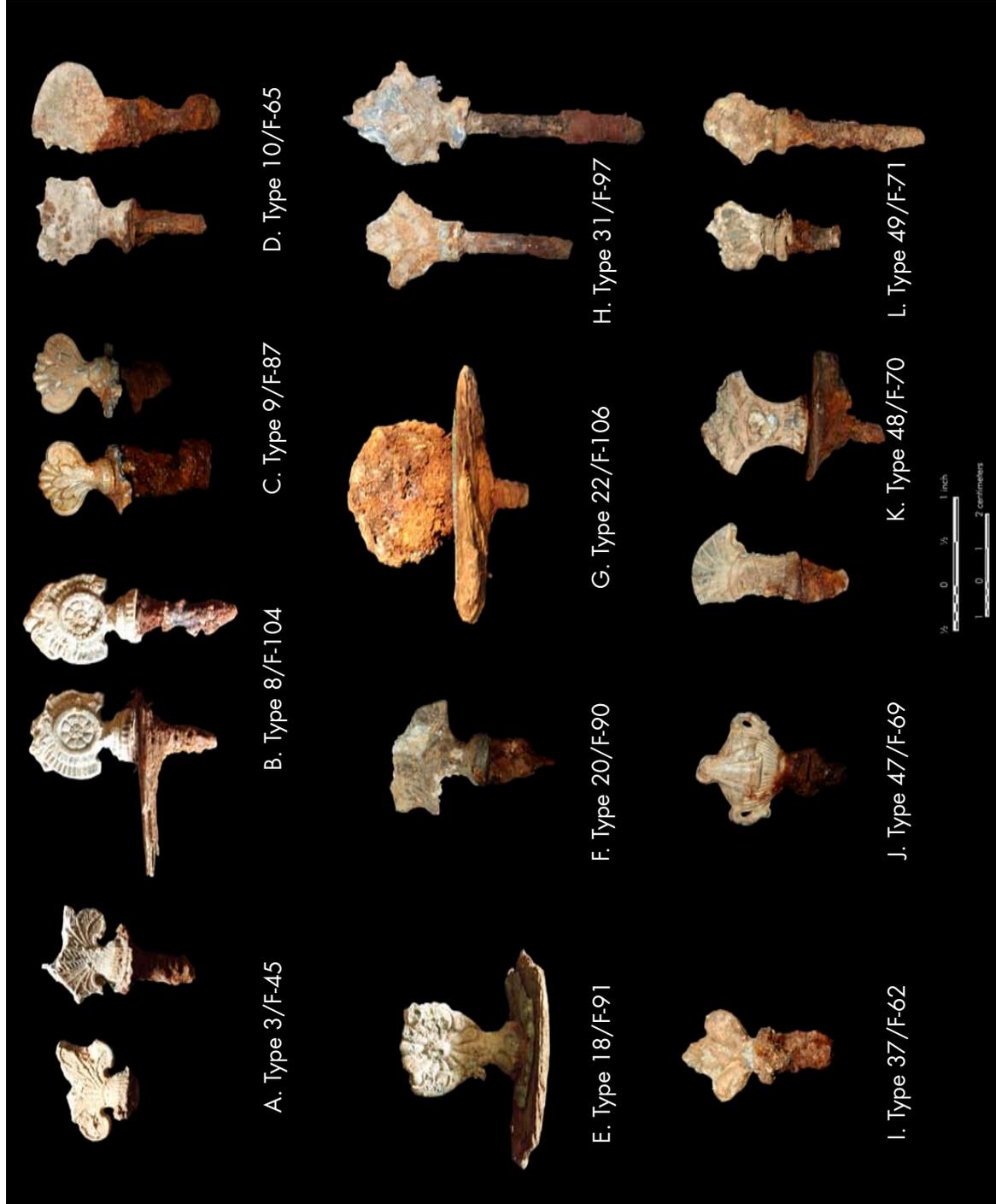


Figure 10.13.  
Selected Coffin Thumbscrews from Avondale Burial Place

Figure 10.14.  
Selected Escutcheon Plates from Avondale Burial Place



A. Type 6 Escutcheon Plate from F-104



B. Type 21 Escutcheon Plate from F-87

Table 10.13. *Distribution of Features Containing Escutcheon Plates*

Form	Number of Features	Receptacle	Age	Sex	Element Count*	Minimum Number of Appliances
Type 4	1	Coffin	Subadult	Female	5	5
Type 6	2	Casket	Adult	Male	12	12
Type 7	1	Coffin	Child	Indet.	4	4
Type 17	1	Coffin	Child	Indet.	4	4
Type 17	1	Casket	Infant	Indet.	4	4
Type 21	1	Coffin	Subadult	Indet.	9	9
Type 31	1	Casket	Adult	Indet.	1	1
Type 33	1	Casket	Adult	Male	5	5
Undefined Type 1	1	Casket	Adult	Male	7	7
Undefined Fragments	1	Casket	Adult	Female	1	1
Undefined Fragments	1	Coffin	Adult	Male	6	1
Total	12				58	53

\*Includes Complete and Fragmentary Elements.

### Coffin Handles

Coffin handles provide a means by which the coffin can be easily grasped and carried. Much like thumbscrews, these functional devices also are vehicles for decorating the coffin with socially appropriate mortuary symbols. Handles are generally composed of two basic components; the bar or handle which was used to physically grasp the coffin for carrying; and a plate or lug, used to attach the handle to the coffin. An intermediate fixture, referred to as a lug arm, was frequently used to attach a handle to the lug. There are many complex variations to this basic structure.

Coffin handles are usually broken into three basic categories – swing bail handles, short bar handles, and long bar handles (also called ‘extension’ or ‘rail handles’). Swing bail handles consist of a grip and lug (or paired lugs). They are designed to allow the handle to swing outward when in use and rest folded by the side of the coffin wall when not in use. Swing bail handles are designed for single hand grasping. Short bar handles are composed of grips attached to the coffin by paired lug arms and lugs. The handles are usually straight bars and the lug arms either rigidly affixed the bar to the coffin or allowed it to swing outward during use. Like the swing bail handle, they were generally designed for single hand grasping. Many swing bail and short bar handles were frequently affixed to the sides in pairs so that the weight was equally distributed, easing the pallbearers ability carry the coffin. Long bar handles were designed for multiple pallbearers to grasp the same fixture. They were constructed using the same components as short bar handles with many lugs and lug arms added to increase the bar’s stability. No long or short bar handles were recovered from the Avondale Burial Place.

Handles affixed to coffins did not appear until the latter portions of the eighteenth century (Davidson 2006:122-123). Most of these early forms tended to be furniture handles and were not specifically made for mortuary purposes. As nineteenth-century death attitudes changed,

distributors recognized that there was a market for handles made specifically for mortuary receptacles. Swing bail handles emerged as relatively simple modifications to the basic furniture handle form; in general, the size and surfaces areas of the handle increased to bear weight and to accommodate decoration. Short bar handles were patented in the 1860s and their use can be traced through the twentieth century. Garrow (2007) identified the end of use for short bar handles made from white metal as the 1920s. Swing bail and short bar handles can be found on both coffins and caskets. Long bars were not an efficient means of carrying hexagonal coffins; they therefore were more frequently associated with rectangular caskets. Long bar handles tend to be late nineteenth- through twenty-first-century artifacts.

There were 13 swing bail handle variants recorded among 84 handles recovered from the Avondale Burial Place burial ground (Table 10.14, Figure 10.15). With the exception of the Type 31, which was found in four graves, each handle type encountered was a unique form. Handles from a given coffin were identical. Handles on adult coffins and caskets were paired on opposing flanks of the long side panel's head (above the shoulder), the center, and foot ends (both below the shoulder). Infant and small subadult coffins tended to have only two pairs of handles. These were usually located near the head and foot ends of the receptacle. They were positioned in the top one-quarter to one half of the side panel. Adults (N=17) were far more likely have handles than children (N=5). This may reflect a greater need for handles among the larger and considerably heavier adult interments than among the smaller and lighter subadults. Nearly all of the adults with coffin handles were buried in caskets while conversely, most of the children were interred in coffins. Descriptions of coffin handle forms are provided in Appendix C.

Proportionately, handle use at the Avondale Burial Place differed dramatically by burial case form and age. In Table 10.15, the proportionate representation of coffins and caskets with handles was contrasted by general age. Handle use among coffins was uncommon and representation was about equal between adults and children. Almost 70 percent of all handles were found with caskets. Among children in caskets, those with handles represented the smallest proportion of the assemblage, while there were nearly three times as many adults in caskets with handles as those buried in caskets without them. Different norms appear to have been applied relative to burial case form.

Table 10.14. *Distribution of Features Containing Coffin Handles*

Form	Number of Features	Receptacle	Age	Sex	Element Count*	Minimum Number of Appliances
Type 5	1	Coffin	Adult	Indet.	6	6
Type 5A	1	Coffin	Child	Indet.	4	4
Type 14	1	Coffin	Child	Indet.	4	4
Type 16	1	Casket	Adult	Male	6	6
Type 21	1	Casket	Adult	Male	6	6
Type 24	1	Indet.	Child	Indet.	2	2
Type 30	1	Coffin	Subadult	Female	6	6
Type 31	1	Casket	Adult	Female	3	3
Type 31	1	Coffin	Adult	Male	6	6

Table 10.14. Distribution of Features Containing Coffin Handles

Form	Number of Features	Receptacle	Age	Sex	Element Count*	Minimum Number of Appliances
Type 31	1	Casket	Adult	Female	6	6
Type 31	1	Casket	Adult	Male	8	8
Type 31	1	Casket	Adult	Indet.	6	6
Type 32A	1	Casket	Adult	Indet.	6	6
Type 35	1	Coffin	Child	Indet.	4	4
Type 36	1	Casket	Infant	Indet.	4	4
Type 37	1	Casket	Adult	Male	4	4
Type 38	1	Casket	Adult	Male	3	3
Total	17				84	84

\*Includes Complete and Fragmentary Elements.

Table 10.15. Coffin Handle Use by General Age and Site

	Subadult Coffins	Adult Coffins	Subadult Caskets	Adult Caskets	Total
With Handles (Proportion)	4 (0.043)	2 (0.021)	1 (0.010)	9 (0.097)	16 (0.173)
Without Handles Sample (Proportion)	30 (0.326)	24 (0.260)	19 (0.206)	3 (0.032)	76 (0.826)
Total (Proportion)	34 (0.369)	26 (0.282)	20 (0.217)	12 (0.130)	92 (1.000)

The burial case for one subadult with handles could not be accurately classified.

The inclusion of handles would have incurred an additional expense and the low use of handles among children in general may represent an economic choice among the burial community. The relatively low use of handles among children may also reflect a general lack of need; children's burial cases were generally smaller, lighter, and less cumbersome to move than their adult counterparts. The relatively low representation among both coffins and caskets may indicate that transporting these burial cases did not necessitate additional hardware.

When addressing an adult-sized burial case, the inclusion of a handle may have been a functional advantage. Recognizing that the mass availability of handles occurred after the hexagonal coffin was in use for a while and before the rectangular casket became part of the normative tradition, these data imply a material shift reflecting a technological improvement in burial case technology. In order for pallbearers to carry a handle-less receptacle, the burial case was carried either on their shoulders or on rails. Both coffins and caskets required considerable coordination to prevent the receptacle from slipping or tipping. The addition of handles, however, provided the pallbearer with a ready grip. This enabled the burial case to be carried at waist height and for it to be secure

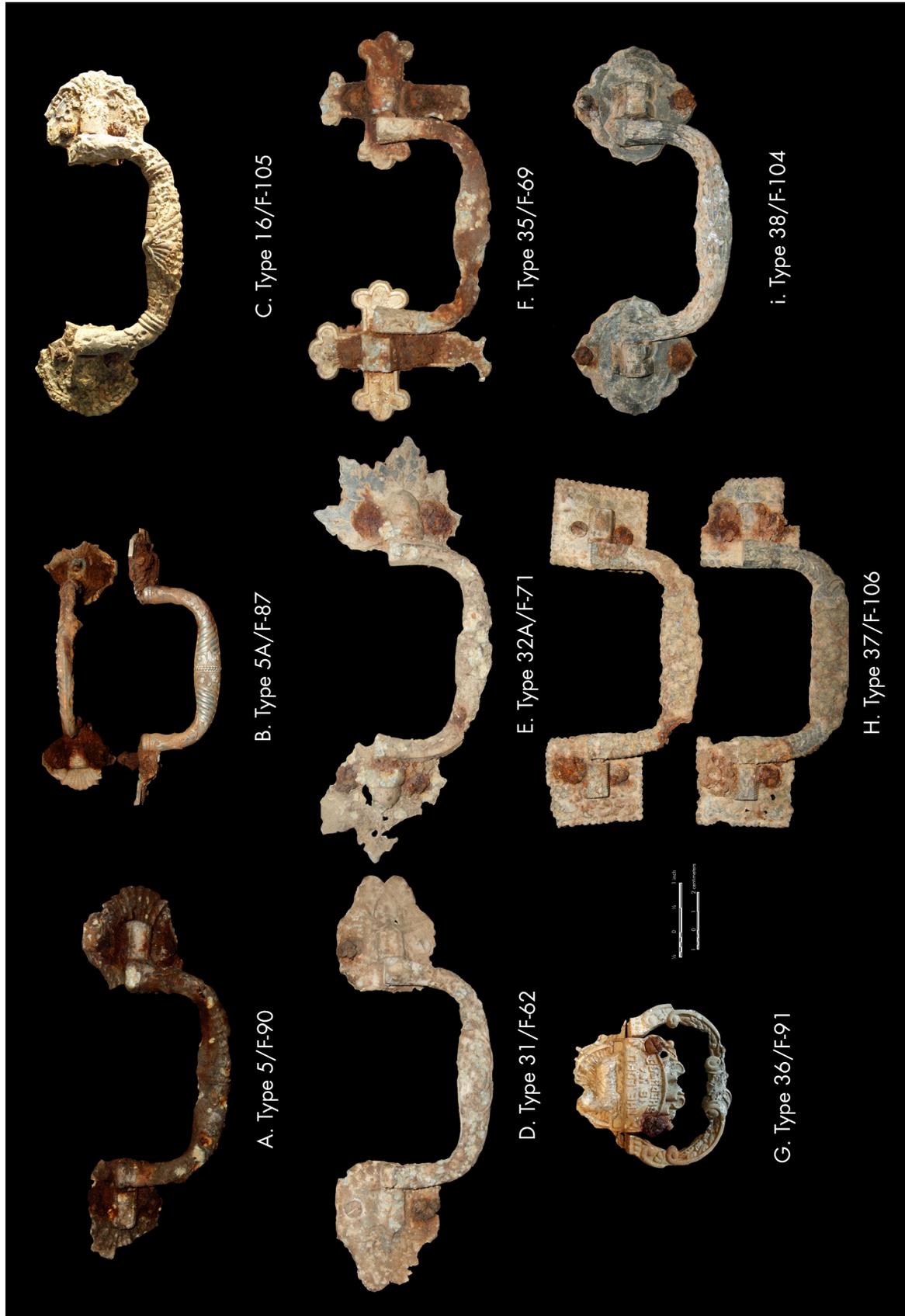


Figure 10.15.  
Selected Coffin Handles from Avondale Burial Place

from movement, particularly if the distance from hearse to gravesite was substantial. Handles also provided a means whereby ropes could be more easily attached (or passed through) to lower the coffin into the ground, or if the grave was shallow, for the pallbearers to place the coffin directly into the grave. While coffins and caskets were undoubtedly used contemporaneously at the Avondale Burial Place, the relationship reflected by handles and form, particularly among adults, implies two features. First, the means in which fully prepared caskets were moved may have been unwieldy without handles; use of handles, therefore, would reflect a functional need to accommodate transport and movement of the receptacle to the burial site. This need may have been greater among caskets than among coffins. Second, the mass availability and use of the coffin handle may have coincided with the late nineteenth- and early twentieth-century transition from hexagonal to rectangular containers. The functional advantages of the handle, particularly for adult receptacles, may well have been a relatively late feature in the cemetery's cultural development and its greater representation among caskets reflects its application to the burial cases in use. A greater representation among the rectangular caskets than the hexagonal coffins would be consistent with the greater use of the casket in mainstream American funeral rituals.

### Coffin Plates

Coffin plates (or plaques) were cast or stamped metal plates affixed to the lid of a coffin. Along with handles and hinges, coffin plates represented one of the earliest forms of specially marketed coffin hardware, dating back to at least the late eighteenth century (Davidson 2006:151). Originally, they bore the name of the coffin's occupant and were designed to provide identification of whose remains were represented in the coffin; however, over time they changed from functional to ornamental objects. Late nineteenth- and early twentieth-century coffin plates were manufactured with an 'empty' panel where the individual's name could be inscribed, or they alternatively came with a pre-cast inscription. No inscribed names were among the plates recovered from the Avondale Burial Place. All recovered plates were marked with one of a variety of stock mortuary related sentiments including "At Rest" and "Rest in Peace." Their forms were limited largely to rectangles, ovals and ribbons, or tapes.

Coffin plates were universally recovered on receptacle lids above (or on) the deceased's trunk. They were usually oriented so that the writing was perpendicular to the container's long axis. Most coffin plates tended to be placed with adults and frequently accompanied coffins and caskets bearing a considerable amount of other hardware.

A total of five different coffin plate forms were identified among the eight recognized specimens (Table 10.16, Figure 10.16). Nearly all (N=7) were placed on adult receptacles. They were slightly more common among caskets than coffins. Descriptions of coffin plate forms are provided in Appendix C.



Figure 10.16.  
Selected Coffin Plates from Avondale Burial Place

Table 10.16. Distribution of Features Containing Coffin Plates

Form	Number of Features	Receptacle	Age	Sex	Element Count*	Minimum Number of Appliances
Type 8	1	Casket	Adult	Male	1	1
Type 15/20	1	Casket	Adult	Male	1	1
Type 19/20	3	Casket	Adult	Female	3	3
Undefined Type 1	1	Coffin	Subadult	Female	1	1
Undefined Type 2	1	Coffin	Adult	Indet.	1	1
Undefined Fragments	1	Casket	Adult	Indet.	1	1
Total	8				8	8

\*Includes Complete and Fragmentary Elements.

### Coffin Hardware and Viewing Plate Use

While Bell (1990) demonstrated that the presence of hardware cannot be used to indicate higher or lower social status, the amount of hardware present may imply a greater social or economic investment in the burial case. Hardware and viewing plates were examined relative to the number of forms that occurred on a given receptacle (Table 10.17). When these were used, there was a weak tendency for subadults to receive only a few pieces, usually thumbscrews and a bit of trimming. Adults tended to receive more decorative hardware, however there were enough children placed in well-decorated burial cases to imply that maturity alone was not driving hardware or viewing plate use. No receptacle was adorned with all the potential forms of hardware present at Avondale Burial Place and the frequency of hardware use on a receptacle did not vary between caskets and coffins. The factors governing how much hardware was used to adorn a coffin did not appear to be based on simple relationships. If hardware use reflected any investment in the individual, this investment probably related to the decedent's position in the family and community.

Table 10.17. The Occurrence of Hardware on Burial Cases

Feature No.	Number of Hardware Forms Used	Viewing Window	Cap Lifter	Screw Cap	Coffin Trimming	Thumb-screw	Escutcheon	Coffin Handle	Coffin Plate
1	1					X			
71	1					X			
94	1				X				
97	1					X			
6	2				X			X	
10	3				X	X	X		
65	3			X	X	X			
46	4			X		X		X	X
62	4	X				X		X	X

Table 10.17. The Occurrence of Hardware on Burial Cases

Feature No.	Number of Hardware Forms Used	Viewing Window	Cap Lifter	Screw Cap	Coffin Trimming	Thumb-screw	Escutcheon	Coffin Handle	Coffin Plate
69	4			X	X	X		X	
91	4				X	X	X	X	
106	4			X		X	X	X	
5	5	X		X	X	X	X	X	
11	5			X	X	X	X	X	
45	5	X			X	X	X	X	
66	5	X	X			X		X	X
87	5	X		X		X	X	X	
90	5	X	X			X		X	X
104	5			X	X	X	X	X	
3	6			X	X	X	X	X	X
105	6			X	X	X	X	X	X
33	7	X		X	X	X	X	X	X
70	7	X	X		X	X	X	X	X

Hardware use did appear to be patterned. In Table 10-18, viewing plate and general hardware forms were cross-indexed to illustrate what forms occurred together. When hardware was used, functional forms were the most numerous. The two most ubiquitously used forms were thumbscrews and handles. Of the 23 burial cases with hardware, thumbscrews were found on 21 receptacles, handles on 17, and both forms appeared together on 16 coffins and caskets. Thumbscrews and handles on any given receptacle exhibited no pattern duplication, so it was highly unlikely that they were obtained as a pre-ordered set from the distributor. Combination would have occurred on a more local level. Corresponding use of thumbscrews and handles appears to have been based on perceptions of what was appropriate hardware within the burial community. Since handles improved transport of the receptacle and thumbscrews meant that the burial case could be closed without the use of hand tools, these functional aspects may have validated their decorative appeal. When decorative hardware was to be used on a coffin or casket, thumbscrews and handles were essential components of the assemblage.

Some pieces of hardware were clearly used together as functional units. The most obvious example of this relationship was between escutcheon plates and thumbscrews. Escutcheon plates were designed to have thumbscrews pass through them. Their use therefore was dependent on the use of thumbscrews and rather unsurprisingly, no escutcheons were present without thumbscrews. While decorations on some escutcheons and thumbscrews were matched, indicating that they were obtained as a set from the distributor, most escutcheons did not appear to be specifically made for use with its corresponding thumbscrew. The likelihood that thumbscrews and escutcheons were frequently sold separately to the burial community was emphasized by the lack of escutcheon use on nine receptacles bearing thumbscrews. The functional advantages of the escutcheon (preventing surface damage) may not have been realized by all makers or consumers.

Table 10.18. Number of Burial Cases (N) Sharing Specific Hardware Forms

	Viewing Window (N=8)	Cap Lifter (N=3)	Screw Cap (N=11)	Coffin Trimming (N=14)	Thumbscrew (N=21)	Escutcheon (N=12)	Coffin Handle (N=17)	Coffin Plate (N=8)
Viewing Window (N=8)		3	3	4	8	5	8	5
Cap Lifter (N=3)	3		0	1	3	1	3	3
Screw Cap (N=11)	3	0		8	11	8	7	4
Coffin Trimming (N=14)	4	1	8		12	10	11	4
Thumbscrew (N=21)	8	3	11	12		12	16	8
Escutcheon (N=12)	5	1	8	10	12		9	4
Coffin Handle (N=17)	8	3	7	11	16	9		8
Coffin Plate (N=8)	5	3	4	4	8	4	8	

Viewing windows formed the core of another functional unit. Along with handles and thumbscrews being present, all cap lifters were found in association with viewing plates. Given that cap lifters were attached to viewing plate covers, this relationship was self-evident. Cap lifters however were found with less than half the viewing plates. Most viewing plates (N=5) were accompanied by thumbscrews where cap lifters were commonly positioned. Surviving coffins and caskets frequently exhibit use of cap lifters to open or close the viewing port cover and thumbscrews to secure the cover to the lid together, however no dual-use forms of this nature were noted at the Avondale Burial Place. The use of one form or the other with a viewing plate implied that cap lifters were used on viewing plate covers designed to be lifted or moved to the side, while thumbscrews were used on covers that were lifted off. Both of these potential viewing port styles were noted on coffins and caskets.

Among more decorative hardwares, namely coffin plates, screw caps, and coffin trimmings, correspondence with functional hardware was very high; in only one case does a decorative form appear without the benefit of a handle or thumbscrew. There were only three cases where coffin plates, screw caps, and coffin trimmings were used together. Among the remaining burial cases coffin plates appeared on receptacles lacking coffin trimmings. Location on the burial case may have been an influencing factor. Both coffin trimmings and coffin plates were frequently placed in the center of the lid along the midline. The presence of one may have precluded the use of the other. Where both were used, trimmings were moved to roughly knee-height along the lid's midline or they were placed on the sides of the receptacle. Both forms sporadically appeared with screw caps.

While never used independently, screw caps tended to show the least association with other hardware forms. Their highly variable application may imply that they were used independently of other hardware combinations. Screw caps tended to be placed in highly visible portions of the burial case, namely along the margins of the lid and vertical panels, where other hardware forms were absent. The presence of screw caps may have been more driven by availability and the aesthetics of those providing or overseeing the burial case's construction.

This exploratory examination of hardware relationships indicated that hardware use did not seem to be related to receptacle form. Any relationships with the dead were probably based on social or economic standings. The decision to use decorative hardware seems to be grounded on functional considerations with specific sets of hardware used to secure and transport the burial case, to add viewing ports or protect the lid's surface. The choice to use these hardwares placed decorative elements on the lid margins and midline along the side panels. These invariably may have emphasized other areas where decoration needed to be applied. Paramount among these seems to be the central portion of the lid, margins of the side panels, and to a lesser extent, the lid's midline at knee-height.

## NAILS

Nails represent the most commonly used fastener to secure parts of coffins and other grave furniture together. They were also used to attach materials to and around these receptacles. In the absence of wood and other hardware, they provided strong evidence that the dead were buried in wooden containers. All objects classified as nails were at least 15/16 inches long (2d cut nail length). In both Europe and Africa, nails were used to hold coffins together prior to the American colonization, so their simple presence in a historic mortuary context is not temporally significant (Davidson n.d.). Nail technology has changed over time. Technically, the skills needed to mass produce cut nails developed in the 1770s, yet, distribution was extremely limited until the early to mid-nineteenth century (Adams 2002:67; Nelson 1968). Machine headed cut nails first appeared on the American market in the mid-1820s, and they dominated it until the 1890s (Nelson 1968; Noel-Hume 1969:253). The first American patent for wire nails was received in 1877, but these artifacts did not see large-scale distribution until the 1880s (Adams 2002:69). Larger, construction-sized wire nails became common after 1885 (Nelson 1968:7). Nail manufacturing and use in Georgia corresponded to these production dates (Elliott 2010).

Most nails from 9B1164 were not well preserved. These iron artifacts were coated with deposits of iron oxide that obscured many of the surface features. Oxidation frequently penetrated the nail shaft, leaving them brittle and subject to breakage from earth pressure. While poor preservation prevented an accurate classification of every aspect, individual characteristics including shaft shape, head style, and size indicated that both cut and wire nails were used.

There were 6,194 nails and nail fragments present in the assemblage (Table 10.19). An examination of head form indicated that practically all classifiable nails were machine headed. Two potential hand-headed cut nails was recovered, one each from F-23 and F-29; their unique appearance was probably the result of salvaging and reuse. About 88.5 percent of the recovered nails were identified as cut nails. Cut nail pennyweights ranged from 4d to 16d with a single 30d spike recovered from F-38. Nails of 7d, 8d and 10d sizes were by far the most common, indicating widespread use of more utilitarian sized nails. Wire nails only accounted for about 11 percent of the assemblage. About two-thirds of the wire nails were positively identified as machine headed, with a very small component (N=2) representing specialty forms, namely finishing nails. Wire pennyweight sizes, ranging from 2d to 12d, were recorded. A single 40d spike was found in the intrusion associated with F-68.

While proportionate representations were skewed heavily by differences in wire and cut nail sample sizes, a comparison of nail sizes from the available pennyweight-classifiable sample revealed a similar distribution (Figure 10.17). Nails ranging between 7d and 12d exhibited the greatest use among both cut and wire nails with 7d nails being by far the most preferred size. Nails of this nature were more commonly used in the construction industry than the furniture industry. Despite changes in both time and technology, nail sizes used to construct furniture at the Avondale Burial Place exhibited little change.

Table 10.19. Nail Form by Size

Type	Head Form	Size	Quantity
Cut	Hand Headed	10d	1
Cut	Hand Headed	Indet.	1
Total			2
Cut	Machine Headed	2d	13
Cut	Machine Headed	3d	32
Cut	Machine Headed	4d	40
Cut	Machine Headed	5d	245
Cut	Machine Headed	6d	108
Cut	Machine Headed	7d	653
Cut	Machine Headed	8d	206
Cut	Machine Headed	9d	109
Cut	Machine Headed	10d	354
Cut	Machine Headed	12d	78
Cut	Machine Headed	13d	1
Cut	Machine Headed	14d	1

Table 10.19. Nail Form by Size

Type	Head Form	Size	Quantity
Cut	Machine Headed	16d	7
Cut	Machine Headed	30d	1
Cut	Machine Headed	Not Recorded	4
Cut	Machine Headed	Indeterminate Size (Bent)	17
Cut	Machine Headed	Fragment	1,188
Total			3,057
Cut	Indeterminate	2d	5
Cut	Indeterminate	3d	22
Cut	Indeterminate	4d	67
Cut	Indeterminate	5d	59
Cut	Indeterminate	6d	82
Cut	Indeterminate	7d	283
Cut	Indeterminate	8d	199
Cut	Indeterminate	9d	48
Cut	Indeterminate	10d	64
Cut	Indeterminate	12d	70
Cut	Indeterminate	14d	1
Cut	Indeterminate	16d	18
Cut	Indeterminate	Indeterminate Size (Bent)	2
Cut	Indeterminate	Fragment	1,436
Total			2,356
Hobnail		Fragment	11
Total			11
Wire	Finishing	4d	2
Total			2
Wire	Machine Headed	2d	1
Wire	Machine Headed	3d	9
Wire	Machine Headed	4d	9
Wire	Machine Headed	5d	28
Wire	Machine Headed	6d	49
Wire	Machine Headed	7d	92
Wire	Machine Headed	8d	11
Wire	Machine Headed	9d	64
Wire	Machine Headed	10d	14
Wire	Machine Headed	12d	30
Wire	Machine Headed	40d	1
Wire	Machine Headed	Fragment	187
Total			495

Table 10.19. Nail Form by Size

Type	Head Form	Size	Quantity
Wire	Indeterminate	2d	6
Wire	Indeterminate	3d	6
Wire	Indeterminate	4d	7
Wire	Indeterminate	5d	9
Wire	Indeterminate	6d	6
Wire	Indeterminate	7d	14
Wire	Indeterminate	8d	1
Wire	Indeterminate	9d	5
Wire	Indeterminate	10d	1
Wire	Indeterminate	Fragment	133
Total			188
Indeterminate	Indeterminate		83
Total			83
Assemblage Total			6,194

Grave furniture for children is generally smaller than adults. Smaller amounts of wood would be needed to construct these objects for children. From an engineering standpoint, these burial cases would require less robust fasteners. This relationship was noted at the Cool Branch Cemetery (40HK9), where Matternes (2001:191) demonstrated that size differences existed between nails in subadult and adult coffins. Does a similar age to nail size relationship exist among the Avondale Burial Place burial cases? To test these differences, it was necessary to draw a test sample from the assemblage that could confidently be linked solely to coffin construction. Nails associated with shaft planking or vault liners were eliminated from the sample. In some cases, there were enough contextual questions about the origin of nails, from graves with wooden liners to cast doubt about whether the burial case's nails could be confidently separated from those of the liner. To prevent potential data contamination, graves containing wooden liners were removed from the nail sample. While this provided a clean sample of 2,356 coffin and casket nails, the results were applicable only those graves where no liner was present.

A plot of the distribution of nails by pennyweight revealed that the most commonly used nails among subadult burial cases were 5d, 7d, and 8d representing about 17, 37, and 16 percent respectively of the nail sample (Figure 10.18). In contrast, adult receptacles were constructed using mostly 7d (27 percent) and 10d nails (23 percent). A modest relationship existed between age and nail size. It was also noted that very few nail sizes were used to construct adult coffins and caskets. Subadults on the other hand exhibited a wider distribution of nail sizes. These data indicated that different construction techniques were used to build coffins and caskets for adults and children. It is likely that the size of the burial case needed was an important contributor to these decisions.

Figure 10.17.  
Proportionate Distribution of Wire and Cut Nails Identifiable by Pennyweight

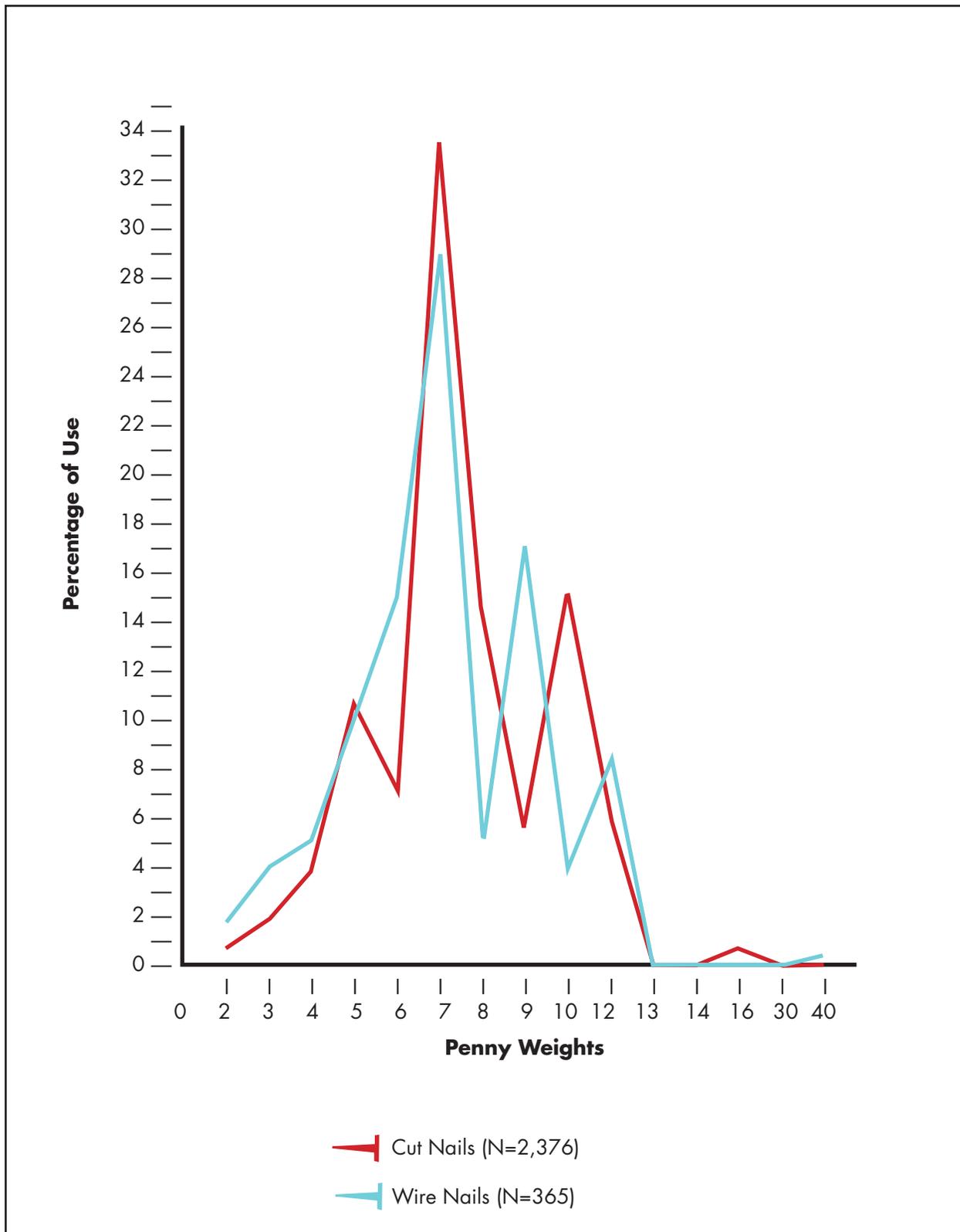
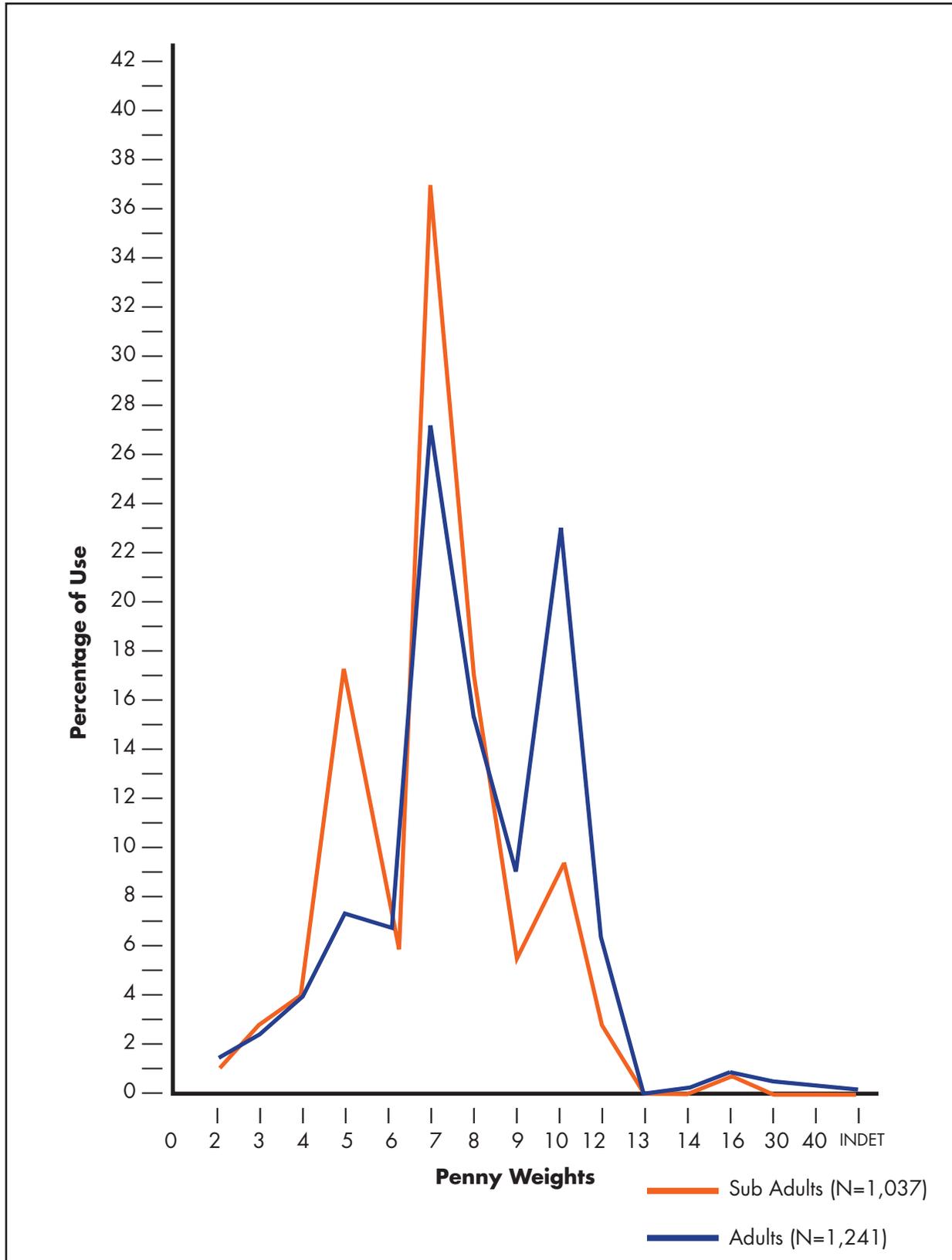


Figure 10.18.  
Distribution of Nails by Age Group and Pennyweight



Could these differences have anything to do with the type of burial case provided to the decedent? To examine this possibility, adult and subadult nail samples were divided into coffins and caskets (Figure 10.19). Among the children, coffin nails reflected a strong preference to the use of 7d nails (41 percent), with all other sizes representing minor inclusions. Subadults buried in caskets, however exhibited near equal use of 5d (29 percent) and 7d (32 percent) nails. Coffins and caskets used to inter children were not constructed using the same nail stores. Interestingly enough a reverse of this pattern emerged among adults. Adult caskets tended to be made using 7d nails (40 percent) with very few other forms represented while adult coffins exhibited a bimodal distribution with 10d and 7d nails being the most commonly used (31 and 21 percent respectively). Adult coffins and subadult caskets reflected clear size difference distributions. In contrast, the distribution of nail sizes used to build adult caskets and subadult caskets were relatively complimentary. Nails used to build adult coffins bore more load with smaller nails or subadult caskets were constructed using larger nails to carry the load. While the nature of decisions behind how coffins and caskets were built remain unclear, these data indicated that not only age, but burial case form played an important part in determining the type of fasteners used to build a final receptacle.

Nails were also used to construct wooden grave liners. Reviews of a sample of 112 nails from six individuals (F-3, F-5, F-12, F-45, F-103, and F-105), where the nails could be confidently identified as associated with only wooden liners, revealed that both cut and wire nails were used. Wire nails were found only with the females in F-3 and F-105; it is more likely that this relationship reflected temporal variation than a gender-driven nail choice. With the possible exception of several wire nail fragments found among the cut nails in F-12, liners were constructed using only cut or only wire nails. The distribution of all liner nails by pennyweight emphasized that the most commonly used liner nails were 9d, 10d, 12d and 7d fasteners (Figure 10.20). Many of these nails were clinched. Clinching nails was advocated as an efficient means of making wooden crates and boxes stronger (Borkenhagen and Kuelling 1948:1). When nails were broken into cut and wire forms, the resulting distributions were very divergent. Cut nails exhibited a bimodal distribution, with 6d and 7d, 10d and 12d nails being the most commonly used forms. Consultation with the original data emphasized that the 6d and 7d nails were associated with subadult liners, while the 10d and 12d forms were exclusive to the adults. Conversely, 76 percent of the wire nails were 9d fasteners. Liners were built following a different plan than coffins or caskets and it was likely that this plan varied temporally and conceptually when cut or wire nails were used.

Nails may have been used for other purposes besides coffin and vault construction. Four nails found in the F-9 post mold may reflect fasteners used to hold parts of a fence or gate together. More perplexing were modifications made to nails. In F-25 and F-27, metal rods, possibly representing other cut nails or thick wire, were attached to the shaft of cut nails (Figure 10.21A and B). Close examination revealed that these objects had not oxidized together, but appeared to have been purposefully joined; the intent of these artifacts could not be determined. Near the center of the coffin in F-12 was a nail that had been bent to form a loop (Figure 10.21C). A second looped nail was found underneath the skull of F-29. These objects may have been used to help secure cloth linings around and beneath the decedent. Nails were also recovered along the ledges of the vaults and were suspected to represent residue introduced from salvaged boards or used to secure these planks to each other. These artifacts were too fragmentary to provide many details about their forms.

Figure 10.19.  
Proportionate Distribution of Nails by Age and Body Case

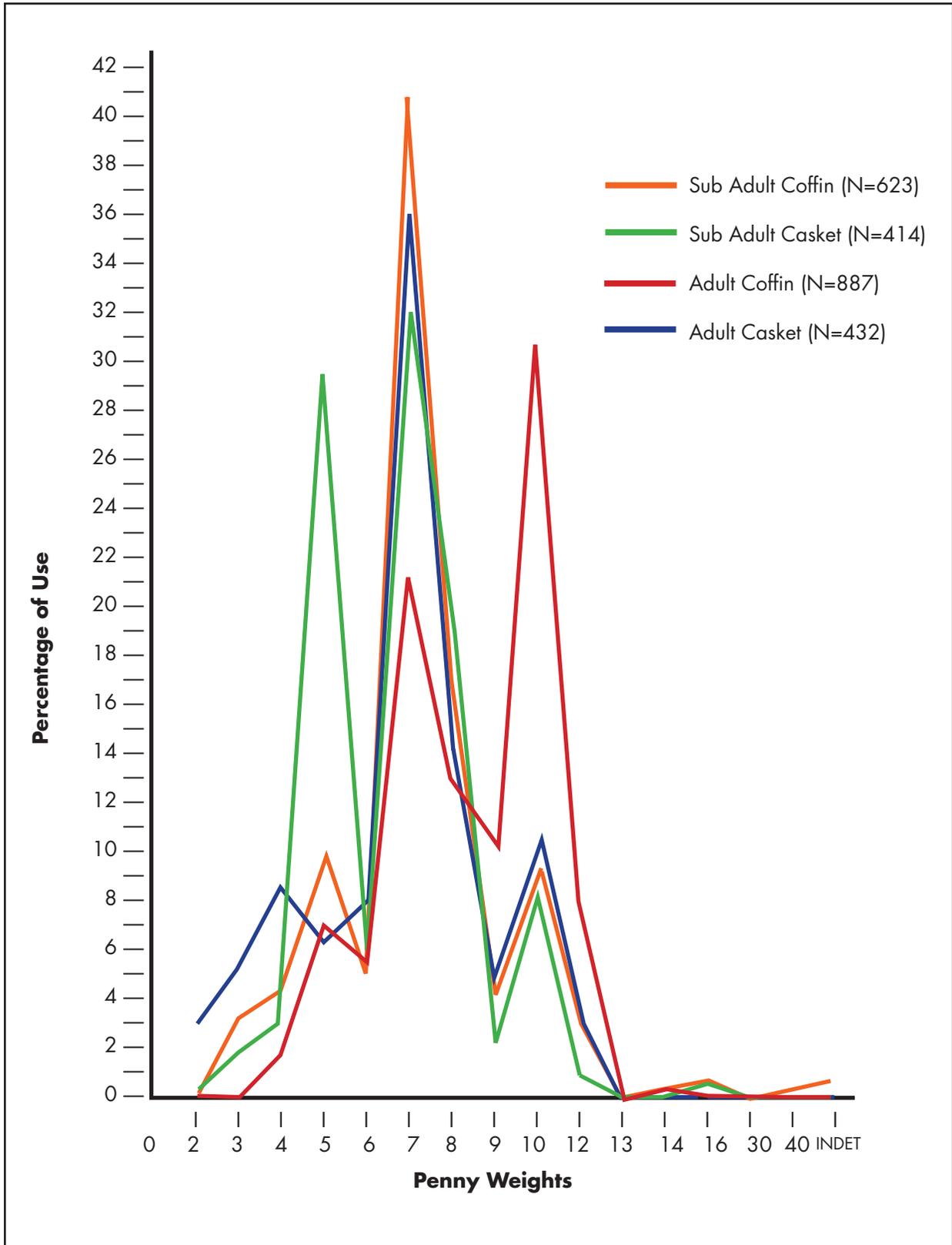


Figure 10.20.  
Proportionate Distribution of Nails Used in Grave Liners

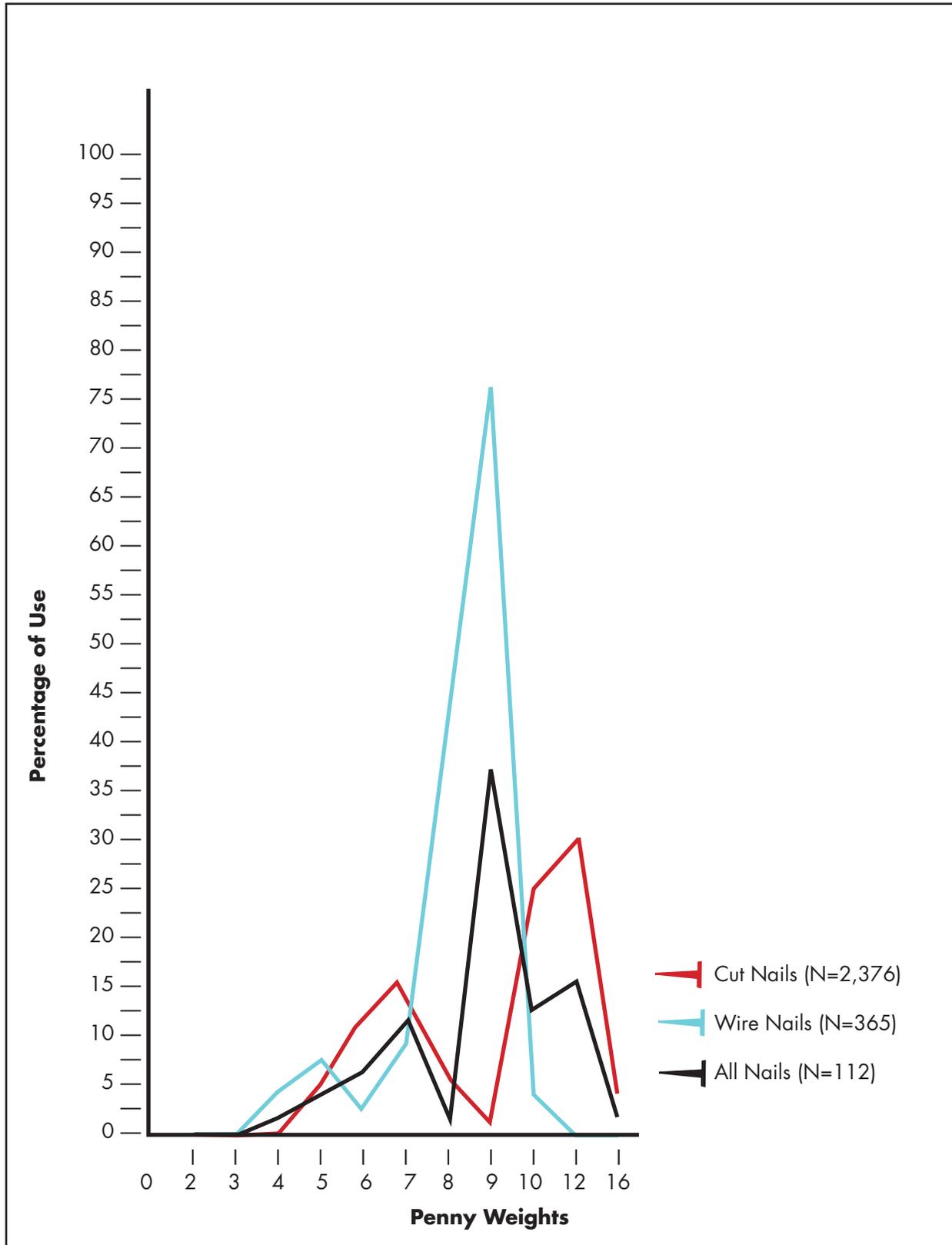
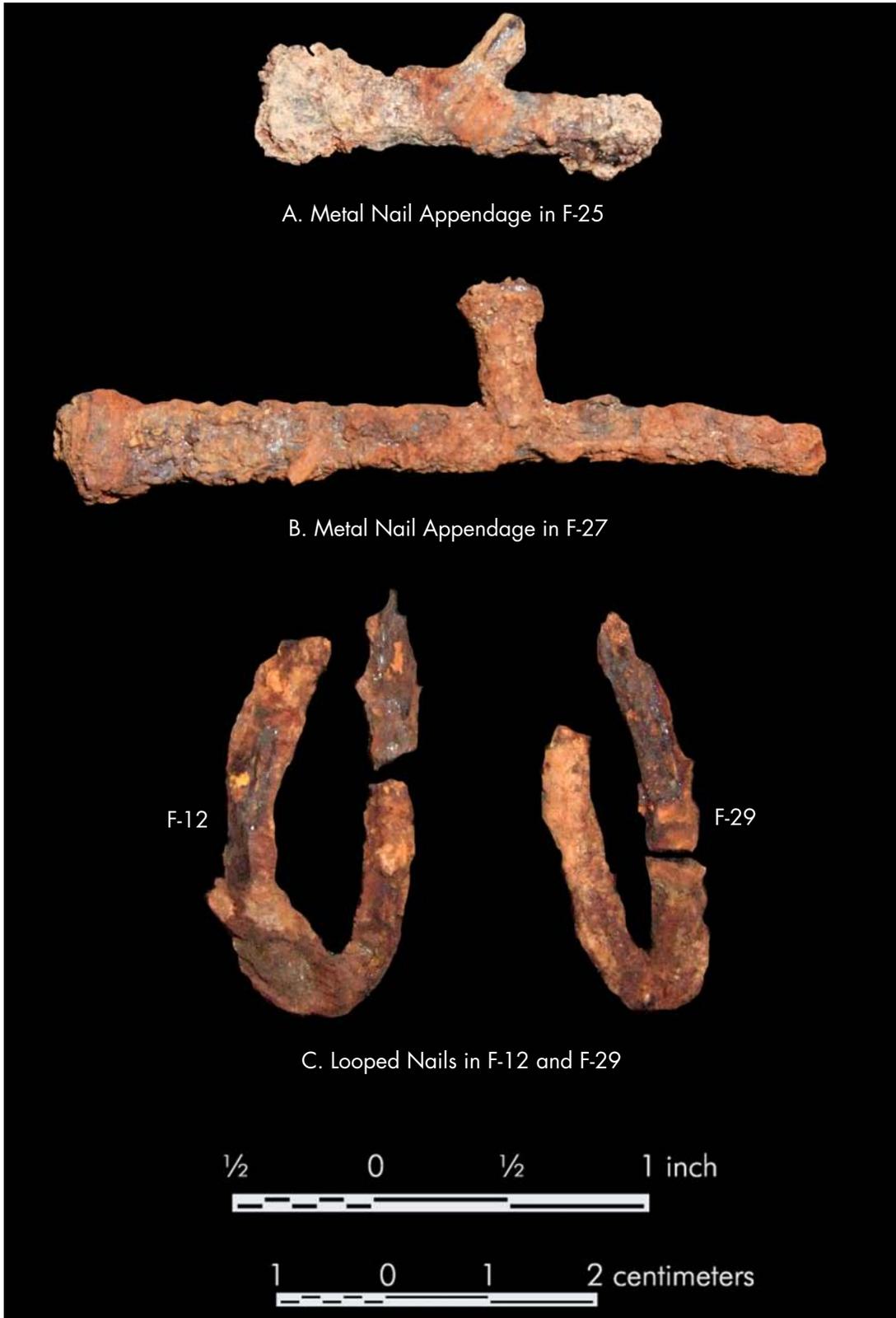


Figure 10.21.  
Modified Nails



## SCREWS

Screws have never been the dominant hardware fastener associated with coffin construction. Their utility in the mortuary setting has been largely a means of either fastening hardware to the coffin or as a means of sealing the coffin lid to the rest of the receptacle. Screws classified as fasteners were solid ferrous-iron objects; this definition differentiated them from similar forms consisting of a ferrous body with a decorative white metal head. These latter objects were classified as coffin screws. No coffin screws were recovered from the Avondale Burial Place. Screw technology was vastly improved in 1846 with the invention of the gimlet screw (DeVeto 1943:214, in Miller 2000:14). These taper-pointed screws eliminated the need to bore a gimlet or starter hole.

A total of 94 screws were recovered from 27 interments. All recovered screws were identified as gimlet screws. All exhibited single slot heads and ranged between 30 and 45 millimeters in length. Most of these were found in or near the lid and were recovered tip down and above the base, indicating that they were used to help seal the coffin's lid. Some screws may have been used in vault liner construction, but their provenience is not well understood.

## TACKS/BRADS

Tacks/brads were separated from nails based on size, with nails considered fasteners greater than 15/16 inches in length. Technically, this size range includes brads, however brads could not be accurately separated from tacks, so they have been combined with tacks in a single artifact form.

Tacks generally served to attach small or lightweight objects to a coffin. In many nineteenth-century coffins, they were a mechanism for affixing cloth to the interior or exterior of coffins (Cheek et al. 2003:233; Lang 1984:22-23). Tacks were available as specialty items from coffin suppliers or as a general carpentry appliance from a wide variety of distributors. Tacks made with cutting machines appear to have been manufactured well into the early twentieth century.

There were 208 tacks and tack fragments recovered from features at 9B1164 (Table 10.20). All exhibited ferrous metal bodies. Iron tacks lacked the decorative appeal of brass or white metal headed tacks; however, they were clearly also used as purely decorative elements on the exterior of several coffins from the New York African Burial Ground and at the 1SC320 Cemetery in Alabama (Howson and Bianchi 2006:272; Matternes and Serio 2005:76). These tacks were similar to those commonly used in the furniture industry.

*Table 10.20. Tacks by Size*

Size (Inches)	Size (Millimeters)	Body Material	Head Material	Quantity
0.15	4	Ferrous	Ferrous	6
0.39	10	Ferrous	Ferrous	24
0.47	12	Ferrous	Ferrous	1
0.51	13	Ferrous	Ferrous	31
0.55	14	Ferrous	Ferrous	1
0.59	15	Ferrous	Ferrous	23
0.62	16	Ferrous	Ferrous	2
0.66	17	Ferrous	Ferrous	34

Table 10.20. Tacks by Size

Size (Inches)	Size (Millimeters)	Body Material	Head Material	Quantity
0.70	18	Ferrous	Ferrous	6
0.74	19	Ferrous	Ferrous	39
0.78	20	Ferrous	Ferrous	1
Indeterminate	Indeterminate	Ferrous	Ferrous	38
Total				208

Among the 170 measurable tacks, sizes ranged from 4-20 millimeters (0.15 to 0.78 in.). Tacks were mostly distributed among 10-, 13-, 15-, 17-, and 19-millimeter sizes, indicating that they were probably made to relatively standardized size templates. Among the 11 features with tacks, six held infants and children. Five tack-bearing features also contained adult females and only a single male interment was found with tacks. The size of tacks used was consistent within an individual coffin or casket.

From an examination of surviving and photographic records of nineteenth-century coffins, tacks were commonly placed around the upper coffin margin. These corresponded with lining attachment points. The more interior aspects of the lining were left free and unattached to allow the preparer access to the sides and base of the coffin and to allow the lining to be appropriately arranged around the deceased. At 9CH875 and 9CH1168, many tacks were found with their heads facing inwards, indicating that the cloth was fastened to the interior of the coffin (Matternes et al. 2010:252-254). Unfortunately, many of the Avondale Burial Place's ferrous tacks had tumbled out of their original context during deterioration of the body case and the remaining few were extremely difficult to spot and recover in-situ in the red-brown clay.

Period photographic images of coffins and caskets also indicated that tacks were placed at regular intervals; they frequently attached cloth tapes around the margins that helped hold the linings against the interior lid margin. Tacks found with heads facing outwards and distributed around more than just the rim of the coffin implied the presence of an exterior cloth covering. While unconfirmed at the Avondale Burial Place, it was likely that some of the tacks, particularly those associated with the coffin's lid, were put to similar uses. Tacks may also have been used to secure molding or some other form of nondurable decorations to the lid.

## STAPLES

Staples were ferrous metal rods, sharpened at either end and bent into a 'U'-shape in order to hold two objects together. Staples, particularly those used for construction purposes, have their origins in antiquity and are not culturally or temporally diagnostic. Eight complete and fragmentary staples were found with adult males in F-12 and F-62. The original location of these fasteners on or in the burial case was compromised by obvious displacement during collapse of the receptacle. They likely affixed nondurable objects, which may have included moldings, wreathes, plaques, or cloths, to the exterior (or interior) of the receptacle.

## METAL BRACE

Sometimes nails and screws were not sufficient to provide the support necessary for a coffin to fulfill its purpose. For reasons that were lost with the deterioration of the coffin, the burial case used to house the female in F-51 required additional support to the exterior of the right shoulder. Fragments of a ferrous metal strap were used as a brace. Similar supports were sometimes added to coffins and caskets recovered from 9CH1168 (Matternes et al. 2010:242).

## PERSONAL ARTIFACTS

Personal artifacts were defined as objects used to clothe, decorate, or convey a social meaning when seen or placed in direct contact with the decedent's physical remains. They communicated messages about the dead only when the dead were viewed. These personal artifacts were subdivided into jewelry, clothing and clothing fasteners, personal accessories, and body treatment accessories.

### JEWELRY

Jewelry included all objects whose primary function was to adorn and convey actual or symbolic messages about the dead. These were particularly effective when they were in direct association with the decedent. In general, they lacked any true functional value, however, jewelry was usually considered to have a 'greater than other body adornments' monetary and/or social value. Objects classified as jewelry included beads and brooches.

#### Beads

Beads are one of the more interpretable personal artifacts recovered from African American interments (Crist et al. 2000:57; Lange and Handler 1985:26). Among historic southern African Americans, beads served two primary, highly interlinked functions. First, they communicated social features about the individual and second, they served as a focus for supernatural control over their environment. These ideas were inherently tied to belief systems in both the distant and not so distant past. Bead use has its origins in antiquity. The use and reworking of European-made glass beads were major material traditions of many African cultures well before the period of slave trade (Bianco et al. 2006:396). Beads additionally served as a form of visual communication. They were used to convey aspects of the wearer's social identity. Specific colors and forms identified the wearer's birth order, emphasized their gender and age, wealth, status, and sexual availability (Caton 1995:31-32; Crist et al. 2000:60). These beads were worn where they were visible, generally around the neck, wrist, arms, legs, or waist.

Beads were also recognized as receptacles capable of absorbing the physical attributes of objects, such as medicines, oils, and extracts, as well as metaphysical qualities, including protective, restorative, and prosperous magic. Their uses had strong ties in West Africa, where they were frequently used as charms. In regions where infant mortality was high, beads were among the objects used as charms to help protect mothers and children (Stine et al. 2000:226). Continuation of the bead use tradition has been well documented in the Americas, where slaves not only brought

their concept of bead use to the New World, they may well have physically transported some beads themselves (Handler 1997). In the Americas, beads were among the media capable of accepting protective magic (Puckett 1926:218).

Power in the bead was associated not only with its form but also with its color. Blue offered the ability to ward off evil and to invite romance (Stine et al. 2000:235-236). Blue's power was not limited to use in beads, but also included use in candles, architecture and even to decorate coffins (see Matternes et al. 2010:214-215). Black beads were worn to retard poor health (Stine et al. 2000:234). White seed beads were worn by women to signify and celebrate motherhood (Francis 1993, in Crist et al. 2000:60).

Beads and bead use are more associated with the world of the living and their archeological representation is more common among domestic areas than in cemeteries. They are very uncommon as burial ground inclusions, usually represented in well under five percent of any assemblage. They tend to be more common in colonial and pre-Civil War contexts than in the later nineteenth century (Stine et al. 2000:224). Owens and Green (2000:428) noted a slight temporal pattern among post-Reconstruction period burials, where bead inclusion declined in later period (>1890s) interments at the Freedman Cemetery in Dallas, Texas. Blue and black colored beads seem to be the prevalent colors identified during later period finds (Stine et al. 2000:224).

When found in mortuary contexts, beads tend to accompany females, children, and conjurers (Stine et al. 2000:234). Beads used for medicinal purposes were usually worn around the wrist or neck (Caton 1995:32). A string of blue, yellow, and black beads were recovered from an adult female at the Cedar Grove Cemetery in Arkansas (Rose and Santeford 1985:69). The African Burial Ground in New York City contained a single female and an infant, each with single strands containing numerous beads (Bianco et al. 2006:399). An isolated eighteenth-century African American yard interment from Charleston was interred with white, black, and clear beads (Matternes 2006). Beads were overwhelmingly represented among adult and subadult females at the Freedman Cemetery in Dallas, Texas (Owens and Green 2000:428). Most of these beads were on necklaces and there did not appear to be a specific color preference. In contrast, black beads were found with a middle aged female at the Elko Switch cemetery and clear glass forms were associated with an infant (Shogren et al. 1989:46-49). A single glass bead was reported with an adult female from the Phillips Memorial Cemetery in Texas (Powell and Dockall 1996:121). Blue, black, and white beads were found on three adults and four children at 9CH875; several of these were accompanied with other objects interpreted as charms (Matternes et al. 2010:257). By the post-Reconstruction periods, the symbolism and meaning attributed to beads may have diversified or assumed a more decorative than symbolic role in African American material culture.

Post-depositional forces shattered most of the 9B1164 beads prior to recovery. Most counts therefore could only be estimated. No less than 204 beads were recovered from four interments (Table 10.21). All beads were small glass artifacts, commonly referred to as seed beads. They averaged about 1.5 to 2.0 millimeters in diameter. White, clear, blue, and black colored beads were identified. With the exception of F-55, bead colors were not mixed (Figure 10.22). F-55 was interred with both clear and blue beads. A small clasp probably helped attach the necklace around the decedent's neck.

Figure 10.22.  
Necklace Clasp with Blue and Clear Beads Recovered from F-55

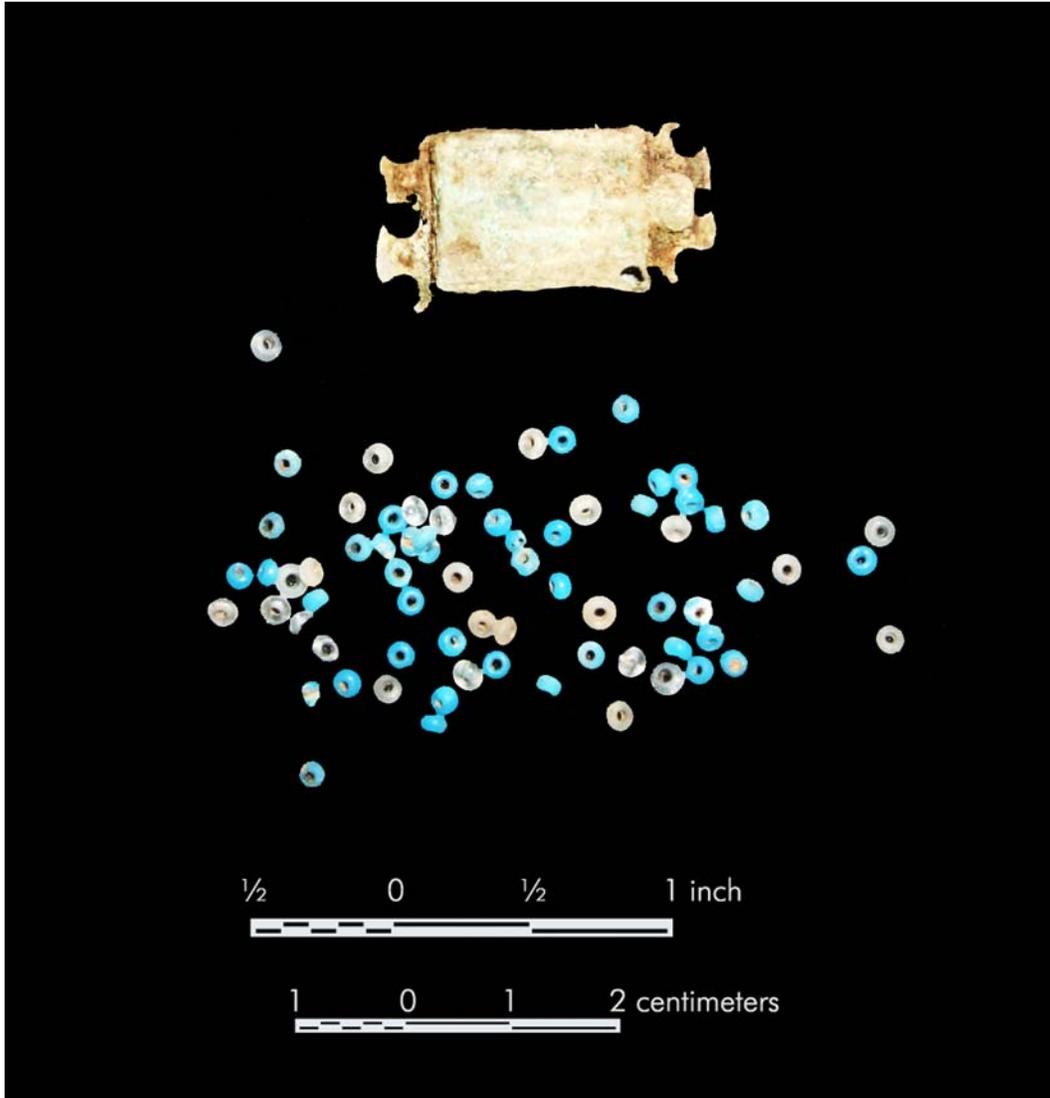


Table 10.21. *Bead Distribution in the Avondale Burial Place*

Feature #	Age	Sex	Color	Form	Quantity
54	Child	Indet.	White	Seed Bead Necklace	>50
55	Child	Indet.	Clear	Seed Bead Necklace	>50
55	Child	Indet.	Blue	Seed Bead Necklace	>50
57	Child	Indet.	Blue	Seed Bead Necklace	>50
59	Child	Indet.	Black	Seed Bead Necklace	4

Use of beads in the Avondale Burial Place mortuary context was exclusive to children. No adults or infants were noted with them. All beads were found around the collar regions and were distributed in patterns suggestive of necklaces. It was likely that these artifacts served to grant the wearer medicinal and supernatural properties, perhaps to overcome the malady which eventually took their lives. Graves containing beads were concentrated to the east central portion of the site, where they were either adjacent or in very close proximity to one another. It is possible that these graves represent a single family group and that the use of beads may have been an individual family tradition.

#### Brooches, Pendants, and Jewelry Clasps

Brooches or decorative pins were defined as jewelry attached by a clasp or pin to the deceased's clothing. Pendants were usually singular forms of jewelry worn around the neck. They came in a wide variety of shapes and styles and were made from materials including metal, plastic, celluloid, rubber, glass, stone, and feathers. Minimally, their appearance indicated that the dead wore some form of attire that was assumed to be more substantial than a shroud. A review of the literature indicated that most brooches were marketed to women and children during life. In general, brooches date into antiquity.

Four brooches and pendants were recovered from the Avondale Burial Place. They were largely but not exclusively the domain of subadults. A gold-colored stamped tin brooch with a floral design was recovered from the chest region of the 4-8-year-old child in F-69. A sheet copper pendant composed of a crescent with at least one sheet copper star attached was placed on the approximate neckline of the infant in F-7 (Figure 10.23A). A review of the available literature revealed no similar forms; it may have been manufactured locally. In African and African American death symbolism, the pendant's shapes had very specific connotations. Stars were viewed as human souls and their journey across the sky mirrored the movement of the soul from the world of the living to the world of the dead (Puckett 1926:464, 569; Thompson 1984:115). The crescent emphasized the reappearance of the moon and symbolized the beginning of a new life after crossing the Kalunga line into the world of the dead (Thompson and Cornett 1981:51). These symbols may well have been used as charms designed to help guide the child's spirit to the next world.

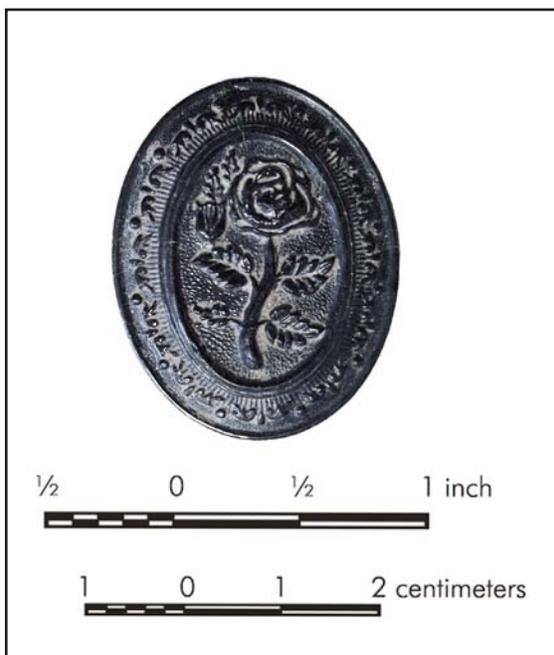
Figure 10.23.  
Jewelry from Avondale Burial Place



A. Copper Pendant From F-7



B. Glass Cameo-Style Choker From F-96



C. Black Glass Brooch From F-97

A pendant, probably worn as a choker, was recovered with the middle-aged women in F-96 (Figure 10.23B). The artifact showcased an oval, clear molded glass disk with molded fruit and foliage (grapes, pears, apples, and several unidentified forms) boldly embossed against a simple bar-textured background. The margin of the disk was molded with undecorated beveling. The backside of this margin had been hand-flaked, providing a textured appearance when viewed from the front. The back was otherwise unmarked. The glass disk was set into a plain brass mount with braided piping around the margin. The undecorated brass provided a golden color to the glass's decorations. A coarse stiff linen-like cloth was attached to the brass mount by a metal loop to form a ruffle around the centerpiece. Finally, bits of a fine-textured black ribbon were found on the back of the decoration and with the base of the skull. This ribbon probably tied the choker around the woman's neck. A shell object, possibly a button was noted with bits of ribbon. This object may have helped to secure the choker around the woman's neck. Cameo-like chokers were very popular accessories during the late nineteenth and early twentieth centuries. Light colored jewelry and bunches of fruit were not media typically associated with nineteenth- and early twentieth-century mourning traditions; it was more likely that the jewelry represented a favored personal adornment. This choker emphasized that brooches and similar forms of jewelry were not the exclusive decorative domains of children.

A black glass brooch or pin was recovered from the top of coffin or the central chest of the 7-12-year-old in F-97 (Figure 10.23C). No mounts accompanied the artifact. The design featured a stemmed rose framed by scrolls and dots on radiants against textured backgrounds. The back of the brooch's margin had been flaked to remove molding overflow, but was otherwise unmarked. Roses were commonly planted on the graves of women and have been used in the past to symbolize martyrdom (Keister 2004:54). The presence of black glass jewelry in a mortuary context implied that this may have been a piece of mourning jewelry, but it must be kept in mind that black-colored jewelry was fashionable during the late nineteenth century. The high relief and cameo-like shape are reminiscent of jewelry made of jet. Less expensive black glass forms in imitation of this jewelry were frequently referred to as French Jet. Roses were commonly used in French Jet jewelry, appearing to make more of fashion statement than a symbolic one. French jet jewelry was popular in the latter nineteenth and early twentieth centuries.

Jewelry clasps found at the Avondale Burial Place indicated that ornamentation was originally attached to clothing; but unfortunately the decorative surfaces of these objects did not survive. Victorian fashions included jewelry made from wood, shell, feathers, molded composites, paper, and fabric, none of which would have survived in the archaeological record. A clasp manufactured from cupreous alloys was identified as part of the bead necklace with F-55 (Figure 10.22).

### CLOTHING AND CLOTHING FASTENERS

Clothing was defined as articles of dress or apparel used to cover and adorn the decedent's body. By themselves, clothing items were generally considered not to be mortuary-related artifacts, however mortuary specific garments were part of the marketed funeral paraphernalia and decedents often set aside clothing specifically for the purpose of burial. Clothing fasteners were

objects used to secure or stabilize clothing around an individual. Clothing and clothing fasteners included boots/shoes, buckles, buttons, collar/cuff studs and cuff links, hooks and eyes, safety pins, bowties, and straight pins.

### Boots/Shoes

One of the more underrepresented forms of attire from the cemetery was footwear. Evidence documenting how the feet were covered was extremely scarce. This lack of information was not solely due to a lack of adequate preservation. Adorning the feet with shoes or socks may not have been a common part of the southern mortuary tradition. Crissman (1994:41) noted that bloating and rigor mortis of the body frequently left the feet too large to fit into shoes. One solution was to obtain commercially available 'burial shoes', which essentially were slippers designed to expand with the decedent's foot (Quigley 2009). If it was not necessary to have the feet visible during the ceremony, they could be discreetly tucked away under a fold of fabric or coffin lid panel.

Shoes are rarely found on African American interments. Less than one percent of the interments from the Dallas Freedman Cemetery were noted wearing shoes; the vast majority appeared to have been buried without footwear (Owens and Green 2000:427). Shoes on the decedent's feet were absent in Chatham County's 9CH875 and 9CH1168 cemeteries (Matternes et al. 2010:313-314) and they were not recovered from skeletons at the First African Baptist Church Cemetery in Philadelphia (Parrington and Wideman 1986:61). Folklorists noted that this was a common component of body preparation (Puckett 1926:84). Rawick (1979, in Davidson 2010:23) noted the words of Christopher Franklin, a former slave from Bossier Parish, Louisiana, "Dey put nice clothes on de corpse. De didn't put on no shoes on it, but they put de socks on" – emphasizing that lack of shoes was a conscious choice among African American presentation teams.

Evidence for shoes at the Avondale Burial Place was found with three individuals. In general, shoe portions coming in contact or within several centimeters of the base of the coffin did not survive. This preservation bias meant that the anterior aspects of the shoe, particularly when elevated by bone were the only portions remaining.

Leather fragments associated with the anterior left tibia were evidence that the individual in F-49 was buried wearing some form of boot. Two linear fragments, running up the leg were each made from at least two layers of leather that had been machine-stitched at tight intervals. Machine-stitched shoes were produced largely after 1862 (Anderson 1968:59; Stevens and Ordonez 2005:13). A row of eyelets ran down both fragments. Laces would have originally secured these elements to each other around the decedent's ankle. Several fragmentary tacks indicated how the uppers had been secured to the lowers. Elements from the base of the calcaneus were composed of multiple pieces of leather that had been secured together, presumably to form a heel.

Only a few fragmentary bits of leather uppers and concentrations of ferrous metal fragments around the feet were all that remained of the shoes found in F-96. Leather fragments on the talus indicated that the footwear extended up to but did not fully cover the ankles. Faint woven impressions left on the interior surfaces of the leather may be evidence that the shoes had a fabric lining or that the individual was also dressed in socks. No evidence of stitching was observed.

Wire nails or tacks were used to attach the uppers to the lowers. Use of these fasteners implied that these were probably work and not 'street' shoes (Stevens and Ordonez 2005:14). Other metal fragments were determined to be fragments of buckles (Figure 10.24). Rectangular buckle fragments exhibited ferrous protrusions suspected to represent teeth; these would have secured a strap to hold the shoe on the foot. No evidence of heels were recovered. Footwear described as "Plow Shoes" in the 1895 Montgomery Ward Catalog exhibited similar hardware to that seen in these boots (Emmett 1969:518).

In F-87, numerous fragmentary elements pointed to the inclusion of work boots with the individual. Lacing margins were formed by two pieces of leather sewn together using close interval machine stitching. Cupreous lacing hooks were secured to these margins using grommets drawn through eyelets. Several smaller leather fragments exhibited stitching, indicating that the boot was probably a composite of many different leather components. Two flat iron shanks were also recovered. No heels or other 'lower' components were identified. Several tacks were present, emphasizing the utilitarian nature of this footwear.

It is important to note that the shoes recovered with F-87 were not physically on the individual, rather were buried either on top of the coffin or more likely on top of the individual's legs. They do not represent attire, rather more likely they were venues for material symbolism. Inclusion of shoes in a mortuary setting has precedence as a metaphor for a journey (Davidson 2010). Parrington and Wideman (1986:61) note that shoes were personal items symbolically required for the journey to the spirit world. They attribute the absence of shoes in African American cemeteries as a "symbolic attempt to hobble the dead and prevent their return to the land of the living." Shoes also served as mediums to control malevolent spirits. Puckett (1926:555) noted that the burial of old shoes was a means of keeping the devil away. African American communities were cognizant that an old boot or shoe was a potential supernatural object; its inclusion meant that the devil or a malevolent spirit, attracted to a newly dug grave might theoretically mistake the shoe for the deceased, thereby trapping or deflecting any malicious intent (Davidson 2010:27). The practice was widespread within African American communities in the United States. The First African Baptist Church Cemetery in Philadelphia, the Dallas Freedman Cemetery, and the 9CH875 Cemetery in Savannah, were among the African American cemeteries where shoes were recovered elsewhere in the grave (Matternes et al. 2010:313-314; Owens and Green 2000:427; Parrington and Wideman 1986:61). The placement of old boots in, or on top of, a coffin may have served as a means of protecting the dead from harmful supernatural forces.

## Buckles

Buckles are objects designed to secure fabric, leather, twine, or other flexible strips of material by the use of hooks or tension. They are not uncommon finds in mortuary settings, but their preservation tends to be less than desired, much to the lament of clothing analysts (Owens and Greene 2000:417). Nineteenth- and early twentieth-century buckles were made from thin metals that tended to corrode easily in subsurface environments and they frequently contained many small metal parts. Without extensive metal conservation, it has often been impossible to accurately identify what type of buckle was represented.



Figure 10.24.  
Boot Buckle Fragments from F-96

Buckles are often components found with belts, but are not commonly part of a mortuary assemblage. Among male clothing, buckles are frequently associated with vest or pant cinches, sock supporters (or garters), cummerbunds, overalls, and with suspenders. Females used buckles in dress and blouse cinches, hats, underwear, sanitary belts, garters, and hose supports. Buckles were also used in some shoe styles. Previous research by Matternes et al. (2010:267-271) has identified no less than seven different buckle styles used by late nineteenth- and early twentieth-century African Americans in mortuary contexts, however, only two forms, both representing cinch buckles, were recovered at the Avondale Burial Place.

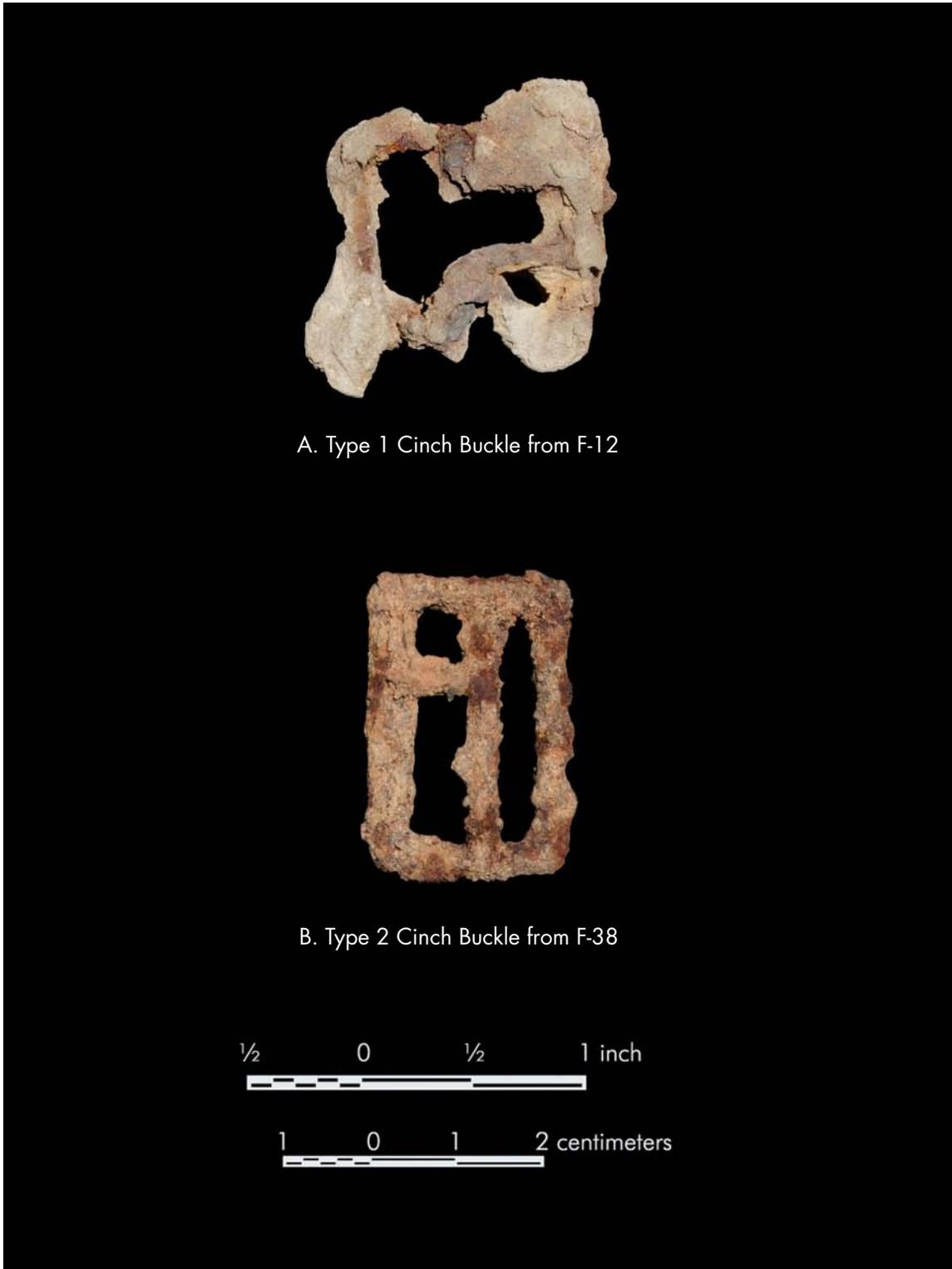
Cinch buckles secured a garment by inserting two or more metal prongs into cloth drawn within the buckle's aperture. Once secured, the buckle prevented the cloth from loosening, providing a custom fit to the wearer's dimensions. Sheldon Hartshorn formally patented these buckles in 1855 (Davidson 2006:179, 180). Hartshorn developed two basic forms. One form (Type 1) exhibited an open-ended ring with the two prongs extending towards a securing plate, which attached at the base of the prongs (Figure 10.25A). The other form (Type 2) attached the prongs to a closed ring; the securing plate was then attached to this ring (Figure 10.25B). They were patented for use on pants and vests, but they may have also been used to secure suspenders (Rose and Santeford 1985:76; Shogren et al. 1989:183). A third type of cinch buckle exhibiting a closed ring with a greatly expanded central bar was uniquely recorded at 9CH875 (Matternes et al. 2010:266-267).

There were eight buckles recovered from eight interments (Table 10.22). Ferrous alloys, possibly with a cupreous/brass coating on some, were used to manufacture these fasteners. Type 2 Buckles were the dominant form (N=5) over the Type 1 form (N=3). The average buckle size for the Type 1 (32.5x24.75 mm) was virtually indistinguishable from the Type 2's dimensions (33.25x22.25 mm) and both forms were universally found along the waistline, implying that both forms were probably used for the same purposes. With the exception of the child in F-53, all buckles were found with adult males. These proportions implied that metal buckles were integral components of the male clothing pattern used by the burial community. These fasteners were probably used to secure trousers or vests on the deceased.

Table 10.22. *Distribution of Buckles in the Avondale Burial Place*

Feature	Buckle Type	Age/Sex	Location	Quantity
12	Cinch Type 1	Adult Male	Mid-Hip (Ventral)	1
26	Cinch Type 1	Adult Male	Base of Rib Cage (Ventral)	1
35	Cinch Type 1	Adult Male	Mid-Hip (Ventral)	1
38	Cinch Type 2	Adult Male	Mid-Hip (Ventral)	1
45	Cinch Type 1	Adult Male	Mid-Hip (Ventral)	1
53	Cinch Type 2	Child	Base of Rib Cage (Ventral)	1
62	Cinch Type 2	Adult Male	Base of Rib Cage (Ventral)	1
101	Cinch Type 2	Adult Male	Mid-Hip (Ventral)	1
Total				8

Figure 10.25.  
Buckles from Avondale Burial Place



## Buttons

Clothing and buttons served as means to transmit social messages about the dead to a viewing audience. The colors, patterns, styles, and symbols assembled in apparel enabled these messages to be directly associated with the dead. Buttons provided indirect evidence of the presence of cloth. In the absence of preserved fabric, they were indicators that the dead were provided some form of apparel. Functionally, buttons were used to fasten a variety of forms of clothing around the deceased. They were designed to be both functional and unseen, or decorative and highly visible.

Late nineteenth- to early twentieth-century buttons were manufactured from a wide variety of materials. Those made from bone, shell, white glass/porcelain, and wood tended to be more utilitarian, while those composed of metal, composition, colored glass, or stone encompassed a more decorative focus. It is important to recognize that exceptions to these trends were common. There were also a wide variety of attachment forms (see Luscomb 1967; Peacock 1972; Pool 1987). Buttons were most commonly sewn to apparel via sew-through holes or ports in the buttons, through a variety of shanks, or were attached using a button punch. Wholesalers and distributors sold buttons by line size. This measure of the fastener's outside diameter was not compromised by the wide variety of shapes possible. Catalog listings indicated that button line measurements approximated the diameter measurements provided in Table 10.23. In general, button forms, composition, and sizes related to the amount of fastening-power behind the button, the mechanics of attachment at a given closure point, and the amount of attention it was designed to bring to the wearer's apparel. Button size uses were based on work presented by Faulkner (1991). Buttons were classified according to their composition, attachment form, and size. When possible, their recovery context was considered to define how they might have served the wearer.

*Table 10.23. Button Measurement Key (After Baer Fabrics 2002)*

Line Size	Diameter (mm)	Diameter (in.)
10	6.35	0.25
12	7.87	0.31
14	8.64	0.34
16	10.16	0.40
18	10.92	0.43
20	12.70	0.50
22	14.22	0.56
24	15.75	0.62
28	17.27	0.68
30	19.05	0.75
36	22.10	0.87
40	25.40	1.00
50	31.75	1.25
60	38.10	1.50
70	44.45	1.75

Buttons comprised a very common artifact form. A total of 444 buttons were recovered (Table 10.24). Prosser buttons were the most common, followed by ferrous metal and black glass buttons. In general, Prosser buttons were reflective of use on undergarments, while black glass and ferrous buttons were used more on outerwear. Buttons served as the best evidence for the type of attire placed on the dead. The general pattern reflected was that the dead were probably not buried in utilitarian clothes, rather that specially made, prepared, or conserved clothes were used. Buttons indicated the probable use of coats, vests, dresses, and gowns to clothe the dead.

Table 10.24. Buttons Recovered from Avondale Burial Place

Button Composition	Total
Bone	11
Brass/Copper	23
Composition	19
Ferrous Metal	95
Glass, Black	28
Glass, Prosser	266
Shell	1
Indeterminate	1
Total	444

#### Bone Buttons

Bone has been a resource for making buttons since well before the birth of Christ. The dense cortical structure of bovine long bones was sawn into strips and individual discs were then cut to the shape and size as needed (Luscomb 1967:25). Both ornamental and utilitarian buttons were produced from bone. Its ability to be cut into a variety of shapes, accept pigments and enable highly polished finishes to be obtained have made it desirable for a variety of highly intricate and decorative forms. Bone's durability made it valuable for utilitarian purposes. Utilitarian forms tended to be for trousers and undergarments (Luscomb 1967:25). They may have also seen service as button backs.

Eleven bone buttons were found among five features. They were all flat, undecorated utilitarian fasteners. One button from F-22 exhibited a rolled margin. Nine bone buttons, representing 81 percent of all bone buttons, were attached using four sewing ports (Figure 10.26A). The one button was a single two-hole fastener found in F-6 and a five-hole bone fastener was found with F-22. With the exception of the infant in F-6, bone buttons were found with adult males. Most were found in close proximity to the pelvic midline, implying use on pants, vests, or coats. Bone buttons tended towards the larger sizes. Most buttons were between 26 and 35-lines, representing large buttons that were made to be seen. The highly polished surface on the button with F-31 may have been done in imitation of mother-of-pearl. Large hand-made bone buttons from the coat line of F-22 were identical in size and form to bone buttons recovered from the Fish Mausoleum in Millidgeville's Memory Hill Cemetery. Interments in this mausoleum date to the 1840s and 1850s (Hammack et al. 2009:12). The remaining two buttons were 16-line fasteners and may have served as undergarment attachments.

Brass and copper buttons are generally considered decorative as well as functional elements, as their metallic luster is designed to draw the viewer's eye to the wearer's apparel. Brass buttons date from antiquity through the modern day. Unfortunately, morphological features on the recovered specimens were not diagnostic or preserved well enough to narrow these temporal dimensions.

There were 23 brass and copper buttons recovered from seven interments. Many of these buttons were extremely corroded, precluding much detailed examinations of their structural and decorative forms. Most specimens originally sported cloth covers, although the surviving cloth was too corroded to identify the type and pattern. Two buttons from F-5 exhibited brass or copper sheaths over a ferrous metal backing. Reconstruction of a partial maker's mark from buttons recovered with F-10 identified that they were made by "...T & Co." (Figure 10.26B) This partial mark could not be tied to any specific button manufacturer.

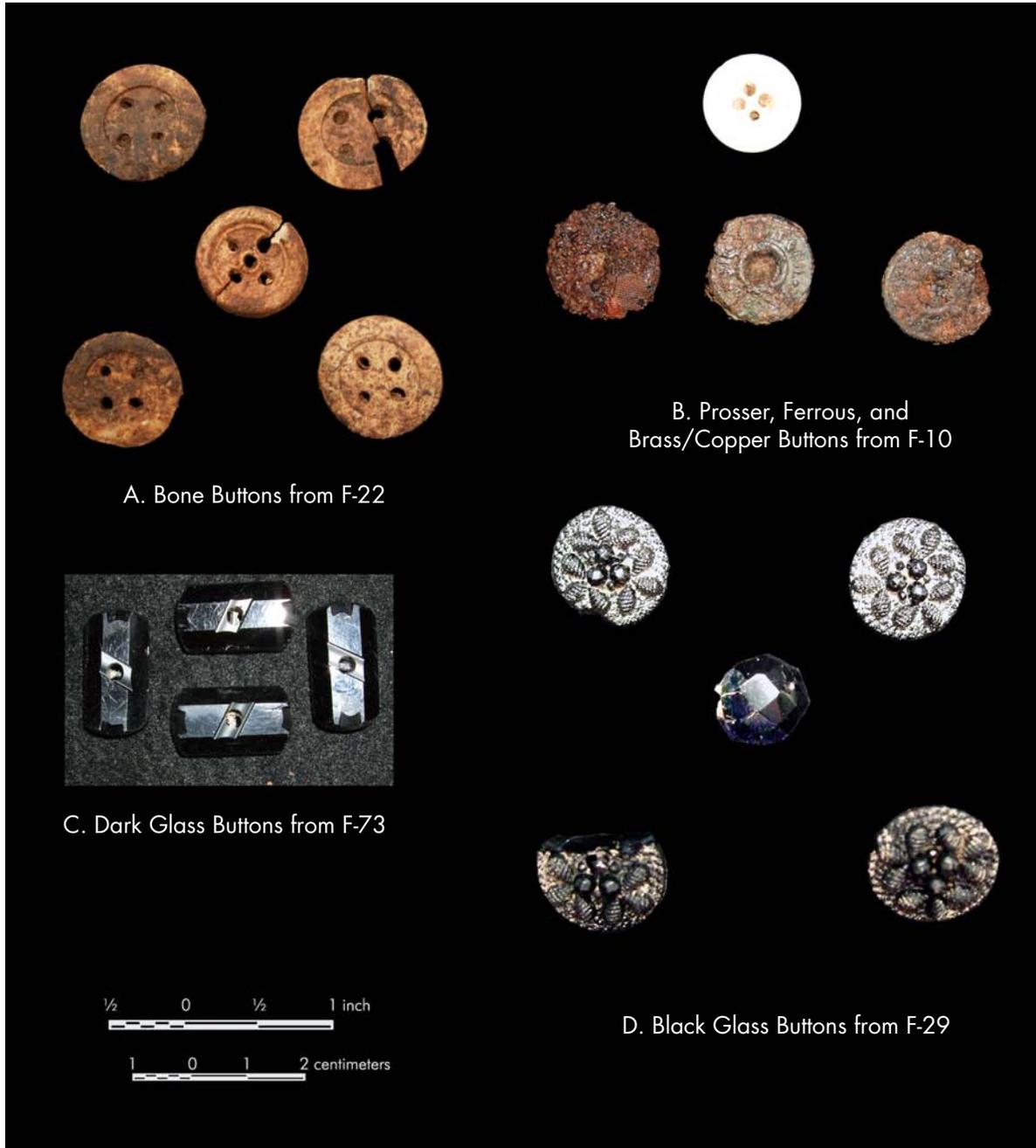
Most specimens in the assemblage appeared to be molded shank fasteners with a port in a stud on the back. One specimen had four holes and two others exhibited two ports. Among the sizeable specimens, over half were from buttons larger than the 22-line size; while the rest were less than the 20-line in diameter. These latter specimens came from a single jacket worn by the gentleman in F-52. Brass buttons tended to be recovered from around the body's midline; their size indicated that most of the brass buttons were designed for use as outer garment fasteners. Given that almost 70 percent of the brass buttons were associated with adult males, these large sized buttons probably represented coat or vest fasteners. The seven remaining buttons, representing 30 percent of the assemblage, came from sub-adults. Their line measurement sizes may also reflect size-appropriate buttons for their outer garments. Conversely, Owens and Green (2000:413) have noted that smaller sized buttons were commonly used to fasten pant flies and suspenders. Brass pant buttons were widely available from catalog outlets for a minimal expense (Amory 1986:344; Emmet 1969:86; Schroeder 1969:1004). Among the remains of a single teenaged female in F-3, the recovered brass button was probably used to fasten or decorate a dress or gown.

#### Composition Buttons

Composition buttons were molded buttons made from a variety of materials including rubber, resin, and/or early forms of plastic. Their shapes were limited only by the manufacturer's ability to create a suitable mold; there are literally thousands of forms (Cienna 2008). Nelson Goodyear's patents in 1849 and 1851 marked the emergence of rubber button production (Luscomb 1967). Patent information on other composition buttons indicated that they were introduced sometime in the 1860s and 1870s; Davidson (2006:179) placed production of these fasteners between the 1870s and the late 1920s.

Nineteen composition buttons were recovered from 9B1164. All were dark brown-black, a color consistent with the manufacturing process, although potentially also as an intentional mortuary symbol. All buttons appeared to have a considerable amount of hard rubber in their matrix. Composition buttons from the Avondale Burial Place represented simple 22-, 24-, and 30-line two-hole fasteners recovered from the approximate chest and hip regions. These sizes reflected dimensions in keeping with coats and vests. The buttons were found exclusively with adults and among male interments.

Figure 10.26.  
Buttons from Avondale Burial Place



Some of the composition buttons exhibited manufacturing backmarks. Buttons backmarked "Novelty Rubber Company," referred to the Nelson Goodyear and Novelty Rubber Company. During the 1880s and 1890s, the India Rubber Company succeeded Nelson Goodyear (Luscomb 1967:101). This company's backmarks also included "Novelty Rubber Co". Around the turn of the century, the India Rubber Company became the American Hard Rubber Company and switched back to using the Goodyear backstamps (Cienna 2009). Goodyear, and these later firms, produced a variety of rubber and rubber-composition buttons for both private and federal markets. Backmarked buttons for the gentleman in F-65 probably represented vest or jacket buttons.

#### Ferrous Metal Buttons

A wide variety of ferrous alloys have been used to manufacture buttons since antiquity. Prior to the invention of the Prosser button they were probably the most common form represented in the archaeological record. Iron's surface can receive a variety of finishes, and it was easy to manufacture a large number of buttons in a relatively short period of time. Its strength and ability to mold intricate designs have made iron an integral part of the garment fastening industry.

Unfortunately, the subsurface environments at the Avondale Burial Place promoted oxidation and corrosion of iron alloys; very little was determinable about these buttons and their place in the mortuary record. A total of 95 ferrous buttons were found distributed among 15 interments. Almost 87 percent (N=13) of these fasteners were found with adults and all adults that could be reliably sexed were identified as males. Only two subadults, an infant in F-14 and an adolescent in F-1, were buried with ferrous metal buttons.

Most of the measurable ferrous buttons were relatively large (25-36 line) and tended to be found around the abdominal area (N=66); these probably represent coat, dress, or vest buttons. Medium-sized (21-24 line) buttons were observed largely in the pelvic region and occasionally at the wrists (N=29). These were interpreted as pant and coat or short cuff fasteners. Three small (10-13 line) buttons were found with F-106. While their sizes may be evidence of a vest or undergarment, their placement on top of the decedent's right waist and forearm could not be reliably linked with any known male clothing pattern. Ferrous buttons tended to be flat, exhibiting attachment using one (N=3), two (N=1), or four (N=26) ports. Twelve buttons were attached using some form of molded shank. The remaining buttons were too poorly preserved to identify attachment form. Evidence of fabric covers was noted on 33 ferrous buttons and may likely have been used to cover the rest (Figure 10.26B).

#### Glass Buttons, Black

Black glass buttons were popularly viewed as evidence of mourning wear. They were common finds on surviving nineteenth-century mourning clothes. Black (or indigo blue) however was a fashionable color and the simple presence of black buttons cannot be construed only as evidence of mourning attire. Davidson (2006:179) noted that their use was most extensive between 1861 and the 1890s, with manufacturing ending by the 1910s-1920s. Unfortunately, black glass buttons rarely possessed maker's marks.

A total of 28 black glass buttons were recovered with four individuals (F-25, F-29, F-66 and F-73) in the Avondale Burial Place. These interments were all adults or teenagers and all but F-73 were probably women. Perhaps the most effective use of black glass buttons were the 21 rectangular fasteners found with F-73 (Figure 10.26C). These 11x20-millimeter buttons were positioned with the long sides oriented horizontally and were arranged in two rows running down the front of the trunk's midline. While poor skeletal preservation precluded sex verification, this button arrangement was very similar to that seen in some surviving nineteenth-century dresses. The exposed surfaces of the F-73 buttons exhibited three facets running the length of the button with an oblique bar etched into the center; this bar contained the attachment port. Two sewing ports were present on the back of the button. Unlike other buttons these ports angled medially to form a single aperture on the button's front. The short ends of the buttons were curved convexly.

A single circular jet-black glass button was found near the center of the chest of the individual in F-25. This 19-line fastener was slightly dome-shaped with a series of triangular flat-surfaced facets cut across its surface. The molded single port shank on the button's back probably helped fasten a garment to the decedent's bodice. A similar sized globular button, exhibiting no fewer than 20 triangular facets around a central diamond-shaped apex, was found at the collar line of the woman buried in F-29 (Figure 10.26D). Four additional black glass buttons were found down the front of her midline. These molded buttons bore three clusters, each bearing a bead and three bulbous objects (pine cones?), set against a coarsely textured background. These buttons probably served to help fasten the dress's front. A single double-ported, oval-fronted button was found with the gentleman in F-66. The button's small size and 'orange peel' dorsal surface implied that its purpose was more utilitarian than decorative; it was likely that the button had more in common with the white glass Prosser buttons than the other, more decorative black glass buttons. Sprague (2002:111) noted that black Prosser-style buttons were produced (albeit in much smaller quantities than white forms) after 1848. While ferrous buttons were noted among the Avondale Burial Place's male interments, the use of black glass decorative buttons was more strongly allied with females.

#### Glass Buttons-Prosser

Decorated and undecorated opaque white porcelain/glass buttons that exhibited an 'orange-peel' pitted dorsal surface and a sunken dorsal cavity where the sewing ports were located are referred to as Prosser buttons. These buttons were patented in America in 1841 and remained popular until about 1910 (Albert and Kent 1949:35; Crist et al. 2000:46; Sprague 2002:111). They were used for utilitarian purposes. Prosser buttons are extremely common in mortuary environments. They were inexpensive, widely available, and could be adapted to secure a variety of textile products, including outerwear, undergarments, sleeping gowns, and possibly shrouds. Prosser buttons were sometimes sewn as a button back to ensure that larger buttons were held securely on clothing and have been observed on commercially produced burial clothes.

There were 264 Prosser buttons recovered. They ranged in size between 7 and 30-lines, with a mode of 17-lines. Most (N=260) exhibited four sewing apertures. These buttons reflected considerable simplicity, emphasizing their utilitarian nature. A plain white, slightly convex surface was noted among 229 of these fasteners (Figure 10.26B). Some decoration was noted. The marley of 23 buttons were marked with small, embossed spokes or ticks. Blue and pink colored

buttons were found in F-49 and F-57. Buttons from F-75 had black transfer printed or painted surfaces; a blue painted rim was noted on buttons from F-31 and buttons from F-67 and F-102 exhibited calico transfer printed surfaces. Rolled rims were noted on buttons from F-31 and F-87. Most of these buttons appeared as the only Prosser button with the individual or they were matched with like forms. There were no strong relationships between decoration and the decedent's age or sex.

The vast majority of these buttons came from the thoracic region where they would have attached shirts, blouses, gowns, and possibly shrouds around the individual. Those along waistlines may have been used as pant fly or undergarment fasteners. Prosser buttons found in association with the forearms and wrists were interpreted as shirt cuff buttons.

The distribution of Prosser buttons favored use among infants and children both in terms of the quantity of buttons and number of individuals buried with them (Table 10.25). Over 57 percent of the Prosser button-bearing assemblage was devoted to infants and children. Among subadults, Prosser buttons tended to be found either as single representations along the nape of the neck or were found in a series down the front or back of the chest. This latter pattern was more common and was reflected in the large button to decedent ratio. It was possible that these buttons reflected the use of sleeping, dressing, or christening gowns. The single button at the back of the neck probably indicated a simple garment that opened from the back, while the multiple button concentrations may have reflected garments that opened considerably farther down the body. Multiple buttons may also reflect use as a form of decoration rather than as purely functional objects.

About 24 percent of the Prosser button-bearing assemblages were identified as males. Even if all indeterminate adults in the sample were female, there was a proclivity for males to be accompanied with these fasteners. Males tended to be buried with multiple buttons and their distribution strongly favored use to fasten shirts, sleeve cuffs, and possibly undergarments. In contrast, Prosser buttons were extremely scarce among females. Only four women were interred with them and all but F-51 were single button representations. Prosser buttons among females tended to be found at the nape and probably reflected fasteners for gowns, dresses, or undergarments. The distributions of these buttons were evidence that use of these utilitarian fasteners varied by age and sex.

*Table 10.25. Distribution of Prosser Buttons*

Individual	Number of Buttons	Proportion of Buttons	Number of Interments	Proportion of Interments	Button to Decedent Ratio
Infant*	15	0.056	3	0.049	5:1
Children**	26	0.097	4	0.065	6.5:1
Female	4	0.015	3	0.049	1.33:1
Male	84	0.315	15	0.245	5.6:1
Indeterminate Infant/Child	117	0.439	28	0.459	4.17:1
Indeterminate Adult	20	0.075	8	0.131	2.5:1
Total	266	0.997	61	0.998	

\* < 3 years old.

\*\* 2-18 years old.

### Shell Buttons

Shell buttons were an affordable alternative to more expensive lustrous buttons. By peeling off the outer surface of some molluscs, particularly river mussels, a mother-of-pearl surface could be exposed on top of a thick durable matrix. Beginning in the 1850s as a cottage industry, and with mass production implemented in the 1890s, shell button production became an important industry along the rivers of the American South and Midwest (Claassen 1994:1, 4, 80). Shell buttons were manufactured in a wide variety of styles and were frequently sold as 'pearl' buttons. Shell buttons were gradually replaced by plastic buttons as the utilitarian button of choice in the early to mid-twentieth century.

A single shell button accompanied the gentleman in F-65. It appeared to be a flat undecorated blank cut into a circular shape. Its position in the lower abdomen implied that it was used to fasten a shirt, vest, or pair of trousers. It may also have served as a decorative accent.

### Clothing Studs (Collar Studs, Cuff Studs, and Cuff Links)

Clothing studs were relatively common finds among Victorian and Edwardian era interments. These artifacts enabled separate clothing components to be assembled and worn as a single unit. The most common fixtures for this apparel were collar studs, cuff studs, and cuff links. Collar studs allowed detachable shirt collars to be tightly fitted around the wearer's neck, providing them with a solid, rigid collar that could be changed and cleaned separately from the shirt. Collar studs typically attached at the base of the throat and the nape of the neck. Similarly, cuff studs held shirt cuffs rigidly in place. Collar and cuff studs were frequently interchangeable. Owens and Green (2000:421) noted that the presence of two cuff studs on each sleeve were indicative of shirts designed to be worn with a jacket. While studs tended to be found around the neck and lower arms, their small size and light weight contributed to their migration in open, water-filled spaced within coffins. Matternes et al. (2010:280) have cautioned that their recovered locations may not reflect where they were originally used.

The need for a device to attach the open ends of clothing dates into antiquity. Prior to the eighteenth century, buttons, strings, and ribbons were the most commonly used fixtures. The cuff link, precursor to the cuff stud, emerged in the eighteenth century as a solution to achieving tight cuff fits around a wrist that was smaller than the hand. It has remained in use, albeit primarily as a decorative object. Cuff studs were a means of tightening and attaching cuffs to the end of sleeves. Detachable collars appeared in the 1820s and studs emerged as a fashion industry necessity soon after (Maginnis 1996). In the 1880s, George Kremetz patented a machine to manufacture one-piece studs, however, it is unclear if the utilitarian studs found at the Avondale Burial Place were manufactured by this device (Nixon 2008). The popularity of collar and cuff studs generally faded after World War I as fashions shifted to other forms of attire. Collar studs and cuff links are still in manufacture.

Studs and links were found with four individuals, all representing adult males. These fasteners were divided into utilitarian and decorative devices. Utilitarian studs were typically undecorated, designed to hold the garment together and not catch the viewer's eye. All utilitarian studs with

gentlemen in F-12 and F-66 were solid, single-part objects. The glass studs with F-66 exhibited flat smooth bases. These paired studs, found along the collar line indicated that this man wore a collar requiring two attachment sites to the shirt. One stud's length was about a millimeter less than the other (12.1 versus 13.3 millimeters); Owens and Green (2000:421) noted that the shorter studs tended to be used in collar fronts. The man in F-12 sported a resin/plastic stud. The base of this fastener was textured with nested circles (Figure 10.27A). This textured surface probably helped grip the shirt and collar. Utilitarian collar studs like these were readily available from a variety of mail order catalogs for three to eight cents a dozen, depending on composition (Amory 1986:940).

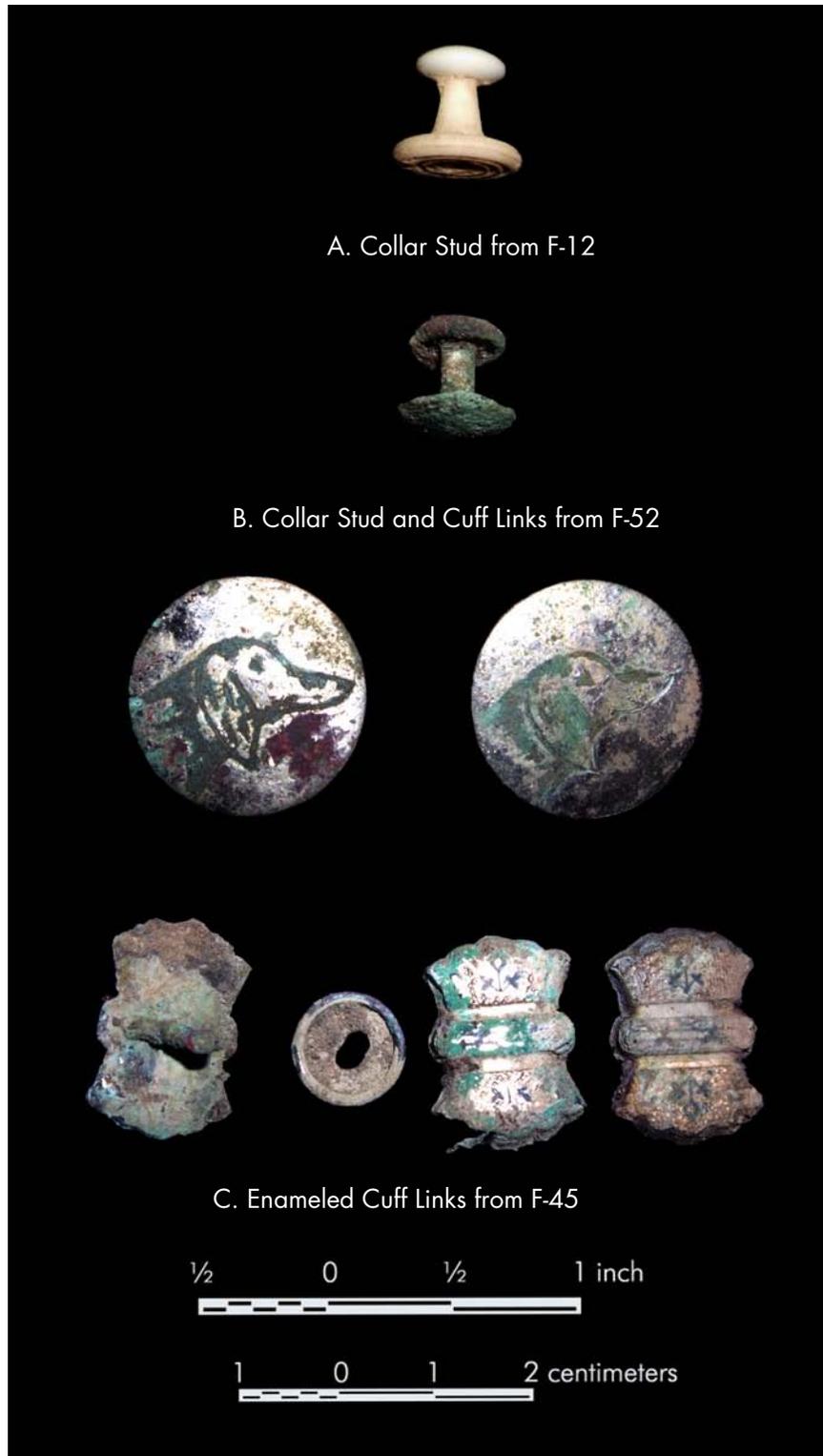
Decorative studs were often elaborately embellished with a variety of shapes and designs and were made of materials designed to draw the viewer's attention. Objects popularly regarded as cuff links have been defined as decorative studs. While there were a wide variety of decorative stud base forms, only solid base designs were recovered. Folding bases were exclusive to cuff links. In F-52, a single brass solid base stud was recovered near the gentleman's throat (Figure 10.27B). Similar studs were recovered from with eight individuals from 9CH875 (Matternes et al. 2010:281). Gold enameled, ferrous tin cuff links were found by the wrists of the man in F-45 (Figure 10.27C). The outer surfaces of these fasteners were shaped like paired crowns, stylized feathers, bow ties, or similar forms and were highlighted with black enamel paint. A pair of nickel-plated brass or copper cuff links accompanied F-52 (Figure 10.27B). These fasteners had been etched, probably by hand, with portraits of a dog in profile. These may well be indicative of an interest or joy in the decedent's life.

As noted earlier, studs and cuff links were found only with adult males from the Avondale Burial Place. This stands in contrast to the distribution of these fasteners from contemporary African American cemeteries in Chatham County, Georgia, where they were also found with women and children (Matternes et al. 2010:284). No less than a third of all the studs recovered from these burial grounds were with women, who appeared to be wearing shirts or blouses with detachable elements. The absence of these devices in the Avondale Burial Place implied that some of the clothing styles worn by the Avondale Burial Place women differed from those along the Georgia coast.

## Bow Tie

The origins of the bow tie are generally placed in the seventeenth century. During the 30 Years War, Croatian mercenaries hired by France wore loosely fitted scarves around their necks to help keep their shirts closed and to protect their necks from the cold winds and rains of Northern Europe (Pohl 2008). King Louis XIII was reportedly impressed with the accessory, and the French upper class adopted the "cravat" (French for 'Croat' or 'Croatian') as a fashion statement. Cravats were sometimes secured using a string, frequently tied in a bow; this may be the origin of the bow tie. The sequence of evolution from the cravat to the bow and neckties is unclear, but over time, the loose flowing cravat transformed into a variety of large and small, loose- and tight-fitting, soft or stiff bowties that are part of modern formalwear.

Figure 10.27.  
Studs and Cuff Links



Throughout the nineteenth century, men of all classes wore long neckties knotted tightly around their shirt collars. They were made from a variety of materials including, most notably, wool and silk. A review of mercantile catalogs emphasized that they were marketed in different lengths, widths, colors and patterns. They often provided the only color in a man's black and white suit. At least 85 different knots were developed for the tie (Academia Cravatica n.d.). While the bow tie appears to have always been an alternative neckwear accessory, by the 1890's, men (and women) began to wear the smaller, stiffer bow tie as a fashion statement. The bow tie was small and symmetrical, and often extended past the neckline by only a few inches (Stamper and Condra 2011). These ties accentuated the stiff detachable collars and helped to hide the seam between shirt and collar. By the mid-twentieth century, the bow tie fell out of day-to-day use; its modern use is generally associated with highly formal dress wear.

Fragments preserved beneath panes of viewing plate glass documented that the gentleman buried in F-5 sported a black bow tie. The bow tie was constructed of a thin black woven fabric and survived largely because the glass pane provided an air and moisture pocket. The width of the tie was around 1.9 centimeters (0.75 in.); it did not appear to flare at the ends. The tie was not a 'clip-on' rather portions of a cloth band extending around the right side, emphasized that it fully encircled the gentleman's neck. Little of the actual bow survived, but it probably was fastened using a standard bow tie knot. A concentration of ferrous and copper-lined, fabric-covered buttons was found with the individual suggesting he may have been buried in a coat and vest. The addition of the bow tie suggests the gentleman was well dressed for transition to the afterlife.

Burns (2002) noted that many men were buried in their best clothes or, when the family could afford it, in special white clothing. Based on a survey of postmortem photographs, Aldridge (2008) found that during the nineteenth-century burial clothes worn by adult males were divided into two major categories, day dress and shrouds. Often (though not exclusively) men were dressed in clothing that was considered their 'Sunday Best,' which could have included a shirt, tie, vest, coat, and trousers (Aldridge 2008). Four of the individuals included in Aldridge's study (2008) were wearing bowties. Even into the twenty-first century, men typically are buried in their best clothes. James Van der Zee, a prominent African American photographer, compiled a collection of African American postmortem photographs from Harlem, New York. These photographs show several African American men wearing their best frock coats, and many of them sported neckwear (Van der Zee et al. 1978). These historical images emphasize that formal neckwear were part of the African American male's burial attire.

## Hooks and Eyes

Hooks and eyes were designed to conceal the fastener by securing the clothing within a cloth overlap. They are frequently placed at the neck and waistlines for dresses, blouses, and skirts (Vogue Sewing 1980:335). The use of hooks and eyes for clothing predates the nineteenth century. Brass forms were manufactured in the 1830s, and regained popularity in the 1850s, after the introduction of wire forms in the 1840s (Kiplinger 2001). Their popularity increased dramatically in the 1890s through 1920s when clothing styles shifted to a need for small, hidden fasteners capable of withstanding a considerable amount of stress. Hooks and eyes were common components to late nineteenth- and early twentieth-century corsets (Victoriana 2007) Hooks and

eyes were also used with men's pre-knotted bowties and ladies neckwear. Examples of the hook and eye are clearly illustrated in neckwear depicted in Emmet (1969:79).

Partly due to their small, fragile nature, hooks and eyes are not commonly reported from mortuary contexts. At the Dallas Freedman Cemetery, hooks and eyes were predominantly encountered with females, where they tended to be located in the abdomen (Owens and Greene 2000:422). Similar findings were noted at 9CH875 (Matternes et al. 2010:284-285). Those found around the waist were interpreted as skirt fasteners, while others were probably dress or blouse fasteners. Hook and eyes found with infants were found near the neckline, probably indicating use on a sleeping or christening gown.

Hooks were made from a single strand of wire bent to form a double stranded arm (near the center of the wire) that projected outwards and back, towards the two ends bent in the shape of a heart (Figure 10.28). Measureable forms were about 11 millimeters long and were made of cupreous alloys. Two forms of eyes have been encountered in Georgia's African American cemeteries. The first, and the form exclusively observed at the Avondale Burial Place, consisted of an omega-shaped wire strand with two small eyelets at the end to allow attachment to the garment. A second form, sometimes referred to by the modern sewing industry as a hook and bar, exhibited a pair of eyelets at each end with a straight elevated bar between them. No precedence for this form was noted at 9B1164.

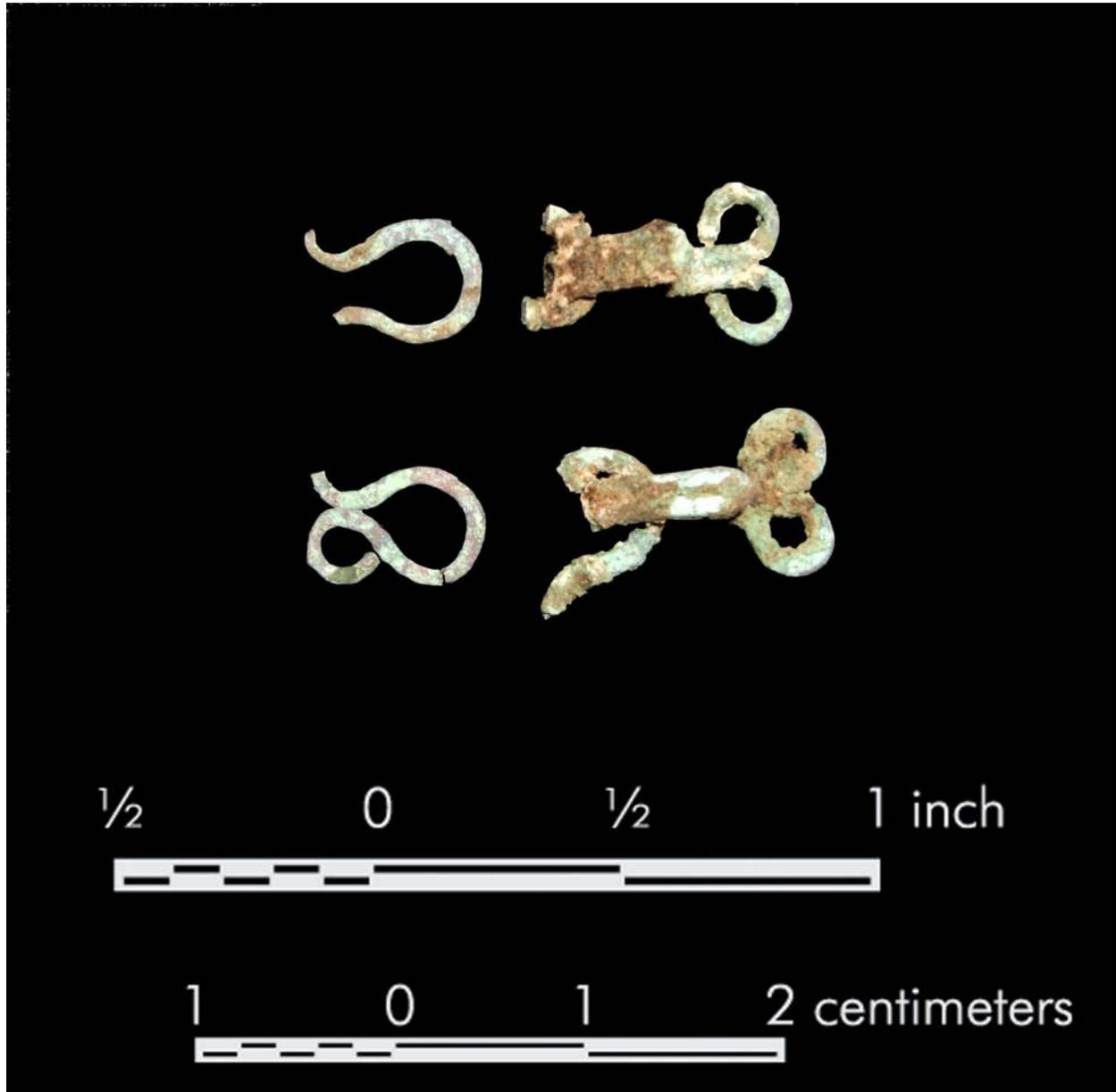
No less than eight hooks and eyes were part of the apparel used to clothe women in F-18 and F-25. These were found along the body's midline although it was unclear if they were originally attachments for the front or back of the garment. They were believed to represent attachments for blouses, dresses, and/or skirts. All recovered hooks and eyes were extensively corroded and most were incompletely represented. Their presence should therefore be considered a conservative estimate of the original assemblage.

### Safety Pins

Safety pins were uncommon artifacts in the Avondale Burial Place. They were generally indicative that fabric and other objects were fastened to the decedent's clothing. In mortuary contexts safety pins were commonly used as fasteners for diapers, clothing, shrouds, and occasionally for jewelry. Unlike most clothing-related artifacts, they were probably not intended to be visible. They would have helped the decedent's clothing fit in a more lifelike, socially pleasing manner. In contexts where no other clothing artifacts were encountered, they may be evidence for the use of shrouds. Safety pins were first patented by Walter Hunt in 1849, but mass production and distribution did not occur until the late 1870s (Davidson 2006:187). Subsequent to Hunt's patent a wide variety of forms were introduced, largely during the late nineteenth century. Safety pins are still manufactured today.

Safety pins were classified based on a system outlined by Owens and Green (2000:424-427) and modified by Matternes et al. (2010:286-289). They were typed using a binary alphanumeric system emphasizing head/shield and base forms. Head forms were designated by a numeric type assignment and base types were noted by an upper case letter. To add stability to the shield or sleeve, manufacturers frequently added corrugations (called ribs) to these basic forms. If present, ribs were noted by adding a lower case 'c' after the shield or sleeve type (e.g. 3cD or 3Dc). For

Figure 10.28.  
Hook and Eye Fasteners from F-18



partial typing of fragmentary safety pins, the designator 'X' was used to fill in for a missing descriptor (e.g. 'XD', 'X-D', '3X' or 'X'). An illustration of the head and base forms observed are provided in Figures 10.29 and 10.30.

Safety pins were poorly preserved at the Avondale Burial Place. They were composed of ferrous or cuperious/brass metal alloys and were frequently corroded into little more than a metallic stain. A minimum of 14 safety pins was identified among 12 interments (Table 10.26). The assemblage revealed six variants, yielding minimum or approximate manufacturing start dates for 10 specimens. Full Back Shields were the most common head forms recovered (N=6) with singular representations of Minimal Shields, Partial Back Shields, and Oblique Tail head forms recorded. There were also six examples of the standard or looped base and four unlooped bases present. One Type H partial sleeve loop was observed. Form diversity probably indicated that these artifacts were obtained from a wide variety of sources that would have included dry goods, garment, catalog sales, and possibly from the local textiles industry. These data indicate that individuals with safety pins were clearly interred during the post-Emancipation era and likely near the close of the nineteenth century.

Safety pins were predominantly found among children (N=8), where fasteners were found or thought to have been located in the ventral abdominal area. While likely representing diaper fasteners this location may also indicate fasteners for shrouds. Similar locations were noted among the adult man and women in F-24, F-90, and F-105. These safety pins likely held similar undergarments designed to retard or absorb body leakages or helped to arrange the decedent's clothing in a more acceptable manner. F-12's pin along the shirt collar may have been used to provide a better fit or help secure a detachable shirt collar.

Table 10.26. Safety Pins Recovered from the Avondale Burial Place

Feature	Individual	Type	Quantity	Location	Manufacturing Date
10	Infant	6B	1	Abdomen	>1876**
12	Male Adult	XH	1	Throat (Ventral)	No Date Found
24	Male Adult	8A	1	Right Ribs (Ventral)	>1888*
24	Male Adult	XA	1	Right Hip	>1878**
44	Child	XB	1	Abdomen	No Date Found
54	Child	XA	1	Abdomen	>1878**
69	Child	6A	1	Abdomen	>1876**
71	Child	6B	1	Abdomen	>1876**
90	Adult	1X	1	Hips	No Date Found
90	Adult	XX	1	Abdomen	No Date Found
91	Child	6B	1	Indeterminate	>1876**
99	Child	5B	1	Abdomen	>1883**
103	Child	6cX	1	Abdomen	>1876**
105	Female Adult	6B	1	Right Hip (Ventral)	>1876**
		Total	14		

\* Catalog Appearance in Owens and Greene (2000:426) \*\* Patent in Davidson (2006:185)

Figure 10.29.  
Safety Pin Head Forms

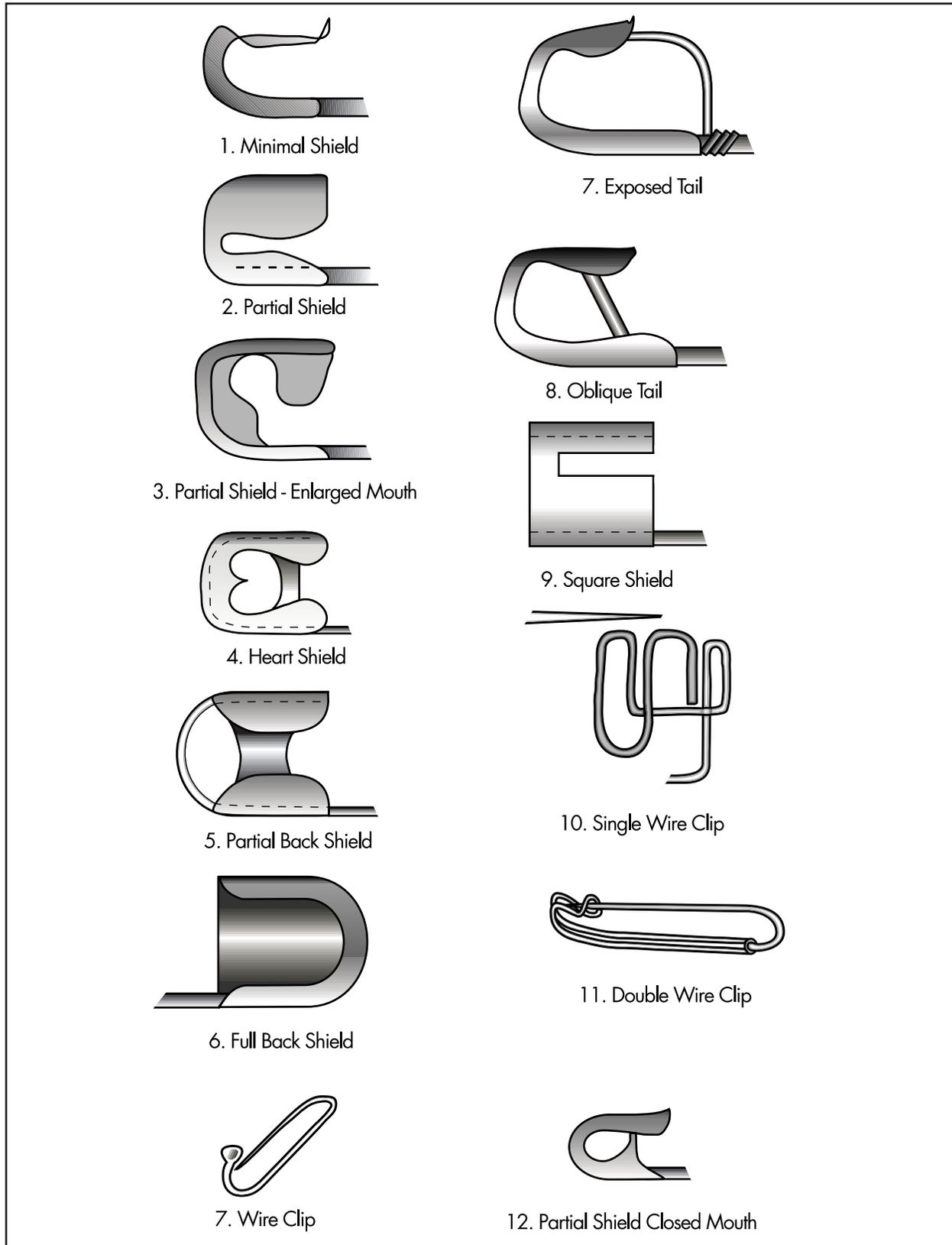
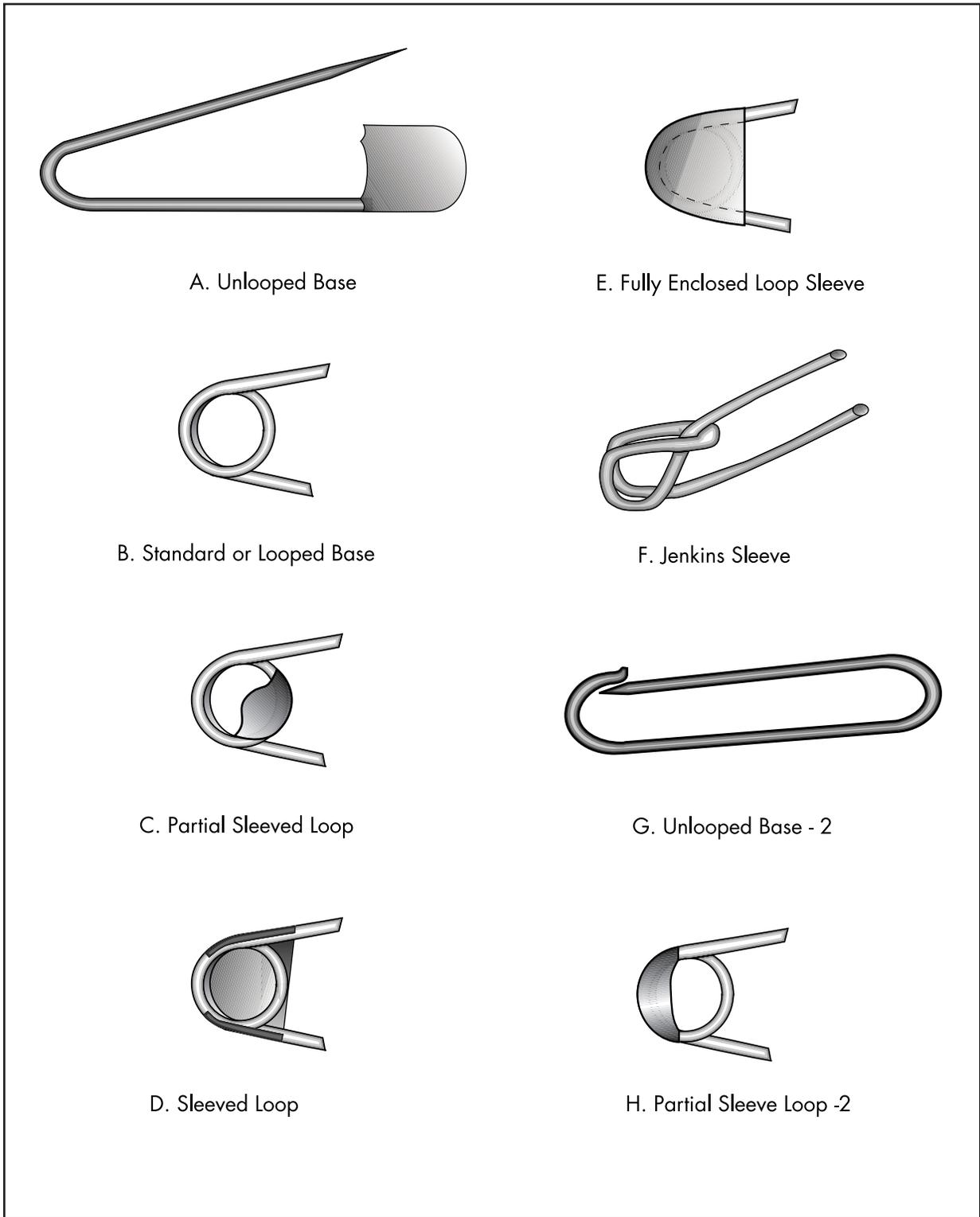


Figure 10.30.  
Safety Pin Base Forms



## Straight Pins

Straight pins were utilitarian objects not specifically designed as mortuary artifacts. They do appear with some regularity in a variety of mortuary settings. They were generally associated with securing clothing, shrouds, hair, or coffin liners. With origins in antiquity, early American forms of straight pins consisted of a coil of wire wrapped around the shank of the pin shaft and then secured by hammering or stamping (Noel-Hume 1969:254). Their replacement, the solid one-piece pin, was patented in 1824. While iron pins were commonly manufactured, brass was the preferred medium as they resisted rust and corrosion. A review of late nineteenth- to early twentieth-century mercantile catalogs indicated that brass pins tended to be twice as expensive as iron.

A total of 31 straight pins were recovered from 16 graves. All pins were solid one-piece fixtures. The pins were heavily weighted in favor of brass/copper (N=27) over iron forms (N=4). Both round and flat heads were noted. A single measurable iron specimen yielded a length of 30 millimeters. Complete brass pins ranged from 10- 35 millimeters in length, with an average length of 22.5 millimeters (Table 10.27). Some brass pins were noticeably more robust than others, yielding measurements on the higher end, while more delicate forms accounted for the shorter measurements. Pin preservation was too incomplete to sort pins into meaningful size samples. Size differences were noted in straight pins from 9CH875, where Matternes et al. (2010:291) suggested that larger sized fasteners represented hat or hairpins, while the smaller may have originally served more specialized upholstery or sewing purposes. Pin sizes for 9B1164 fell exclusively within the modal ranges for pins from 9CH875 and may not have represented either of these functional differences. Most of Avondale Burial Place's pin lengths are within a 10-millimeter range; these variations may have come from pins made by different manufacturers or may reflect functional differences.

Table 10.27. Frequency of Straight Pin Lengths from 9B1164 and 9CH875

Length in Millimeters	Quantity (9B1164)	Quantity (9CH875)*
Iron Straight Pin (9B1164)		
30-34.99	1	
Brass/Cupreous Straight Pins		
5-9.99	0	1
10-14.99	2	1
15-19.99	1	3
20-24.99	4	8
25-29.99	0	20
30-34.99	2	17
35-39.99	1	2
40-44.99	0	2
45-49.99	0	1
50-54.99	0	1
55-59.99	0	1
Total	11	57

\*Iron and Brass Pins Pooled.

The distribution of straight pins among the human assemblage was far from uniform. One pin was found with an adult female, another with a female teenager, and the rest were from children and infants (Table 10.28). Straight pins were not artifacts associated with adult males.

Matternes and Gillett (2007:56-57) were able to demonstrate that the distribution of straight pins could be used to infer how they were used. Among infants and children, at least eight straight pins were recovered from the abdominal region, an area that overlapped the distribution of safety pins, and possibly indicated a similar use to fasten diapers. The distribution of pins around some individuals, particularly the infant in F-2 was reflective of how pins may have been used to secure a shroud. Individuals buried with straight pins were not buried with safety pins. Unlike safety pins, most straight pins (N=11) were found around the decedent's skulls. These locations implied use to secure hair or apparel around the head. The child in F-58 was interred with no less than four straight pins surrounding the individual's face. This pattern harkened to the use of funeral napkins. In some funeral rituals, the decedent's body is completely covered in cloth with the face left exposed. Prior to closure of the coffin, a cloth was pinned down to the cover the face, an allusion to the cloth that covered Jesus' face after the crucifixion (see John 20:7; (Seward 1921:291). Other pins were found underneath and alongside the interment. These were probably used to help secure coffin linings around the deceased. Straight pins may have also been used to help secure clothing around the individual's body in a more appealing manner.

Table 10.28. *Distribution of Straight Pins at 9B1164*

Feature	Individual	Quantity	Location	Composition
2	Infant	1	Chin	Ferrous Metal
2	Infant	1	Waist, Ventral	Brass/Copper
2	Infant	1	Chest, Ventral	Brass/Copper
2	Infant	1	Skull	Brass/Copper
2	Infant	2	Skull	Ferrous Metal
3	Female 14-16y	1	Abdomen	Brass/Copper
4	Infant	1	Abdomen	Brass/Copper
10	Infant	1	Skull, Superior	Brass/Copper
11	Child	1	Coffin Margin near Right Knee	Ferrous Metal
14	Infant	1	Indeterminate	Brass/Copper
19	Infant	1	Abdomen	Brass/Copper
19	Infant	1	Abdomen	Brass/Copper
19	Infant	1	Skull	Brass/Copper
19	Infant	1	Skull, Dorsal	Brass/Copper
19	Infant	1	Skull, Dorsal	Brass/Copper
20	Child	1	Skull	Brass/Copper
21	Female Adult	1	Foot, Left	Brass/Copper
30	Child	1	Shins	Brass/Copper
36	Child	1	Abdomen	Brass/Copper
48	Child	1	Abdomen	Brass/Copper

Table 10.28. *Distribution of Straight Pins at 9B1164*

Feature	Individual	Quantity	Location	Composition
54	Child	1	Skull	Brass/Copper
58	Child	1	Abdomen	Brass/Copper
58	Child	1	Abdomen	Brass/Copper
58	Child	2	Face, Left	Brass/Copper
58	Child	1	Face, Right	Brass/Copper
58	Child	1	Face, Middle	Brass/Copper
58	Child	1	Skull, Superior	Brass/Copper
82	Child	1	Chest, Dorsal	Brass/Copper
83	Child	1	Skull, Superior	Brass/Copper
	Total	31		

### PERSONAL ACCESSORIES

Personal accessories are objects that would have been carried or used by the individual for personal care, on a day-to-day basis. Objects that fell into this classification included combs, dolls, hair pins, pestles, tobacco pipes, purses, rings, and tokens.

#### Lice Comb ('Flea Comb' or 'Nit Comb')

Head lice were a recurrent health risk in many rural nineteenth- and early twentieth-century communities. Less than aggressive hygiene, shared grooming accessories and clothing, poor understanding of the head louse's life cycle, as well as a propensity for a single head louse to lay hundreds of eggs during its 40-day lifetime, led to frequent struggles to control the spread of these pesky parasites (Weems and Fasulo 2007). Head lice (*Pediculus humanus capitis*) can cause pediculosis, an inflammation and itching of the scalp; unlike the closely related body louse (*Pediculus humanus corporis*), the head louse cannot spread diseases like typhus.

Lice are host specific and the common head louse has probably evolved with humans from common parasitic primate ancestor (Reed et al. 2004). They have been encountered in a variety of human remains dating as early as 10,000 years ago (Araujo et al. 2000). There have been a variety of ways in which head lice were removed. Some methods, including the use of sulphur, arsenic, and mercury, may have effectively removed the louse, but they exposed the patient to health risks that could have compromised their immune systems (Morewitz 2005). A safer and time-tested means of removing head lice was to capture them in a fine-toothed comb and manually crush them between the fingernails.

Lice combs date back to at least the fifth or sixth century A.D. (Palma 1991). Lice combs were frequently double sided, with two rows of teeth sharing a common spine. No occurrences of lice combs in other mortuary contexts were found, however, a bone specimen was recovered from Fort Crawford, a Federal Period military encampment in Prairie du Chien, Wisconsin and fragments of another were found Nebraska's Fort Atkinson (Carlson 1979:70; Roller 2006).

The Avondale Burial Place specimen lice comb was nearly identical to forms made over a thousand years ago (Figure 10.31). It was recovered from the pocket area of the gentleman in F-62. It was approximately eight centimeters long and was composed of a hard black resin or plastic. Two rows of very narrowly spaced teeth were set at opposing ends of the comb, much like the earlier forms. Similar combs were available through a variety of mercantile catalogs (Amory 1986:935; Emmet 1969:106; Schroeder 1969:1002). The presence of a lice comb is evidence of a parasitic health risk agent in the burial community. Modern versions of this comb are manufactured by the pet care industry to control flea infestations.

### Porcelain Doll

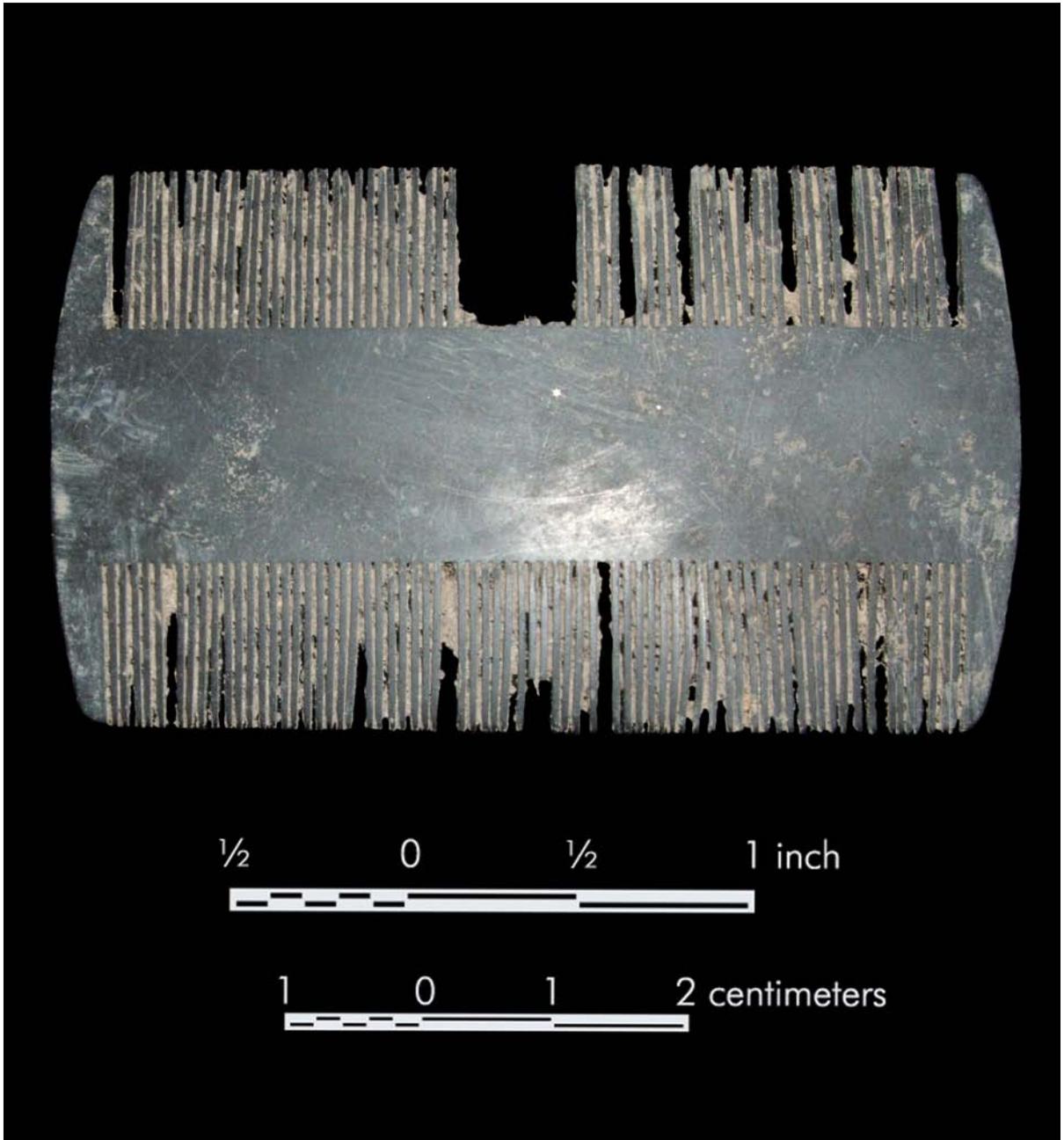
Few artifacts were more poignant than the doll found tucked in the arm of the small child in F-34. Toys, and dolls specifically, were relatively rare inclusions in graves and their presence in African American mortuary contexts has only been occasionally observed. Most notably, nine dolls were found inside coffins of children and females at the Dallas Freedman Cemetery (Owens and Green 2000:438). More commonly, and as seen at the Avondale Burial Place, toys were included on the surface of graves (e.g. Ingersoll 1892:69, Matternes et al. 2010:198; Owens and Green 2000:438). Dolls have a long-standing history in African and African American communities. Durable forms associated with children and from North American contexts tend to reflect more European and European American manufacturing traditions.

While the use of ceramics to make doll components can be traced in antiquity to least the Classical Greek era and porcelain doll heads were being manufactured in Europe as early as the 1750s; these did not become popular and available for mass consumption until the 1840s (Coleman 1968:118; White 1966:21). These dolls featured a glazed ceramic surface (popularly referred to as 'China dolls'), molded hair and hand painted facial features (Campbell 2006:489). Kaolin clays in Germany and France were the preferred medium for porcelain doll parts. Early porcelain dolls (those made before the 1860s) were made using two-part molds; seamless slip cast molding was introduced in the late 1860s (Noel-Hume 1969:317). This innovation dramatically increased doll production and drove down doll prices. By the 1880s, slip cast molding became the dominant manufacturing technique (Coleman et al. 1986:243). Porcelain dolls were gradually replaced in the early twentieth century by composition, celluloid, rubber, and other less breakable forms.

Nineteenth-century porcelain dolls typically sported a glazed surface; however, in the 1860s and 1870s, unglazed porcelain or bisque dolls with more intricately molded facial features and real hair were introduced (Campbell 2006:487; Coleman 1968:118). Because doll heads were hollow, this added facial molding tended to make doll heads front heavy (White 1966:23); this is probably why dorsal aspects of doll heads tend to be more completely represented in the archaeological record than more ventral, facial parts. Hairstyles tended to mimic what was fashionable at the time.

Ceramic doll parts were sold either as component sets, allowing the buyer to apply the body of their choice to the doll or they were attached to wooden, kid, or cloth bodies. Homemade bodies were frequently made from available materials that would have included cloth, wood, and leather.

Figure 10.31.  
Lice Comb from F-62



Cork was considered the best commercial stuffing, but hair, excelsior, cotton, and sawdust were also very commonly used (Coleman et al. 1986:761). Surviving handmade examples were also stuffed with rags or wool.

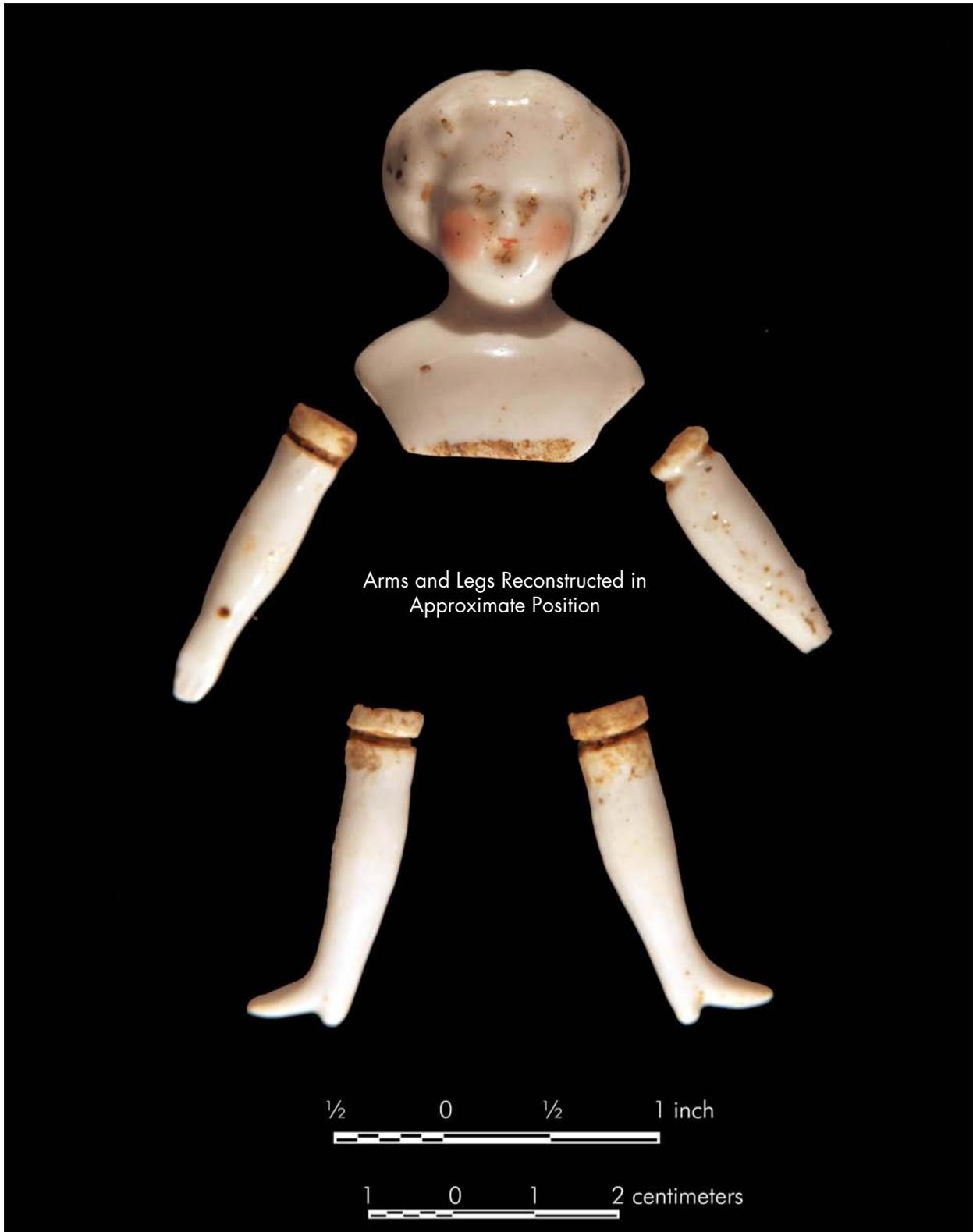
Ceramic doll making became a specialized industry in Germany. By 1880, German dolls dominated the market (Campbell 2006:487). Doll making factories frequently specialized in making one particular component (Bach 1985:viii; Coleman et al. 1986:760-761). Buyers would purchase the parts and assemble them into a single doll and market the finished product under their own brand name. It was common, therefore to find identical parts on dolls made by different companies. Changes in export tariffs meant that dolls made after 1891 were marked with their country of origin (White 1966:27). Mass produced dolls made prior to this date rarely possessed maker's marks (Bach 1985:vii).

No elements of the F-34 doll's soft body survived, which can be inferred to indicate that they were made of a nondurable material (Figure 10.32). Infield measurements from the mold margin at the shoulders to the top of the legs indicated that the body was only about 5.3 centimeters (2.09 inches) long. The total length of the doll (crown to heel) was 10.44 centimeters (4.11 inches). A fully clothed five-inch long doll similar to the one from F-34 was listed in a John F. Stratton catalog from the 1880s as selling for 25 cents (Coleman et al. 1986:1124).

Remaining parts of the doll consisted of five components, a head and shoulder bust, two arms, and two legs. The head was 42 millimeters tall with a maximum shoulder width of 32 millimeters (about 1.25 inches). Specks of black paint were present in the hair and traces of red enamel defined the mouth. The interior of the shoulders had been trimmed to remove excess clay and to make it easier for the head to be mounted to the body. This surface and those of the arm and leg joints were faintly coated with an amber-colored adhesive similar to the vegetable glue commonly used in doll construction (Coleman et al. 1986:762). The head was heavy for its size and lacked a conduit through the neck; it was likely that the head was solid and not hollow. Very general facial features had been molded onto the head; residual paint indicated that most facial details had been painted on the glazed clay surface's exterior. The cheeks had been rouged by pink color that was applied underneath the glaze. The wavy, molded hair was parted down the center and braided or looped to form a ridge along the neckline. This hairstyle has been found on a variety of dolls made by German factories in the 1870s and 1880s (Doll Reference.com 2010).

Ceramic portions of the legs were only knee-high, measuring 39 millimeters long, and were incised to allow drawstring attachment. Left and right sides appeared to be interchangeable. Molding of the right thumb indicated that the 38-millimeter long arms were side specific, although in the field, it was noted that the right arm had been mounted on the left side. The left hand had broken off prior to deposition and the margins of the break were slightly worn. The toy was undoubtedly used and loved before inclusion in this grave. A review of period catalogs noted that ceramic doll parts were available separate from the bodies, however this doll's dimensions were smaller than those listed in any trade publication. Dolls of this size may have only been available as finished units.

Figure 10.32.  
Porcelain Doll Parts Recovered from F-34



All ceramic elements were composed of white, hard-paste kaolin clays similar to those used by German manufacturers in Thuringia and Northern Bavaria (Coleman et al. 1986:773-774). The interior of the shoulders was partially glazed much like the outer surfaces. This manufacturing technique was common among German produced dolls (Coleman et al. 1986:952). The arms ended in spatula-like hands and were indicative of a late nineteenth-century manufacture (Noel-Hume 1969:318). The lack of a marked country of origin may indicate a pre-1891 manufacture. Prior to the 1880s, doll legs tended to be relatively thin and sported flat-heeled boots (Fawcett 1964:27; Noel-Hume 1969:318). Subsequently, legs started exhibiting more bulbous calves and high-heeled boots. Unfortunately, the F-34 doll's legs were thin, only slightly bulbous and clearly shod with high-heeled boots; these may reflect a more transitional leg form. Unglazed portions of the shoulder's interior exhibited a rough, uneven surface reflective of a press mold construction. This generally supported a pre-1880 manufacturing date, but Coleman et al. (1986:952) noted that German manufacturers used both forms in the late nineteenth century. Most likely the doll was made in the 1870s or 1880s.

### Hair Pins/Bobby Pins

Hair pins or bobby pins were functional devices whose primary purposes were to secure the wearer's hair in a fashionable or pleasing arrangement. They were made from a wide variety of materials with metal, plastic, or rubber commonly representing at least one of the pin's material components. Hairpins were frequently garnished and used sometimes solely for decorative purposes; bobby pins were typically unadorned. Both forms have their origins in antiquity.

Four bobby pins were recovered with the adult in F-70. These simple, U-shaped ferrous objects, roughly three centimeters long, were noted behind the skull. Two pins exhibited straight arms, while the third was probably crimped. They may have helped hold an object like a bonnet or ribbon in place. A review of period mercantile catalogs revealed that straight and crimped bobby pins were readily available (Emmet 1969:87; Lyons 2007; Schroeder 1969:1002). Typically, they were sold in lots of 50 or 100 pins.

### Green Glass Pestle

Pestles are linear handheld objects with a working surface that is shorter than its length. They are used to grind or crush ingredients into smaller forms against the sides and base of a bowl or mortar. Mortars and pestles are generally made from materials that are harder and more durable than those they are designed to mill. Pestles are commonly made from ceramic, stone, metal, wood, or glass. Their origins go into antiquity, where various forms of pestles can be identified in ancient cultures on all continents.

A small aqua/light green glass pestle was recovered with the infant in F-56 (Figure 10.33). It exhibited an elongated hourglass shape with an enlarged, rounded base and a flat, slightly bulbous top. The pestle was made of solid glass and exhibited no bubbles, embossing, or pontil marks. The pestle's working surfaces and sides of the top were frosted, either intentionally or from extensive use.

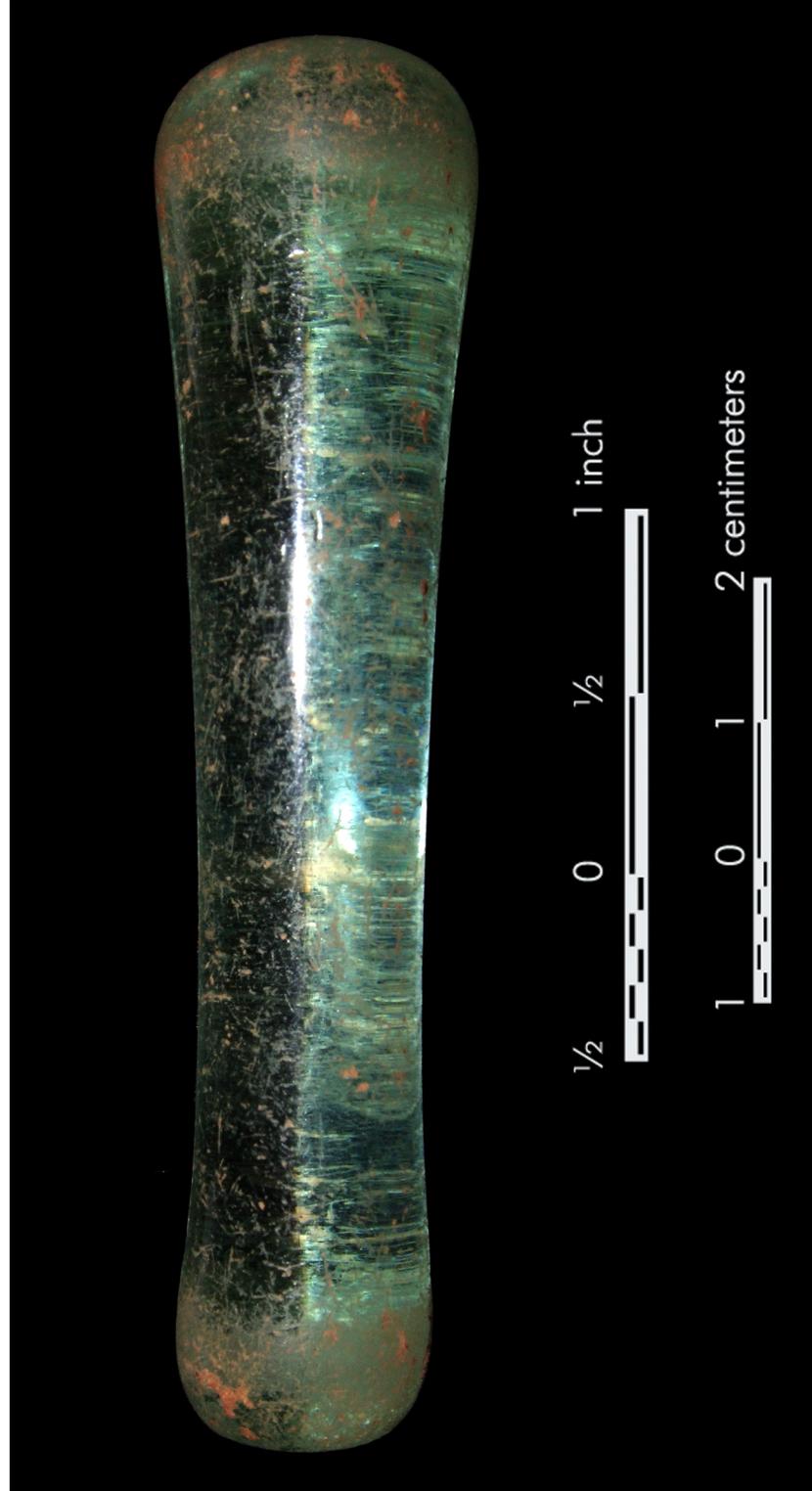


Figure 10.33.  
Aqua/Light Green Glass Pestle from F-56

Glass pestles offered many qualities that made them desirable pharmaceutical tools (Sonderland 2004). In general, glass mortars and pestles were cheaper than those made from other materials. While pestles made of glass lack elasticity, they are capable of withstanding considerable compressive force. They are also easier to clean than other forms. Glass surfaces abrade considerably less with use than those coated with metal, wood, stone, or ceramic. As a result they do not provide the prepared compound with a supplemental flavor or color. Glass's smooth surface also acted to inhibit microbial growth. Unlike other pestles, they can be used to combine both liquid and dry compounds.

Nineteenth- and twentieth-century pestles were generally manufactured and sold by the mortar's capacity (usually expressed in dry ounces) (Richardson and Richardson 2003:70). The pestle from F-56 was approximately 84 millimeters long (3.25 inches). While no matches could be found in the available literature, this length indicated it was designed to accommodate mortars with a less than six-ounce capacity. Mortars and pestles designed for use in chemical and pharmaceutical applications vary in sizes from one ounce to several gallons. A review of the literature noted that those made for the kitchen were rarely less than 8-12 ounces; pestles associated with these mortars were roughly 6-8 inches long. It is most likely that this object was originally designed for medicinal purposes. Glass pharmaceutical mortars and pestles were common early and mid-nineteenth-century appliances (Richardson and Richardson 2003:70).

The presence of a pestle in a mortuary context has not been previously recorded, nor could any precedent be found in the available ethnographic literature. A variety of interpretations can be inferred for its presence; these include use as a toy, as a teething ring, or as a prop to help level the body or the coffin. Another possibility is that it possessed metaphysical qualities. A pestle was included in a spiritual cache recovered from a pre-Emancipation context on the Eastern Shore Estate in Maryland (Patel 2011:16). As objects that crush curative substances, pestles were designed to come into direct association with medicinal compounds. Drawing an analogy from the way beads soaked in medicines and oils were believed to transfer restorative qualities to the afflicted, the pestle may have also been seen as a vehicle capable of transferring the healing qualities of medicine to the victim (Caton 1995:31). The pestle, therefore, may have served as a charm aimed at improving the infant's health.

## Tobacco Pipe

Tobacco pipes have their origins in antiquity, where they are recognized as a pre-Columbian Latin American invention (Hightower 1976:30). African American use of smoking pipes can likewise be traced to African origins in antiquity (Davidson 2010; Handler 1983). While pipe smoking was not entirely unknown in Europe, the tradition of smoking tobacco did not become fashionable and widespread until the sixteenth century (Noel-Hume 1969:296). Tobacco pipes were not common European mortuary inclusions. Among the West African Dahomey people, the dead man's pipe was filled with tobacco and then shared for his enjoyment by the men and women charged with watching the body (Georgia Writer's Project 1972:237). The finished pipe was then interred with its owner. Archaeological analogs to this were reported by Armstrong and Fleishman (2003:47), Handler (1997:106-109, 113), and Matternes et al. (2010:299). Smoking pipes were occasionally left on the surface of African American graves where the smoke was believed to provide a material form to the spiritual presence (Gundaker 1998:130). While typically

considered a 'male' artifact, nineteenth-century consumption of tobacco with a pipe was a part of some European and African American female subcultures (Joiner and Smith 2004:82; Yamin 2005:11).

Artifacts from tobacco use were included with the gentleman in F-31. A small white kaolinite or ball clay pipe bowl was recovered immediately above the individual's skull. Pipes typically have not been recovered in this location and given that the coffin's foot was probably canted above the head, it was very likely that pipe traveled down slope to its recovered location. The exact context of this pipe within the coffin should be considered suspect.

The pipe consisted of a two-centimeter diameter bowl with a short stem, about three centimeters long made from a two-piece mold (Figure 10.34). The stem met the bowl at a 90-degree angle and contained a port for mounting a wood, bone, rubber, or ceramic mouthpiece. It was likely that a ferule would have been needed to insure a tight fit between stem and bowl. The pipe could also have just as easily been mounted with a more expedient quill or reed mouthpiece. There were no decorations or maker's marks.

The aperture for a reed stem was undamaged; sooting on the interior of the vessel and blackening of the bowl's surfaces indicated that it had been used. White kaolin clay pipes, reflecting an American, French, or Italian manufacture were in common use throughout much of the nineteenth and early twentieth centuries (Pfeiffer 1981:109). They were generally mass produced inexpensive objects designed for limited use and disposal. Short stemmed pipes, sometimes referred to as 'stub-stemmed' pipes, were produced by American companies including the Pamplin Pipe Factory, the American Clay Pipe Works, and Akron Smoking Pipe Company during the second half of the nineteenth century (Reckner and Dallal 2000:73, 146). The heel-less, near 90-degree turn in the pipe elbow was consistent with bowl forms made during the mid- to late nineteenth century (Oswald 1951, in Noel-Hume 1969:303). A similar pipe illustrated in Hightower (1976:31) was identified as from the 1880s and sold prepackaged with a bowl full of tobacco; it, typically, sold for a nickel.

### Coin Purse

Portions of a ferrous rim and very fine (less than one millimeter wide) mesh were recovered with F-94. The rim exhibited a slight convex curve. The mesh was mounted flush with the rim with the outer margin being flat while the interior edge was scalloped or crimped to hold the mesh in place. The rim is very similar to ferrous hoop spines used to enclose chatelaine-style coin purses. Most chatelaine purses were lined with fabric and their exteriors were covered in a variety of fabric, bead, sequins, or leathers. No surface covers remained; however, at least two layers of a fine woven fabric were preserved by iron oxidation. No coins or other objects were found with the object.

Purses are uncommon mortuary finds. Coin purses were recovered from several adult interments at the Dallas Freedman Cemetery and at 9CH875 (Owens and Green 2000:440; Matternes et al. 2000:300). Purses have their origins in antiquity and by themselves are not diagnostic to any particular time period (Chenoune 2005). Chatelaine bags were re-introduced in the 1870s as small bags intended to be worn on the wrist for holding tickets or coins (Pinkerton 2009).

Figure 10.34.  
Clay Pipe from F-31



Examples of purses with the same sizes and shapes as those recovered were noted in the 1895 Montgomery Ward and Company Catalog and the 1902 Sears and Roebuck Catalog (Amory 1986:931-933; Emmet 1969:100-101). Coin purses were marketed as accessories for both men and women.

## Rings

Rings are defined as decorative metallic bands worn on the fingers or toes that at least partially encircled the digit and also served as an important means of social communication. In American culture, the form and composition of a ring, its placement on the hand, and any attached symbols communicated important information about the wearer including their marital status, socio-economic status, educational background, organizational affiliations, birth date, or religion. Many Americans recognize that relatively plain bands on the fourth left hand digit are viewed as wedding bands, while those on females with stones or eye-catching ornamentation are indications of engagement. Conversely, men and women wearing a band on the fourth right hand digit were perceived as widows or widowers. The use of rings can be traced into antiquity. Panati (1987:22) noted that the use of rings to communicate marital status has been documented as early as ancient Egypt.

A total of five rings were recovered from four adult individuals (Table 10.29). Rings were distributed equally between men and women with the number of rings (N=3) being slightly in favor of females. Most of the rings recovered were plain undecorated bands. Rings were examined according to where they were on the hand. Wedding bands were positively identified with F-31, F-33, and F-96 (Figure 10.35). The gentleman in F-86 probably wore a widower's band (on the right hand). The woman in F-96 wore two rings, a wedding band and another with a stone inlay mount; this latter form probably represented an engagement ring.

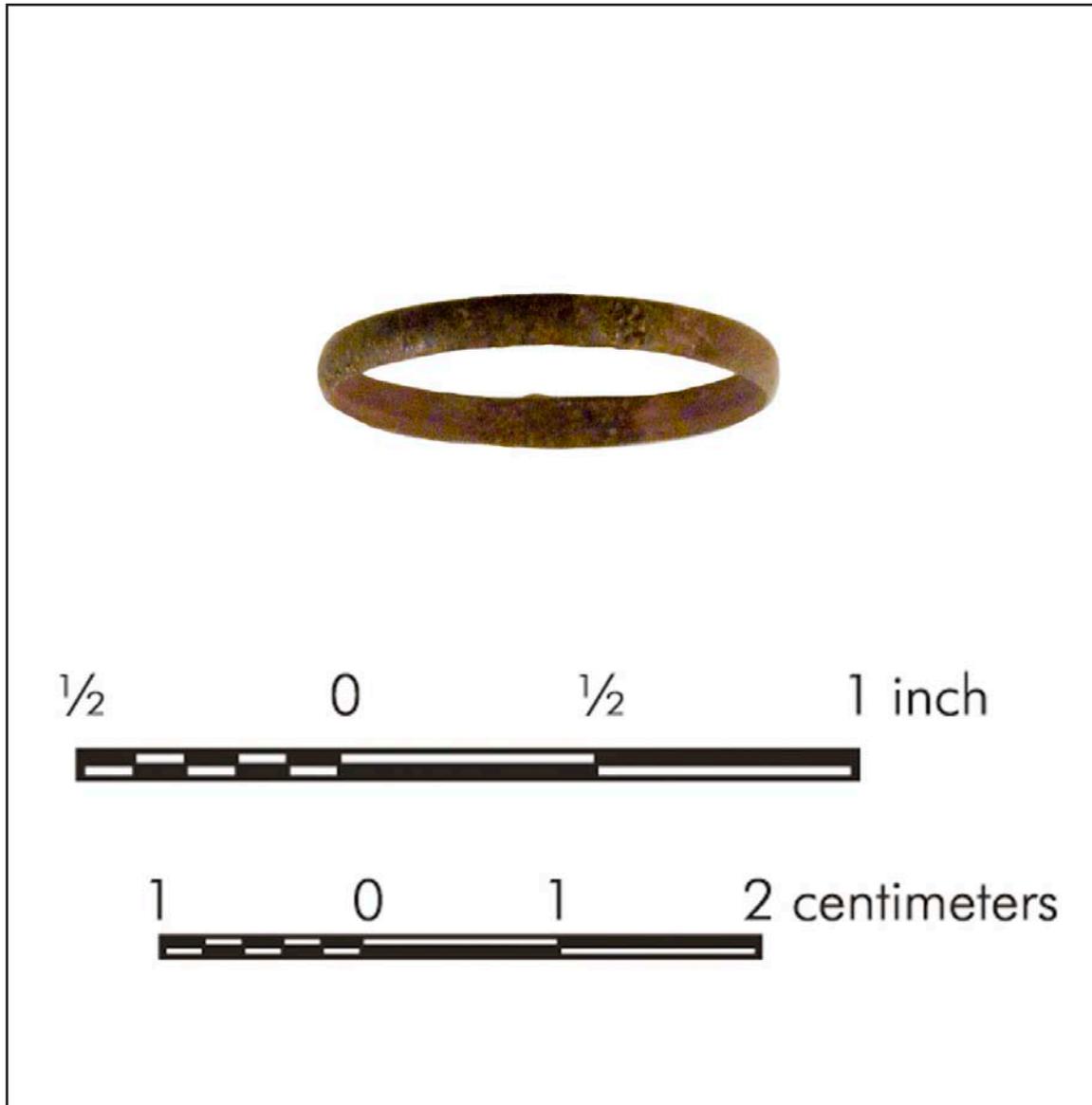
*Table 10.29. Rings Recovered from the Avondale Burial Place*

Feature	Age/Sex	Location	Quantity	Interpretation
F-31	Adult Male	Left Hand	1	Wedding Band
F-33	Adult Female	Left Hand	1	Wedding Band
F-86	Adult Male	Right Hand?	1	Wedding Band
F-96	Adult Female	Left Hand	1	Wedding Band
F-96	Adult Female	Left Hand	1	Decorative Band
		Total	5	

## Promotional Token

In general, tokens are objects designed to symbolize someone or something. While they may come in a wide variety of shapes and forms, promotional tokens are designed to entice the holder to purchase or support an object, person, organization, or idea. They tend to be relatively small and made predominantly of metal or wood. Most promotional tokens appear similar to coins but they possess no legal monetary value. They were frequently designed to be carried in the pocket

Figure 10.35.  
Wedding Band Recovered from F-31



or purse or worn on a string or ribbon. They were commonly distributed as a form of advertisement, often providing the bearer a special price, service, or benefit when presented at the appropriate establishment. When displayed, they frequently communicated that the wearer as part of an elite group. The use of promotional tokens can be traced back into antiquity.

Commonly referred to as 'Hard Times Tokens,' this type of political media symbolizes the economic depression blamed on Jacksonian and democratic policies that focused on federal fiscal management plans based on hard currency (Fuld 2004; Low 1898a, 1898b, 1899). The Panic of 1837 and subsequent depression resulted in the hoarding of hard currency and shortages of coinage. Many hard times tokens bore a strong resemblance to U.S. coinage of the time. They were probably intentionally sized close to the large cent to lampoon the currency's lack of value. Some forms bear busts of Columbia that are similar to those on the large cent. The substitution of "Not One Cent for Tribute" for "One Cent" not only prevented charges of counterfeiting being leveled on the token's private manufacturers but also served as a political slogan aimed against tribute payment to the Barbary Pirates (Low 1898b:48-53; Marotta 1998). Other, more biting political slogans were rampant. While none of the tokens were struck by the Federal government (and hence carried no official monetary backing), some forms were unofficially accepted by merchants as legal tender.

A single promotional token was recovered from the neck region of the adult in F-86. The token was circular with a diameter of 0.875 inches (2.7 centimeters). It was made of a cupreous alloy. Generally these tokens were composed of copper, although one specimen in the Alan S. Fisher collection was listed as made of brass (Fisher 2010). A small hole was drilled near the margin and fibers, preserved by absorption of copper salts, indicated that cotton filaments (probably a string) once passed through it (Singley 2010). The object was undoubtedly worn around the individual's neck. On close examination, the bust of a man in military garb was minted on the obverse side (Figure 10.36A) and a scale inscribed "Democrats" and "Whigs" was cast on the reverse (Figure 10.36D). The date "1840" was placed below the scales. These features matched no known legal currency, but alternatively identified the object as a campaign token from William Henry Harrison's 1840 presidential election campaign.

The bust depicted William Henry Harrison; his military uniform emphasized that he was a distinguished officer during the War of 1812 (Figure 10.36B). The scale portrayed on the obverse weighed in favor of the Whig Party (over the Democrats) and was surrounded by the inscription "Weighed in the Balance and Found Wanting" (Figure 10.36C). These features set this specimen apart from the several hundred Hard Times Tokens that have been identified by Numismatists. The token does not appear to have been part of Lyman Low's original 1899 catalog of Hard Times tokens, so no Low number as been assigned to the form. Twentieth-century token expert Russell Rulau assigned the number HT-819 to this particular token (Fisher 2010).

Harrison spent much of his adult life as a career politician, holding office as Governor of the Indiana Territory, elected to seats in Congress and the Senate, and appointed as diplomat to Columbia. In his bid for the presidency in 1840, and with the backing of the Whig Party, he soundly defeated Jacksonian Democrat Martin Van Burin (NNDB 2010). Harrison's views on

Figure 10.36.  
"Hard Times" Token from the 1840 Presidential Campaign



slavery made many Southerners view him as an unreliable candidate. In true political style, Harrison's rhetoric committed himself to both sides of the issue. In general, he viewed slavery as a non-Federally mandated issue that was best decided on a state-by-state basis. As a young man he joined an abolitionist society, a move that he later used to ground himself as anti-slavery (Cleaves, 1939:7, 253). While Governor of the Indiana Territory, Harrison supported the emancipation of slaves in Indiana, even freeing his own slave, but recognized the right to maintain their services under indentureships that lasted for as long as 90 years (Goebel 1926:76-78; Cleaves 1939:250). This move brought virtually no change to the status of the enslaved person in Indiana.

In the 1830s, he supported emancipation, but only if the slaves returned to Africa (Goebel 1926:315). During the 1840 election campaign, Harrison wooed southern voters by denying that he was ever an Abolitionist, only the member of a humane society (Goebel 1926:358). Harrison could hardly be seen as an inspiration to people in the South and perhaps even less so to African Americans. It seems unlikely that the importance of the token included its relation to Harrison or the presidential campaign of 1840.

Coins carried special meaning in the historic African American culture. Perforated coins are predictable finds around the necks, ankles, and other appendages of post-Emancipation period African American interments (Braley and Moffat 1995:34; Davidson 2004b:38; Matternes et al. 2010:304-307; Rose and Santeford 1985:75, 116). These artifacts, particularly those made of silver, were viewed as charms, able to ward off malevolent magic and possessed medicinal properties (Davidson 2004b:22). Copper objects shared many of these same qualities. Puckett (1926:388) noted that wearing a penny around one's neck was considered a cure for indigestion. Coins may have also served to ground important dates among illiterate or marginally literate community members. Folklorist Harry Hyatt (1935:522-523) noted that perforated coins often bore the date of one's birth and, therefore, served as a good luck charm. Rose and Santeford (1985:75) proposed that the dates on similar coins recovered from African American interments in Arkansas recorded the date for the individual's birth.

While not technically legal U.S. legal tender, it is likely that the Harrison Campaign token's shape, size, composition, and inscriptions prompted the community to treat it like a copper coin. The token from F-86 was recovered with Harrison's bust facing down and the scale with its 1840 date facing up; this orientation may have intentionally deemphasized the token's association with a political candidate in favor of information provided on the back. More importantly to this community may have been the date. It was very likely that the token's date may have also been the decedent's birth date. The token was struck and dated in 1840, representing one of the only securely dated pre-Emancipation artifacts from the graves at the Avondale Burial Place. Unfortunately there are no supplemental artifacts in the grave to provide a cross-date for its placement in the cemetery. Grave dimensions and skeletal features suggest that the individual was an adult when death occurred; if the assumption that the token represented a 'lucky coin' was correct, death as a young adult could place the date of death as early as the late 1850s and potentially represent a pre-Emancipation interment.

Caution however is in order. New South Associates has noted that copper does not survive well in burial environments, so the token's poor condition cannot be viewed solely as a product of use, rather it can also result from exposure to caustic conditions. The aperture in a silver dime recovered from F-311 at 9CH875 in Savannah, Georgia (see Matternes et al. 2010:305-306) was extremely worn, an indication that the dime was used as a pendant for a considerable period of time; this wear was lacking in the Avondale Burial Place's F-86 token, emphasizing that this object that was probably conserved. It is unclear how long the object may have been stowed away. This individual's death may have occurred long after emancipation, particularly if the object was valued and protected, so it cannot be assumed that this token is unequivocal evidence of a slave interment.

The token may have also served other purposes. The medicinal properties associated with copper coins would likely be seen in this token and the token would have served as a fine substitute for regular coinage. As noted among coins, the token may have also served as payment for transport to the world of the dead. The token's placement with F-86 may also be an indication of the decedent's health and relationship with the supernatural world.

### BODY TREATMENT ACCESSORIES

Body treatment accessories were defined as objects placed in or on the body at or around the time of death. They possessed functions that included the death of the individual, medical responses to the fatal event, and objects used to physically prepare the body for burial. These artifacts included coins and small arms ammunition.

#### Coins

Coins are relatively common artifacts found with the dead. The form and location of these artifacts in historic African American burial traditions imply a variety of uses and meanings including body treatment, health and medicinal purposes, supernatural charms, and payment. Among African American communities, coins provided a means of supernatural control. Many African Americans carried 'lucky' coins in their shoes or pockets (Russell 1997:428). Silver coins found around the neck, wrist, and ankles were frequently punctured and used as charms; these sometimes followed the living into the grave (Crist et al. 2000:62; Davidson 2004b:38). Coins, particularly silver ones, were a means of catching or containing a spirit (Capozzoli 1997:330; Evans et al. 1969:80). Placement in or on a grave would have served as a means of limiting a spirit's ability to leave a gravesite. Parler (1962:2885) noted that coins were sometimes inserted in the ears to control spirits. Placing coins (or tokens) in the dead's hands, pockets, or near the head provided a toll for the return of the dead's spirit to Africa (Pollitzer 1999:141; Watters 1994:64). Cases similar to this have been recorded at the Sam Goode Cemetery (Crist et al. 2000), in Savannah's 9CH875 Cemetery (Matternes et al. 2010), and the First African Baptist Church Cemetery (Philadelphia), (Parrington et al. 1989).

Most coins found in the Avondale Burial Place were associated with the eyes. Postmortem relaxation of the muscles and placement of the dead on their backs tended to allow the eyelids to fall open resulting in a culturally disturbing, open-eyed corpse. To provide more of an appearance of sleep, coins were frequently used to weigh down the eyelids (Crissman 1994:31). Pennies were

the most frequent medium; stockpiles of coins, referred to as 'ghost money' (Randolph 1951:313, in Rose and Santeford 1985:61), were maintained specifically for that purpose. Informants from Hanover County, Virginia noted that these stockpiles consisted largely of old out-of-mint and no longer accepted coins (Melvin Tate and Allan Smith, Personal Communication 2003). Many researchers have noted that this practice was part of the southern African American mortuary tradition (Combes 1974:54; Georgia Writers Project 1972:140-141; Puckett 1926:84; Watters 1994:64; Wright and Hughes 1996:21). Occasionally, these coins were left with the dead after the coffin was closed and are best identified by recovery in the orbits of the skull. There are numerous documented cases of this phenomenon in the archaeological literature (See Cheek et al. 2003; Matternes et al. 2010; Rose and Santeford 1985; Shogren et al. 1989).

Seven coins were recovered from Avondale Burial Place's mortuary contexts (Table 10.30). They were distributed among four features, notably F-34, F-45, F-67, and F-68. F-45 was the grave of an adult male, while the other three were children. These correspond to placements in the 9CH875 and 9CH1168 assemblages, where coin use was greatest among children and males (Matternes et al. 2010:303-304). F-45, F-67, and F-68 were located in the northeastern quadrant of the cemetery and were placed adjacent to one another. It was possible that the inclusion of coins inside the grave was a family-specific tradition. F-34 was found near the center of the burial ground.

*Table 10.30. Coins Recovered from 9B1164*

Feature	Coin	Date Range	Modified	Location	Quantity
34	Half Dime	1837	Pierced	Neck	1
45	Shield Nickel	Indeterminate	No	Eyes	2
67	Shield Nickel	Indeterminate	No	Eyes	2
68	Penny, Indian Head	1878, 1880	No	Eyes	2
Total					7

To gain insight into how these coins were used, the assemblage was examined in terms of the coin's type and form. Three of the decedents were buried with pennies or nickels (Figures 10.37A and B). These represent the larger and heavier forms available among small-denomination coins; they were all paired and as noted, were found in close association with the eye orbits. These data imply that the desire for the dead's eyes to be closed was a part of the burial community's mortuary tradition. Features such as the interval between when death occurred and when the body was discovered, the time needed to plan the funeral, the time required to mobilize the necessary labor, and the time needed to obtain the necessary materials would have varied from death event to death event. These timing variations would have virtually assured that some aspects of the preparation and viewing of each body occurred during the initial decomposition phases. It would have been exceedingly difficult to permanently modify the dead's posture during these phases. As a result, attaining the effect of a 'peaceful sleep' may have required greater effort for some individuals, particularly children, than was necessary for others. Use of coins for these individuals appeared to be a result of body treatment.

All coins had corroded from exposure and surface details were difficult to discern. Readable mint dates indicated that the Indian Head cents were made in the late nineteenth century. While these specimens were too damaged to read, shield nickels in general were struck between 1866 and 1883 (Thorne 2008). Notable pre-depositional wear was observed on all specimens, indicating that the coins had been in circulation for some time prior to their use in the funeral setting. These graves were most likely dug many years after these coins were minted. They do not represent death dates, rather the absolute minimum dates that these coins could have been deposited.

The silver half-dime with F-34 had been pierced along one margin (Figure 10.37C). This object was found underneath the mandible, implying that it probably had originally been strung as a necklace around the child's neck. As noted earlier, the silver composition of the coin held metaphysical properties and when worn as a charm, it may have served to protect the wearer.

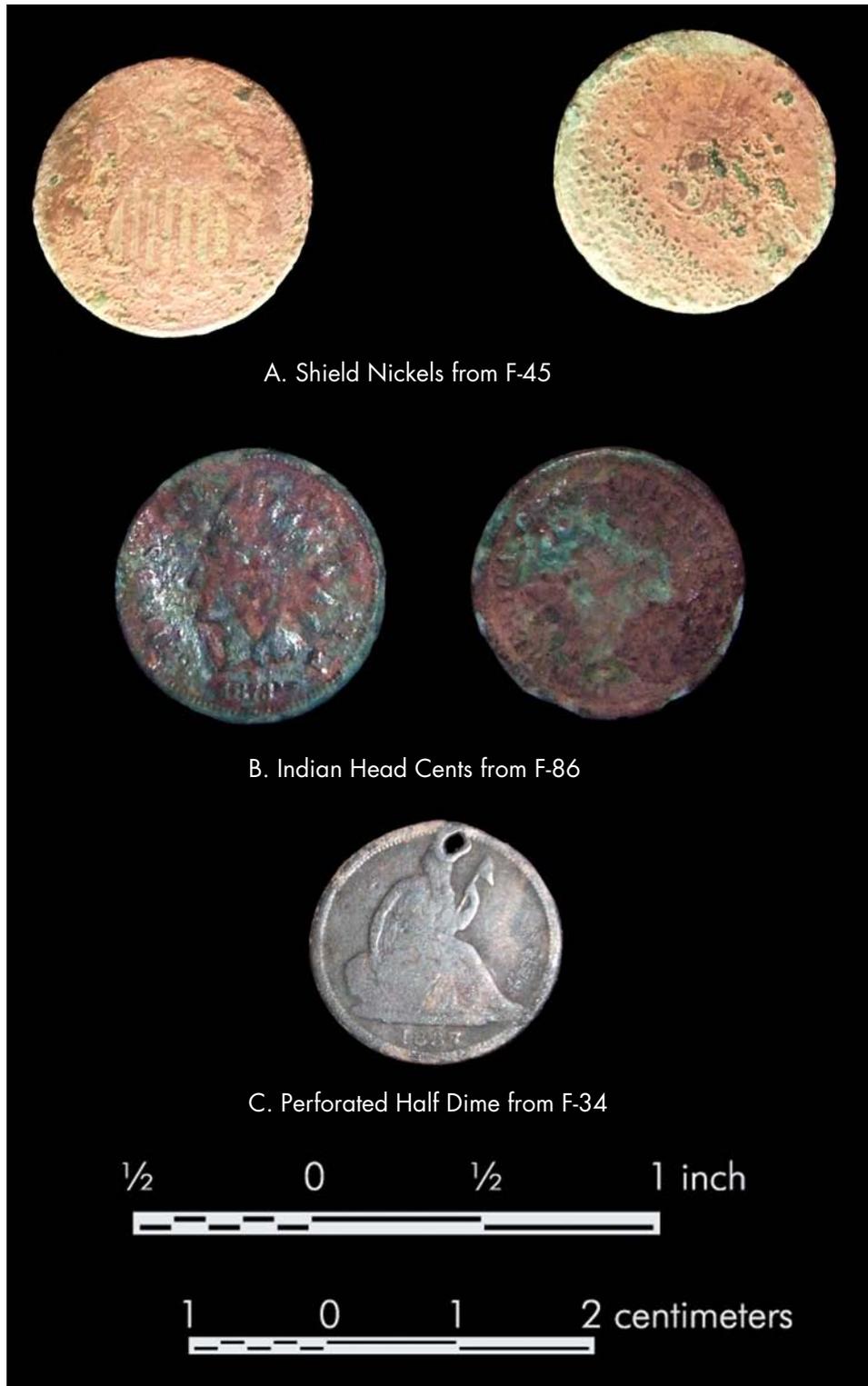
Retention of pierced coin necklaces as mortuary accoutrements tends to favor deposition with women and children. Pierced coins have been reported from a number of post-Emancipation era African American cemeteries including a woman from Cedar Grove (Rose and Santeford 1985:73-75), a child from Sam Goode Cemetery (Crist et al. 2000:62), children from the Redfield Cemetery (Braley and Moffat 1995:33,52), and infants recovered at 9CH875 and 9CH1168 (Matternes et al. 2010:305). Thirteen pierced coin necklaces were recovered from the Dallas Freedman Cemetery (Owens and Green 2000:430). Slave-period perforated coins from non-mortuary contexts have been documented by a number of researchers across eastern North America. Examples include the Kings Bay Plantation (Adams 1987:204), Monticello (Singleton 1991:176-191), and Oakley Plantation (Wilkie 1995:136-148).

F-34's half-dime exhibits a seated liberty with no stars. It was minted in 1837, the first year that this half-dime form was produced (Coinsite.com 2010). The date was struck along a single plane beneath the liberty figure, a feature known as a 'small date.' These dimes represent one of the first works produced by Chief Engraver for the Mint, Christian Gobrecht, based on sketches drawn by Thomas Sully. While the minted date was nearly 25 years before Emancipation the child was also buried with an 1880's era doll, indicating that the child died well after freedom came to the South. Retention of coins (and possibly tokens) marked with the holder's date of birth was a tradition held by African Americans, but this date is also inconsistent with the child's age (2-4 years), (Hyatt 1935:426-427). This coin does not indicate the presence of a slave. The coin, and especially the perforation margins are extremely worn, revealing that it was used as a charm for a considerable period of time prior to burial. This pattern has been noted among the Dallas Freedman Cemetery, where Davidson (2004b:46) suggested that such charms were inherited. Unfortunately, there are no indications when the coin first came into the African American community, but given that perforated coins are present in clearly slave period contexts, it is possible that it may have been part of an enslaved community assemblage.

### Small Arms Ammunition

Unlike many artifacts recovered from mortuary environments, the presence of spent ammunition implicates a diverse range of important community features. They can indicate land use prior to grave deposition; they can imply levels of violence within the community; they may be part of the funerary ritual; and they can reveal post-funerary cemetery activities. Sorting out the function of the bullet is largely based on careful observation of how these materials entered the mortuary record.

Figure 10.37.  
Coins with Avondale Interments



One small arms round was recovered from inside a grave at the Avondale Burial Place. While a number of modern and antiquated spent shotgun cartridges were identified on the surface, the grave was the only place where a bullet was recovered. This round was found adjacent to the right shin of the male in F-38. While this implied a direct relationship between bullets and bodies, the association must be considered cautiously.

In general, there are four ways a round may end up in a grave. First, they may represent bullets fired prior to use of the ground for burial purposes. These rounds would have entered into the mortuary deposit as chance inclusions in the burial fill. Conversely, they may represent rounds fired after the grounds were used for burial purposes. Their location in the deposit would have been the result of their firing trajectory and independent of the funeral or burial event. The distribution of small arms rounds in the cemetery would reveal attitudes about the cemetery and the dead among the post-depositional community. Third, these rounds may have been fired into the individual, representing episodes of injury or violent death within the community. The level of violence prevalent within a community is implicated by the presence of rounds in this context. Finally, bullets may represent meaning-laden objects placed with the individual as part of the mortuary ritual.

Rounds fired and landing in the project area prior to its use as a cemetery would have been randomly distributed (relative to the cemetery). They would have appeared in the grave fill, as well as the undisturbed soils around each grave deposit. Using a metal detector, the 9CH1168 and 9CH875 burial grounds in Chatham County, Georgia were surveyed to address this possibility (Matternes et al. 2010:309-313). The absence of spent rounds in the undisturbed soils around graves implied that entry of rounds solely into graves after the interment had been deposited was unlikely. Puckett (1926:143) noted that post-burial arms discharge sometimes occurred around burial areas as a means of frightening away ghosts. However, in order to achieve the distribution of spent rounds observed at these two cemeteries, shooters would have had to intentionally fire their weapons into the ground in a manner where the round's forward motion terminated at the interred body. The probability of achieving this feat of marksmanship among all the graves with spent rounds verged on the improbable. During the initial surveys and excavation at the Avondale Burial Place, all surfaces were inspected for artifacts including bullets. While not as comprehensively explored as in the Chatham County surveys, the lack of spent rounds observed anywhere else at the Avondale Burial Place may be evidence of a similar pattern. The spent round in F-38 probably does not result from pre- or post-burial activities at the burial ground.

The round recovered from F-38 probably arrived with the individual. Clear evidence of gunshot trauma is not uncommon in post-Emancipation period African American cemeteries (Braley and Moffat 1995; Matternes et al. 2010; Rose and Santeford 1985; Tine 2000). The possibility of a violent death has to be recognized as a part of their world. However, the lack of skeletal evidence of ballistic entry speaks against violence as the only means of ingress to the mortuary record. Spent rounds may also have been intentional inclusions. Non-jacketed lead rounds, like those used in the late nineteenth and early twentieth centuries tend to deform when they enter the human body (Wilson 1999); the deformation in the F-38 bullet (see below) implied that this round may not have traveled into the interment. Rounds of questionable origins were found with interments from the

Area 1 Cemetery (9CH11168) in Chatham County, Georgia (Matternes et al. 2010:312-313). While no direct ethnographic precedence could be found, the possibility that these rounds – whose material symbolism may result from them being bullets, lead objects, and/or white or silver colored media – were included with the dead cannot be discounted. Among the Tuareg people of Niger, West Africa Rasmussen (2001, in Rasmussen 2004:162) documented the use of a bullet in an amulet worn by a child. This spent round was designed to help protect him from being shot to death like his father.

#### 0.32-Caliber Round

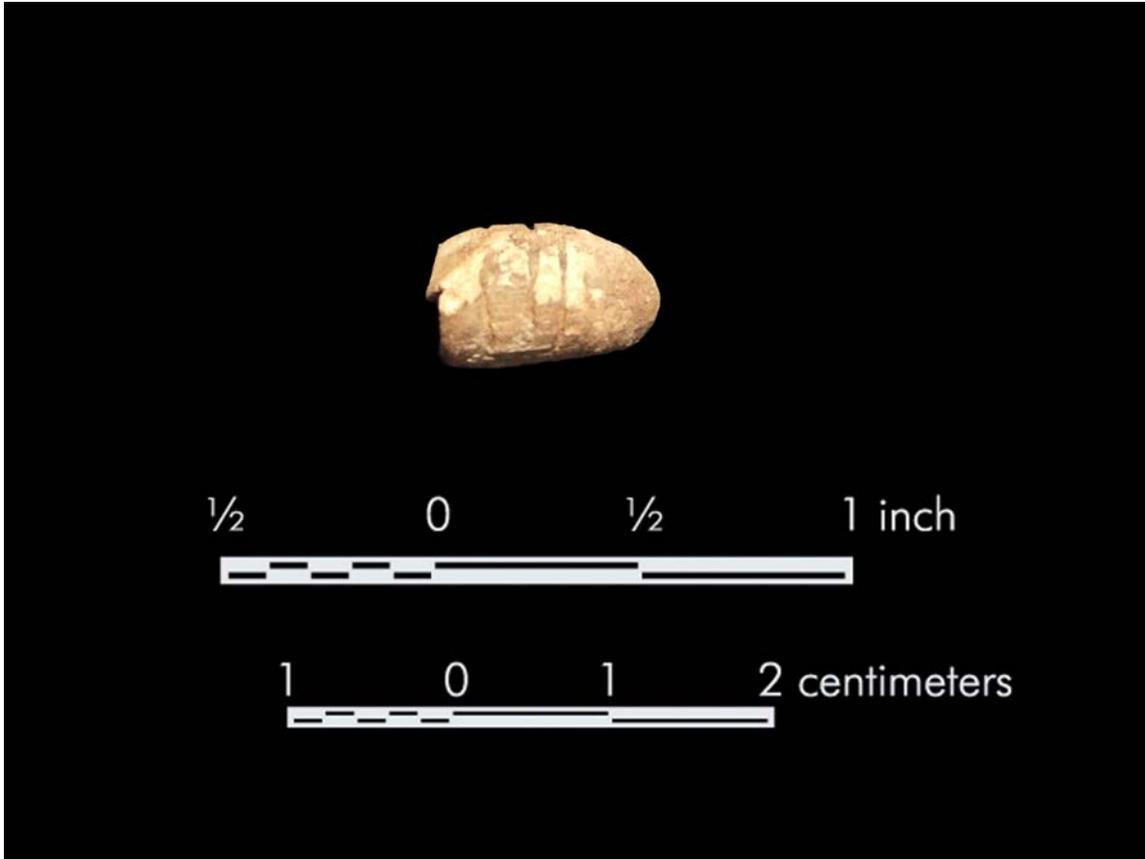
The bullet recovered from F-38 was designed to fit 0.32-caliber firearms (Figure 10.38). This solid lead round exhibited a concave, rimmed heel and rounded tip. Three grooves encircled the middle of the bullet's body. The projectile was heavily patinated. The tip of the round was undamaged, but the base exhibited an oblique strike against an object strong enough to have peeled the rim dorsally. The most likely source of this deformation is from striking an object after the round had traveled sufficient distance to start tumbling in midair. The force necessary to damage the round to the observed degree would have left a mark on the skeleton, however no evidence of trauma was observed in any of F-38's bones. While the bullet could have entered F-38's soft tissue after ricocheting, there is no evidence supporting this scenario. Another possibility was that this damage occurred after the round had been discharged. The senior author has observed similar damage among spent rounds that have been run over by motor vehicles. The possibility that the object was found, conserved and buried with the individual must also be considered.

Formal introduction of the 0.32-caliber cartridge accompanied production of the 0.32 Smith and Wesson handgun in 1878 (Barnes 2009:283). Period mail order catalogs including Sears and Roebuck, J. H. Johnston, and Montgomery Ward list many styles of these weapons and ammunition; these emphasized the wide availability of these weapons to the civilian market (Amory 1986; Emmet 1969; Lyons 2007; Mouat 1996; Schroeder 1969). These weapons appeared to have been too small and lacked the firepower needed to see widespread military use. They were, however among the caliber of cheap, mass-produced firearms, condescendingly referred to as 'Saturday Night Specials.' At close range, these rounds were large enough to disable most targets and the weapons were lighter and exerted less recoil than other higher caliber arms. The 0.32-caliber rounds found with individuals buried at the Redfield Cemetery in Jones County were believed to have been victims of gunshot wounds (Braley and Moffat 1995:26, 58). The 0.32-caliber firearm and its ammunition are still in production.

## CONCLUSIONS

Rarely are the dead buried without material vestiges of their culture. These objects are the result of the complex acts associated with the funeral ritual. Most served specific purposes and their placement in a mortuary environment was intentional. For the Anthropologist, they are a means of recovering lost information. Objects placed in and on the graves at the Avondale Burial Place provided a link between funeral traditions recorded in the South and those practiced by the Avondale Burial Place community. They are important clues unlocking how the burying community viewed death, their place in society and how the world was organized around them.

Figure 10.38.  
0.32-Caliber Bullet Recovered with F-38



Grave artifacts were distributed from the surface to the grave's base. Within the context provided by ethno-historical accounts, their form and context helped to define what purposes they originally served. Objects including tobacco pipes, dolls, combs, and purses placed directly with the dead were likely personal possessions provided for use in the next world. Coins found on the eyes conveyed how the decedent's mortal remains were prepared for burial as well as linking Avondale Burial Place's mortuary rituals with those outlined in historic accounts.

Clothing and jewelry were perhaps the most intimate means of material communication provided to the dead. They helped hide the physical ravages often associated with death and enabled the decedent to be viewed as a culturally pleasing individual. Many of the cemetery's decedents were provided with what finery they possessed, while others, particularly children were probably buried in the only apparel they owned. Clothing such as mourning wear conveyed evidence of the complexity of the mortuary ritual as an event that required social displays of both the living and the dead. As emphasized by the cufflinks from F-52, clothing was also a means for aspects of the decedent's personality to be portrayed. Jewelry was sometimes a medium into the world of the supernatural. Bead and coin necklaces not only were objects of personal adornment, they provided the wearer protection from uncontrollable, malevolent forces in the world.

The universal use of burial cases, whether they were coffins or caskets, indicated that some parts of the burial ritual were immutable – they had to be present. In the Avondale Burial Place community, the dead were afforded certain rights; one of these was the right to a chamber that separated them from the grave. The dead were not simply biohazards, buried to protect the living from their physical corruptions, they were icons safeguarded for eternity within a protective enclosure. The coffin proved to be a medium for social display. The color, form, and decoration provided a means for material symbolism and ideas to be associated with the dead. As demonstrated by this analysis, these ideas became permanent fixtures, associated with the dead forever. The coffin was also a vehicle for change. Avondale Burial Place's burial cases may well reflect material outcomes associated with changes in American burial ideology that were occurring during the cemetery's active use.

Likewise, the grave itself was an artifact. Its orientation reflected meaning tied to ideas from both Christian and West African cosmologies. The grave was not a uniform construct; rather it was built following one of several intentional plans. Variations in shaft morphology indicated that within the general concept of how a burial ritual was conducted, the presentation was dynamic enough to allow for alternative forms to co-exist. Once filled, the grave served to seal all these ideas and meanings within it. It still, however, served as a focus for material communication with both the living and the dead. Pottery, glass, and personal possessions left on the surface corresponded with the community's concerns for the welfare of the spirit. These objects helped to guide and protect the spirit as well as honor obligations to provide them with the things they needed. Bricks and memorials marked the grave, defining not only where a grave was located, but served as a means of helping the burial community remember who they were and what was important in their lives.

No records exist of how the dead were buried in the Avondale Burial Place. An examination of the cemetery's material record, however, sheds important light illuminating a room once darkened by

the passage of time. These materials provide a glimpse of a community following a complex set of traditions designed to ease the social, spiritual, and physical impacts brought on by the gradual loss of its members.



## XI. TEMPORAL AFFILIATION

Cemeteries embrace two distinct temporal phenomena. First, they are composed of multiple depositional events. At the Avondale Burial Place, each grave resulted in a unique archaeological assemblage that was stratigraphically distinct from other interments. While this meant that each deposit contained pristine undisturbed material assemblages, it also meant that each grave was temporally independent and could not be used to infer stratigraphic relationships with other graves. Since each grave was an independent depositional event, the cemetery represented an accumulation of independent depositional events. This emphasizes the second temporal point—the cemetery was not the record of a single event, it was a record of events that occurred over time. The Avondale Burial Place provided not just a snap shot of the burial community; it was also a record of events that occurred during the course of the community's history. Knowing when burial events took place was an important part of understanding the cemetery's place in time and space.

### LIMITATIONS IN DATING FOLK CEMETERIES

Assigning accurate temporal affiliations to folk cemeteries is a challenging task. While urban and more mainstream American cemeteries can provide a wealth of accurate temporal data, folk cemeteries can be frustratingly silent. There are a number of issues that make mid- to late nineteenth- and early twentieth-century folk cemeteries notoriously difficult to date.

Folk cemeteries were often poorly documented. Most of the information about them was primarily recorded in oral tradition (Clauser 1994:4; Richey et al. 2008:30). When lore-possessing community members emigrated or died, details about a cemetery were not passed on and subsequently were lost. A related issue was surface representation. Graves in folk cemeteries were often delimited with non-durable markers or memorials without names and death dates. Lacking oral, written, or inscribed information, researchers have had to rely on architectural and archaeological data for temporal approximations. At best, available data can only provide broad temporal approximations.

While stratigraphic superposition of depositional layers can sometimes be used to infer when a cemetery could have last been used, folk cemeteries were frequently placed in locations where stratigraphic dating is rarely possible. In the past, poorly documented cemeteries in urbanized areas were frequently overlooked and subsequent development sealed them beneath layers of overburden. These intrusions can be used to temporally estimate when the cemetery's depositional period had clearly terminated. Folk cemeteries, however tend to be located in relatively isolated portions of the rural landscape. While they tend to be less disturbed than their urban counterparts, it is also less possible to date the events that sealed them. Lacking overlying deposits, superposition cannot be used to help establish when the cemetery's last interments were deposited.

As noted, surface materials may be used to define when a cemetery was in use, but very few of these are embedded in the soil well enough to reliably indicate when they were deposited or for which specific grave they were originally intended. To obtain reliable artifact associations, excavation is usually required. Folk cemeteries tend to be built following long-standing burial traditions and did not rely on mainstream cultural fashions to define material use. As a result of this the funerary paraphernalia and objects used to construct grave furniture typically reflect long manufacturing histories. These artifacts did not change much over time and as a result, these materials lacked temporal sensitivity. Graves dated solely on funerary paraphernalia frequently exhibited broad temporal dates.

Graves deposited during the late nineteenth and early twentieth centuries often contained coffin hardwares, each with considerable dating potential. A rudimentary understanding of when mortuary-specific artifacts were manufactured hampers obtaining accurate temporal estimates for these graves. Only recently have detailed material studies been undertaken to examine trends in style and manufacturing (e.g. Davidson 2004a, 2004b, 2006). These have led to improvements in dating specific artifact forms, but the information available is still limited. In many respects, research into temporal and stylistic ranges for mortuary-specific nineteenth- and early twentieth-century artifacts is still in its infancy.

In general, folk cemeteries frequently exhibit a paucity of non-construction related artifacts deposited in the grave. Since materials deposited in a grave permanently removed objects from family or community use, there was a tendency for burial communities to retain useable goods for continued use among the living. This trend affected the occurrence of personal artifacts, which as a class tended to be the most temporally sensitive. This practice, however, was not absolute. In some cases, objects deemed important to the dead (or their spirit) transcended desires to continue their use among the living. The lack of uniformity among the personal possessions included may be an indication that the decision to bury or retain personal possessions was carried out on a case-by-case basis. Fortunately at the Avondale Burial Place, personal possessions were included in some graves as part of more Afrocentric burial traditions. Even these tended to be deposited sparingly. This resulted in few materials being available to help date individual graves. Graves lacking burial goods were among the least accurately dated forms.

Despite these limitations, graves at the Avondale Burial Place were assigned temporal estimates reflecting when each individual grave was most likely deposited. This approach focused on combining known documentary evidence with manufacturing and stylistic data obtained from the artifact assemblages.

## DOCUMENTARY EVIDENCE OF TIME

One primary avenue used to date historic cemeteries has been to combine historical and cemetery-specific events with archaeological or material patterns. In an optimum setting, records of how the cemetery was organized and who is located in each gravesite would be used to precisely define when in time the facility was active. In the case of the Avondale Burial Place, oral and historical records provided some information on the cemetery's presence, its size, community affiliations, and a general idea of when it was in operation.

The documentary history of the Avondale Burial Place was at best sparse, based largely on inferences and assumptions drawn from oral and historic records. No direct references to the cemetery have been found. Lacking documentary or map references to the site, its name is not historical, rather it is a construct developed for this project. Twentieth-century aerial maps noted that the potential burial area was probably a single corner of one property lot. Its margins were probably defined by fences and roadways. This lot's delineation appears to date to at least the early nineteenth century. There were no indications that the burial ground had any direct Native American ties and no evidence has been found of any strictly European American interments. While European entry into southern Bibb County probably occurred by at least the eighteenth century, settlement did not occur until the 1820s. The first African Americans would have arrived with these early settlers. The Avondale Burial Place served as an African American cemetery facility. Land records indicate many changes in ownership of the surrounding lands over the subsequent 150 years, but there is no mention of the cemetery in any document. No inventory of the cemetery, records of its structure, or location have been found; oral records only indicated the general proximity of its location. These informants recognized that by at least the 1950s grave deposition in the cemetery had ceased. Upkeep of the cemetery may have continued until as late as the 1960s, but by this time, its existence was largely a matter of oral tradition. From these records it appeared that the Avondale Burial Place may have been in use some time between the 1820s and the 1950s.

## ARCHAEOLOGICAL EVIDENCE OF TIME

Historic records are often incomplete, contain errors, or omit important temporal information. These data can be supplemented by an examination of stylistic and manufacturing information associated with the cemetery's artifacts. While archaeological dating of cemeteries can be accomplished on both surface and subsurface materials, this discussion will largely focus on subsurface deposits, because most of the Avondale Burial Place's surface remains cannot be positively associated with individual graves and only generally to the burial ground.

Davidson (2000) has demonstrated that an effective means of examining temporal variation in a cemetery involves identification of key moments in material culture change. By cross-referencing documented cemetery events, stylistic variation as recorded in manufacturing documentation and major changes in mortuary artifact forms, Davidson was able to seriate graves from the Dallas Freedman Cemetery into three distinct periods ranging from the 1860s through the early 1900s. To date this work stands as the most thoroughly developed temporal sequence for post-Emancipation cemeteries.

Differences in assemblages between Dallas Freedman's urban context and Avondale Burial Place's rural setting, were profound enough to prohibit direct use of Davidson's (2000) seriation. Principally, the Avondale Burial Place lacks the cemetery events (dated land acquisitions) that were critical to Davidson's (2000) seriation. For Avondale Burial Place, these events in Dallas represent arbitrary temporal divisions. Avondale Burial Place's grave furniture also lacks the magnitude of commercially made mortuary specific products found in the Dallas assemblage. Dating the Avondale Burial Place had to be grounded on other aspects of the mortuary assemblage. Many of

the important concepts behind Davidson's (2000) seriation, however, were applicable. A review of the artifact data noted several key shifts in Avondale Burial Place's material culture. In particular, changes in coffin lid closure, clothing fasteners, nail form, and introduction of decorative hardware were recognized as significant enough changes to the Avondale Burial Place's material culture to use them as reliable temporal benchmarks.

The foundation of Avondale Burial Place's temporal estimates is the *Terminus Post Quem* (TPQ). TPQs represent one of the most absolute forms of artifact dating available to archaeological researchers. With this method, the latest manufacturing date among artifacts in a given deposit provides the absolute earliest date that the contents of a given feature could have been deposited (Noel-Hume 1969:11). TPQs are extremely effective at defining a minimum 'start' date for a mortuary deposit; however, they are unable to address when artifacts were used once they were made. This limitation prevents being able to use TPQ to identify how recently an assemblage could conceivably have been deposited. TPQ date ranges must typically rely on manufacturing data, archaeological phenomena (such as stratigraphy), or indications as to why a community would have stopped using an artifact form to define a 'stop' or terminal date for a feature or artifact's use. Technically, graves and other features that lack overlying stratigraphic information potentially could have been deposited at any time between the TPQ and initiation of the archaeological excavation.

In order to be able to capture when artifacts came into and fell out of normal use, researchers focus on stylistic variation and product popularity. Among artifacts including ceramics, fasteners, buttons, and some forms of coffin hardware, use has been extensively documented and reliable use ranges have been established. When possible, these have been used to narrow down potential deposition dates for individual graves within the assemblage. While these dates are not as absolute as the TPQ date, they help establish a date range when a given grave was most likely deposited.

When possible, individual graves were provided with two temporal estimates. All interments were initially assigned an individual grave date. The individual grave date was a pooled estimate based on the TPQ and earliest ending use range established for all artifacts in a given interment. Individual grave dates defined the most likely period in which a grave was deposited in the cemetery.

Graves were also divided into synthetic temporal groups as a means of standardizing dates for examination of the entire cemetery. Graves were classified into time periods based on key changes in their material culture. Most groups reflect a considerable overlap in time depth because the key change in material culture reflected the addition of new materials and not a replacement of older forms. This is because the absence of these newly added materials can reflect both contemporaneity with graves possessing them and deposition before the innovation was developed. The appearance of new innovations that did not replace an existing form could not be used as a temporal boundary to refine the date range for forms lacking these newly added materials.

The temporal groups were considered to be synthetic because they also addressed temporal data (mostly from the inclusion of personal artifacts) from outside the key material change artifacts. While many of the individual grave dates and temporal group dates were identical, graves with individual artifact TPQs and use ranges that varied from the temporal group range were placed with the group that most accurately reflected the grave's likely temporal position. Graves whose individual grave date did not fit within a single group were assigned to both groups. Temporal groups were applied to the Avondale Burial Place as follows.

Group 1 (circa 1820-circa 1900). Graves in Group 1 reflected the use of cut nails to build coffins and caskets. A terminus of about 1900 was assigned based on the full transition of cut to wire nails roughly coinciding with the turn of the century. These graves tend to contain no other temporally diagnostic materials.

Group 2 (1840s-circa 1900). Graves deposited after the early to mid-1840s. The introduction of the Prosser button in 1841 profoundly affected the way in which decedents were dressed. Likewise, the appearance of the wood screw in 1846 vastly improved the ability to seal a coffin efficiently. Cut nails were exclusively present in Group 2 graves. Terminus was based on the estimated departure of cut nails from common use.

Group 3 (1870-circa 1900). Another major innovation to securing lids to coffins came with the production of thumbscrews. While considered the primary material innovation, the appearance of thumbscrews coincided with the general introduction of most major mass produced hardware forms, most notably being the coffin handle. No handle forms in the Avondale Burial Place assemblage could be dated to before 1870 implying that functional values of the handle may have been recognized at about the same time. The presence of wood screws and thumbscrews in the same deposit indicated that wood screws were not completely replaced. Like Group 2, Group 3 grave furniture was constructed using cut nails. Terminus was based on the estimated departure of cut nails from common use.

Group 4 (1877-circa 1900). This group emphasizes the introduction of the wire nail into the Avondale Burial Place assemblage. Nail assemblages in this group were distinguished by the presence of both wire and cut forms. While hardware and wood screws were common in Group 4 graves, interments lacking these and other late period artifacts were also noted. Terminus was based on the estimated departure of cut nails from common use.

Group 5 (Circa 1900-1960). Mortuary analysts tend to recognize that the transition from cut to wire nails in mortuary contexts occurred by around 1900 (Davidson 2000:251; Garrow 1987; Garrow and Symes 1987). Exclusive use of wire nails was the primary determinant for inclusion in this group. Graves in this group frequently contained artifacts reflecting post-1900 use ranges, suggesting that these were among the last to be deposited in the cemetery. The terminus for this group was based on community reflections of when graves were no longer deposited. The style of burial case, coffin hardware, and clothing fastener found in these graves reflected forms that were largely abandoned by 1930.

## INDIVIDUAL INTERMENT DATES

Nearly every feature in the cemetery could be assigned a time range reflecting the most likely period in which the grave was interred (Table 11.1). The one exception was F-40, which lacked any material remains and as a result could not be associated with any particular period in time. Some temporal estimates were broad. Over 20 percent of the assemblage fell into time ranges that spanned about 80 years. Among the remaining sample, most potential interment dates covered ranges of 25-40 years. In a few cases, hardware and personal artifacts were able to establish ranges as narrow as 12 years, such as F-24 with a date ranging from 1888-1900.

*Table 11.1. Interment Date Ranges for Individual Graves*

Feature No.	Individual Grave Date	Temporal Group	Temporal Group Range
1	1877-1900	4	1877-About 1900
2	1824-1900	1	1820-About 1900
3	1880-1900	4	1877-About 1900
4	1824-1900	1	1820-About 1900
5	1885-1900	4	1877-About 1900
6	1880-1900	4	1877-About 1900
7	1877-1900	4	1877-About 1900
8	1820-1900	1	1820-About 1900
10	1893-1907	4/5	1877-1960
11	1885-1900	4	1877-About 1900
12	1877-1900	4	1877-About 1900
13	1877-1900	4	1877-About 1900
14	1824-1900	1	1820-About 1900
15	1841-1900	2	1840s-About 1900
16	1841-1900	2	1840s-About 1900
17	1820-1900	1	1820-About 1900
18	1846-1900	2	1840s-About 1900
19	1824-1900	1	1820-About 1900
20	1877-1900	4	1877-About 1900
21	1824-1900	1	1820-About 1900
22	1820-1900	1	1820-About 1900
23	1820-1900	1	1820-About 1900
24	1888-1900	4	1877-About 1900
25	1846-1900	2	1840s-About 1900
26	1855-1900	2	1840s-About 1900
27	1841-1900	2	1840s-About 1900
29	1877-1900	4	1877-About 1900
30	1877-1900	4	1877-About 1900
31	1846-1900	2	1840s-About 1900
32	1877-1900	4	1877-About 1900

Table 11.1. Interment Date Ranges for Individual Graves

Feature No.	Individual Grave Date	Temporal Group	Temporal Group Range
33	1870-1900	3	1870-About 1900
34	1870-1900	3	1870-About 1900
35	1877-1900	4	1877-About 1900
36	1877-1900	4	1877-About 1900
37	1841-1900	2	1840s-About 1900
38	1878-1900	4	1877-About 1900
39	1841-1900	2	1840s-About 1900
40	1820-1960	None	
42	1820-1900	1	1820-About 1900
43	1841-1900	2	1840s-About 1900
44	1849-1900	2	1840s-About 1900
45	1870-1900	3	1870-About 1900
46	1885-1900	4	1877-About 1900
47	1841-1900	2	1840s-About 1900
48	1824-1900	1	1820-About 1900
49	1862-1900	2	1840s-About 1900
50	1841-1900	2	1840s-About 1900
51	1846-1900	2	1840s-About 1900
52	1841-1900	2	1840s-About 1900
53	1855-1900	2	1840s-About 1900
54	1878-1900	4	1877-About 1900
55	1820-1900	1	1820-About 1900
56	1841-1900	2	1840s-About 1900
57	1841-1900	2	1840s-About 1900
58	1841-1900	2	1840s-About 1900
59	1841-1900	2	1840s-About 1900
60	1820-1900	1	1820-About 1900
61	1820-1900	1	1820-About 1900
62	1870-1900	3	1870-About 1900
63	1841-1900	2	1840s-About 1900
64	1841-1900	2	1840s-About 1900
65	1880-1920	4/5	1877-1960
66	1885-1900	4	1877-About 1900
67	1866-1900	2	1840s-About 1900
68	1880-1900	4	1877-About 1900
69	1876-1900	3	1870-About 1900
70	1896-1910	4/5	1877-1960
71	1885-1900	4	1877-About 1900
72	1820-1900	1	1820-About 1900
73	1846-1900	2	1840s-About 1900

Table 11.1. Interment Date Ranges for Individual Graves

Feature No.	Individual Grave Date	Temporal Group	Temporal Group Range
74	1820-1900	1	1820-About 1900
75	1841-1900	2	1840s-About 1900
76	1820-1900	1	1820-About 1900
77	1820-1900	1	1820-About 1900
78	1841-1900	2	1840s-About 1900
79	1820-1900	1	1820-About 1900
81	1820-1900	1	1820-About 1900
82	1824-1900	1	1820-About 1900
83	1841-1900	2	1840s-About 1900
84	1841-1900	2	1840s-About 1900
85	1820-1900	1	1820-About 1900
86	1840-1900	2	1840s-About 1900
87	1885-1930	4/5	1877-1960
88	1846-1900	2	1840s-About 1900
89	1841-1900	2	1840s-About 1900
90	1900-1930	5	About 1900-1960
91	1894-1926	4/5	1877-1960
93	1841-1900	2	1840s-About 1900
94	1870-1900	3	1870-About 1900
95	1841-1900	2	1840s-About 1900
96	1862-1900	2	1840s-About 1900
97	1870-1900	3	1870-About 1900
98	1846-1900	2	1840s-About 1900
99	1883-1900	4	1877-About 1900
100	1841-1900	2	1840s-About 1900
101	1855-1900	2	1840s-About 1900
102	1846-1900	2	1840s-About 1900
103	1876-1900	3	1870-About 1900
104	1870-1907	4/5	1877-1960
105	1900-1930	5	About 1900-1960
106	1877-1900	4	1877-About 1900

## CEMETERY DATE RANGES

Interment periods and an average date for the cemetery were also estimated. Initially, artifacts from the cemetery's surface were considered. Each surface find was an isolated artifact and not part of a specific group, individual artifact manufacturing start dates had to be used as TPQ dates for each object. As noted earlier, long-time resident Harry Lucas recalled that the cemetery was last used in the early 1950s (Gale 2008a:Appendix C). Lucas's boyhood memory for when this

event occurred is approximate; an assigned end date of 1960 represented the maximum date when the cemetery was last known to have been used. Average dates were then established for each artifact. These were pooled and then averaged to provide a mean point estimate for cemetery surface materials. While the earliest potential manufacturing start date could go back as early as the late eighteenth century, historical data best supports a start date of post-1820. Artifacts on the surface could have been placed between 1820 and 1960. Most materials were made after the mid-nineteenth century; an average date for surface materials was determined to be 1905.

Artifacts placed in the same grave were associated with one another and their temporal information could be pooled to date the entire deposit. Average dates were determined for each grave, pooled and, like the surface materials; these dates were averaged to determine a mean point estimate for the cemetery's deposits. Graves in the Avondale Burial Place could have been placed as early as 1820. It is doubtful that any graves were placed in the burial ground after 1930. A mean date of 1877 was applied to the subsurface deposits. It is possible that the difference between surface and subsurface mean dates reflects the placement of later period surface materials on the surfaces of graves that had been deposited considerably earlier. In other words, it is likely that descendants continued to visit the cemetery long after these individuals were interred.

## CEMETERY TIME AND CEMETERY SPACE

Graves were collapsed into temporal groups to look for time-related patterns within the cemetery (Table 11.2). Graves constructed using early to mid-nineteenth-century technology were the most common. Groups 1 and 2 accounted for over 60 percent of the assemblage. The proportions however, are deceptive. While the cemetery assemblage has the appearance of being dominated by pre-Reconstruction graves, it must be emphasized that Group 1 and 2 graves also extend well into the late nineteenth century. These interments tended to be simple, relatively unadorned deposits with few, if any durable personal effects. Temporally, these graves could contain pre- and peri-Emancipation period interments, but they cannot be reliably separated from late nineteenth-century graves that were deposited following a more traditional African American funeral ritual. Personal artifacts dating from the late nineteenth century, a notable example being the porcelain doll found with F-34, are evidence that traditional practices were very much alive despite other changes in material culture. The possibility that slave-era graves are in the cemetery is likely, but what can be more reliably demonstrated are graves placed the late nineteenth century.

On the other end of the time spectrum, only eight individuals, representing about seven percent of all graves, were likely interred after 1900. These Group 5 and Group 4/5 burials clearly used materials whose manufacture and use was strongest in the twentieth century. The use of swing bale handles over the more popular bar handles, preference for hexagonal coffins and not rectangular caskets, and reliance on thumbscrews over more modern internal burial case lid closures, emphasized that the Avondale Burial Place burial community had not abandoned its more traditional material culture for more mainstream forms.

Table 11.2. *The Proportionate Distribution of Graves by Temporal Group*

Temporal Group	Time Range	Number of Graves	Proportion of Assemblage
1	1820-about 1900	22	21.78
2	1840s-about 1900	39	38.61
3	1870-about 1900	8	7.92
4	1877-about 1900	23	22.77
5	About 1900-1960	2	1.98
4/5	1877-1960	6	5.94
Unassigned		1	0.99
Total		101	99.99

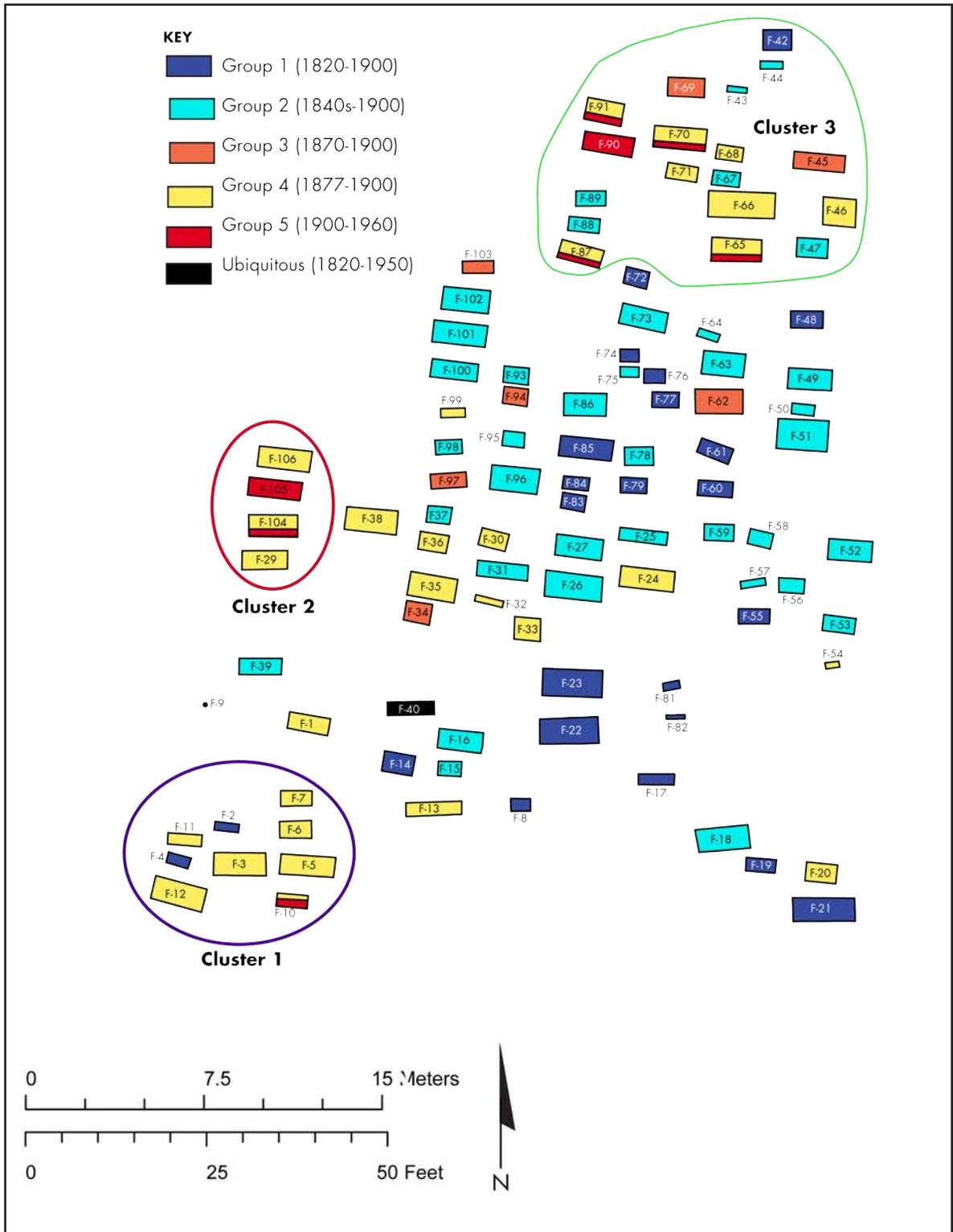
Temporal Groups were plotted on a map of the cemetery to illuminate how the cemetery may have grown over time. In Figure 11.1, a plot of the temporal groups across the cemetery revealed a strong pattern of graves that were clearly deposited after 1870 positioned along the northern, eastern, and western peripheries. These appear to surround a core of Temporal Group 1 and 2 graves, clustered in the center and along the eastern margin of the burial ground.

Temporal positioning suggested the possibility of three clusters. The approximate boundaries of these clusters are illustrated in Figure 11.1. Two spatially distinct groups of graves along the western side were defined as Clusters 1 and 2. Cluster 1 was located on the summit of the hill and represents a group of spatially distinct interments that were most likely placed in the late nineteenth century. The mixture of adults and children imply that it may contain a family group. Cluster 2 contained a group of adults and teenagers that were interred very late in the cemetery's temporal sequence. The lack of children may be evidence that this was not a family group. Cluster 3, on the northeastern periphery of the burial ground was composed almost exclusively of late period burials. The presence of both adults and children may be an indication that this was also a family group.

In addition to these clusters, the cemetery exhibited a concentration of Group 1 and 2 interments in the center. Unfortunately, and as emphasized earlier, Groups 1 and 2 exhibited broad temporal ranges, so it was not possible to definitively classify this central area as exclusively an early to mid-nineteenth-century burial component. The distribution of post-1870 graves around it, however, did suggest that graves possessing later period artifacts were preferentially buried on the cemetery's periphery. The simplest explanation for this would be an outward expansion of graves through time.

The origins of the Avondale Burial Place were never recorded and individual artifact data has so far been unable to definitively identify when the earliest graves were placed in the facility. The spatial distribution of temporal groups, however, provided some hints. Temporal Groups 1 and 2 were located in the land lot's corner adjacent to the property boundary with Land Lot 131. The red clay matrix in this specific location was agriculturally poor and positioned close enough to property boundaries to be easily avoided by the plow, yet far enough away to prevent interment on another

Figure 11.1.  
Spatial Distribution of Graves by Temporal Groups



landholder's grounds. The core burial area was easily accessible by the dirt road east of the cemetery. If this road existed in the nineteenth century, this may have been the primary access way to the cemetery. The burial ground was positioned on a high point in the landscape on a gentle slope and in close association with a wet/marshy area (to the northeast and at the base of the slope). These features were extremely common among pre-Emancipation period African American burial grounds.

While the Group 1 and 2 graves tended to contain the least number of durable materials, which made them difficult to assign to anything but broad temporal ranges, they also reflected the same material pattern found in pre-Emancipation period African American interments. Grave furniture followed simple construction patterns and the materials included with the dead tended to be minimal. This mirrored ethnographic descriptions of slave burials in the Deep South. Unfortunately it was not possible to definitively demonstrate that pre-Emancipation era interments were located in the Avondale Burial Place. However the central core of Temporal Group 1 and 2 graves exhibited the right location, material culture and temporal potential to have been deposited prior to Emancipation.

## XII. CONCLUSIONS

The Avondale Burial Place is the lost vestige of a community that for all intents and purposes has fallen by history's wayside. Its structures have long since disappeared, its lands absorbed by surrounding villages, and its populace has moved elsewhere to pursue opportunities locally or out of the area. The community exists in the dim childhood memories of a few aged members of the European and African American communities. Historical and archeological examinations of the Avondale Burial Place provided glimpses of this poorly understood and largely unexplored niche of Central Georgia.

Only a few African American communities above the fall line have received extensive examination by social researchers. As a result, many aspects of life among those living in the Georgia piedmont are still not adequately understood. One important and underrepresented venue has been their mortuary traditions. Knowledge gleaned from cemetery sites has largely been limited to surface examinations and a few subsurface examinations. The Avondale Burial Place project represents the largest single investigation approached by mortuary archaeologists in the Macon-Bibb County area. In this final chapter, the data presented will be synthesized to provide some insight into the role and place of the communities responsible for developing and using this cemetery.

### AVONDALE EXPECTATIONS AND REALITIES

Ethnographic and historic accounts, as well as previous archaeological research into African American funeral traditions, provided analytical foundations for what predictably should have been present in the Avondale Burial Place. In a general sense, many of these expectations were met. Evidence linking West African, lowland/coastal, and upland folk traditions were visible in the cemetery. Care for community members extended beyond death and meaning-laden objects were important parts of the ritual's material communication system. Skeletal morphology reflected a largely African American ancestry. Health conditions pointed to a lifestyle grounded on hard manual labor, marginal health care, and supported a nutritionally inadequate diet. These patterns suggest that the community depositing in the Avondale Burial Place were composed of people practicing similar lifeways as other African American groups. The cemetery is not so unique as to be un-interpretable from an African American mortuary perspective.

Having said this, however, the remains found in the Avondale Burial Place were not as fully predicted. Some artifacts, including the pestle with F-56, a wire mass with F-18, and oddly shaped nails from F-12, F-25, F-27, and F-29, could not be fully interpreted based on prior knowledge. There were numerous other cases where the Avondale Burial Place did not follow predictable patterns.

The Avondale Burial Place's clay and silty loam depositional environments were far from unique to Georgia and certain phenomena were expected. An examination of historic aerial maps emphasized that the cemetery had not been developed agriculturally for many generations, if ever. At worst, a shallow plow disturbance was anticipated and it was very likely that the grounds had never been plowed. Numerous grave depressions should have been visible on a cleared surface and shaft margins in the underlying soils. Surface disturbances should have been very shallow. Excavations revealed, however, that structural features in the top 45-50 centimeters had been obscured by root growth, animal burrows, and other forms of bioturbation. This adversely impacted surface grave identification and reduced probe survey to a virtually ineffective technique. The ability of a search and rescue dog to pinpoint the location of human remains in the archaeological deposits underneath these disturbed soils was considered dubious. In reality, however, these canines demonstrated that they were in fact able to identify unmarked graves in adverse conditions. Central Georgia's clay subsoils are notoriously challenging for grave identification using GPR and New South Associates was open to the possibility that the method might also turn out to be ineffective. This proved not to be the case. Avondale Burial Place's subsurface environment emphasized that plant and animal activities can have a long-term negative effect on archaeological methods used to detect a cemetery from surface deposits, but that methods including GPR and trained canines were able to overcome these obstacles and define where a burial ground was located.

Finding records on African Americans and their communities, even after Emancipation, can be a challenge. Perhaps naively, it was anticipated that the cemetery would be visible on some map or property description. To date, no depiction has been found. This absence may be a reflection of the value placed in these African American institutions by the dominant nineteenth- and early twentieth-century European American culture. Finding living descendants, particularly those of African American decent, for an unmarked and unrecorded cemetery is often impossible. To the surprise of all involved, however, finding living potential descendants was one of the easiest analytical milestones overtaken. This can largely be attributed to a keen interest these folks had in their own family heritage. Several critical family and community members were found almost immediately in the genealogical network. Differences between project expectations and realities were reflected by these individuals. Initially, family expectations were that little could be gained from the project, however, the reality was that they learned much about their family's past that could not have been gained from historical or genealogical resources.

Based on the original GDOT excavations, a potential model of the cemetery was defined. It was suspected to be a small structure of no more than 25 individuals, probably the result of a single family and/or possibly reflecting a pre-Emancipation temporal affiliation. Despite its rural and semi-isolated location, the cemetery actually turned out to be a community facility. There are likely multiple family groups represented in it. These results implied that a larger, more integrated African American community network was present in the area than originally believed. While likely to contain pre-Emancipation graves, the cemetery best documents a post-Emancipation community.

Hints of variation in the mortuary ritual were implied by the artifacts. Most notably was the absence of salt plates. Use of salt as a component of the body preparation is commonplace among the historical narratives and plates used to hold salt can be anticipated from any cemetery of substantive size. The lack of salt plates in Avondale Burial Place may be evidence that the use of salt was not part of their tradition; that the plates were more rigorously retained after use; or that non-durable media were used to hold the salt. Each alternative implies that the rituals practiced by the Avondale Burial Place community strayed from those more commonly used in the surrounding regions. Variations in grave pit morphology were also considerably greater than expected. Grave pits within a single cemetery are more typically standardized to one or two forms, however the variation exhibited at the Avondale Burial Place, particularly among the construction of vault chambers implied that the rules for burial were dynamic enough to allow multiple traditions and interpretations to be applied interchangeably. The absence or use of hardware on burial cases from the same time period reflects similar patterns of acceptable variation. Assuming that the cemetery has been used more or less continuously from its inception to its closure, mass-produced coffin hardware dating before the 1870s were expected to be present. Of particular note was the absence of 1850s-1870s era coffin screws and sudden appearance of their replacement form – the thumbscrew. These imply that the cemetery reflected a purely post-1870 occupation, with multiple burial case form and decorative traditions being followed, or a change in goods distribution occurred where coffin hardware was introduced to the community after 1870. Either interpretation reveals a considerably more complicated suite of funerary behavior than previously expected.

Among the human remains, skeletal preservation tended to be reversed from pre-excavation expectations. Given that pit features in the relatively acidic red clay tend to retain moisture and that moisture is deleterious to skeletal preservation, New South Associates anticipated that bone preservation would be marginal. More complete skeletons were anticipated to be present in the silty loams. Coarse sand within the clays probably helps to drain clay-dug grave pits, which tended to be on the rise's summit and above the water table. In reality, the water table was much closer to the ground surface along the rise's summit, placing graves in the silty loams in more peril from flooding. Subsurface water contact, not soil form, was probably the more sensitive predictor for skeletal preservation. Age at death also appears to have had profound effects on skeletal preservation. While the risk of disintegration among the undeveloped, woven bone structures of subadults is generally recognized among scholars, New South Associates initially anticipated that skeletal representation would have been greater than was revealed. To provide non-subjective approximations of age, approaches to indirect age estimation was explored to demonstrate that these were indeed child graves. The child, it turned out was a more important component to the skeletal assemblage than originally anticipated. Children provided important clues to health and dietary conditions within the skeletal assemblage. Their number spoke unsettling truths about life in southern Bibb County. Child mortality in the nineteenth century was considerably higher than modern standards, with 30-50 percent of a given assemblage representing subadults. Avondale Burial Place's proportion approaches 60 percent. This value suggests that life may have been more demanding on the young than among other burial communities or that segments of Avondale Burial Place's adult community were being buried elsewhere.

Anthropology's understanding of rural African American death ways, particularly those from Central Georgia, is not comprehensive. There is considerable research that still needs to be done before the structure and motivations behind these behaviors are fully realized. In this regard, it is the unexpected that provides the best evidence that the Avondale Burial Place offers a number of contributions towards a fuller understanding of a largely unrecorded past.

## GRAVE DETECTION METHODS

Avondale Burial Place presented an archaeological challenge that, while not unheard of in Georgia archaeology, has not been fully appreciated. In the span of less than a century, a cemetery completely disappeared from the surface. It seems doubtful that the burial ground was willfully destroyed; abandonment and the forces of nature more likely conspired to return the grounds to their original forested state. The challenge lay in how to find it.

There were no surface indications of the burial ground; in fact bioturbation erased most signs of the cemetery from the top 70 centimeters of soil. This had major negative impacts on the success of available surface detection methods. Soil compaction techniques, which generally do not examine more than the top 30-40 centimeters of soil, were incapable of providing meaningful data in this environment. Locations vegetated with deeply rooted plants enabled search and rescue dogs to identify scents emanating from below the ground surface; however areas covered by shallow rooted plants provided little opportunity for deep particles to travel to the surface. Clay's ability to recompact over time has long been recognized as a confounding phenomenon when searching for older graves with GPR.

Among the non-invasive/marginally invasive surface detection methods, none fared better than detecting 45 percent of all graves. Dogs and radar were capable of identifying the location of the cemetery and in a less than conducive subsurface environment like that at Avondale Burial Place, this was an impressive achievement. While the cemetery was located, most graves were not. What this data emphasized is that in reforested environments, where red clay predominates and the burial ground is over a century old, at best, surface detection methods can provide only a minimum conservative estimate of the number of graves present. In order to determine the true number of graves in a like environment, removal of the confounding overlying layers is necessary. As demonstrated at the Avondale Burial Place, a visual examination of the subsurface is still the most reliable means of grave identification.

## TEMPORAL INTERPRETATIONS

### DATING THE FOLK CEMETERY

The Avondale Burial Place does not represent a single event deposit; rather it was formed over a broad period of time from the gradual accumulation of graves. Temporally sensitive mortuary artifacts indicated that the cemetery probably saw its greatest use in the mid- to late nineteenth century, with the deposition of some graves occurring into the early twentieth century. These dates however are greatly hampered by cultural traditions that streamline the resources devoted to the dead and emphasize use of locally obtained, reused or recycled, and non-commercially produced

materials. The artifacts available for dating therefore tend to reflect long manufacturing periods or, as in the use of coffins (over caskets), continued use of traditional forms long after they have fallen out of popularity among the mainstream American culture. As a result of these cultural patterns, many individual graves reflect dates that span a broad period of time.

When more refined dates can be obtained they result from two material culture patterns. First, these dates are the product of innovations and improvements in technology. The appearance of new materials rarely represented a replacement of an existing form; rather they were additions to the material assemblage. These changes were found almost exclusively among materials used to encapsulate the dead. As seen in some interments by the inclusion of other objects dating after the innovations were adopted, acceptance was not universal and graves lacking these innovations were clearly being deposited.

Second, other cultural traditions, principally those designed to provide the dead with materials they needed in the spirit world, prompted the inclusion of materials with more abbreviated manufacturing and use dates. The form of personal objects included reflected aspects of the decedent's personality and circumstance. Since these were neither substitutions nor innovations, their inclusion was based more on cultural than technological norms. Their presence was therefore less predictable. Their inclusion in graves that were otherwise identical to the more spartan traditional forms also implied that interments with and without personal objects (including both durable and nondurable forms) might well have been contemporary.

While approximate temporal affiliations can be obtained for folk burial grounds like the Avondale Burial Place, the nuances of how individual graves can be dated are dramatically influenced by burial tradition. Unlike less isolated, more mainstream, and more urban cemeteries, rural folk cemeteries appear to be less prone to change by cultural trends and some individual graves may express a temporal lag in the funerary traditions.

#### ARE SLAVES PRESENT?

One of the more problematic issues surrounding the Avondale Burial Place is its origins. Historic records provide no insight into when the cemetery was first developed and the lack of marked gravestones provides no indications of the order and time that graves were placed into the cemetery. There are numerous graves that contain artifacts that could have only been placed after the 1860s; however, there is also a large contingent of interments with TPQ dates that originate in the early nineteenth century. Their broad time depth means that they could also have been placed after freedom was granted. Avondale Burial Place's archaeological evidence is not strong enough to demonstrate that graves were unequivocally placed before Emancipation. The cemetery, however, does offer several lines of inferential evidence that slaves may be present in the assemblage.

There are no indications that the cemetery was constructed in close proximity to any of the surrounding farm complexes. Its location seems to have been in an isolated portion of the landscape; it probably has always been the back portion of an agricultural field. It was placed in the corner of a land lot and generally deposited in a red clay summit that was less agriculturally

viable than the sandy loams surrounding it. The burial ground occupies the summit of a low rise and follows a slope down towards a low marshy area. These are geographic features that were commonplace among pre-Emancipation African American cemeteries.

Two artifacts were recovered from the cemetery that were clearly made prior to the Civil War. The first, a pierced coin dated 1837 was found with the child in F-34. While there is no disputing the manufacturing date, the child was also buried with a doll made in the latter quarter of the nineteenth century. Heavy wear on the coin was evidence that it had been used for a considerable period of time prior to deposition and it probably came to the child as an inherited object. In this case, the coin's context demonstrates that the burial date was considerably later than its manufacturing date. A campaign token for the 1840 presidential election found with the gentleman in F-86 also offers a pre-Emancipation era manufacturing date. The ribbon aperture for this soft metal, highly cupreous object exhibited little to no signs of wear and it was likely curated for a while before being buried. Losses of surface details are more likely the result of corrosion in the grave than from wear. While F-86 offers the best possibility, evidence is not strong enough to definitively conclude that it was a pre-Emancipation interment. At the very least, there are artifacts in the Avondale Burial Place assemblage that were made prior to Emancipation and most likely an enslaved community used them.

While individual grave dates could not positively identify pre-Emancipation era interments, the distribution of these dated graves on the site suggested a pattern of outward expansion. Graves reflecting the earliest possible TPQ dates tended to be concentrated near the center of the cemetery, while graves with clearly later TPQs were deposited along the burial ground's periphery. This distribution implied that during the latter phases of its use, space within the cemetery was not equally available, so new graves were placed in whatever grounds were available. These would have been places where graves did not already exist. While clustering based on common burial traditions cannot be fully dismissed, the presence of a well-developed burial area in the center of the cemetery suggested that its time depth might extend farther back than the better-dated peripheral interments.

The archaeological data from Avondale Burial Place is not robust enough to definitively identify when the cemetery was first used. It is unlikely that its origins date prior to settlement in the 1820s, but it may well have been founded on the first slave death in the community. Given the intertwined network of slave families that likely existed among the various land holdings in the immediate area, the burial ground may not have been exclusive to slaves associated with Land Lot 130. It likely served as a communal facility for all members of an extended community network, living in the immediate area.

### WHERE DID EVERYBODY GO?

The abandonment of the Avondale Burial Place was not isolated from the world around it, its closure was closely linked with changes that occurred within the community as a whole. Life for the African American in southern Bibb County during the late nineteenth- and early twentieth-centuries left a lot to be desired. Socioeconomic disruptions brought on by the Civil War had virtually collapsed the region's infrastructure and it took many decades to recover. The region's economic base was established on agricultural systems that were threatened by fluctuating economic

conditions, competition from other American and international markets, and changing environmental conditions, as typified by the spread of the boll weevil. Its rural, isolated location provided few opportunities to better one's condition and the labor intensive lifestyle with marginal return played considerable havoc on the health of all community members.

It seems little wonder that when opportunities outside of southern Bibb County were presented, members of the burial community made the best of them. While northern industries targeted south and central Georgia as important recruiting points as early as the 1870s, the outbreak of World War I placed a renewed emphasis on inducting southern Georgians into the northern labor force. The foundation of many northern industries were traditionally cheap immigrant labor, however European hostilities reduced outward flow as these nations filled all available hands with rifles, or used them to support their own war efforts. At least half a million African Americans (and an equal number of European Americans) were recruited from the Deep South to fill northern labor shortages. When they moved, they took their funerary needs with them. One reason that the Avondale Burial Place fell out of use was because its patrons emigrated out of the area.

It is also clear that not all members of the community left the area. The same surnames observed in nineteenth- and early twentieth-century censuses and other regional historical records appear in mid-twentieth century and modern day documents. Local informants confirm that there are kinship ties between these past and present groups. These very same names also appear in local cemeteries including the Good Samaritan and Mount Hope AME Church burial grounds. If southern rural African Americans traditionally focus on burial with their kinsmen, why did they discontinue use of the Avondale Burial Place?

One potential explanation has to do with empowerment. Prior to the Civil War, most African Americans were granted some dominion over the way they were allowed to bury their dead, but this control was largely at the discretion of the slaveholder. While slaves may have petitioned for favored grounds for burial, the decision of where to bury was generally not theirs to make. There was also no guarantee that that the slave would have access to the burial grounds in the future.

One of the developments that occurred from the 1860s through early 1900s was that African Americans gained empowerment over the dead. Initially freedom meant that they were able to conduct mortuary rituals according to their own terms, however since very few African Americans owned property, they were at the mercy of other, mostly European American landowners for access to burial sites. This lack of control over the burial grounds meant that they were still subservient to the landowner class.

Wrestling control over land for burial purposes was accomplished on three fronts. First, land came with churches. Landowners who were sympathetic to the spiritual needs of the African American community occasionally donated land for church construction, but more commonly, churches also gained land through direct purchase. While land owned churches gave them the freedom to worship as they saw fit, it additionally provided grounds for parishioners to bury their dead. Collective pooling of community funds would also go to acquire burial space. The dues paid to a mutual aid society, particularly burial associations, provided the capital needed to purchase lands (or sections within existing cemeteries) for exclusive burial of its members. Finally, some African American entrepreneurs recognized business opportunities in cemetery management. African

American funeral directors used private funds to develop burial grounds for use by the African American community. In each of these cases, control over the ultimate fate of the dead was transferred squarely into the hands of the African American community.

The Avondale Burial Place was never owned by African Americans. The cemetery was always under someone else's control. While there are no indications that landowners ever exercised their right to deny access to the cemetery, the Avondale Burial Place did not represent a secure burial ground. Burial in a cemetery that fell under African American control may have been a strong motivator for change. This is emphasized by the presence of surnames with ties to the land immediately surrounding the Avondale Burial Place in the Good Samaritan (Bibb Mount Zion Baptist Church), Mount Hope AME Church and other local cemeteries. Interment in an African American owned cemetery became a symbol of empowerment. In keeping with the southern perspective, the African American cemetery and the physical traces of one's ancestors in it became a means of legitimating a community's claim to a place in the social landscape.

## CULTURAL CONCLUSIONS

The Avondale Burial Place straddles two geographic provinces. The site exhibits both the sandy loams associated with the coastal plain and the red clays that comprise much of the piedmont and upland areas. The division point between these two provinces, the fall line, runs across this section of southern Bibb County. Cultural geographers have tended to view the fall line as not only a physiographic division but also as a cultural boundary. There is a tendency to view lands south or east as associated with the coastal subculture and those north or west as following more upland traditions.

Mortuary traditions in Georgia and much of the south have been characterized as following a similar dichotomy. As outlined in Chapter IV, distinctive folk patterns have been identified with the coastal regions and with the uplands. These typically have been associated with non-elite rural communities following beliefs and traditions that were not part of the contemporaneous mainstream American culture.

On closer examination many of the features identified as distinct were actually quite similar. In some cases, for example, the need to get the decedent interred quickly prompted the use of a second funeral or funeralizing at a later date. While some of the functional origins in African American and European American communities for why these practices developed seem to be diverse, the common response implies a considerable amount of cultural exchange between groups. In other forms, contrasting communities used similar objects to fulfill distinctly different concepts. The use of vessels as grave decorations for example, was applied by the lowland African American communities as a form of water symbolism and spirit appeasement while uplanders tended to use whole vessels to contain flowers and decorative edging. To the casual observer, these practices may appear identical and undoubtedly they have influenced the representation of one another, but the motivation for their use comes from two different sources. The fulfillment of common needs by similar actions and the use of common materials to fulfill different purposes have resulted in a reinterpretation and blending of many mortuary traditions. To some scholars, these may be signs of cultural syncretism. While largely considered separate folk entities, upland and lowland folk mortuary traditions appear to be considerably more intertwined than is popularly conceived.

The Avondale Burial Place exhibits qualities that link it to both upland and lowland burial traditions. Its location coincides well with the placement of slave and freedmen lowland burial grounds as well as sharing many qualities with upland localities. Grave structure closely followed patterns more prominently documented in upland settings, while the inclusion of personal objects was a distinctly lowland concept. Other forms, including orientation, receptacle use, tendency towards minimal grave good inclusions, and clothing choices were shared and cannot be attributable to one burial tradition over the other. It seems unlikely that one particular burial tradition was followed more than another. More likely, the presentation teams responsible for the Avondale Burial Place considered a variety of traditions that were available in the region, chose elements that were appropriate to the circumstances surrounding the individual funeral event, and used these to build a ritual that fulfilled the social, physical, and spiritual needs of the surviving community.

### MATERIAL CHANGE

The Avondale Burial Place was in use during a period of transition in the American funeral industry. While the undertaker and funeral director were fixtures of urban landscapes since at least the mid-nineteenth century, their domain only marginally included the rural hinterlands. In these regions, more traditional mechanisms based on family and close-knit ties within the community were relied upon for fulfilling funerary needs. To date, historical research has been unable to identify any funeral professional who specifically serviced the Avondale, Walden, and Rutland communities, but there is ample evidence that commercially produced mortuary paraphernalia were imported. More specifically, coffin hardware, if not individual coffins and caskets, were commercial products from outside the region.

Coffins and caskets are important mediums for social communication. They provide a means to associate ideas directly with the decedent's mortal remains and make prominent statements about the dead and the world they leave behind. Recognizing the importance of the funeral in African American culture, a 'good coffin' would be a significant part of a 'good funeral.' Nuances in the surviving burial case components indicate that both handmade and commercially made coffins and caskets were probably used in the Avondale Burial Place. Pre-Emancipation era members of the African American community would have been familiar with the concept of coffin construction and the burial community did not specifically have to rely on outside sources to obtain burial cases. Receptacles, potentially those of higher quality and with a more refined finish, however were available for a price and could easily have been imported from Macon.

Coffins and caskets may have been furnished indirectly. When funeral expenses were defrayed by membership in a mutual support group, the product provided by these organizations would invariably have a commercial rather than a locally made origin. The introduction of commercial burial cases to a community with an orientation aimed at self-sufficiency may have been instigated by presentation teams attempting to meet a lofty cultural standard.

An examination of the relationships between various forms of coffin hardware noted that when hardware was used, it invariably included the handle and thumbscrew. The handle vastly improved the presentation team's ability to transport the burial case from one place to another,

while the thumbscrew provided an efficient means to tightly close a receptacle without the aid of additional tools. Since both forms appear on coffins that are otherwise virtually identical to more traditional burial cases, the presence of these hardware were not related to a replacement of receptacle type. Instead, they appear as additions to an existing form without any other substantive modification to the original form. By the time handles and thumbscrews appear at the Avondale Burial Place in the 1870s, they have transformed into highly decorative appliances. It is not unreasonable to suggest that the aesthetic appeal offered by these functional appliances may have predicated the inclusion of other purely decorative hardware to the mortuary ritual's material culture.

The introduction of coffin hardware to the Avondale Burial Place was not a material revolution. There are numerous examples of burial cases lacking hardware that can be dated to after the 1870s in the assemblage. These data indicate that the mortuary program was not rigid; rather, it was dynamic enough to accept more than one means of achieving a culturally acceptable funerary ritual. Another wonderful example of this was in the way the grave was constructed. Not only were two major forms present, the simple and vaulted grave, but also there was considerable variation in secondary burial chamber shape. Invariably all grave shafts achieved the same goal; they removed comparable volumes of earth to produce a grave capable of containing the human form. presentation teams were able to choose a suite of alternative behaviors and outcomes to provide the decedent with an acceptable funerary ritual.

## BIOLOGICAL CONCLUSIONS

### ISSUES OF PRESERVATION

Preservation conditions in any given cemetery are major influences on the level of information available. The acidic nature of the soil acted to dissolve a lot of soft materials, leaving only the more durable forms for recovery. Materials such as clothing, leather, wood, and to a lesser extent metal have significantly deteriorated, removing many important features of the community's material culture from examination. Our view of the cemetery therefore is biased by what was available for the archaeologist to examine.

Nowhere was this more profound than among the skeletal remains. Many skeletons exhibit catastrophic loss of trabecular bone, leading to the collapse and destruction of the surrounding cortical bone, and about a quarter of the cemetery revealed no discernable human remains. Indirect age estimation was able to determine that most graves containing no skeletal remains were probably those of children. As a direct result of poor preservation, the assemblage's sex structure was likely compromised; its age structure, particularly as it related to the very young, was incomplete, and determinations of ancestral affiliation was possible for only a few individuals. Less than optimal skeletal preservation severely limited what could be concluded about both the individual and the population.

Less than optimal preservation conditions however were not uniform across the cemetery. In a seeming contradiction, burials placed in the more acidic sandy red clays tended to be better preserved than those in the sandy loams. Something more than soil form was negatively impacting

these remains. The most likely candidate was ground water. Graves not placed on the red clay summit were prone to frequent inundation by changes in ground water level, particularly after a hard rain. In a few cases, bases of graves were below modern ground water levels. Water acted as a biasing agent. Knowledge about the site was more comprehensive in areas where graves were above normal groundwater levels than in parcels that were below it. Family groups located on the northern (and downhill) side of the site are less understood than those located farther south.

### SKELETAL HEALTH AND MORPHOLOGY

Knowledge of the health and morphology of the Avondale Burial Place burial community is based on (and biased towards) individuals who were interred toward the southern end of the site. In general skeletal remains are perhaps not the best source to examine morphological genetic variation. Connective tissue is designed to respond and adapt to the physical and physiological worlds around them and as a result, they reflect a considerable amount of environmental influence. They are at least somewhat durable and capable of providing evidence of broad genetic trends in a subject's phenotype. The people of Avondale Burial Place exhibit evidence of an ancestry most closely linked with the environmental conditions of Africa. As with other human populations, there is a considerable amount of genetic variation within the gene pool. Some individuals exhibit features that are more frequently thought of as European or Asian. By themselves, these features do not constitute evidence of admixture but may well also represent one of many polymorphisms expected to be present within a largely African gene pool. There is also considerable historic evidence that admixture between European American and African American gene pools did occur prior to Emancipation throughout the South. There is no direct evidence that this occurred within the local community; however during the late nineteenth and early twentieth centuries, mulattos and other people of mixed heritage were generally not considered members of the European American community. While their pedigree may not have been fully traceable to the African continent, it is most likely that the folks buried in the Avondale Burial Place were socially considered part of the African American community.

Skeletal tissue is not much better for recording health conditions and causes of death than it is for genetic variation. Outside of major trauma, health maladies tend to leave a mark on the skeleton only after they have been in contact with bone for several weeks. Given the acute condition of many deleterious agents and the lack of contact between bone and specific stress agents, it should come as no surprise that a cause of death for the vast majority of folks in the Avondale Burial Place was unknowable. Many chronic conditions impact more fragile portions of the skeleton, such as the ribs, vertebrae, pelvis, hands and feet. When preservation is less than pristine, these portions of the skeleton are not present in conditions conducive to identifying health maladies. The data available for consideration should only be considered a sample at best of the true health condition. What is preserved in the Avondale Burial Place assemblage emphasizes several points.

Perhaps one of the most deleterious issues facing the Avondale Burial Place burial community was a lack of health knowledge. Medical understanding of germ theory and disease processes was still rudimentary and the awareness of these concepts was largely unknown in most isolated rural communities. The Avondale Burial Place people lived in an environment that promoted insect-borne

and parasitic maladies; they had very little concept of how to combat these. The importance of sanitation and disease prevention was not perceived and as a result, communicable, infectious, and contamination-based diseases were common threats. The simple acts of a midwife not washing her hands, a child walking barefoot, or two friends sharing a water bottle were enough to place community members in mortal peril. Life in southern Bibb County had its share of dangers. Farm equipment, unruly animals, and irregular terrain were among the agents capable of inflicting trauma. Bones were broken, muscles were torn, and interpersonal relationships may well have erupted into violence. Medical responses to injury and sickness were often ineffectual and even dangerous. Access to medical care was extremely limited and families were often left treating the victim on their own with little to no guidance. Some home remedies were more hazardous than the initial ailment. These conditions would not change until rural health care was made a priority in the early to mid-twentieth century.

Earning a living in southern Bibb County meant that the populace was exposed to chronic heavy labor demands. Labor requires the body to burn energy up and beyond that needed to maintain homeostasis; this placed an increased demand on the body's nutritional resources, taxing all systems. Heavy labor demands meant that energy reserves available to help combat disease or injury were significantly reduced, increasing the possibility of succumbing to an ailment. Repeated stress placed on muscle attachment sites increased their surface dimensions. Cartilage and tendon surface exhibited ossification to accommodate for the labor loads applied to them. Chronic oversteering caused deterioration of the joint surfaces and onset of osteoarthritic changes. These limited movement and availability of the joint to function completely, requiring other joints to accommodate the load, thereby oversteering them and spreading joint problems throughout the body. Damages recorded in the joints emphasize that the community was engaged in a lifestyle that literally wore out their bodies, often prior to the onset of old age.

The food available to the community was of poor quality and frequently in short supply. The southern rural dietary staple of corn, pork, and molasses provided enough calories to sustain the individual but was devoid of many important nutrients. Its high cholesterol probably was a significant contributor to heart disease. These foods were generally non-abrasive, providing an opportunity for bacterial colonies to remain in the mouth. The high carbohydrate nature of this diet promoted plaque-forming bacterial colonies; the sugars in these foods enabled these colonies to produce a variety of acids, thereby destroying dental tissues. Caries, abscesses, attrition, and periodontal disease were the common result.

A downward spiral similar to that outlined by Scrimshaw (1975) emerged from this state. Dental disease meant that the victim was unable to efficiently consume foods. Less food reduced the quantity of nutrients and energy available to the body and lowered the immune system's ability to fight off infection. This, in turn, would have reduced the body's ability to fight off maladies, including further dental infections, exacerbating the condition and ultimately contributing to a collapse of the individual's health. Among women, pregnancy and fertility cycles further lowered immune system capabilities enabling infection to gain a foothold. Since high pregnancy rates were needed to overcome the effects of high child mortality, Avondale Burial Place's women would have been especially vulnerable to compromised immune systems.

Survival to adulthood was a feat unto itself. Nutritional deficiencies were a leading contributor to death in the rural south. Sadly, the Avondale Burial Place burial community was no exception. While malnutrition was a feature that plagued all members of the community, it was especially hard on the children. A general lack of dairy products and green vegetables meant that iron, needed to provide oxygen to body cells was in short supply. Consuming high amounts of corn, whose digestion taxes the body's iron stores added to a deficiency of both iron and oxygen. Without adequate quantities of oxygen, all cells would have ran at a less than optimum efficiency. Anemic conditions, emphasized by cribra orbitalia, were clearly a part of a population's health and disease load. If sickle cell anemia was also present, the afflicted children were in danger of suffocating within their own tissues. Other dietary concerns, including inadequate consumption of vitamins and minerals, contributed to skeletal responses such as dental hypercementosis. Reduced amounts of green vegetables and dairy products led to low levels of dietary calcium; this in turn affected bone growth. Lack of Vitamin D probably accounted for the rickets-like bowing in F-36 limbs and may well have contributed to the periradicular bands observed in this child's molars.

Other childhood events likely contributed to poor health. Weaning undoubtedly represented a major nutritional crisis in the Avondale child's diet. Abandonment of the nutrient-rich breast milk for a nutritionally deprived, solid-foot diet had dire consequences on health and growth. In some children, it resulted in growth arrest among the developing teeth; other health compromised children were likely unable to survive the transition and contributed to the staggering child mortality rate. Food shortages appear to have been commonplace, with the quality and quantity of food available waning during the winter. Lack of niacin during the winter months led to outbreaks of pellagra during the spring and the development of seasonal hypoplasial bands in the teeth. The generally shortened stature among adults is likely the cumulative affect of growth arrests that were more profound than could be accommodated for catch-up growth during less hard months. Children expressing any physiological weaknesses were undoubtedly the first to be impacted by any number of communicable diseases and many were not able to overcome these conditions. Childhood mortality was high as emphasized by both the cemetery's age sample structure and the sheer magnitude of probable subadult graves. Perhaps the greatest irony was that graduation to adulthood simply meant a life of toil, hard work and a host of related maladies.

Where Avondale's skeletal record remains murky, the historic record sheds important light. In general, the state of health among the rural African Americans in the south was poor. Plagued by inadequate diets, lack of access to medical help, poor sanitation, limited economic resources, and a labor-intensive lifestyle, many families probably lived on the brink of survival. Any vision that life in south Bibb County African American communities was any better than among most other southern African American communities is a romantic illusion.

## PERSONAL IDENTIFICATION

One of the primary goals of cemetery recovery projects where unmarked graves are encountered is to establish possible identities for sets of human remains. Traditionally, this approach compares biological and cultural characteristics in the skeleton to the socio-biological features of potential candidates (Rathbun and Buikstra 1984). When possible, the sum totals of all life events recorded

in a skeleton are evaluated to narrow down the range of possibilities. Personal belongings and other grave artifacts can also be used to associate specific skeletons with a given individual. Temporally diagnostic objects are likewise important identification references. They eliminate candidates that fall outside of the grave's temporal boundaries.

To date, there are no historical records or archaeological phenomena, such as gravestones or coffin plates, that positively identify anyone in the Avondale Burial Place. A review of historical and genealogical data associated with African Americans living in the Walden, Avondale, and Rutland area and in close proximity to the cemetery revealed a list of candidates who may have been buried there (Table 12.1). Ancestry, age, and sex were primary characteristics discerned from historical documentation that could be used to help positively identify human skeletal remains. These data were contrasted with artifact data to identify candidates that best fit the data. There were 25 individuals identified as possibly having been interred in the Avondale Burial Place. Due to the vague historic records addressing them, Susan Caroline (as either a Ryland or as Ryder/Barton/Moore) and Darkas/Hattie Thomas may be present either as young persons or alternatively as older adults. Both fates for these women were considered. The results of these comparisons are also provided in Table 12.1.

*Table 12.1. Possible Identities for Avondale Burial Place Graves*

Candidate	Sex	Age at Death	Death Date	Potential Features
Amy Loday	Female	64-84	1880-1900	29, 46, 49, 61, 62, 70, 73, 90, 100, 101, 102
Columbus Walker	Male	21-41	1880-1900	5, 22, 26, 38, 45, 46, 49, 52, 61, 65, 66, 85, 86, 90, 100, 101, 102, 104
Darkas (As Hattie Thomas)	Female	43-63	1880-1900	18, 21, 29, 33, 39, 46, 49, 61, 62, 70, 73, 86, 90, 96, 100, 101, 102
Darkas (As a McArthur Slave)	Female	9-11	1850-1852	40
Elbert Barton	Male	21-41	1880-1900	5, 22, 26, 31, 38, 45, 46, 49, 52, 61, 65, 66, 85, 86, 90, 100, 101, 102, 104
Elijah Barton	Male	>13	>1880	5, 12, 16, 22, 24, 26, 27, 31, 35, 38, 40, 45, 46, 49, 52, 61, 65, 66, 85, 86, 90, 100, 101, 102, 104, 105, 106
Floyd Barton	Male	48	1882	35, 49, 61, 86, 100, 101, 102, 104, 106
George Ryland	Male/ Female(?)	1-11	1870-1880	1, 2, 4, 7, 8, 13, 14, 15, 17, 19, 20, 30, 32, 34, 36, 37, 40, 42, 43, 44, 47, 48, 49, 50, 53, 54, 55, 56, 57, 58, 59, 60, 63, 64, 67, 69, 72, 74, 75, 76, 77, 78, 79, 81, 82, 83, 84, 88, 89, 93, 94, 95, 97, 98, 103
Henry (As a McArthur Slave)	Male	5-25	1852-1870	17, 25, 31, 40, 42, 49, 53, 53, 61, 77, 89, 100, 101, 102
Infant Daughter of Ellen Virginia	Female	Infant	~1860	2, 4, 8, 14, 15, 19, 37, 43, 47, 48, 50, 55, 56, 57, 58, 59, 60, 64, 72, 74, 75, 76, 78, 79, 81, 82, 83, 84, 88, 95, 98
Isabella Walker	Female	31-39	1872-1880	18, 21, 23, 29, 39, 49, 61, 62, 73, 96, 100, 101, 102

Table 12.1. Possible Identities for Avondale Burial Place Graves

Candidate	Sex	Age at Death	Death Date	Potential Features
James Ryland	Male	40-50	1870-1880	12, 16, 26, 35, 45, 49, 61, 85, 86, 100, 101, 102, 104, 106
Joe McClendon	Male	28-38	1870-1880	22, 26, 31, 38, 45, 49, 52, 61, 85, 100, 101, 102, 104
John Ryland	Male	6-16	1870-1880	1, 13, 17, 25, 30, 40, 42, 49, 53, 61, 63, 65, 69, 77, 89, 94, 97, 100, 101, 102
Joshua Walker	Male	37-45	1872-1880	22, 26, 35, 45, 49, 52, 61, 85, 86, 100, 101, 102, 104
Letty Walker	Female	Indet.	1880-1900	18, 21, 23, 29, 33, 39, 46, 49, 51, 61, 62, 70, 73, 86, 90, 96, 100, 101, 102
Lucinda	Female	7-27	1852-1870	17, 23, 25, 40, 42, 49, 53, 61, 63, 73, 89, 100, 101, 102
March Thomas	Male	32-40	1872-1880	22, 26, 31, 45, 49, 52, 61, 85, 100, 101, 102, 104
Margaret McClendon	Female	40-60	1880-1900	18, 21, 29, 33, 39, 46, 49, 61, 62, 70, 73, 86, 96, 100, 101, 102
Mary Thomas	Female	10-20	1870-1880	1, 17, 25, 29, 40, 49, 51, 53, 61, 62, 65, 73, 97, 100, 101, 102
Ned McClendon	Male	46-49	1876-1877	12, 16, 26, 35, 45, 49, 61, 85, 86, 100, 101, 102, 104, 106
Peggy	Female	62-82	1860-1870	33, 49, 61, 62, 73, 100, 101, 102
Nancy	Female	67-87	1880-1900	46, 49, 61, 62, 70, 73, 90, 100, 101, 102
Samuel Ryland	Male	8-18	1870-1880	1, 13, 17, 25, 30, 31, 38, 40, 49, 53, 61, 65, 69, 97, 100, 101, 102, 104
Sophonria (As a Young Woman)	Female	18-28	1860-1870	18, 23, 25, 49, 51, 61, 62, 73, 100, 101, 102
Susan Caroline (As Ryder/Barton/Moore)	Female	70-80	1910-1920	70, 90
Susan Caroline (As a Ryland)	Female	25-35	1870-1880	18, 21, 23, 29, 39, 49, 51, 61, 62, 65, 73, 96, 100, 101, 102

Comparing what is known about these candidates to what was found in the cemetery revealed inconsistencies that rejected many interments from consideration for being a given person. Not all graves could be eliminated. Each historically identified individual was potentially represented by a number of features. The information currently available on these persons is incapable of discerning which specific grave may be the correct fit. It should be recognized, thus, there may be hope in the future. Genetic comparisons may be able to help establish identity; other personalized characteristics such as the cause of death, distinct genetically based morphological characteristics or cultural modifications can also be used to narrow the range of possibilities. Likewise, historical documentation, such as letters, photographs, death certificates, and church/funeral home records sometimes record life events such as injuries, dental attrition, stature, or degree of infirmity that can be tied to specific skeletons in the cemetery. Continued inquiry with the information provided by historic records and living informants will undoubtedly help uncover evidence that further links a given person to a set of specific remains.

## A FINAL VIEW OF THE AVONDALE BURIAL PLACE

The grounds holding the Avondale Burial Place were very different in the twenty-first century than they were during the nineteenth and early twentieth centuries. When the cemetery was in use, there were probably two roads providing access to it. A farm road that ran between LL 130 and LL 131 provided primary access. This road is visible on historic aerial photographs, as well as the 1922 Soil Survey. This road became highly rutted around the cemetery and it is likely that surface traffic veers to the west, potentially into the cemetery grounds, but it does not appear that these actions impacted any graves. A second road travelled obliquely around the western side of the cemetery, running from the northeast corner towards the southwest side, connecting with an unnamed trail that passed westwards towards what is now Highway 41. A post mold (F-9) along this side of the cemetery is indicative that the cemetery was at least partially surrounded by a fence. Early aerial images of the parcel indicated that Avondale Burial Place lacked any large trees. The forest encountered during initial visits to the site was purely a twentieth-century phenomenon.

It is extremely likely that the cemetery originally exhibited a number of surface decorations. Graves were undoubtedly marked by monuments, made either from wood or fieldstone, the latter of which having likely disappeared over the intervening years. Bricks found on the surface may have been used as grave markers or served as border edgings. Glass vessels were undoubtedly present. Some of these probably held flowers, water, or both, while others were likely 'killed' and were only present in fragmentary form. These and the highly glazed ceramics, which were probably also present in complete and fragmentary forms, would have shimmered in the sunlight, adding an air of mysticism to the grounds. Toys and other personal possessions would have told an audience about the dead and emphasized that their identity had not been forgotten. The lack of surface depressions indicated that the graves were attended on a regular basis, and it is possible that they may have originally been mounded.

The cemetery most likely served the funeral needs of a community of African Americans living in the immediate vicinity. Families living in the Rutland, Avondale, and Walden communities either used the cemetery or belonged to an extended kinship network that included folks who were interred there. Many of these people either were slaves or descended from slaves who had been brought into the area to work in the region's agricultural industry. While roadways and rail lines linked them to the outside world and the nearby regional center of Macon, these communities remained relatively isolated from much of mainstream American culture. Their world focused on a survival strategy emphasizing use of resources that were available in the local environment and a reliance on traditional life ways that had proven to be reliable in the past.

There is no way of getting around the fact that their life was demanding. The community retained its ante-bellum agricultural focus although farming may not have been as profitable as it had been earlier. With the collapse of organized field labor, landholders were tasked with negotiating with individual laborers to keep their land in production. The division of large tracts into smaller parcels probably placed as much, if not more physical demand on the individual field laborer as had existed prior to Emancipation. Returns were relatively meager. Physical labor took a toll on the human frame and its fruits provided barely enough sustenance for families to survive. They

survived on a diet that lacked adequate nutrients. Their meals, in fact promoted bacterial growth, destroying the oral environment, and limiting the amount of food that the victim could consume. Poor nutrition bred poor health and there were numerous pathogens in the environment to further challenge an already stressed body. Few community members lived into their 60s or 70s.

Perhaps the most tragic result of life in southern Bibb County was its toll on the young. It is unlikely that children were adequately nourished and this impacted their growth. Growth insults were recorded in their teeth, and it is likely that malnutrition stunted their stature. That is if they survived; with over half the cemetery represented by children, a large family would have been needed to insure perpetuation into the next generation. Larger families would have placed more demand on the family's resources, leaving less to go around for everyone. It is very likely that childhood may have been the most perilous time in the average Avondale Burial Place community member's life.

Death would have brought an outcry from the community. Family and friends would have bonded together to insure that the dead were provided with an appropriate farewell. Drawing on traditions stemming from their own cultural heritage and concepts imbedded in regional customs, a ritual designed to meet the needs of the dead and the living was conceived. The tools of the funeral ritual were found in their own community and as time passed, the trappings of commercially made paraphernalia began to replace the time worn traditions of handmade materials. Mourners gathered at the victim's home or church; they blessed the dead and perhaps with help from their society members, jubilantly marched away to rejoice the decedent's journey to another world. Gathering at the grave, hymns and prayers were offered. The dead were not forgotten, their life would be celebrated and the community would re-bond in the hope that the "lights on Canaan's far shores" were those of a better world.



## XIII. THE SECOND FUNERAL: REINTERMENT AT BETHEL AME CHURCH, BYRON GEORGIA

"These must be very special people. We only get one funeral and these folks got two."

Rev. Herman "Skip" Mason, Descendant

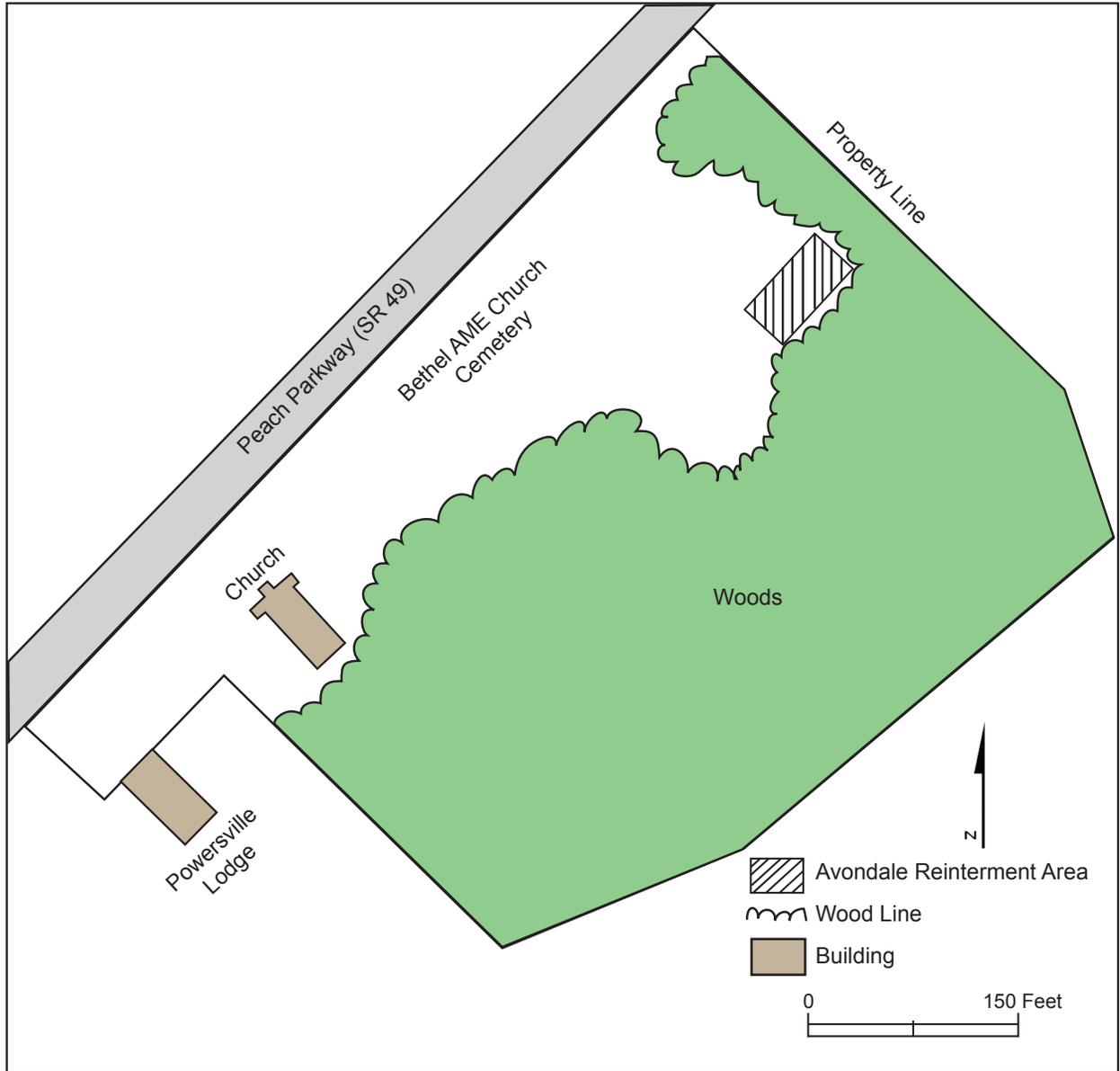
February 21, 2012

The Georgia Department of Transportation had several objectives to meet in the relocation of the Avondale Burial Place. Once the decision was made to relocate Avondale Burial Place, several objectives were established. First, all graves in the cemetery should be relocated to a single place as close to the historic location in southern Bibb County as possible. Second, the new location should be an established, managed cemetery to assure that no neglect or abandonment would occur. The third objective was to preserve as much of the mortuary meaning as possible by placing the burials in the same pattern and orientation as was used as the Avondale Burial Place. This objective would require sufficient space for the 101 graves and voids to implement. After numerous considerations, the Bethel African Methodist Episcopal (AME) Church Cemetery, located at 6230 Peach Parkway in Byron, Georgia was identified as the most suitable relocation site. The Bethel AME Church Cemetery occupies a 5.13-acre tract and contained adequate space for housing the Avondale Burial Place assemblage (Figure 13.1). A review of the property by GDOT and New South Associates found that use of the Bethel Cemetery as a reinterment site was in compliance with state, municipal, and GDOT regulations and applicable environmental statutes.

Technically, the reinterment process began during the recovery stage. Once excavation and examination were completed, all artifacts and human remains were inventoried. Human remains and fragile artifacts were wrapped in acid-free tissue. Most artifacts were subsequently placed in plastic bags to reduce transport damage. Human remains were packaged by element or body segment and arranged anatomically inside specially designed polystyrene burial containers. These containers were marked to indicate the head and foot ends to ensure proper orientation when placed back in the ground. All recovered materials were transferred to the temporary storage facility at the New South Associates' Stone Mountain office until the cemetery was fully excavated and all reinterment arrangements were completed. The storage area was climate controlled, behind locked doors, and checked each workday to ensure that the remains were in a stable environment.

The physical relocation of the Avondale Burial Place did not commence until approval was obtained by all overseeing agencies. A 0.048-acre area in the northeastern section of the existing cemetery was delineated, cleared of all vegetation, and prepared for interment. Plan view maps of the original Avondale Burial Place's structure served as a blueprint for grave placement at the Bethel AME Cemetery. It was not physically possible to place graves in the Bethel

Figure 13.1.  
Plan View of the Bethel AME Church Grounds and Cemetery



Cemetery following exactly the same arrangement as noted at the Avondale Burial Place. A compromise, where grave placement followed the established arrangement in the Bethel Cemetery, enabled interments from Avondale Burial Place to be placed in the same order and kept sets of graves together in clusters. In order to maintain these clusters, several 'empty' spaces between graves were left. These provided a location to inter surface artifacts that could not be associated with a specific grave and to place the monuments.

In general, seven northeast-southwest oriented rows, spaced approximately eight feet apart from center-point to center-point, were translated into three-foot wide trenches. These trenches were cut long enough to accommodate a 5.5-foot center point-to-center point space between individual interments and allowed adequate workspace around the reinterred graves. The reinterment trenches were flat-bottomed structures placed roughly 48 inches (122 centimeters) below the existing ground surface. Reinterment spots within each trench were cleared of all loose debris to ensure that containers lay flat on the trench's floor; each container was moved into the trench by hand to ensure that the contents did not shift or spill during placement (Figure 13.2A). Reinterment containers and all accompanying materials (grave artifacts, human remains, coffin wood, and hardware) were then placed by each corresponding location in the trench. Steel nails were placed on top of each reinterment container to aid future relocation of the interment's exact location with a metal detector. Submetric UTM coordinates were established for each grave (Table 13.1). The final placement of the Avondale Burial Place burial assemblage in the Bethel AME Church cemetery followed the plan illustrated in Figure 13.3.

Table 13.1. UTM Coordinates for Graves in the Avondale Burial Place Reinterment Area (NAD 83)

Grave Number (Feature Number)	UTM Northing	UTM Easting	Zone
1	3610967.8634700	237704.6539200	17S
2	3610965.2214200	237703.8328810	17S
3	3610964.2479300	237702.8678540	17S
4	3610964.4082300	237700.9932340	17S
5	3610962.9785400	237704.7132970	17S
6	3610963.1954200	237704.9068860	17S
7	3610963.1904800	237705.0946400	17S
8	3610964.1293900	237707.3739430	17S
10	3610962.6384100	237704.9861750	17S
11	3610965.0440500	237702.1372630	17S
12	3610963.9720100	237700.6999330	17S
13	3610964.0580000	237705.8689960	17S
14	3610966.5276300	237704.8066620	17S
15	3610965.0413600	237706.4585160	17S
16	3610965.2508300	237706.9337350	17S
17	3610963.9937900	237708.3097940	17S
18	3610964.4125100	237713.4876100	17S
19	3610964.2326700	237711.8858680	17S
20	3610962.0194300	237711.6397630	17S

Table 13.1. UTM Coordinates for Graves in the Avondale Burial Place Reinterment Area (NAD 83)

Grave Number (Feature Number)	UTM Northing	UTM Easting	Zone
21	3610962.2733600	237710.4251990	17S
22	3610965.2236600	237707.9663810	17S
23	3610966.0936500	237708.6468600	17S
24	3610966.7072400	237710.6357790	17S
25	3610967.0424300	237710.5506550	17S
26	3610967.2938900	237709.4299680	17S
27	3610968.4891900	237710.4008300	17S
29	3610970.0273200	237706.7775630	17S
30	3610968.3068800	237708.8929660	17S
31	3610967.6587200	237708.2183220	17S
32	3610967.1091100	237708.0159800	17S
33	3610966.2267800	237707.8048860	17S
34	3610966.9144600	237706.9775000	17S
35	3610967.6908200	237706.9979230	17S
36	3610969.5589800	237707.7046610	17S
37	3610969.9902700	237708.1857150	17S
38	3610970.7641600	237708.3000160	17S
39	3610967.5897900	237706.6194980	17S
40	3610967.2595300	237706.5168690	17S
42	3610974.7735100	237720.4300280	17S
43	3610975.9023500	237719.7081890	17S
44	3610974.1204000	237719.9431400	17S
45	3610973.7975600	237719.5588800	17S
46	3610972.9201600	237719.1600330	17S
47	3610973.2652400	237718.6994020	17S
48	3610971.0791600	237717.4206530	17S
49	3610969.5412600	237716.8165470	17S
50	3610968.4494600	237716.1302340	17S
51	3610966.9066100	237715.7138810	17S
52	3610965.8419700	237713.9949220	17S
53	3610964.7551100	237713.1208550	17S
54	3610963.7618700	237712.9068430	17S
55	3610966.2265600	237712.0322610	17S
56	3610965.1888700	237713.5080330	17S
57	3610966.5568200	237712.1348910	17S
58	3610967.2025100	237712.9034110	17S
59	3610967.6288600	237713.5722190	17S
60	3610968.7280700	237713.9769020	17S
61	3610970.2783300	237714.1116250	17S
62	3610971.1581900	237714.4165960	17S
63	3610971.0275200	237715.1646920	17S

Table 13.1. UTM Coordinates for Graves in the Avondale Burial Place Reinterment Area (NAD 83)

Grave Number (Feature Number)	UTM Northing	UTM Easting	Zone
64	3610971.4563400	237715.7396230	17S
65	3610973.8494200	237717.5874680	17S
66	3610974.8179600	237718.7402470	17S
67	3610975.4834100	237718.7577520	17S
68	3610975.7101700	237718.5758330	17S
69	3610976.5408600	237716.5309680	17S
70	3610975.5871300	237714.8149280	17S
71	3610975.0548100	237713.9554490	17S
72	3610973.8521000	237713.2662190	17S
73	3610972.8712100	237712.5828230	17S
74	3610972.0825000	237713.0317840	17S
75	3610971.3184900	237712.5419770	17S
76	3610970.2931400	237713.5483640	17S
77	3610970.2217500	237712.0434170	17S
78	3610968.9943400	237712.2929540	17S
79	3610968.4546100	237711.7151060	17S
81	3610965.6228500	237709.6678350	17S
82	3610964.8563600	237709.2719040	17S
83	3610969.1472300	237710.6999660	17S
84	3610968.6887800	237711.2515570	17S
85	3610970.0196900	237711.2865680	17S
86	3610970.8946100	237711.7792920	17S
87	3610972.8613300	237712.9583300	17S
88	3610974.7467800	237713.0079290	17S
89	3610975.6217100	237713.5006540	17S
90	3610976.2649300	237714.3630500	17S
91	3610976.5828400	237714.9350630	17S
93	3610971.3481200	237711.4154560	17S
94	3610971.2495600	237710.9431540	17S
95	3610970.3820500	237710.1687990	17S
96	3610970.2736100	237710.0720040	17S
97	3610970.8750700	237708.3029330	17S
98	3610971.1806300	237709.3443310	17S
99	3610972.1640000	237709.9338500	17S
100	3610973.1671100	237709.7723550	17S
101	3610973.5418200	237708.1852030	17S
102	3610974.0299100	237706.5070910	17S
103	3610975.6957900	237710.6843510	17S
104	3610970.5670400	237707.3554120	17S
105	3610972.0063900	237707.4872180	17S
106	3610972.7580500	237708.4464100	17S



A. Reinterment Caskets Positioned for Reburial



B. Reverend Herman 'Skip' Mason Consecrates the Bethel Reinterment Area



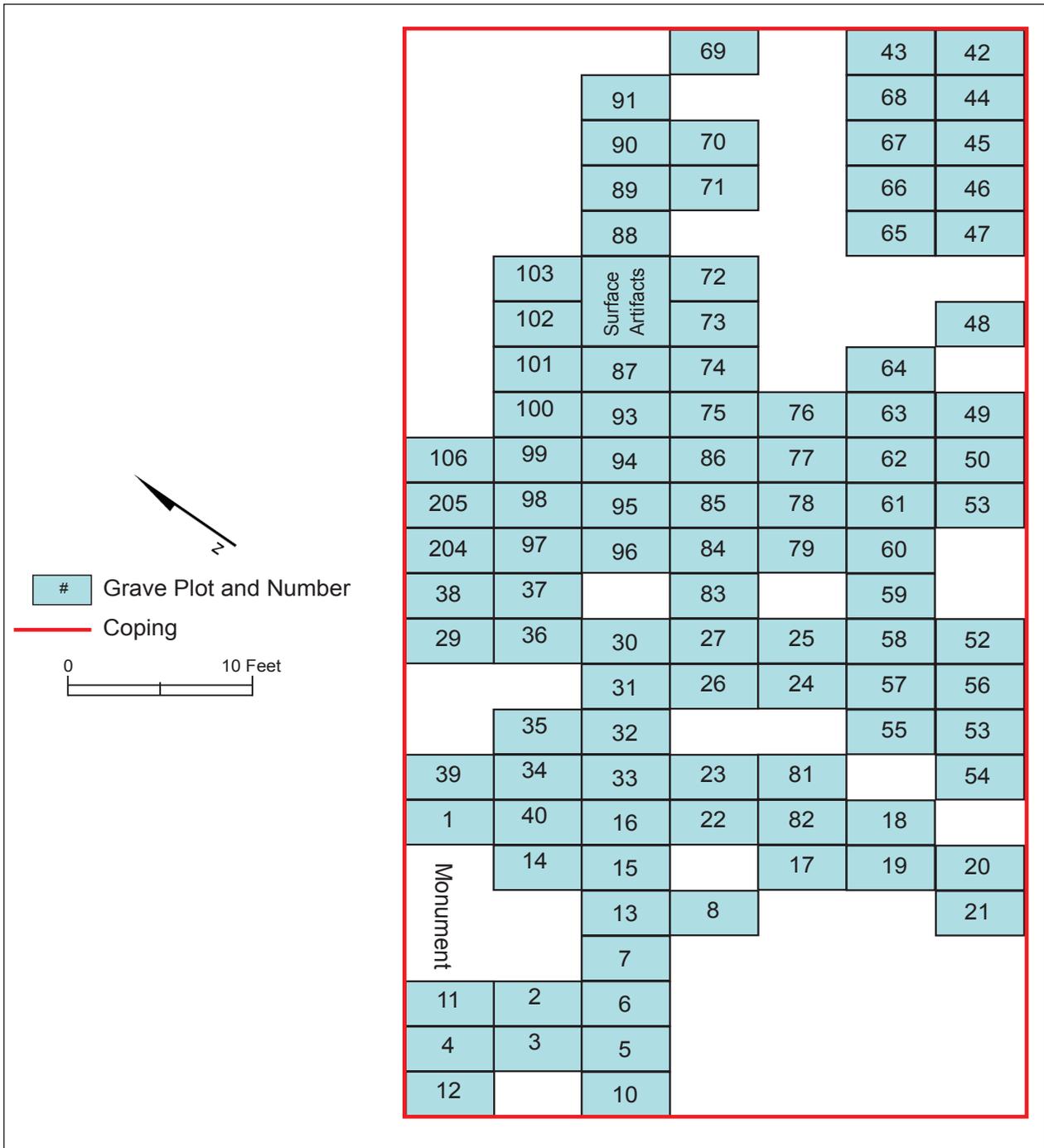
C. Individual Grave Markers Installed at the Reinterment Site



D. Memorial Stone

Figure 13.2.  
Reinterment of the Avondale Burial Place

Figure 13.3.  
Reinterment Plan



Prior to reinterment, Barton family descendant, Reverend Herman "Skip" Mason provided a brief prayer and ceremony. Soil from the original burial area was spread across the site to consecrate it as a burial ground (Figure 13.2B). All relocated interments were then carefully covered with soil to avoid dislodging the container and temporary markers were placed above each grave's location until more durable signage was installed. The ground's surface was re-landscaped and covered in landscaping fabric to retard weed growth and prevent erosion. A cinderstone coping was placed around the burial area and the interior space was covered in gravel.

Since none of the graves from Avondale Burial Place were positively identified, individual graves were designated by their feature numbers. The grave number provided a means of establishing a record of where each interment was precisely located in the Bethel reinterment area. Grave numbers were constructed to follow original feature numbers. These numbers were professionally cut into granite markers obtained from Fairway Stone, Inc. These markers were six inches long, nine inches wide and four inches thick. Lettering was cut to a height of two inches, providing the lettering with at least a one-inch protective border around their outer margins. One marker was placed on the head end of each grave. In keeping with the established tradition at Bethel AME Church Cemetery, grave markers were placed facing to the southeast. Markers were positioned on the ground surface so that they protruded above the gravel bed by at least 1.5-inches (Figure 13.2C).

Edging placed around the reinterment area helped identify the grounds as a distinct social unit with the Bethel AME Church Cemetery. A granite memorial stone identifying who was represented in that social unit was erected along the northwest side of the reinterment area. In contrast to other signage at the cemetery, the monument's text was faced northwest so that it faced visitors, who would be arriving from the direction of the church (also northwest of the reinterment area). The text provided on the stone is presented in Figure 13.2D.

A public dedication of the Avondale Burial Place reinterment site was held on February 21, 2012 and included an on-site dedication service (Figure 13.4A-C). This was followed by a public open house sponsored by GDOT at their regional office in Macon (Figure 13.4D). This open house was attended by the descendant family, members of the Bethel AME Church congregation, representatives from GDOT and State Historic Preservation Office and members of the public. Currently, the Avondale Burial Place reinterment area is open for visitation to all interested parties.

Figure 13.4.  
Dedication Ceremony, February 21, 2012



A. Reinterment Area on Dedication Day

B. Reverend Hopkins Speaks



C. Placing Flowers on Dedicated Graves

D. Findings Presented at the Public Forum





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