Abstract

Hidden and Sacred: African American Cemeteries in Eastern North Carolina

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The purpose of thesis is to identify an Eastern North Carolina African American Burial Pattern through the survey of Black Bottom Cemetery and the comparison of this cemetery to others in Eastern North Carolina as well as the Southeastern United States. Black Bottom Memorial Cemetery is a community cemetery comprised of over 600 marked and unmarked graves in which the earliest marked burial dates to 1907 and the most recent burials to 1999. Grave markers used range from locally crafted folk styles from materials such as concrete to commercial marble monuments. The cemetery began on the highest ground within the plot and expanded to nearby low-lying areas. During the Civil Rights era of the 1950s and 1960s a change occurred in the cemetery in which family plots moved to a more visible location closer to the road bordering the property, the style of markers changed to a flat slab provided by the funeral home, and rows of individual burials, as opposed to groups of family plots, were established in the eastern section of the cemetery.

In Black Bottom Memorial Cemetery grave decorations are found in scatters centering on individual graves or grave groups and appear to have broken over time due to natural factors. The vessels are predominately decorated household items such as painted ceramics and molded glass. Grave orientation and grouping is another key

characteristic of African American cemeteries. Graves in the Black Bottom Memorial Cemetery are primarily arranged in family clusters, orientation varies widely and seems to be of secondary importance to proximity to family clusters, in other words, burial near family was of greater importance than maintaining a strict east-west alignment.

Comparison with other, roughly contemporary, African American cemeteries in the Southeast reveals similar characteristics in grave decorations and grave alignment. Data from the survey of Black Bottom Memorial Cemetery and the comparison cemeteries suggests that large amounts of ceramic and glass fragments or vessels, folk or locally made markers, and graves clustered in family groups rather than in ordered plots are strong indicators of post-emancipation through the Civil Rights era African American cemeteries. After the Civil Rights Movement, grave decoration shifted to alternative decorative materials such as banners, solar lights, and other items. The higher visibility of the graves suggests that a change in attitudes regarding entitlement to a place in mainstream culture occurred but that traditional practices of grave decoration continue in a modified form.

Hidden and Sacred: African American Cemeteries in Eastern North Carolina

A Thesis Presented to the Faculty of the Department of Anthropology

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by

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Chapter 1: Introduction

This thesis details the survey of an African American cemetery in Eastern North Carolina, referred to as Black Bottom Memorial Cemetery, the analysis of data recovered, and a comparison to other surveys in the area and region which utilize both bio-archaeological and surface survey methods. The goal of this thesis is to define a pattern of the characteristics visible from the surface in an African American cemetery in Eastern North Carolina and provide a limited test of this pattern against other cemeteries in the Southeastern United States to test the applicability of the pattern beyond Eastern North Carolina. The proposed use of the Eastern North Carolina African American Burial Pattern is to allow for better prediction of the location of and identification of African American cemeteries in archaeological surveys and urban planning.

This thesis began with a phone call. Mrs. Alma Whitaker, one of the founders of Church Women United, Inc. contacted John Wood with the North Carolina State Historic Preservation Office to inquire if there was anything the State could do to preserve and survey a cemetery in Belhaven, North Carolina. Church Women United, Inc. had been formed by several women in the Black Bottom Community for the purpose of acquiring the deed to the land encompassing the cemetery and to find a way to restore and maintain the cemetery. Time, neglect, and out-migration from the community had taken their toll and many graves were deteriorated. Church Women United, Inc. had been able to secure the deed to the land by means of a donation from the Latham family, the original owners of the land, but lacked the resources to restore and maintain the cemetery.

The State of North Carolina had no funds set aside for surveying, much less preserving, cemeteries that were not at risk of imminent destruction. This prompted John Wood to look into alternatives. The city of Belhaven was willing to take over maintenance of the cemetery but first wanted a survey done to locate the unmarked graves and ascertain the condition of the cemetery. Unfortunately, the city did not have the budget to have the survey completed. John Wood contacted Dr. Charles Ewen with the Anthropology Department of East Carolina University (ECU) to see if he would be interested in offering the project to his students. He was interested and, through the Phelps Archaeology Lab at ECU, was able to provide transportation and equipment. The survey was offered as a class project for the Historic Archaeology class in the fall of 2007, thus that is how the author and two other students began a survey of the Black Bottom Memorial Cemetery in Belhaven, North Carolina.

The goal of this initial survey was to map the position of the western-most end of all the graves which could be located through a surface survey in order to have an accurate map prior to the town taking over maintenance of the cemetery. The project, originally estimated to take two to three weekends in the cemetery and involving perhaps 150 graves quickly grew into a much larger project. The cemetery at final count contains over 600 graves. During the course of the first part of the survey in the fall of 2007 Belhaven officials arranged to have the cemetery cleared of vines and other growth in the underbrush. As this cleanup effort continued, more and more graves were revealed. The grave-containing section of the parcel effectively doubled over the course of this clean-up as illustrated in Figure 1.1.

Figure 1.1. Map showing the estimated and final extent of graves and property boundary of Black Bottom Memorial Cemetery.

During the initial survey, students mapped approximately 150 graves in the central, least overgrown section of the cemetery; however, all involved felt the project warranted further time and effort. The project continued and was expanded into a thesis by completing the mapping of the cemetery and performing additional analysis of factors such as marker morphology, grave orientation, and date of marked graves. In addition the cemetery was compared to others in the area that had been surveyed in a similar manner in order to define a model of an African American burial pattern for Eastern North Carolina, referred to as the Eastern North Carolina African American Burial Pattern in this thesis.

Archaeological studies of cemeteries have a long history. Mortuary ritual is important as the ritual surrounding death often serves not only to mark an individual's passing, but to reaffirm the ties of the living.   The multiple layers of symbolism and social function surrounding the process of disposing of the dead has been explored by several authors, notably Metcalf and Huntington (1991) and Pearson (2003). This project focused primarily on the layout and organization of the cemetery itself as a starting point for the definition of a burial pattern. The arrangement of the graves, types of markers used, and artifacts associated with graves all provide information about the cemetery and the culture which created it.

Archaeological studies of African American burials, in particular, comprise a rapidly growing field of archaeological study. The rapid growth has been driven by legally mandated Cultural Resource Management (CRM) archaeology in projects such as the African American Burial Ground in New York City. CRM studies often focus largely on the biological data that can be recovered from human remains as well as the cultural

data recovered from artifacts associated with individual burials. Excavation of human remains is often fraught with emotional and cultural issues (Williams and Williams 2007). There exists an approach which, while lacking in biological data gained through excavation, allows for significant recovery of cultural data without excavation of graves. This approach provides a different data set, one that focuses on the most visible part of burial practices, those that occur on the surface of the grave and in the positioning of the grave shafts.   There have been relatively few studies published using this approach, focusing on the internal organization and material culture of African American cemeteries, although works such as M. Ruth Little's "Sticks and Stones" (1998) and John Vlach's "The Afro-American Tradition in Decorative Arts" (1990) do include some analysis of grave markers and decoration and organizations such as the Chicora Foundation regularly perform cemetery surveys in which surface cultural markers are mapped and analyzed.

Several areas are included in surface surveys including grave markers, grave decorations, and burial location. Grave markers in African American cemeteries range from commercial designs to homemade.   Homemade grave markers are characterized by being made from inexpensive, readily-available materials including concrete, iron, and wood and, as a result, are more susceptible to weathering. These markers were likely created due to economic reasons to a degree; they were also created to express a folk aesthetic that may not have been available in commercial designs. John Vlach (1990) notes that African American decorative arts have their own aesthetic; local artisans were able to create folk monuments with the proper aesthetic which was simply unavailable from commercial suppliers. Increased affluence and a move towards claiming a place in

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mainstream culture seems to have reduced the use of folk markers in favor of commercial markers.   However, the aesthetic and creativity in their construction has not vanished, but has been redirected to graveside memorials and decorations as discussed below.

One of the most significant characteristics of African American graves is grave decorations. These decorations are in the form of glass or ceramic vessels placed on and around the grave which can be whole or fragmented. Vessels may have been ritually broken or broken as a result of weathering and other forces. Deetz (1996) notes a scatter of broken ceramic and glass vessels at the Parting Ways site in Virginia, a site occupied by freed slaves during the late eighteenth and early nineteenth century. These vessels are not part of a household midden and represent a ceremonial deposit associated with funeral customs. Late nineteenth century authors such as Ingersoll (1892) noted the presence of ceramic and glass vessels in African American cemeteries and the practice has continued into the twentieth century. The practice was so widespread and important in African American burials that it was noted by authors such as William Faulkner (131: 1991), who notes in *Go Down, Moses*:

> …the grave, save for its rawness, resembled any other marked off without order about the barren plot by shards of pottery and broken bottles and old brick and other objects insignificant to sight but actually of a profound meaning and fatal to touch, which no white man could have read.

Grave decorations are not simply a vessel such as a vase holding a few flowers, rather the quantity and variety of materials used distinguishes them from simple flower holders. The objects chosen for grave decorations are generally decorated vessels such as

pressed or molded glass and decorated ceramics such as pitchers, cups, and vases. Other traditions make use of repurposed materials but not in the same way. For example, Little (1998) notes that in some Euro American cemeteries in western North Carolina turpentine cups had been repurposed as markers denoting the corner of family plots. Unlike African American grave decorations, however, the repurposed materials are of utilitarian, industrial origins and are not functional and not decorative in nature. Repurposed materials in an African American context seem to generally serve multiple purposes, only one of which is decorative. They may simultaneously have a spiritual or religious significance as well as a commemorative one. Grave decorations left for the purpose of appeasing a dead individual or providing guidance to the afterlife move into the category of grave decorations. Since intent is difficult to infer from the objects themselves all objects left on or near graves are referred to as decorations, rather than offerings, in this thesis.

Grave decoration may have their origin in African spiritual practices. Many cultural traditions include placing ceramic vessels on or near the grave, particularly the Yoruba religion (Vlach 1990). However, it is extremely difficult to point to any one African tradition as the originator of this practice (Jamison 1995). Regardless of the origins, this practice appears to have become universally adopted in some form by the nineteenth century among enslaved African Americans and was noted by historians and authors well into the twentieth century. It is important to remember that this trait of African American cemeteries is not a fossilized remnant of the past; it became a vibrant part of the way the living honored and remembered the dead. The precise form and meaning may shift over time, as living traditions do, but the roots of the practice do show

an unbroken cultural link with African traditions and a means of developing and maintaining a truly African American culture. Based on the Black Bottom Memorial Cemetery survey as well as informal visual surveys of related cemeteries and literature surveys there exists a reduction in ceramic and glass grave decorations in cemeteries post-dating 1960; however, the tradition of grave decoration remains and appears to have shifted to readily available and easily adaptable materials. Some examples are flags, solar lights on graves, banners, plantings, and the use of foam vases and planters as visible in the Old County Road Cemetery adjacent to Black Bottom Memorial Cemetery, which is discussed in greater detail in chapters 4 and 5. Even though the material expression of the tradition is shifting, there is evidence the tradition itself continues.

Another common characteristic of African American cemeteries is that earth mounds over graves are not maintained and are allowed to settle, often forming shallow depressions marking the presence of a grave shaft. This practice is not limited to African American cemeteries, and it is debatable whether this practice is a result of economic factors, functional factors of the depression serving as a marker for the grave, traditional beliefs, or a combination of all of these. However, Little (1998:249) was informed by one eighty year old community member that it was bad luck to re-work mounds, implying that there is some element of traditional belief at work. In combination with other characteristics this serves as a useful secondary indicator.

A final characteristic of African American cemeteries, at least those established prior to the Civil Right movement, is that they are often hidden from nearby roads by a screen of vegetation. The interior of the cemetery may not be the cleared, manicured, landscape associated with cemeteries influenced by the Rural Cemetery aesthetic, for

example many modern memorial garden cemeteries, due to several factors. Economic

factors prevent the hiring of a full-time caretaker and limit the amount of time and

funding available for cemetery maintenance. Cultural factors call for special places, such

as cemeteries, to be hidden so they will remain undisturbed. The long history of slavery

and laws which attempted to control the culture of African Americans undoubtedly has

had an impact by further reinforcing the need for sacred spaces to be hidden. Location is

another factor, as African American cemeteries do not always occur on higher elevations

where cemeteries are traditionally located. A variety of possibilities have been suggested

for cemeteries being located in low-lying areas, often near water sources. One suggested

possibility is the survival and adaptation of Yoruba African belief in waterways as spirit

paths (Jamieson 1995).   Another possibility is economic factors, such as the availability

of land that can be purchased or permission secured to use. These low-lying areas are

often unsuited to agriculture and home sites as they remain wet and are difficult to plow

and are thus of low economic value.

Archaeological surveys of African American cemeteries in Eastern North

Carolina are rare, regardless of the approach. Only one other example comparable to the

survey performed at Black Bottom Memorial Cemetery could be found in the James City

Cemetery near New Bern, Craven County, North Carolina (Phelps 1979).   This thesis

attempts to compare the previously identified characteristics of African American

cemeteries, such as the presence of folk markers and sunken grave shafts, to those

identified by the survey of Black Bottom Memorial Cemetery in eastern North Carolina

(Little 1998). The identification of the Eastern North Carolina African American Burial

Pattern and testing of its validity is an aid to both anthropological and archaeological

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research as well as historic preservation efforts. By identifying strong surface markers of African American cemeteries the need to disturb burials is reduced and the task of determining which community or communities the cemeteries are likely to be associated is made easier. Further, identification of such traits can help improve restoration and preservation methods as intentionally placed cultural material are less likely to be labeled as "trash" and removed during site clean-up.

The title "Hidden and Sacred" refers to African American cemeteries as they are often less visible. These cemeteries are "hidden" from public view for a variety of economic and social issues. Land ownership was a difficult and expensive proposition for African Americans through the middle of the twentieth century. Therefore, many cemeteries are placed on land owned by white landowners, with or without the owner's permission. Even when permission could be secured, the land available was often marginal land along the flood zone of waterways, as in the case of the Cedar Grove Cemetery (Rose 1985) which is located on the river side of a levee. As mentioned above, this land is generally not ideal for agriculture and not a good home site due to factors such as soft, muddy soil and presence of pests such as mosquitoes. The unsuitability for other purposes meant that land could be either purchased cheaply, permission gained for burials, or used for clandestine burials without concern for disturbance by plowing. Sometimes slave cemeteries continued to be used after emancipation, as is the case with the Old School Cemetery described in Chapter 4. Another consideration for keeping the cemetery hidden is maintaining the sanctity of the cemetery. Burial places were often the target of desecration as a means of controlling the African American community

(Holloway 2002). Hidden cemeteries were places where burial services could be performed in peace and graves were more difficult to desecrate.

"Sacred" in the thesis title refers to a belief in a cemetery as sacred ground. Many authors (Holloway 2003; Vlach 1990; Jamieson 1995) have commented on the cemetery as a sacred place that served as a memorial to the ancestors and a source of strength through tradition. Burial traditions among African and African descended individuals incorporated diverse African belief systems and Christianity into a truly African American practice. Burials, and cemeteries, became an important expression of culture and remembrance within these traditions. From colonial days through the mid twentieth century, these traditions provided a source of unity and strength in the African American community, an opportunity for expression away from the prying eyes of slave owners, Jim Crow proponents, and others who supported an agenda of discrimination. The study and preservation of these cemeteries is important to both African American history and to American history as a whole as these are the most visible, tangible, reminders of a segregated past and the culture that developed in spite of many obstacles and efforts to see it subjugated or destroyed.

Chapter 2: History, Environmental Setting, and Theoretical Background

History

Beaufort County History

Beaufort County, one of the seven oldest counties in North Carolina, is located in eastern North Carolina and occupies approximately 537,000 acres along the north and south side of the Pamlico River (Fig. 2.1) (Reed 1962). The first visit by the English occurred in 1585 when members of Sir Walter Raleigh's expedition, led by Sir Richard
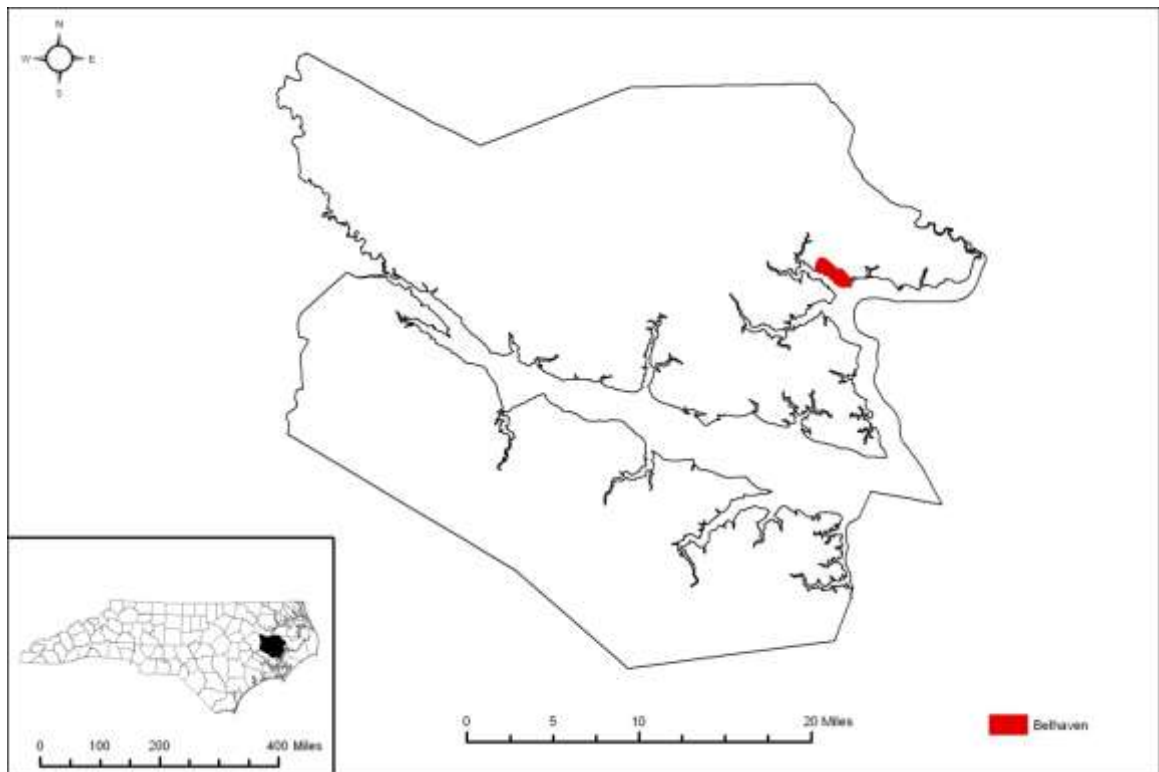
Figure 2.1. Map showing location of Beaufort County and Belhaven.

Grenville, visited the Native American town of Aquasock, part of the Algonquin speaking Secotan confederacy. Later in 1585, Grenville returned to the village to

demand the return of a silver cup he believed the inhabitants of Aquasock had stolen.

When the inhabitants failed to produce the cup Granville ordered the village burned, thus

making present-day Belhaven the site of both the first village visited by the English and

the site of the first village burned by the English in a prime example of early English

diplomacy with the Native American inhabitants of the area (Ashe 1971; Reed 1962).

The colony at Roanoke, northeast of Belhaven in present-day Dare County, failed by

1590. The area would not see another steady English colonization attempt until the late

17th century when a few colonists began to trickle down from Virginia. In 1663 Charles

II granted Carolina to the eight Lord Proprietors, who divided the colony into 3 counties:

Albemarle, which included lands north of the Albemarle Sound, Clarendon which

included lands from the Albemarle to the Cape Fear River and included present-day

Beaufort County, and Craven which included all of present-day South Carolina. Two

attempts were made to plant colonies in Clarendon County in 1663. However, by 1667

both had failed and the area was effectively abandoned until the late 17th century when

settlers began moving in from the Albemarle region in search of land (Reed 1962).

In 1696 Bath County was established and included lands now in present-day

Beaufort and Pitt counties. By 1705, Bath Town had been established and in 1729

Beaufort County was established from land formerly in Bath County and the colony was

taken over by the Crown. In 1761 present-day Pitt County was established from the

eastern portion of Beaufort County, thus establishing the present-day borders of Beaufort

County. The major colonial era industries in the county were the naval stores industries

of tar, pitch, and timber.   By the late nineteenth and early twentieth centuries these gave

way to lumber mills. Timber, along with agriculture, remains the most important

industries in the county (Reed 1962, Belhaven Centennial Committee 1999).

Belhaven History

The earliest American settlement in the Belhaven area consisted of a cabin, used

for a hunting and fishing camp, built by Daniel Latham near the Pamlico River in 1868.

Latham's grandson, Solomon Topping, often visited this cabin and in 1884 his mother

deeded it and the surrounding 150 acres of land to him. In 1885 his stepfather, Dr. W.J.

Bullock, built a sawmill, and by 1891 Topping owned more than 200 acres of land in the

area of present-day Belhaven.   By 1889 a small settlement known as Jack's Neck and

inhabited by a few farmers and fishermen had developed.   The township grew when the

Roper Lumber Company was established in the town and in 1891 the Norfolk-Southern

Railroad built a line to the town, at this time the named was changed to Belle Port. The

name changed again to Belhaven in 1893 and the village was officially incorporated as

the town of Belhaven in 1899.

Within one year of incorporation the town population increased from 78 to 700

people, mostly due to an influx of African Americans who moved to the area to work in

the lumber mills.   In 1905 the Interstate Cooperage Company, a subsidiary of Standard

Oil, began operations in Belhaven. The plant employed about 900 individuals, further

increasing the number of people moving to the area. By 1910 there were six lumber

companies in Belhaven employing several hundred individuals. Lumber and fishing

would remain the primary industry in the town throughout much of the twentieth century.

Fishing sharply declined in the 1970's and by the 1990's most of the lumber mills had

closed or moved elsewhere (Belhaven Centennial Committee 1999; Loy and Worthy

1976; Reed 1962). The area has seen a decrease in population over the past decade (US

Census Bureau 2009). The remaining employers comprise small-scale commercial

fishing, small-scale manufacturing and machining, and retail sales based on the author's

observation.

Belhaven's most famous resident was Eva Narcissus Boyd, "Little Eva", who

recorded the hit song "The Loco-Motion" in 1962. She went on to record several other

songs and performed duets with stars of the day such as Big Dee Irvin. Little Eva's

music career began to decline and by the 1980's she had given up performing. She

moved to Kinston, NC and became a bishop mother at Vision of Hope Church. In 2003,

she died of cervical cancer and is buried in a cemetery directly adjoining Black Bottom

Memorial Cemetery (Katski 2009). Originally her grave was marked only by a small

metal funeral home provided plaque. In 2008 the town of Belhaven erected a wooden

cross with an image of a locomotive to mark her grave. Finally, in 2009, a donated

granite monument was placed at her grave that shows her name, date of birth, date of

death, and an engraving of a locomotive (Leigh 2003; Katski 2009) (Fig 2.2).

Figure 2.2. Eva Boyd's grave, wooden marker and funeral-home marker on the left, current granite marker on the right.

Black Bottom Memorial Cemetery History

According to several informants in the Black Bottom community, the Latham

family, including descendants of the founder, set aside the parcel of land now known as

Black Bottom Memorial Cemetery around 1900 as a space for African American families

to bury their dead. This was an incentive to attract mill workers to the area, and it

appears to have worked as the population of the town increased from 78 to 700 in the

year after the town was incorporated in 1899 (Belhaven Centennial Committee 1999:9).

Since the Latham family also owned interest in the first lumber mill in the area this seems

a likely scenario. The earliest marked burial bears a date of death of 1907. It is

reasonable to assume that there may be earlier burials which no longer have markers, as

several informants recalled the cemetery having a significant number of wooden markers,

some of which may have dated to earlier than 1907.   The land remained in the Latham family until 2005, when it was donated to Church Women United, Incorporated, an association of women in the Black Bottom community.   These women worked to gain title to the land and have the city take over maintenance as the cemetery was overgrown and several above-ground crypts had deteriorated badly (Fig 2.3 and 2.4).

In 2008 the town officially agreed to take over maintenance of the cemetery though Church Women United, Inc. retains the title and deed to the property.   The Town of Belhaven began a clean-up effort in 2008 and organized volunteer efforts in the community to restore several badly damaged burial vaults in the spring of 2009. The local Prince Hall Rites Masonic Lodge is assisting in this endeavor in honor of the lodge members who are buried in the cemetery.   In addition to restoration exposed human remains in the damaged vaults have been re-buried to protect them from damage and vandalism.

The name "Black Bottom Memorial Cemetery" was chosen by Church Women United, Inc. to commemorate the cemetery's place as the community cemetery, prior to this it was known simply as the "Black Cemetery". There are two additional plots of land directly adjacent to and adjoining the Black Bottom Memorial Cemetery which contain graves (Fig. 2.5). All three plots are often referred to as "Black Bottom Memorial Cemetery" in media reports, and the city has cleared vegetation and taken over grounds keeping for the entire area that contains graves, including the plot labeled "Old County Road Cemetery" in county land records. A few graves, including that of Eva Harris, may

Figure 2.3. Older, central, section of cemetery prior to clearing.

Figure 2.4. Damaged crypt.

lie on the plot of land owned by Essie McCarter based on the location of ditches which appear to mark property boundaries. These graves are visible in Figure 2.5. A surveyor would need to be consulted to verify the location of property lines and make a final determination. For the purposes of this thesis I will use "Black Bottom Memorial Cemetery" to refer only to the parcel of land owned by Church Women United, Inc.

Environmental Setting

Belhaven is located along the banks of the Pantego Creek (Fig. 2.6). Most of the area is between 0-5 feet above sea level on a floodplain with numerous small creeks and drainages. Flora consists of low-lying ground cover and pine stands. This area was once thickly forested with pine but much of the stands were logged during the first half of the twentieth century. The predominate soil type, and the type within Black Bottom Memorial Cemetery, is the Tomotley Series which is characterized as a poorly drained soil formed of loamy marine and fluvial sediment. The soil ranges from strongly to extremely acidic and from a sandy loam to a sandy clay loam and is not considered to be good for agriculture (Kirby 1995).

Theoretical Background:

The pattern this thesis draws from is the Upland South Folk Cemetery Complex as described by D. Gregory Jeane (1987) in analyzing Black Bottom Memorial Cemetery and developing a list of traits. John Clauser (The Upland South Folk Cemetery Complex is a distinctive type of cemetery identified by a complex of traits with three distinct phases.

Figure 2.5. Map showing parcels associated with Black Bottom Memorial Cemetery.
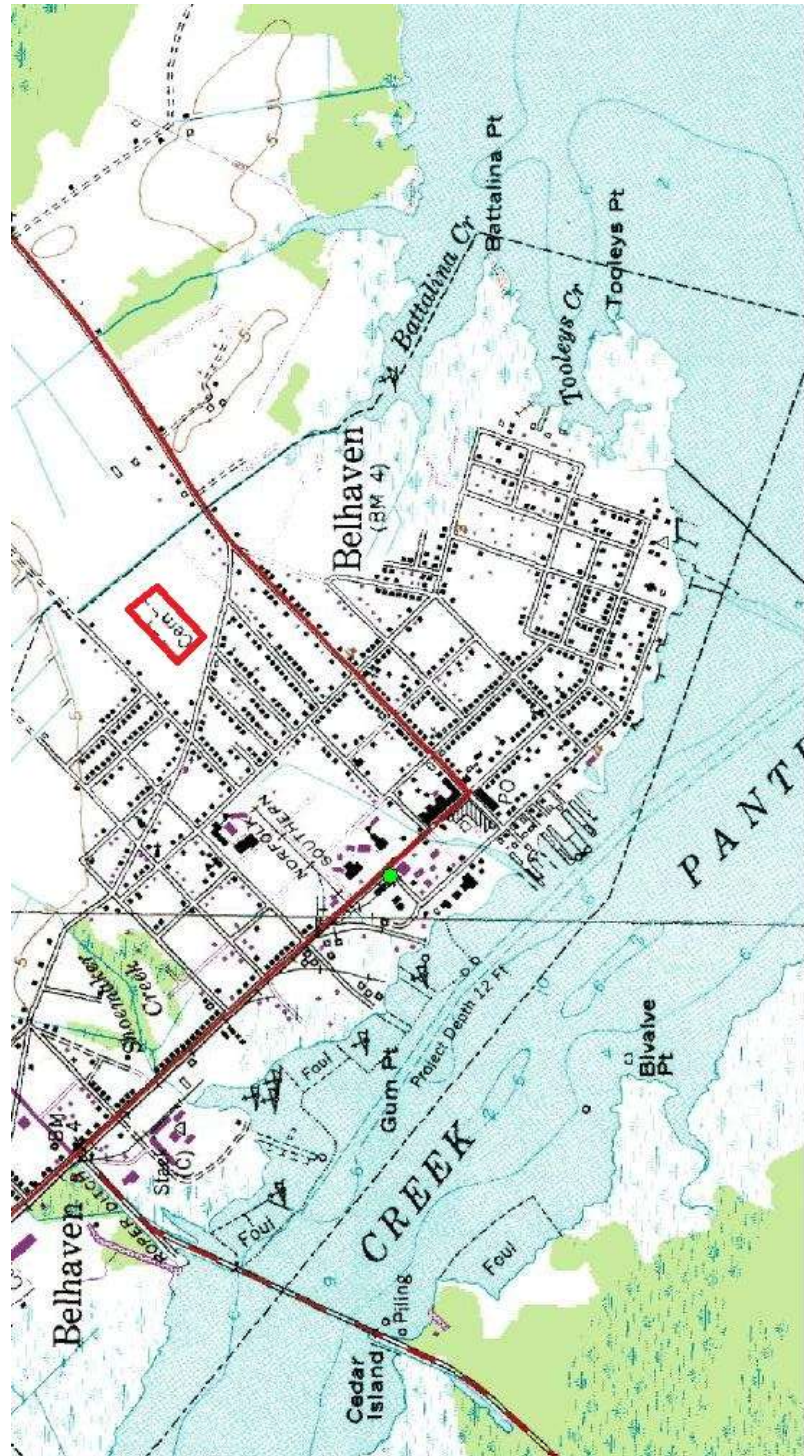
Figure 2.6. Belhaven Area, Black Bottom Memorial Cemetery Outlined in Red. USGS Belhaven

Quadrangle, 1:24000, 1985.

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The first of these phases, the Pioneer phase, is dated from the eighteenth century through the early nineteenth century. It is characterized by the limited use of durable (stone) markers, most likely due to the difficulty of acquiring these markers; scraped surfaces in which the entire cemetery is scraped to the clay subsoil and maintained as a vegetation-free areas; and finally includes distinctive plantings such as cedar and gardenia. The second phase is the Transitional phase, dating from circa 1830 to the early twentieth century in some areas. This phase is characterized by a grassed graveyard and scraped graves or family plots, mounded graves, and family plots enclosed by some sort of structure; and the use of commercially produced stone markers and plantings of mimosa and rose. The third phase is the Modern phase, which shows significant influence from the Rural Cemetery Movement. It is characterized by grassed areas, leveled graves, and the increased use of commercially produced markers. This phase sees the transformation of the Upland South Folk Cemetery Complex into a "modern" style of cemetery that is maintained by hired keepers.

The Upland South Folk Cemetery Complex traits are geographically bounded within the Upland South, which is defined by Henry Glassie (1969) as a geographic area defined by the cultural traits practiced within its borders. Debate over whether the boundaries are geographically or culturally limited has arisen since Glassie's definition. Scholars can be divided into two groups, those that argue for a geographic boundary roughly following the fall zone and those that call for a cultural boundary bounded by

specific traits such as log cabin construction. The geographic was chosen as the

functional definition for the purposes of this thesis.

Difficulties were encountered applying the Upland South Folk Cemetery Complex.

The primary difficulty is that the area under study is located in the Lowland South,

defined as the area of large-scale plantation economies.   In addition, many of the traits

seen in African American cemeteries do not match the three phases of the Upland South

Folk Cemetery complex. Finally, and most importantly, Jeanne (1992) notes that the

Upland South Folk Cemetery Complex seems to be European in origin.

The most important reason for developing a new model is the European origin

ascribed by Jeanne to the Upland South Folk Cemetery Complex. Despite similarities in

some practices between African American cemeteries in the South and the European

derived practices of the Upland South Folk Cemetery Complex, the cultural context

behind these practices makes them distinct. For example, the use of "making do" seems

to be a common trait between the African American and the Upland South Folk cemetery.

Jeanne (1987:108) defines "making do" as accomplishing some task with the materials

and skills at hand, and notes that in the Upland South Folk Cemetery Complex this may

include such practices as using upturned turpentine cups to mark the boundaries of family

plots or individual graves. Differences in the types of materials used and in the form and

layout of the cemeteries characterize the two patterns. M. Ruth Little (1998:248) notes

that "independence from the aesthetic norms of commercial monuments is characteristic

of the work of African American artisans" and that "grave makers made in the African

American folk tradition of homemade, inexpensive materials are ephemeral and susceptible to weathering".   These two examples illustrates the similarity, both types use materials which are readily available and at hand, and the difference, in the Upland South Model "making do" is an economic necessity while for African Americans this practice may have been as a result of a lack of commercially produced culturally appropriate markers. The markers produced to this cultural aesthetic will be referred to as folk markers in this thesis.

John Clauser's Southern Folk Cemetery (1994) also served as a model for the development of this thesis. The Southern Folk Cemetery is defined by its location on high ground, scraped graves, mounded graves, and grave border decoration. Markers may be of the folk variety or commercially purchased. The traits identified by Clauser do not seem to be universally present in African American cemeteries, for example, grave mounds are not maintained and grave decorations are not limited to the borders of graves and seem to serve a purpose beyond marking the boundaries of graves. These differences, as with the Upland South Folk Cemetery Complex, called for the identification of a new pattern associated with African American Cemeteries.

One additional cemetery model used for comparison in this thesis is the Rural Cemetery Movement. The Rural Cemetery Movement began with the establishment of Mount Auburn cemetery in 1831 and incorporated an ordered, rectangular, layout of family plots and individual plots laid out in a landscaped, park like setting derived from the aesthetics of English formal parks (Bender 1974). The name "Rural Cemetery" came

into use to refer to the landscaping rather than location of the cemetery at a time when the term cemetery was coming into common use.

In design following the Rural Cemetery Movement burial plots are neatly arranged within the flowing, landscaped, setting. Extensive landscaping is usually involved to create an idealized image of a "wild" space given over to nature. French (1974) notes that this aesthetic existed as a way to bring a controlled nature into the industrial/urban city centers, a way to purify the interior spaces of cities without sacrificing the urban nature associated with progress. Cemeteries following this design were seen as places for teaching and reflection, a place where tamed nature was used to commemorate former inhabitants. Monumental architecture was important and acceptable markers were set out in the bylaws governing the cemetery (French 1974, Bender 1974).

The Rural Cemetery Movement became the dominant ideal in formal cemetery design by the middle of the nineteenth century and was well established by the end of the Civil War (French 1974). The tenets of the movement remain influential in cemetery design today and led to modern design ideas, such as the memorial garden (French 1974). In this thesis the Rural Cemetery Movement is used as a counter-example to African American cemeteries; it represented the ideals of European American society and does not seem to have affected African American cemeteries until the middle of the twentieth century, as discussed in Chapter 4 and 5.

The time period of this thesis is 1865 through the present day. This date was chosen, as briefly discussed in Chapter 1, in order to encompass the period from emancipation through the Civil Rights Movement into the present day. Following World War II, African American contributions to the war effort helped foster a growing sense of both entitlement and empowerment. This would lead into the Civil Rights Movement during which African Americans demanded equal treatment in both the law and in society in general (Crow et al. 2002). This period marks a significant change in the African American community, one which could be reflected in changing mortuary practices.

Chapter 3: Methodology

Black Bottom Memorial Cemetery Survey:

The survey of the Black Bottom Memorial Cemetery began as a class project for Dr.
Charles Ewen's Historic Archaeology class at East Carolina University and was expanded into a
thesis project with some methodological changes, as discussed in the following chapter. The
original class project was estimated at approximately 18-24 hours spread across three field days,
however, the expanded thesis survey concluded with approximately 70-80 hours spread across
11-12 field days. These figures do not include time spent processing and analyzing the survey
data.

Equipment and Datums:

All survey work was performed using a Sokkia SET610 total station in conjunction with
a Trimble Recon data collector running Trimble Survey Pro software.   A total station is an
instrument combining an electronic theodolite or transit for measuring angles with an electronic
meter. This allows the instrument to accurate measure the distance and bearing from an
established point to another point. The established point is generally referred to as the primary
datum and is used as the basis for all measurements in a survey. For this survey, a primary datum
was established at the junction of two access roads in the cemetery and two additional datum
points were defined during the course of the survey in order to ensure complete coverage of the
cemetery (Fig 3.1).   All datum points were marked by driving a 12 inch long galvanized steel
nail into the ground and marking the location with flagging tape and marker spray-paint to aid in
finding the datum later in the survey. While not suitable for a permanent datum, these nails were
sufficient for the duration of this project.

A Garmin GPSMap 60cx global positioning system (GPS) unit was used to record the
location of the primary datum. Wide-Area Augmentation System (WAAS), a system for

Figure 3.0.1. Map showing datum locations.

improving the accuracy GPS units that allows for greater than 3 meter accuracy 95% of the time, was enabled on the GPS and it was placed on the primary datum for 2 minutes and allowed to average the position errors during this time, further increasing the accuracy to greater than 2 meters as reported by the GPS. This level of accuracy is sufficient for the purposes of this project, as it being used primarily as an aid to relocating the datum and as a means of overlaying the collected data on aerial photographs and digital maps.   The datum is located at a UTM coordinate of longitude -76.616092 and latitude 35.544862.

Phase One: Class Project

The survey, undertaken as part of the class project, was intended to record the position of all visible graves as indicated by either a grave marker or a grave depression in the ground prior to the City of Belhaven taking over maintenance of the property owned by Church Women United, Inc. Initial estimates by individuals who had seen the cemetery approximated 150 graves, so three days of surveying over three weekends were planned with 5 students.   In order to meet the goals of the survey on schedule, a single point was recorded for each grave at the center of the most-westward end of the grave. This point was chosen as it represents the head of the grave in Judeo-Christian tradition, the most likely orientation of burial. As the survey progressed it quickly became apparent that the cemetery was significantly larger than expected and well beyond the scope of a single-semester class project. The scope of the class project was scaled back to completing the survey of a central area of the cemetery with further work to be completed as part of a thesis project.

Phase Two: Thesis Project

The scope of the thesis project was expanded to include a comparison of Black Bottom Memorial Cemetery with other, previously surveyed, African American cemeteries of the same period in order to identify distinctive characteristics shared by the cemeteries. To facilitate this end, the survey at Black Bottom Memorial Cemetery was expanded and two points were recorded

for each grave; one at the approximate center of the head end and one at the approximate center of the foot end. For consistency with the previous class survey, the head was defined as the most westward end of the grave. In addition, each grave was assigned a number, and for each marked grave the following was recorded, if present: name, dates of birth and death, inscription, material, shape, and style of marker, as recorded in Appendix B. The marker styles followed M. Ruth Little's (1999) standard typology with the addition of a folk/vernacular type, as illustrated in Figure 3.2.

Data from each marked grave was recorded on a standardized form (Fig. 3.3) and entered into a Microsoft Excel spreadsheet for integration with the survey data. Originally the location and type of marker in use at each grave was expected to be more important than the grave decorations, thus, the presence or absence of grave decorations was noted in the comments field but not systematically collected in the same way that marker types, for example, were recorded. The locations of several trees, ditches, and roads were also recorded during the survey phase in order to help reference the location of graves. The northing, easting, and description of each point surveyed are included in Appendix C.

The spreadsheet, containing the data recorded from marked graves, was combined with the survey data from the total station and converted to a shapefile with a custom projection applied which allowed the cemetery map to be created in ESRI ArcGIS. A shapefile is a standard format that contains data and geographic coordinates associated with the data, allowing for spatial analysis in which the location becomes an important part of the data. In the case of this survey the data for each grave are recorded along with the geographic coordinates of the grave allowing the combined data to be displayed and analyzed in a GIS application. The custom projection was created from the GPS recorded datum and allowed the data to be overlaid on aerial photographs, street plans, and other available geo-referenced digital data. The metadata for this projection is given in Appendix D. Figure 3.4 demonstrates the application of these data. In this figure the

Figure 3.2. Marker Types: 1) Vault, 2) Grave Slab, 3) Headstone, 4) Box Vault, 5) Obelisk, 6) Folk/Vernacular.

Grave Data Sheet

Cemetery_____

Grave #_____   Orientation_____

Demographic Information

Lastname_____

First_____ Middle_____

DoB_____ DoD_____ Age_____ Sex_____

Multiple ?_____ Additional names & relationships_____

_____

Marker Description

Marker Height_____ Marker width_____ Thickness_____

Material_____ Condition_____

Marker shape _____

Decoration_____

Inscription_____

Footstone?_____ Material_____

Comments_____

_____

_____

_____

Figure 3.3. Marked Grave Data Form.

Figure 3.4. Map with satellite image, plot boundaries, and grave locations.

survey data and property boundaries have been overlain on a satellite image. Any graves appearing to be outside the property boundaries are most likely an artifact of the different projections of the image data, survey data, and property boundaries. This figure is intended as a general tool for identifying the position of the data on the landscape and not as a means of locating individual graves.

During the course of the survey, the city of Belhaven took over maintenance of the cemetery and began the process of cleaning the cemetery and stabilizing vaults. Unexpected impacts of the maintenance work on the survey were damage to the primary datum by earth-moving equipment and exposure of additional graves by clearing of undergrowth in previously surveyed areas. A check of the primary datum using control points recorded after the damage showed that it had been affected only slightly, and the amount of movement was within the margin of error of the survey. The cleared area of the cemetery was re-surveyed in order to ensure that no graves were missed. As a result some graves were recorded multiple times; duplicates were manually removed from the digital data following the survey. Furthermore, the initial survey of the cemetery, completed as a class project in the fall of 2007, had included only the head of each grave. The foot end of all graves were surveyed and matched with the head end of the graves in order to have consistent survey data. This entailed surveying the head of some graves a second time to act as reference points for the survey of the foot end of the graves.

Phase Three: Data Analysis:

Once data collection and conversion was completed, data analysis began using both ArcGIS and SPSS. SPSS is a statistical analysis program published by IBM, Inc. that allowed large datasets to be compared and analyzed using standard statistical methods and formulae. ArcGIS, a suite of GIS applications produced by ESRI, Inc., was used to generate maps showing the layout of the cemetery, the location of marked graves and boundary ditches, and the time-scale involved in the placement of graves. This analysis allowed for easy visual identification of

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the chronology of trends in the cemetery. As part of this analysis, a map of the cemetery showing all graves and identifying marked graves was prepared for the city of Belhaven, North Carolina.

Statistical analysis was limited to a comparison of the date of deaths due to the small number of graves with complete information. This analysis, conducted using SPSS statistical software, was limited to dividing the marked graves into categories based on decade of death and generating a graph showing the number of graves with dates of death that fell in each decade. The population of this model was limited to marked graves, as the date of death of individuals in unmarked graves could be reliably established. Proximity to marked graves may provide a general date range, but the accuracy is not assured.

An additional facet of the survey was identifying elements which may have comprised grave decorations. As noted in Chapter 1, grave decorations are an important aspect of African American grave ritual that is well documented from the nineteenth through the early twentieth century. At Black Bottom Memorial Cemetery there was evidence of numerous ceramic and glass vessels, some impressed into the wet concrete of slab covers, others left at the end of graves, and some whose presence could be determined only by the fragmentary remains scattered throughout the cemetery. It was difficult to determine if the vessels had been destroyed by graveside mortuary rituals, grounds cleaning activities, natural damage from time and the elements, or deliberate destruction by vandalism. Vandalism is not uncommon in cemeteries, however, there were no overt signs of vandalism such as graffiti painted onto or carved into markers. Presence of vessel bases in concrete monuments was recorded on the standard recording form along with presence of glass or ceramic vessels which were recognizably associated with a grave. Grave inscriptions and any further notes were also recorded on this form.

Upon the completion of the survey, the total station data were converted to a shapefile which could be opened in ArcGIS. For this project, the shapefile was used in the creation of

maps and for the spatial analysis of the cemetery. ArcGIS was used to generate maps showing

the location of marked graves, decade of death for marked graves, and the distribution of male

versus female graves. After entering the survey forms into a spreadsheet using Microsoft Excel,

it was merged with the ArcGIS shapefile to provide names, decade of death, and sex for marked

graves. In addition, the spreadsheet was imported into SPSS in order to generate the percentage

of marked vs. unmarked graves. Graphs generated from these analyses will be presented in

Chapter 4.

Chapter 4: Discussion and Comparison

Identification of Traits

There were two goals for this project. The first goal was to identify traits in the the location of the cemetery and arrangement of burials to development a list of traits, referred to as the Eastern North Carolina African American Burial Pattern. The second goal was to complete the survey of the Black Bottom Memorial Cemetery, analyze the data, and produce a map of burials for the town of Belhaven, North Carolina. The Black Bottom Memorial Cemetery map revealed a large cemetery containing 617 burials with traits of African American mortuary tradition such as the presence of ceramic and glass grave decorations as well as the use of folk markers made of adapted materials as discussed in Chapters 1 and 3. The analysis helped identify traits in the location and layout of the cemetery and, by comparing this cemetery with others, see if any identified traits extend to other cemeteries. This collection of could then provide an additional useful method of identifying African American cemeteries when "abandoned" cemeteries are discovered.

The first trait to be identified and tested is the location of the cemetery. Several factors most likely affect the location of the cemetery. One key factor is the economic one of land ownership, which was historically difficult for African Americans in many areas due to low wages, discrimination, and other factors. Often African American cemeteries seem to be located in areas that were less desirable for agricultural and residential purposes. The land in these cases either would have been affordable or permission could be obtained to make use of the "waste" land owned by others. As African Americans were able to increase the economic opportunities available new cemeteries were established on more desirable land (Holloway 2003, Rainville 2009).

Another factor may have been a need to screen mortuary activities. After centuries of laws which attempted to control virtually every facet of life, keeping private traditions and rituals of burial hidden seems a logical act (Garman 1994). This is not to say that burials were conducted in absolute secrecy, rather, cemeteries were arranged in such a way that graveside traditions would be screened from public view. This is visible in the Black Bottom Memorial Cemetery in that the oldest burials are located some distance from the road while burials post-1950 moved to an area next to the road. During the Civil Rights era, burials seem to have moved to more visible locations, perhaps asserting their place in the greater community (Holloway 2003). An alternative explanation is that roadside plots were unavailable for burials, either due to landowner wishes or the clandestine nature of burials on land that was not owned by community members.

The grouping of graves into family plots is the second trait to be identified and analyzed. Consistent grave alignment is a primary concern in cemeteries following the Rural Cemetery Movement; however, it appears to be a secondary concern in African American cemeteries. Primary importance is given to burial near family, as illustrated by Figure 4.2, a satellite photograph of Old County Road cemetery. The orientation of graves is generally east-west but varies to nearly north-south in some cases. These changes in orientation appear to take place in order to ensure the most effective usage of family plots, insuring all have a space. These changes are also visible in Black Bottom Memorial Cemetery within the oldest section, where family groups mostly align with each other, but not with other family groups.

The next trait is the placement of burials and the cemetery itself on the highest available ground. Like most other twentieth century cemeteries and gravesites, the oldest graves in Black Bottom Memorial Cemetery are located on the highest ground in the cemetery. This will be discussed in more detail later in this chapter. Black Bottom Memorial Cemetery itself is not located on the highest ground in the area, that is, the ground along the natural levees near Pantego

Figure 4.2. Satellite image showing the Old County Road Cemetery.

Creek. The predominately white Belhaven town cemetery is located along a natural levee. The location of Black Bottom Memorial Cemetery is perhaps best explained by the lack of community ownership of land. Low lying land in the area tends to be swampy, poorly drained land that is unsuited for agriculture or residential use. The unsuitability of the land for other pursuits may help explain why the community was allowed to bury their dead in it. The presence of a cemetery may have been an enticement to bring in African American mill workers, and by using a piece of land that was not suited for other pursuits the landowner could attract mill workers without losing the use of otherwise valuable land.

A secondary trait to burial along high ground is proximity to water, particularly flowing water. Some authors have postulated that African American cemeteries are often located near water or include symbolic representations of water such as mirrors or other reflective surfaces and vessels (Jamieson 1995). This association may well exist, but the geographic realities of the coastal plain make determining the significance of proximity to water difficult to support archaeologically, as there are few locations that are not close to water. Furthermore, limited opportunities for land ownership and non-African American control of the land used for burials may obscure this preference. Proximity to water, particularly flowing water, may have been a factor in the location of burials when such sites were available, however, the data collected during this survey is insufficient to suggest that this factor influenced the selection of land for the Black Bottom Memorial Cemetery.

The next trait to be identified and analyzed is the presence of grave decorations within the cemetery. The presence of ceramic and glass wares with African American cemeteries is widely noted in cemetery studies and is generally considered an indicator

not only of the presence of African American graves but also an indication of the survival of African traditions and their adaptation in the development of a full blown, independent African American tradition (Little 1998; Vlach 1990). Additionally, in some cemeteries the practice of "killing" a vessel has been noted (Deetz 1996). "Killing" consists of creating a hole in the vessel in such a way as to render it unfit for its intended purpose of holding a liquid but leaving the vessel with the appearance of a complete one. African American grave decorations are generally comprised of a large variety of glass and ceramic vessels arranged on or near the grave. The vessels can vary from containers for flowers, to medicine bottles upended on the grave, to the table wares used by the deceased (Vlach 1993). This collection of grave decorations has been noted by many other scholars and is one of the most recognized traits of African American cemeteries. Shells are sometimes included, however, tt should be noted that Little (1998) describes shell decorations on the grave mounds in European American cemeteries in North Carolina. Shells have been used in European iconography for centuries, and the presence of shells alone does not an African American cemetery make.

Other cultural groups have used ceramics in grave related functions, for example, Little (1998) notes the use of ceramic turpentine cups to mark the border of European American family plots. These usages are often distinct from African American grave decoration in that the vessels are utlitarian, not decorative, and are found solely as functional markers indicating the borders of graves. In contrast, the combination of decorated ceramic and glass vessels and vessel fragments on individual graves is distinctly African American. The use of decorative ceramic and glass wares seems to

have been a widespread African American tradition and was often noted in nineteenth century writing. Ernest Ingersoll , writing in 1892(68), noted:

> I saw at Columbia, S. C., a practice in vogue among the blacks which exists nowhere else so far as I can learn, and is savage or childlike in its simplicity of idea. When a negro dies, some article or utensil, or more than one, is thrown upon his grave; moreover it is broken. If you go through a dilapidated weed-grown graveyard which straggles in and out of the hollows on a side hill covering the high bluffs along the river, you will see some very strange examples of this mortuary custom. Nearly every grave has bordering or thrown upon it a few bleached sea-shells of a dozen different kinds, such as are found along the south Atlantic coast. Mingled with these is a most curious collection of broken crockery and glassware.

The final trait identified and analyzed is the use of folk, or ad-hoc, markers. These markers, as discussed in Chapter 3, are generally made locally of locally available materials such as wood, cement, metal, ceramics, and glass. They may be made by the family or by a local artisan who specializes in the creation of markers. As discussed earlier, they are often associated with groups who are lower on the socio-economic scale. They are commonly found in African American cemeteries but are not sufficiently diagnostic on their own to indicate potential African American affiliation. If paired with other traits, particularly the presence of grave decoration, they can provide additional confirmation however.

Analysis of Black Bottom Memorial Cemetery

In order to more accurately analyze and describe the Black Bottom Memorial Cemetery and the surrounding area, the cemetery will be divided into two sections. The main section comprises most of the cemetery including the older burials, and the eastern section comprises a rectangular extension to the east. The plot between the land owned by Church Women United, Inc. (Black Bottom Memorial Cemetery) and Old County Road is identified in county land records as "Cemetery (Old County Road)"; and is referred to here as the Old County Road Cemetery. Finally there is an additional plot of land to the south west of Black Bottom Memorial Cemetery that may contain additional burials. This plot is listed as being owned by Elsie McCarter in county tax records and referred to here as the McCarter Plot. See Figure 4.3 for an illustration of the location of these plots.

Having concluded that proximity to water was not a major factor in the cemetery layout, the next step was to determine the contributing factors. The first step in was identifying the oldest part of the cemetery, which was determined from a grave marker with a 1907 date. Significantly, this area is located on the highest ground as determined by LiDAR (Light Detection and Ranging) data (Figure 4.4). LiDAR is a method of airborne laser scanning that generates very accurate topographic data which can then be imported into a GIS system. There is a small difference in height of two feet within the cemetery. The older graves are clustered along this high ground with more recent graves descending into the lower lying areas of the plot. It is not
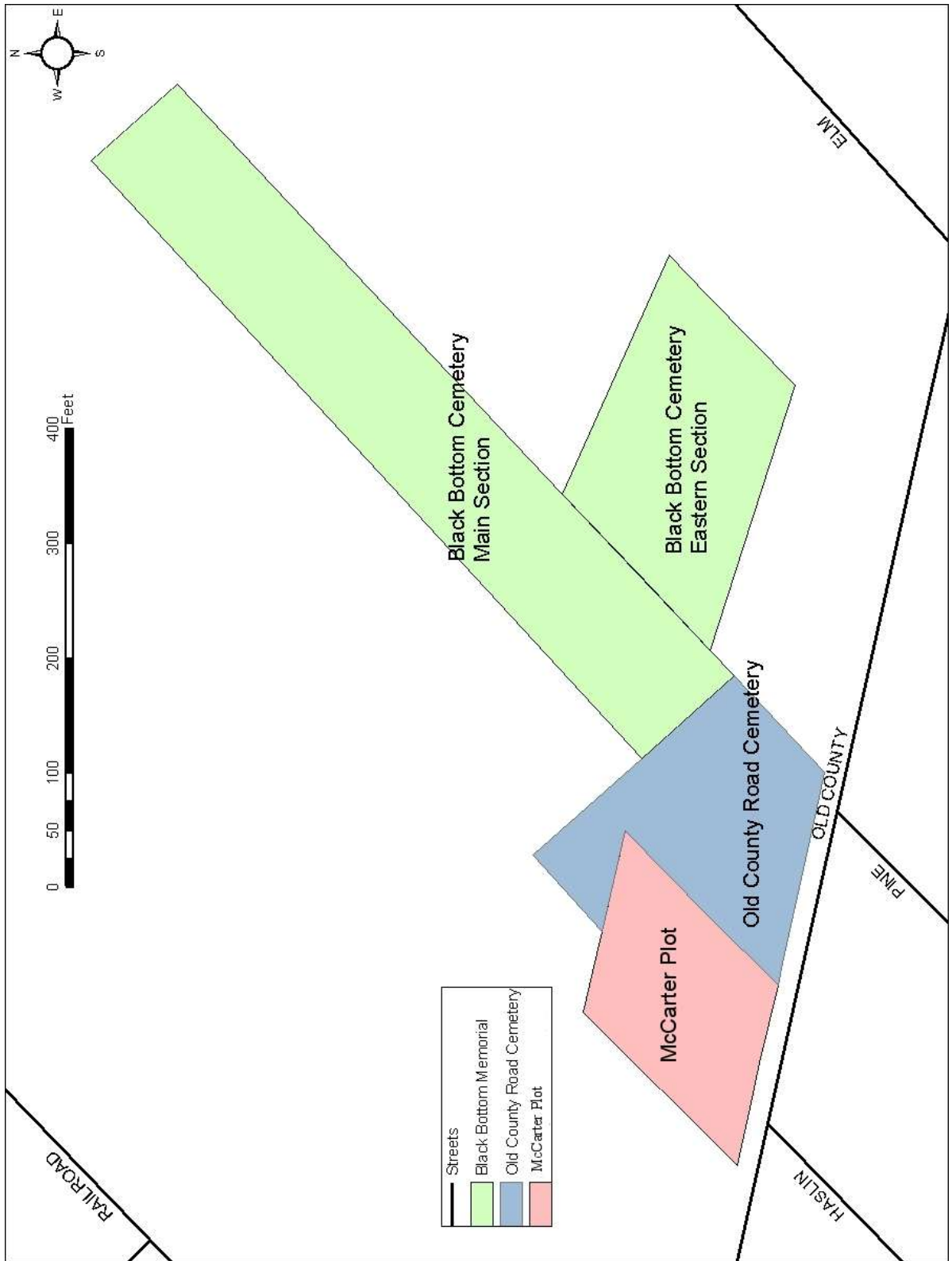
Figure 4.3. Map showing the relative location of Black Bottom Memorial Cemetery, Old County Road Cemetery, and the McCarter Plot.

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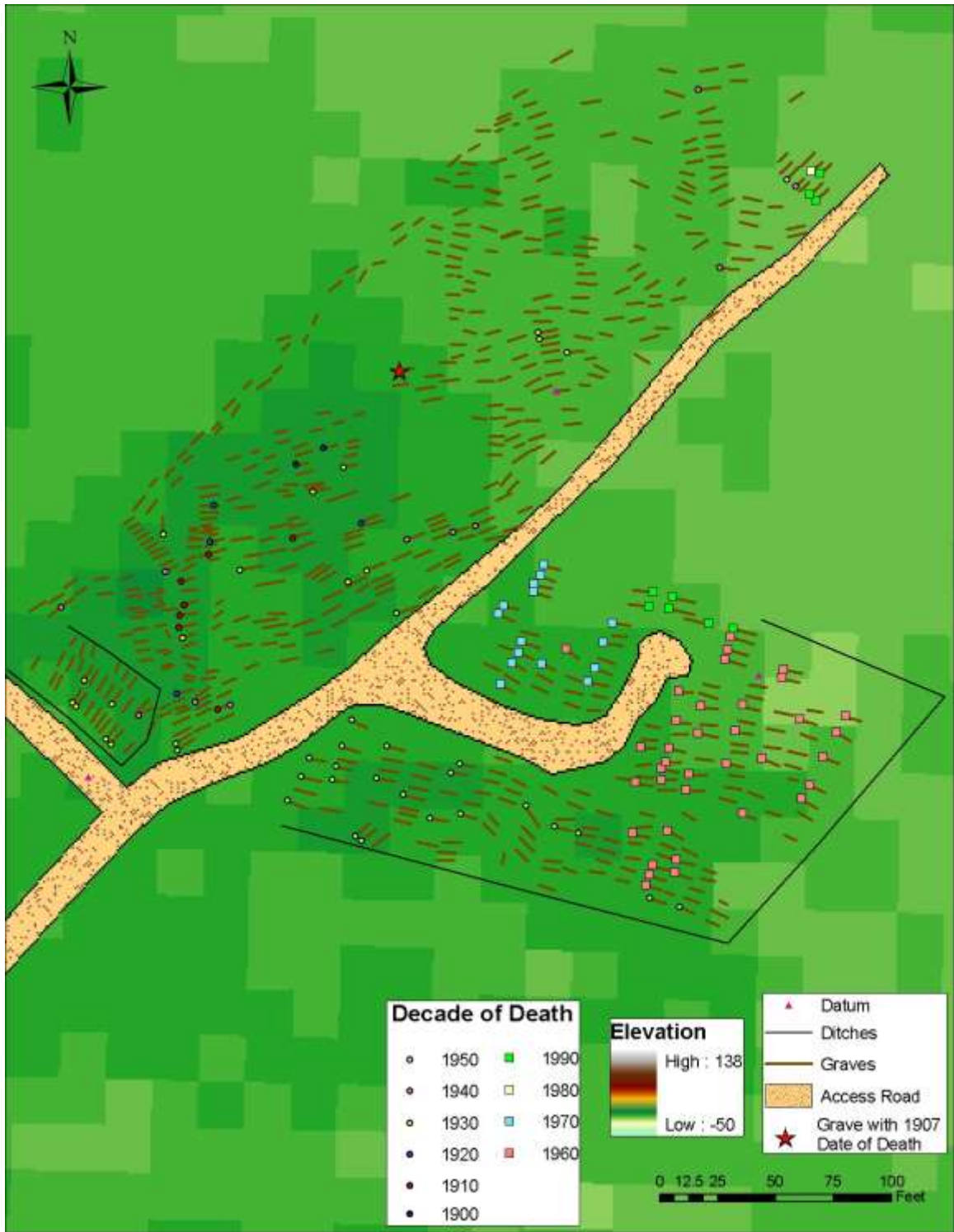
Figure 4.4. Map showing elevation, location of graves, and location of 1907 grave.

surprising to find graves on the higher ground within the plot, but given the minimal variance in height present in much of the coastal plains of eastern North Carolina, it is worth noting that even a low rise has been utilized. From this low rise the cemetery expanded through the high ground to the south. Once the higher ground had been fully utilized, the cemetery expanded to the north and eventually to the lower areas to the east as well. The arrangement of oldest graves on the highest ground within the plot is a common Judeo-Christian cemetery pattern and is not unique to African American cemeteries. Lastly, the area to the east of the oldest graves appears to be arranged in a more linear pattern and will be discussed later in this chapter.

Grave orientation was originally postulated to be one of the most significant factors in determining family associations. Older graves in each family group would align with each other with this orientation shifting over time as the distance from the older burials in each family group increased. However, the lack of marked graves hindered assessment of a chronological sequence. Similarly, the orientation of the grave could not be utilized as an indicator of the age of the grave. However, the orientation of the individual graves when compared to surrounding graves may give an indicator of possible family groupings. Even if this is the case, the significant amount of unmarked graves in the Black Bottom Memorial Cemetery, coupled with the difficulties encountered during survey as outlined in the methodology chapter, prevented a definite conclusion.

In some cases variation in orientation seems to be due to attempting to fit a grave in an already crowded plot, however, once again unmarked graves do make this difficult to determine. An expedient field survey of the Old County Road cemetery revealed

significant variations in orientation, with some graves east-west and others being nearly north-south in alignment. Due to most of the burials in Old County Road Cemetery being dated, it is possible to determine the chronological sequence of burials. It appears that much of the variation is due to efforts to maximize the number of burials in the space allotted. It is likely that the same factors were at work in the older, unmarked, burials at Black Bottom Memorial Cemetery.   An example of this is present in the eastern part of the cemetery where a husband, wife, and third grave are aligned at 90 degrees to the other burials in order to fit three graves in the space normally occupied by two.

The strongest cultural indicator present lies in the use of grave decorations, in the form of numerous fragments of glass wares, ceramic wares, and the imprints of vase bases in the cement of slab tombs, as mentioned in Chapter 3. These materials are distinct from litter or trash. Much of the fragments of ceramic come from vessels commonly associated with cemeteries, such as vases and pitchers. Further, these fragments ring graves rather than being concentrated in single areas, unlike trash dumps. The imprints, and in some cases the bases, of both glass and ceramic vessels in many of the concrete slabs overlying graves provides further evidence that these vessels represent deliberate placement.

While there appear to be no intact arrangements of grave decorations in Black Bottom Memorial Cemetery due to the years of neglect the cemetery suffered, the location and type of the fragments present give strong hints as to the cultural affiliation of the cemetery. The presence of grave decorations is a well-documented feature of African American cemeteries as noted by many authors including Deetz (1996), Vlach (1990), and Little (1998). These are some of the strongest indications of the presence of African

American graves in a cemetery in eastern North Carolina, particularly in cemeteries dating to pre-1950.

Grave markers are important part of African American cemeteries. Grave decorations can serve the role of grave markers, acting as visual memory aids linking a particular plot to an individual and thus to a family (Clauser, 1994); however, purpose-made grave markers of both folk and commercial origin are present in African American cemeteries. Wooden markers were likely common; however, due to their fragile nature none are present in Black Bottom Memorial Cemetery. Oral tradition records the presence of wooden markers up through the 1960's and credits the present lack of wooden markers to fires which were set to burn off undergrowth. Currently, approximately 46% of the graves at Black Bottom Memorial bear some sort of marker. Of these marked graves, nearly 60% are in the eastern portion of the cemetery, discussed below. The majority of the markers are commercial in origin; however, folk markers are present in Black Bottom Memorial Cemetery.

There are several examples of folk markers of the sort described by Vlach (1990) and Little (1998) including a well-crafted, although badly damaged, marker of concrete in the traditional slab form but with inset marble and green glazed tiles to form the pattern of a cross, now broken (Figure 4.5). In addition, another concrete marker is made in the form of a tablet surmounted by a cross with the inscription inscribed in the body (Figure 4.6).Beginning during the 1950's a distinct type of burial marker seems to have come into use. Little (1998) notes that a type of flat slab marker, usually cast from concrete with an inset plaque near the head for the individual's name, date of birth and death along with another plaque at the foot for the name of the funeral home (see Fig. 4.6) as being unique

Figure 4.5. Folk Marker, Essie Harrel. Fragment of marble tile visible to right of head stone once formed vertical member of cross, 2 additional fragments (not visible) formed horizontal member.

Figure 4.6. Folk Marker in shape of cross with incised heart.

Figure 4.7. Flat slab marker with name of funeral home.

to African American graves.   In the formal survey of Black Bottom Memorial Cemetery and informal, visual, surveys of other African American cemeteries in Eastern North Carolina there are numerous examples of this type of marker and all are associated with African American burials. For eastern North Carolina it can be concluded that this sort of flat slab marker is only used to mark African American graves and occurs predominately in African American cemeteries.

This aforementioned type of marker is common in Black Bottom Memorial Cemetery, particularly in the eastern section of the cemetery as described and illustrated earlier in this chapter.   The eastern section of Black Bottom Memorial Cemetery came into use in the 1950's and these flat slab markers predominate in the eastern section. A visual survey of Old County Road cemetery shows that this type of marker is also the most common, by a wide margin. This would indicate that the flat slab marker is a strong indicator of African American burials post-dating 1950.

Analysis of the mapped graves in the eastern section of the cemetery demonstrated a definite change in the way burial sites were chosen during the 1950's. This change is illustrated in Figure 4.8; in which a clear change in the location of burials to a new section of the cemetery during the 1940's and 1950's is revealed.   The figure was generated by assigning a buffer of 18 feet diameter around the head point of each marked and dated grave. An 18 feet buffer was chosen based on the standard dimensions of an adult grave, which are approximately 3 feet wide by 6 feet long. This diameter should include nearby graves that are likely to be those of spouses and other relatives of the individual in the marked grave. This figure, coupled with a close examination of the dates of death in this section, shows a change in burial patterns. As individuals died they

were buried next to the previous grave and this continued until the "row" was full (Figure 4.9) instead of the organic family plot arrangement seen in the main section of the cemetery. Few burials took place in the main section of the cemetery during the 1950's. Very few burials took place after 1959 other than a few burials on the fringes of the main section of the cemetery in what appear to be family plots. It is worth noting that, although the Old County Road Cemetery was not formally surveyed for this thesis, an informal walk-through survey of death dates reveal most of the burials post-date 1950. In addition, local informants suggest that the eastern section of Black Bottom Memorial Cemetery was a potter's field for those unable to buy family plots or with no family plots in which to be buried. Taken together these suggest that during the 1950's a change occurred in which family burial plots were established in the newly opened Old County Road Cemetery and a portion of the Black Bottom Memorial Cemetery began to be used primarily for individual burials.

The number of marked graves in the eastern section of the cemetery shows an increase through the 1960's with a steep decrease afterwards (Fig. 4.10). The increase is most likely accounted for by several factors including increasing wealth, a change from wooden folk markers to more durable concrete ones, and the significant social changes during the 1950's and 1960's. The most dramatic increase is likely due to the use of the eastern section of the cemetery as a burial plot for individuals who did not have family plots in other sections of the cemetery.
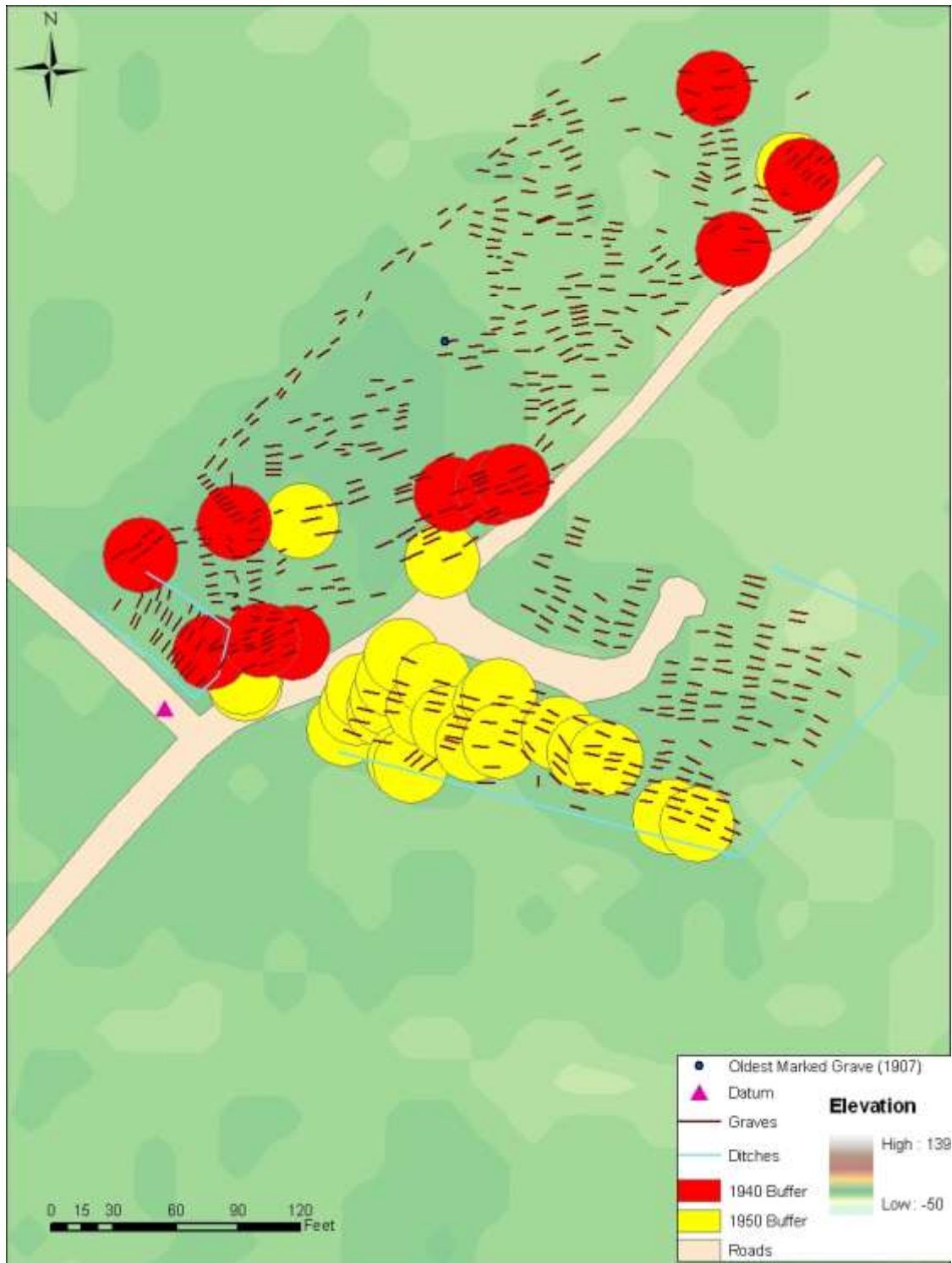
Figure 4.8. Map showing change in grave location 1940-1950.
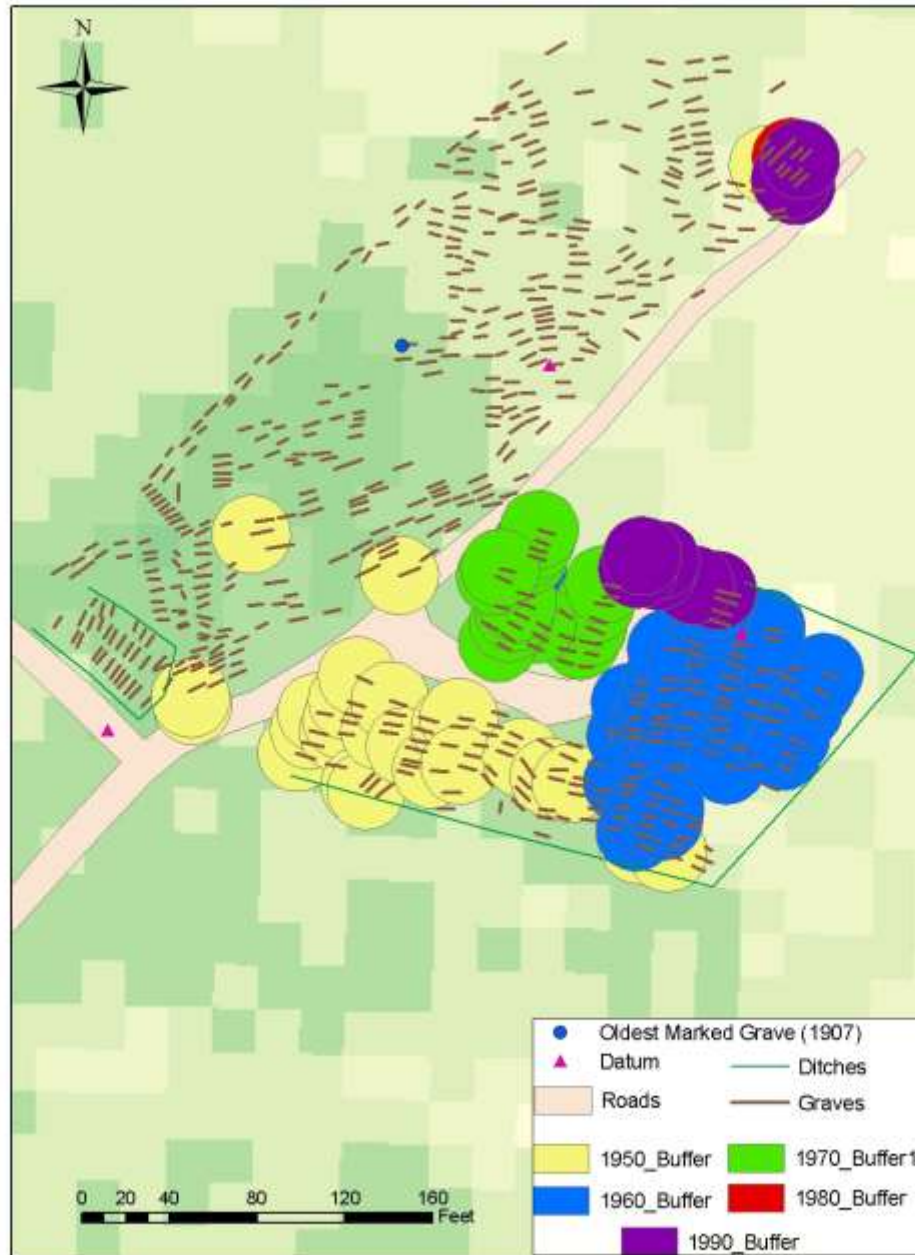
Figure 4.9. Map showing change in location of burial 1950s-1990s.
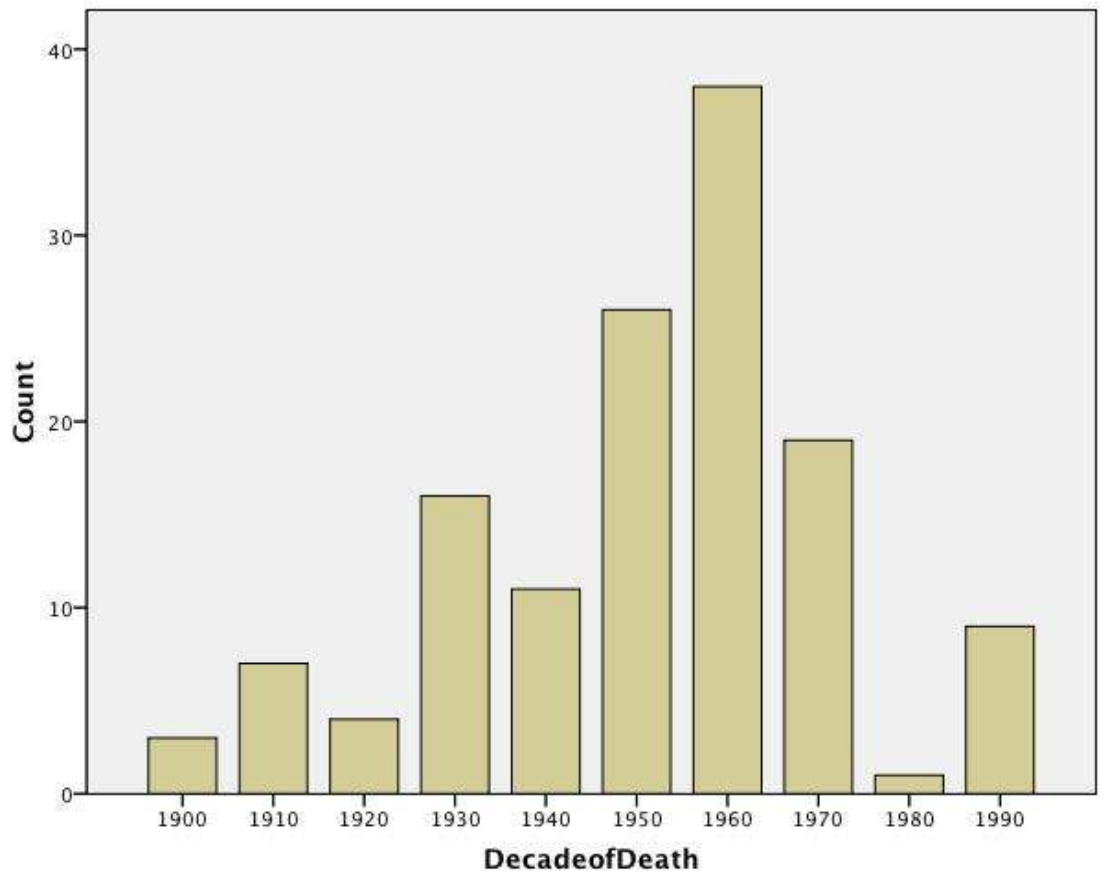
Figure 4.10. Chart showing marked deaths by decade.

Several possible factors in this change include the migration of family plots to a new cemetery where plots had to be purchased, changes in demographics due to out-migration, and shifting control of the selection of burial sites. The decrease post 1960 is likely due to burials being placed in the Old County Road Cemetery and the lack of space remaining in the eastern section of Black Bottom Memorial Cemetery. These factors indicate a change in the utilization of space within the Black Bottom Memorial Cemetery, however, the presence of the Old County Road Cemetery allows for analysis of burials in the area post-1960.

Taken together these clues suggest that in the 1950's and 1960's control of burial locations became more formalized as represented by several factors. The timing of this change coincides with the rise of the Civil Rights Movement of the 1950s and 1960s and suggests the factors involved were those of control over the cemetery (Rogers 2004). It is also a change to a more visible, formalized, cemetery with both embalming and burial overseen by African American owned and operated funeral homes. Holloway (2003) notes that African American morticians were not common in the South prior to the Civil Rights Movement for a variety of reasons including lack of educational opportunities, discrimination in the law, and threats of violence from organizations such as the Ku Klux Klan. The change in the location of family plots, with graves now visible from the road, may indicate a growing desire for public awareness and recognition. This change from private to public discourse is present in other areas of the Civil Rights Movement and expressed through public protests and mainstream publications, such as Ebony, aimed at an African American audience (Anderson and Pickering 2008, Morris 1986, Keppel 1965). African Americans had constituted a majority of the population of Belhaven, yet

the cemetery in which many African Americans were buried was set back from the road and screened by an empty plot. In the 1950s and 1960s family plots using commercial markers began to be placed next to Old County Road, a highly visible location.

The change in layout and placement, then, is likely tied into a rising sense of entitlement and pride in heritage. Change in location of family plots would have an effect on the eastern area of Black Bottom Memorial Cemetery as now family plots were being located in the newly opened Old County Road Cemetery directly to the south of what is now Black Bottom Memorial Cemetery. Thus the eastern section of Black Bottom Memorial Cemetery became, largely, an area for individual burials. There is an exception in a group of graves dating to the 1990's on the north edge of the eastern section. This is the family plot of Mrs. Alma Whitaker, one of the ladies instrumental in Church Women United, Inc.'s efforts to gain ownership of the Black Bottom Memorial Cemetery.

Comparisons to Other Cemeteries:

Black Bottom Memorial Cemetery was compared to three other African American cemeteries, one from eastern North Carolina, one from Georgia, and one from Arkansas. The comparaision was done on the basis of the traits identified earlier: grave layout, grave decorations, and folk markers. All three display similar characteristics in term of grave decoration and layout.

The first cemetery is the Bryan Cemetery (31CV25) near New Bern, North Carolina. This cemetery was associated with James City, a housing settlement established by the Freedman's Bureau during the Civil War. Two cemeteries were

associated with James City, the Near and Far cemeteries, also known as the James City cemetery and Bryan cemetery.   James City was established in 1862 and by 1864 there were over 10,000 freed slaves in the city. It was named after Horace James, a U.S. Army Chaplain who was Superintdentent of Freedmen for the District of North Carolina. James City was established on land temporarily confiscated from James A. Bryan by the U.S. Army. At the conclusion of the Civil War the land reverted to this owner. In 1892, when Bryan tried to collect rent from a community of about 500 people there was a "rebellion". It is likely these individuals believed the land had been given to them by the U.S. Army. Following this incident a settlement was eventually reached that led to some amount of rent being paid, however, most residents moved to a new settlement. This movement left James City effectively abandoned by the early twentieth century. Despite the abdonment of the town, use of the cemeteries continued until the 1930's or 1940's.   The Bryant Cemetery began use sometime in the mid to late nineteenth century, the lack of markers makes dating difficult. While this is earlier than the Black Bottom Cemetery, the demographic groups using the cemeteries are similar. Both cemeteries were used largely by the descendents of freed slaves during the late nineteenth century and into the twentieth century.   The similar demographics, geographic closeness, and overlapping date ranges suggests that similar forces with regards to cemetery layout were at work in both locations.

The Bryan Cemetery was damaged in the 1940's during clearing of the land for the construction of Camp Mitchell, a World War II training facility. During clearing of the land the grave markers were loaded onto trucks and disposed of elsewhere (Phelps 1979:11).

While a comparision of the marker in both Black Bottom Memorical Cemetery and the Bryan Cemetery is not possible due to the loss of the markers in the Bryan Cemetery, it is possible to compare the arrangement of graves as recorded by David Phelps (1979) and the presence of grave decorations in these two cemeteries. Bryan Cemetery was surveyed in 1978 under the direction of Dr. David Phelps of East Carolina University as part of a Section 106 survey of the area prior to the expansion of an airport located adjcacent to the site. The area was mechanically stripped and grave shafts were mapped. During mechanical stripping the presence of grave decorations was noted.   The map of the Bryant Cemetery generated during this survey shows the rows of graves are organized for the most part along a north/south axis with some variation in orientation, and what appear to be family clusters or groupings throughout the area (Fig 4.11). The north-south rows are not the grid-like arrangement found in cemeteries associated with the Rural Cemetery Movement. These rows are arranged in loosely defined, organic rows that curve across the landscape. This arrangement is very similar to that found in the main section of the Black Bottom Memorial Cemetery.   A comparision on the basis of markers is not possible due to the removal of markers at the Bryant Cemetery prior to the archaeological survey.

The second cemetery used for comparision is the Cedar Grove Cemetery in the Red River Valley of Arkansas. This cemetery was associated with the Cedar Grove Church and likely came into use in the 1830's and continued until 1924, when a major flood caused significant damage in the area.   Church association does not immediately imply a difference in layout, as the cemetery was used by the community at large and set apart from the church building itself. While in use, this cemetery was located along the

edge of the Red River in land that was marginal for agriculture due to its location on the river side of an early levee (Rose, 1985:14). Stripping of the area in 1927 during an early phase of levee construction caused the loss of much, but not all, of the original surface, and the cemetery was buried as a result of subsequent flooding along with subsequent levee construction events. The cemetery was excavated by the Arkansas Archaelogical Survey in 1980 in order to relocate it due to the construction of a modern levee, unfortunately, the aforementioned events made it impossible to directly tie grave decorations in the form of ceramic or glass vessels to individual graves. The excavation did reveal numerous fragments of ceramics and glass within the earlier levee fill and in the top layers of the excavation units suggesting such offerings were present. Grave orientation was also revealed during the excavation process. Like the Black Bottom Memorial Cemetery and the Bryant Cemetery, graves are oritented east-west while rows are oriented north-south.   Like the Black Bottom Memorial Cemetery and the Bryant Cemetery graves are oriented east-west with rows oriented north-south. Additionally the grave rows form curving, organic lines and not a strict grid-like arrangement (Fig. 4.12). Some markers, buried by flooding, were still present and were predominately commercial types.
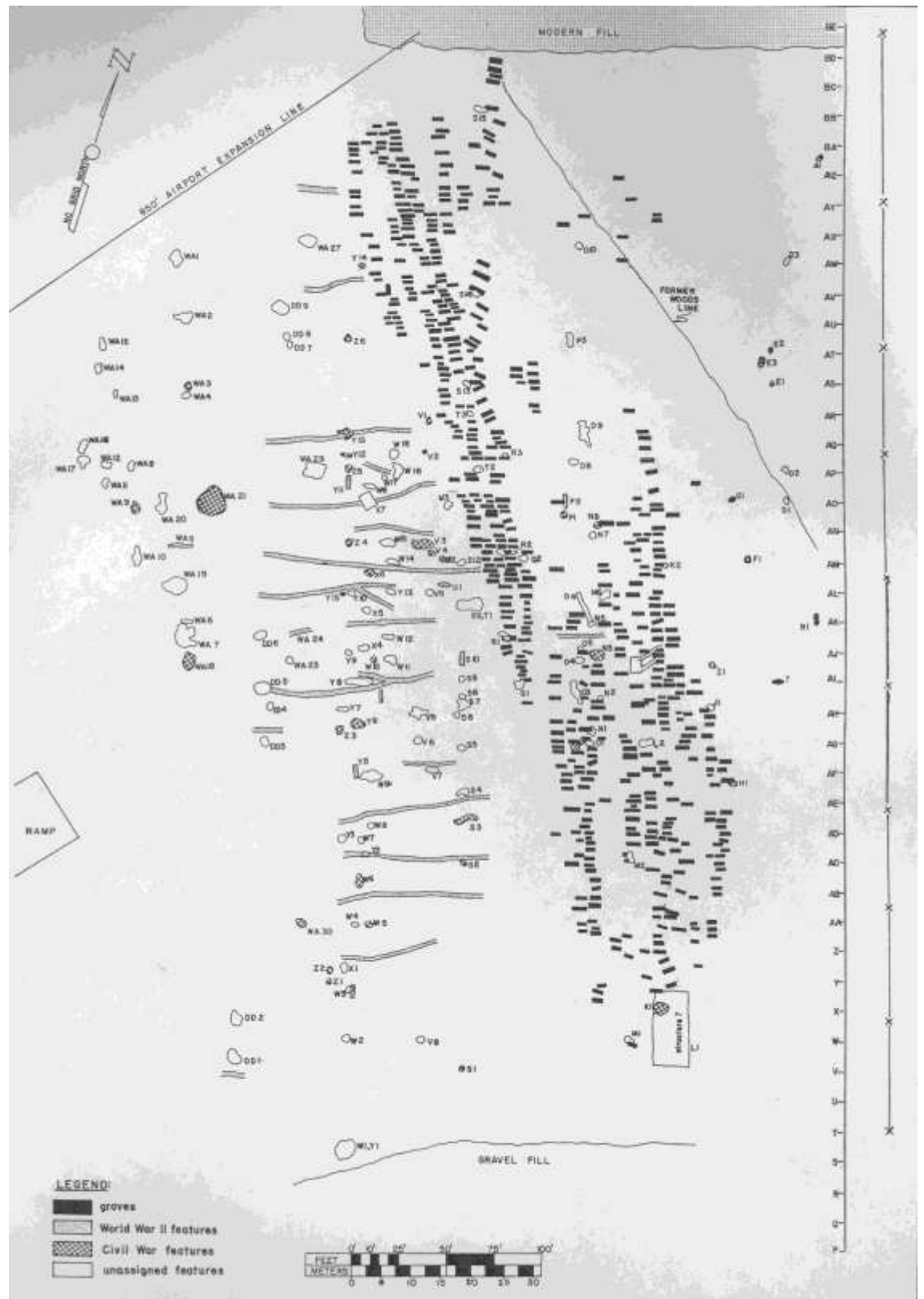
Figure 4.11. Map of Bryant Cemetery (Phelps 1979).

63
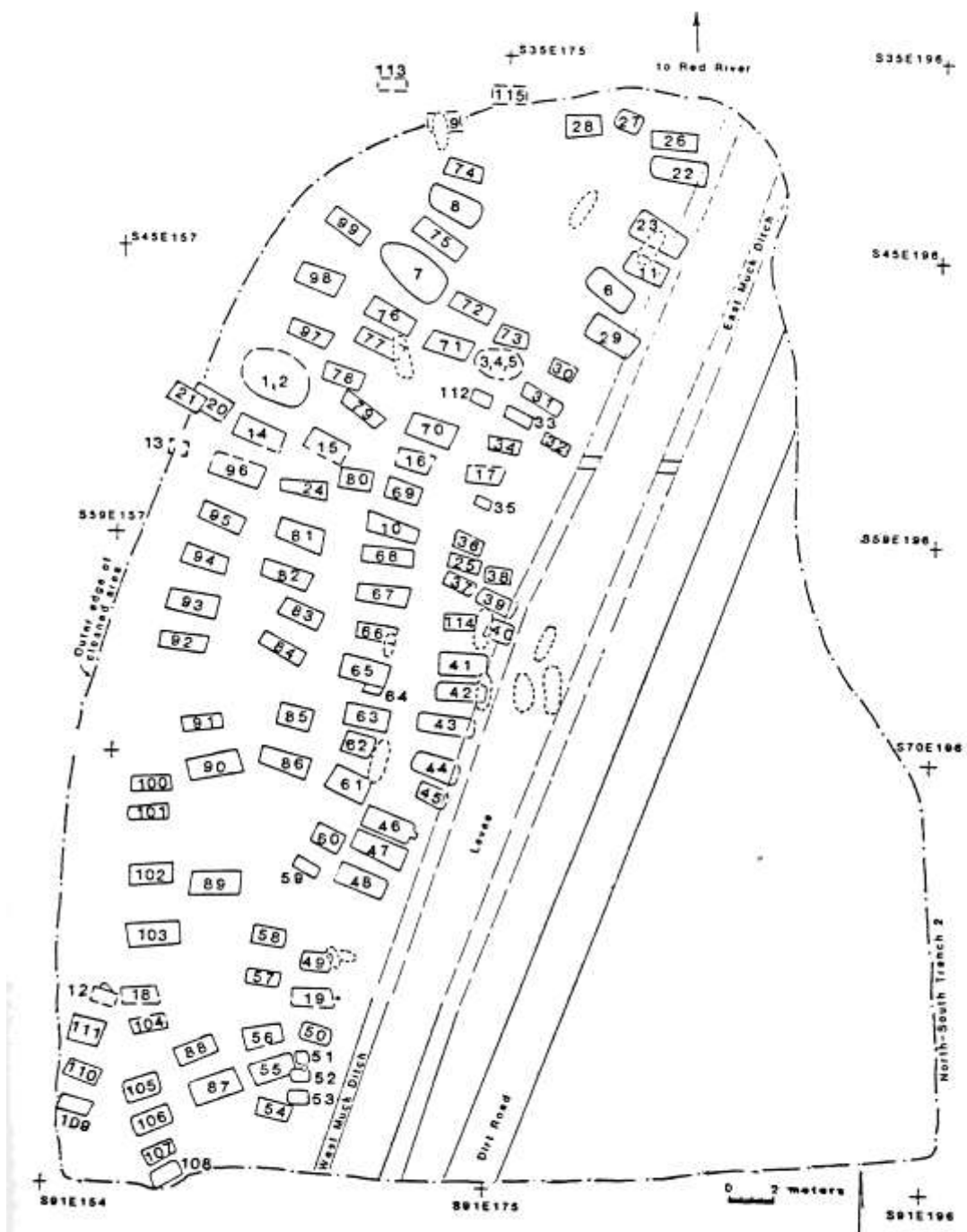
Figure 11. Historic burials in the direct impact zone (the dashed outlines indicate prehistoric burials)

Figure 4.12. Map of Cedar Grove Cemetery (Rose 1985).

The final cemetery for comparision is the Old School Cemetery in Washington, Georgia (Figure 4.13). This cemetery was surveyed in 2007 by New South Associates as part of an effort by the City of Washington to restore and maintain the cemetery. Like the other cemeteries in this study, it is a community cemetery. The earliest grave dates to 1892, although the use of the cemetery may date to the Antebellum era, and the most recent burial dates to 2006 (Joseph et al., 2008). This cemetery is substantially larger than Black Bottom Memorial Cemetery as it contains 1,738 graves. In addition, there is a strong tradition of marking family plots at the Old School Cemetery which is not present at the other cemeteries examined for comparitive purposes. These differences may be due to scale, as the Old School cemetery was in use by a larger community and there may have been a more clearly defined ownership of the cemetery beyond tradition or verbal agreement. Despite these differences there are similarities to the Black Bottom Memorial Cemetery including the presence of folk grave markers, use of ceramic and glass grave decorations, and sections of curving, organic north-south rows.

This brief comparision of Black Bottom to three, roughly contemporaneous, cemeteries suggests that the presence of certain traits: organic layout of graves, presence of grave decorations, and to a lesser extent folk markers are strongly associated with African American cemeteries, suggesting a wider phenomena beyond eastern North Carolina. These traits will be discussed in more detail in the following chapter.
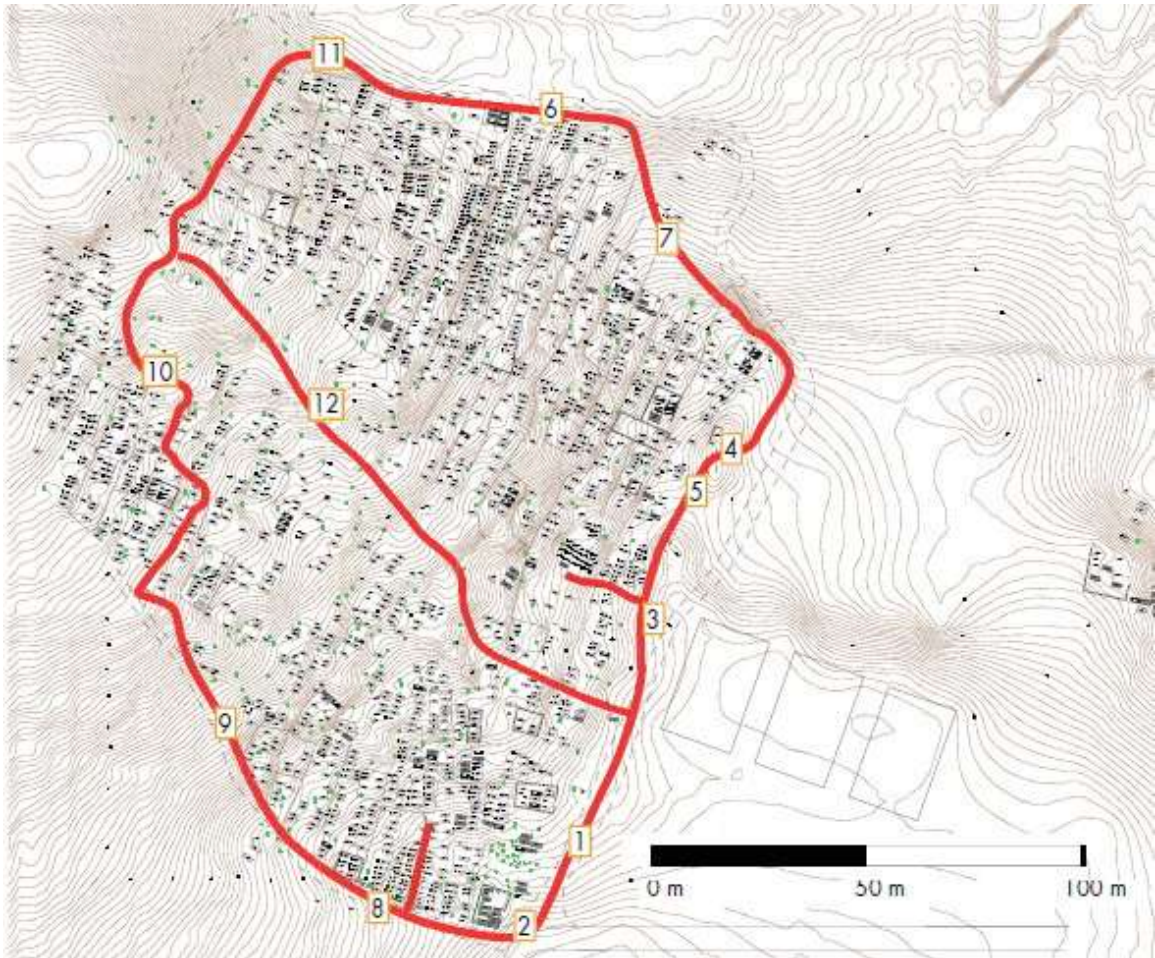
Figure 4.13 Map of Old School Cemetery (Joseph and Matterness 2008).

Chapter 5: Conclusions and Further Research

Conclusions:

Based on the comparative examples presented in Chapter 4, the Eastern North Carolina African American Cemetery Pattern is comprised of the following: the presence of grave decorations largely comprised of ceramic and glass, folk and ad-hoc markers in the form of locally produced markers or appropriated materials, and an informal or organic arrangement of graves in which burials are aligned in relation to family plots rather than a uniform cemetery wide alignment. This mix of traits seems to consistently occur in African American cemeteries, although damage due to changes in land use may blur the presence of some or all of these traits on the surface.

Grave decorations are one of the strongest indicators. At Black Bottom Memorial Cemetery these vessels seemed to have served both a traditional and functional purpose in that they appear to have been used as containers for flower arrangements. For example, a few fragments of a glass canning jar, commonly called a Mason jar, were decorated by a glued covering of aluminum foil, transforming a plain item into a decorative one. In addition, many graves have multiple impressions of containers in the concrete slabs covering the grave shaft, a distinct variation from the single urn or vase often found in the formalized Rural Cemetery Movement style cemetery.

The second trait commonly associated with African American cemeteries is the presence of folk markers. Folk markers are made from locally available materials to meet the local aesthetic. Vlach (1990) suggests that the creation of folk markers in the African American community is not strictly due to economic factors. Folk markers are

created to fill the need for culturally appropriate materials, a need that may not have been met by the predominately European American burial industry of the nineteenth and early twentieth centuries. Little (1998) notes that folk markers are common in, but not limited to, African American cemeteries. This trait is one which cannot stand alone as a cultural marker but is nevertheless an important trait. The importance of this trait lies in the cultural expression of the markers and in their presence coupled with one of the other traits. One common decoration of both folk and commercial markers in African American cemeteries is the presence of reflecting surfaces incorporated into the marker. This may be in the form of small mirrors, silver paint, or similar substances. These are commonly stated in cemetery studies to represent water and tie in with the belief in water as a path to the spirit world.

The final trait is the organic arrangement of the graves. This organic arrangement is expressed both in family groups and in the larger arrangement of the cemetery. It differs from the grid-like formal layouts of the Rural Cemetery Movement in that the family groupings do not always follow a rectangular pattern. They follow an organic arrangement which sees individuals grouped near the first burials in the family cluster instead of grids in a rectangular family plot. The organic arrangement may contain rows, but they are generally centered in family burials and do not extend to the entire cemetery. Alternately, graves may be placed in such a way as to make best use of the landscape. Both of these traits are visible in Black Bottom Cemetery. In the central part of the cemetery where burials are predominately in family groupings, graves are arranged in clusters. These clusters may display an internal alignment in which the graves within a cluster are aligned into rows; however, these rows will often not align with nearby graves

in a different cluster.   Figure 5.1 shows an example of family groupings in Black Bottom Memorial Cemetery. While each family grouping is aligned in a linear manner, these two groups do not align with each other. The arragement in the overall cemetery, at least through 1950, is that of rough north-south rows of family groupings. These rows at time may vary in alignment so much that some are almost east-west.

The organic arrangement of graves implies a different understanding of what is, and is not, important in a cemetery. It is not important to present a tidy, grid-like arrangement such as seen in many European American cemeteries, however, it is more essential that families be buried together. The variations in grave alignment thus seem to be an attempt to make use of every bit of available space in order to ensure families remain together.   It also promotes the most efficient use of land, which was a very limited resource for African Americans in the South as discussed in Chapter 1.

The reaction of European Americans upon seeing an African American cemetery of the period from 1865-1950 is often one of dismay at the perceived haphazard arrangement of graves and the lack of landscaping. This is most emphatically not the case. The lack of Rural Cemetery Movement landscaping is explained by the different cultural background, possibly by economic factors which prevent the hiring of full-time staff to maintain the cemetery, and by the overall importance of family. The seemingly random orientation of graves is an expression of the importance of family above all else, and the importance of keeping family together even after death.
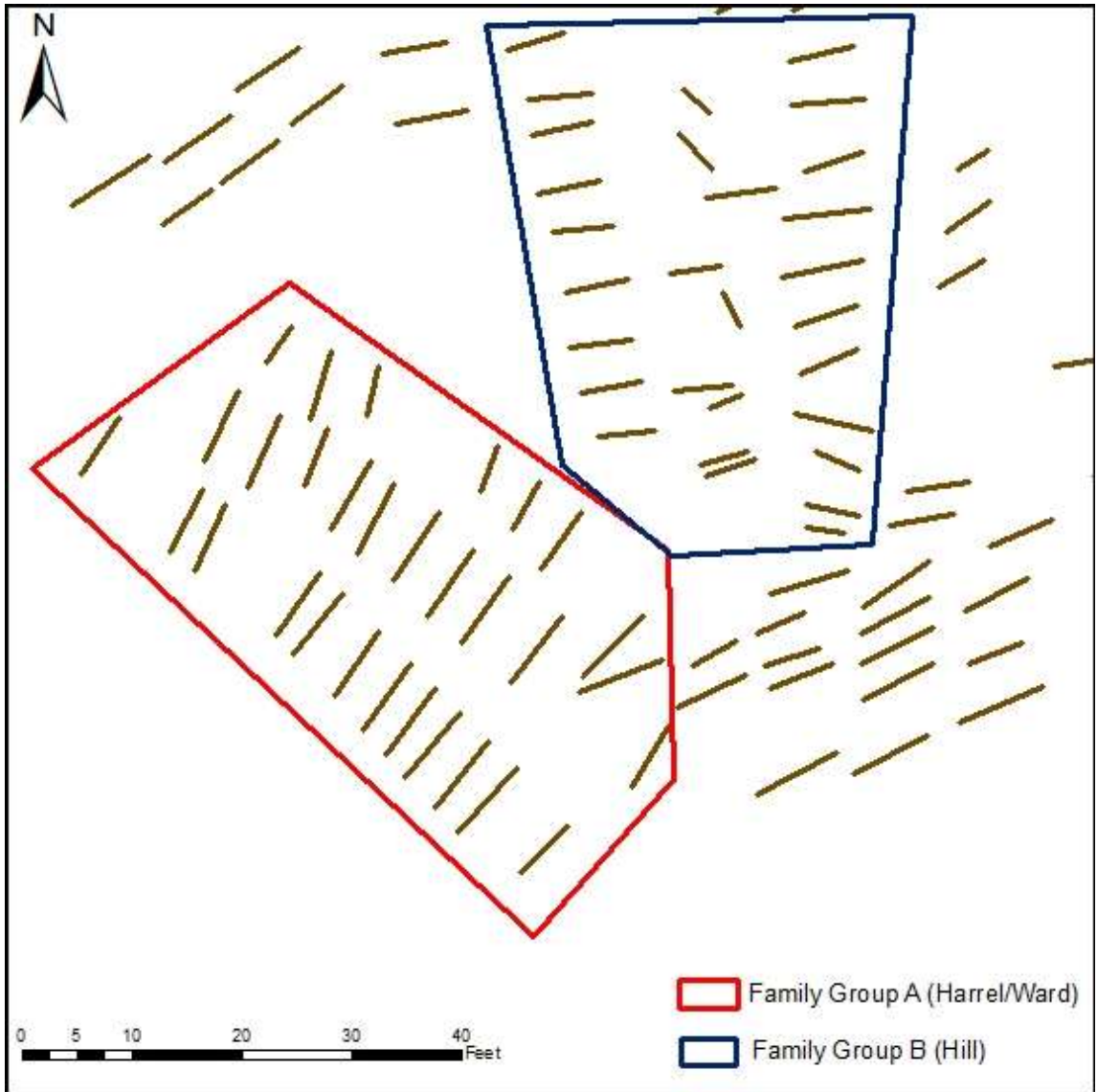
Figure 5.1. Detail of Black Bottom Cemetery Illustrating Family Group Alignments.

The Eastern North Carolina African American Cemetery Pattern presented here implies that the unit of analysis in these cemeteries should follow an order such as: grave, family plot (area immediately surrounding a grave), then the cemetery as a whole. As discussed above, family seems to be of paramount importance in the arrangement of these cemeteries, at least before 1950. By 1950 a change occurred in the layout, with more formalized family plots and a more grid-like arrangement becoming more common. This is exemplified by the eastern section of the Black Bottom Memorial Cemetery and by the Old County Road cemetery. The family plot remains the most important unit of organization, but the arrangement of plots changes from the more organic layout common prior to 1950 to rectangular family plots containing a more neatly arranged grid of burials. This change likely represents several factors, chief among them the effects of the Civil Rights Movement on the African American community. Further factors, as mentioned previously, may include changes in land ownership and the rise of African American funeral homes. The cemetery layout adopts some practices from that of the majority European American culture while still retaining a uniquely African American quality in grave markers and decorative elements. The use of grave decorations remains, particularly in the form of elaborate grave tableaus which include flowers, lights in the form of candles or, more recently, solar powered path lights and small decorative items such as ceramic vessels and figures.

An additional factor in the changes which occurs in the 1950's is the increasing prevalance of African American owned funeral homes. Prior to the 1950's African American owned funeral homes and African American undertakers were relatively rare in the southern United States due to several factors. Those factors included discrimination

in laws, such as those requiring the body be embalmed by an undertaker coupled with laws that prevented African Americans from this profession, pressure from racist groups such as the Ku Klux Klan, and lack of educational opportunities for African Americans (Crow, Escott, & Hatley 2002). During the 1950s and 1960s more African American funeral homes came into existance and began providing services from death-bed to grave (Holloway 2003). The need for funeral directors to keep records of how many individuals were buried in plots and whether a grave contained a body may have been one of the factors leading to the adoption of a more grid-like arrangement in family plots.

It is therefore possible to use the presence of these three traits: grave decorations, presence of folk markers, and informal arrangement, to identify patterns indicative of African American cemeteries. However, the variation in expression and survival of these three traits prevents using them as the sole means of postive categorization. That is to say, the presence of these traits indicates a high probability of African American burials, but without historical records, archeaological sub-surface investigation, or bio-archeaological analysis of human remains complete certainty is not possible.

One additional note regarding chronologies is important. The present of the flat tablet grave markers seems to indicate an African American Cemetery with use post-1950 in eastern North Carolina. The evidence from Black Bottom Memorial Cemetery seems to confirm Little's (1998) observation that this type of marker is only present in African American cemeteries. As such it provides a useful tool in both chronology and cultural identification.

This project has been far more complex than was originally expected. While some of this complexity was due to an over-estimation of what could be done in the few weekends available for fieldwork, much of it was due to the complexity of these cemeteries. Far from being a simple cluster of unmarked graves hidden from easy view, African American cemeteries such as the Black Bottom Memorial Cemetery are complex expressions of cultural identity. The form of expression may be through grave decorations, folk markers, grave layout, the location of the cemetery on the landscape, and other factors yet to be discovered; they all contribute to a record of human lives and the expression of rememberance.

It is hoped that, in some way, the results of this project will aid both field archaeologists working within the bounds of Section 106 as well as academic researchers. These findings can be useful as a guide to determining potential cultural affiliation, thereby reducing the burden of researchers by narrowing down which communities might be possible founders of lost, abandoned, or simply well-hidden cemeteries encountered during archaeological survey and study. In addition, the information from the survey will be of use to the Town of Belhaven and Church Women United, Inc. during clean up and maintenance efforts. This information will also be useful to geneaologists researching family histories as the data in Appendix B has been passed on to both the Beaufort County Genealogical Society.

Further Research:

Further research possibilities exist in several areas in relation to Black Bottom Memorial Cemetery: the social dimension, grave decorations, and marker styles. The social dimension, relates to an ethnographic understanding of what the cemetery means to

the community and how this meaning has changed over time. One potential avenue of

research is interviewing older members of the community to record their memories of the

cemetery as well as interviewing both younger and older community members to gain an

understanding of what the cemetery means to them. There are a variety of questions that

could be answered from such an inquiry, including topics such as how the meaning

changes over the generations, how information about traditions and family plots is

transmitted, and how the changing demographics of the area affect the relationship of the

cemetery to the community.

The grave decorations at the Black Bottom Memorial Cemetery also merit further

study. The visibility was limited during the initial surveys due to the overgrown state of

the cemetery and time limits prohibited an in depth analysis beyond noting their presence

and, as mentioned earlier, grave decorations were initially not expected to be of central

importance.   The presence of grave decorations is one of the most important markers of

an African American cemetery yet limited work has been done on grave decorations in

the twentieth century. Black Bottom Memorial Cemetery offers one avenue of research

into this activity.   There are numerous fragments of vessels scattered throughout the

cemetery, many of which are ceramic and appear to be fragments of vase and pitcher

shaped vessels. Glass fragments from vessels ranging from decorative pressed glass to

beverage bottles are also present. In addition to these fragments many cement box graves

contain either the bases, or impression of bases, of containers such as vases or jars. The

number and location of these bases varies considerably. One commonly reported artifact

in Georgia, clocks, does not appear to be present in the Black Bottom Memorial

Cemetery. Regional variations in grave decorations and decorative styles thus lends itself

as a possible topic for future study. A systematic analysis of grave decorations at Black Bottom Memorial Cemetery, focusing on types of material and spatial distribution of material, would be one potentially fruitful line of research.

Finally, an in-depth study of the variation in marker styles could answer questions such as how the types of markers changed over time and how folk markers relate to time periods. Also the flat grave markers, according to M. Ruth Little (1998), are a type unto themselves associated solely with African American cemeteries. However, no work to date has been done to identify where they were manufactured and whether families could choose elements of the design. The presence of these markers seems to signal the decline of folk markers and may represent the shift of burial rights from a family/community function to a function carried out by professional undertakers.

If time permitted, the inquiries and avenues of study proposed by further research would have been incorporated into this research project. The primary avenue of further study would have been expanding further afield from the Black Bottom Memorial Cemetery. A suggested expansion of this project is surveying several cemeteries using methods similar to those used at the Black Bottom Memorial Cemetery in order to build a baseline of data that would reveal some general traits of African American Cemeteries in eastern North Carolina. This baseline would be very useful to Cultural Resource Management surveys, historiographic studies, and ethnographic studies of the area and with consistent survey techniques such as recording the location of the head and foot of each grave, presence and type of grave markers, position on landscape of cemetery, and the proximity to water could provide the foundation for comparative, nation-wide, studies. One cemetery suggested for further study is the Wootentown cemetery near Washington,

Beaufort County, North Carolina. The Wootentown Cemetery dates to the mid nineteenth century and was established on land owned by a freedman, that is, a free person of African American descent. As a cemetery owned by a member of the African American community it would be revealing to compare the layout and location to community cemeteries which were not owned by the African American community.

African American cemeteries of the period from emancipation to the present day remain an emerging focus in historic archaeology. Identification of all rural cemeteries such as family plots, churchyards, and small community cemeteries increases with importance due to increased development and urban sprawl. African American cemeteries, particularly those established prior to 1950, are particularly vulnerable due to their hidden location and demolition by neglect. Cemeteries, regardless of their cultural association, are seen as sacred spaces both legally and culturally. Improved understanding of where these cemeteries are and what they look like aids Section 106 surveys, historic preservation programs, and land developers. Further research in this area promises to provide dividends to all involved in historic preservation and a deeper understanding of the common heritage, history, and the development of American culture.

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Appendix A: Preservation Suggestions for Black Bottom Memorial Cemetery

The ongoing efforts by Belhaven and Church Women United, Inc. have made a significant difference in the Black Bottom Memorial Cemetery. Damaged tombs are being repaired, grounds keeping efforts are underway, and the cemetery property is now in the hands of the descendants of those buried within. A long term preservation plan for the cemetery is a logical next step. This appendix provides suggestions and resources for such a plan.

Cemeteries serve not only as a place of remembrance but as a repository for artistic works in the form of markers, local history through gravestone inscriptions, and through figures important to local history. Cemetery preservation can incorporate both conservation and restoration along with general upkeep and record keeping; it is important to retain all these aspects of a cemetery (Strangstad 1995; Joseph 2008). In the case of Black Bottom Memorial Cemetery, restoration would not be a primary goal given the limited information on what the cemetery looked like during any particular time period. Conservation is the most appropriate goal and would include stabilizing existing markers, repairing collapsed or badly damaged markers, and developing a maintenance plan that prevents future damage.   The maintenance plan should cover the needs of grounds keeping as well as issues such as visiting hours, possible improvements to the cemetery, and the impact of increased visitation.

The process of grounds keeping, mowing grass, trimming around gravestones, and maintaining roads and paths can be damaging to markers. Historic cemeteries are not

always best served by the extensive landscaping required to present a manicured, "carpet" lawn (Strangstad 1995:47). Balancing appearance and preservation needs are the most critical aspect of determining appropriate landscaping. Black Bottom Memorial Cemetery is best served by a simple grounds keeping plan which keeps undergrowth and vine growth clear while maintaining the present wooded appearance, if needed, grasses or other non-spreading, low-lying ground plants, such as clover, are an option to stabilize erosion.

The size, layout, and existing ground cover in Black Bottom Memorial Cemetery suggests mowing with hand-propelled push mowers and weed trimmers using a soft nylon trimming string (as opposed to metal blades) is the option least likely to cause damage. During mowing and clearing damage from collisions with mowing equipment is the most common hazard to markers and fragile crypts. Weed trimmers with nylon string as opposed to metal blades are the preferred method as they do less damage to markers if accidental contact occurs. If mowing with push mowers is required, they can be fitted with rubber bumpers made from old inner tubes or old tires to minimize damage to markers (Strangstad 1995). Even soft nylon trimming line can damage soft marble or brick markers and marker bases (Joseph 2008); around these markers trimming using hand tools such as shears is the safest option. Maintainers should be instructed to avoid contact with markers as much as possible.

Balancing the needs of cost-effective maintenance and the needs of conservation can be challenging; hand trimming grass and other ground cover near the most fragile markers is ideal, but can be an expensive proposition. If at all possible the use of hand trimming is recommended around brick vaults and the few marble markers present at

Black Bottom Memorial Cemetery. Careful trimming with line trimmers using soft nylon line is acceptable around the other areas of the cemetery. Herbicides and pesticides can damage markers and should not be used around the base of markers or vaults.

One additional issue of concern with the brick vaults is their fragile state; they may be susceptible to collapse caused by the vibration of large motorized mowers and other vehicles nearby (Fig A.1). Until these vaults are stabilized, extra care and caution should be used around them. In addition, any pieces of collapsed vaults or broken markers should be left in place until

Figure A.1 Collapsed Vault at Black Bottom Memorial Cemetery. Remainder of vault is unstable and susceptable to further damage from collision with mower or vibration from mowers.

such time as the vault or maker can be repaired or replaced. Moving broken pieces can make it difficult to repair the marker or vault as it may not be possible to positively identify which fragment went with which vault or marker. If these pieces must be moved they should be placed at the base of the marker or crypt they were dislodged from for future repair, not moved to the edges of the cemetery.

Another area of maintenance is that of the markers themselves. Generally, the best solution is to avoid cleaning markers unless the growth is actively damaging, for example, some lichen dissolve stone (Fig A.2). In addition, general cleaning of the stones may be required to improve legibility (Fig A.3).   In general, stones should only be cleaned when absolutely necessary with plain water and soft brushes as stone and concrete markers can be damaged by most cleaning solutions. A broad soft-bristled brush such as a paintbrush and worn toothbrushes for cleaning in depressions and carvings are ideal for cleaning the stone. A non-ionic detergent can be added to the water if needed, but the stone must be thoroughly and gently rinsed after the use of such a detergent. The formula for any non-ionic detergent is one ounce to 5 gallons of water. Non-ionic detergent is an electrically neutral cleaning agent that does not lead to the development of soluble salts, which damage stones. It is commonly available from photography supply stores, feed stores, and conservator supply centers under several different brand names including Photo-Flo (photography supply stores), Orvus (feed store), and Vulpex (conservator supply) (Trippe-Dillon 2000; Strangstad 1995).

Lichen can be removed by thoroughly wetting with plain water and then gently removing the growth using only fingers. If that is not effective a wooden craft stick (also known as a popsicle stick or tongue depressor), a wooden/bamboo spatula, or soft plastic

scraper can be used to gently scrape off the thoroughly dampened lichen (Strangstad 1995). In severe cases a poultice may be required. The poultice is made of a mix of dry kaolin/porcelain clay mixed with a 50/50 solution of lab grade glycerin and water. These are mixed and kneaded until the consistency of

Figure A.2 Lichen growing on marker. Inset image is close-up of Lichen.

Figure A.3. Marble stone showing staining which hinders readability.

putty. Place a small wad of this poultice on the affected area and cover with plastic wrap. Allow it to set until the poultice dries to a leathery appearance, and then remove. Use wooden scrapers and water to remove any remaining poultice (Trippe-Dillon 2000).

Maintenance work beyond general cleaning should be handled by professionals with the guidance of an appropriate agency. The North Carolina Department of Archives and History (NCDAH) can offer suggestions and contact information for professional conservations; in addition, the NCDAH has offered training seminars and can recommend written guides containing up to date methods. Repair and resetting of markers, cleaning of deeply stained stones, and similar activities are best handled by professionals to prevent further damage to the stones.

New construction in the cemetery, such as walking paths, is not recommended. There is limited area to place these without damaging graves. The existing road will need additional maintenance if an increase in visitors occurs. Many graves are present only as depression in the ground and should be preserved if at all possible (Strangstad 1995). If these depressions need to be filled for safety reasons or erosion control, one recommended method is to fill the depressions with granite dust, a finely crushed stone, leaving it slightly mounded above the ground surface (Joseph 2008). This serves to visually retain the grave depression as a landscape feature while leveling the terrain. Holes from tree removal or animal activity can be simply filled with earth.

Durable grave decorations and artifacts such as glass and ceramic vessels should be left in place. Generally, fragments of ceramics and glass around graves are the remnants of vessels placed on the grave, although there does appear to be some trash

dumped in the cemetery. As a general rule of thumb ceramic containers and glass vessels

other than bottles near graves are likely to be grave decorations. Similar debris in the

roadway is likely to be the result of dumping and can be removed. Glass bottles present a

special challenge as it can be difficult to separate illegally dumped trash from carefully

placed offerings. A rough guide in this case is to examine the number of bottles, a cluster

of several beer bottles or other spirit bottles is likely to be an illegal trash dump while a

single bottle, particularly if it is placed on a grave or decorated with paint or aluminum

foil, is more likely to be a grave offering. Individuals in the Black Bottom community

may be able to help produce improved guidelines, particularly individuals who remember

the cemetery as it existed 30, 40, 50 or more years ago.

One major area of concern is that several graves border the road and can be easily

damaged by traffic. In addition, possible increased traffic to the cemetery will bring

more vehicular traffic to the cemetery which has very little parking. A fence along both

sides of the road through the cemetery will address both these issues as it will keep

visitors, who may be unfamiliar with the cemetery, on the road and prevent parking or

driving on areas containing graves (Fig A.4). One suggested type of fence is a low post

and chain type fence. It would be simple to step over so visitors can access the plots but

prevents vehicle traffic. Furthermore it is durable, requiring limited maintenance, and is

visually low-impact. An alternative is to construct a gate preventing unauthorized

vehicles from accessing the cemetery. Such a gate would best be placed across the road

entering Black Bottom Memorial Cemetery as it would allow vehicle access and parking

up to the older part of the cemetery where deep boundary ditches already provide a clear

distinction between road and grave area (Fig A.5).

91

An additional area of concern is the lack of signs marking the cemetery. A sign indicating the name of the cemetery and placed along Old County Road would greatly assist out-of-town visitors in finding the cemetery, and a plaque or sign detailing the history of the cemetery and its significance to the history of Belhaven, placed near the entrance to the cemetery, would be a desirable addition. The cemetery is likely to be visited by genealogists conducting family research, "gravers" interested in historic cemeteries, and other individuals. A combination of signs and discrete fences would help promote visitation while limiting damage to the cemetery.
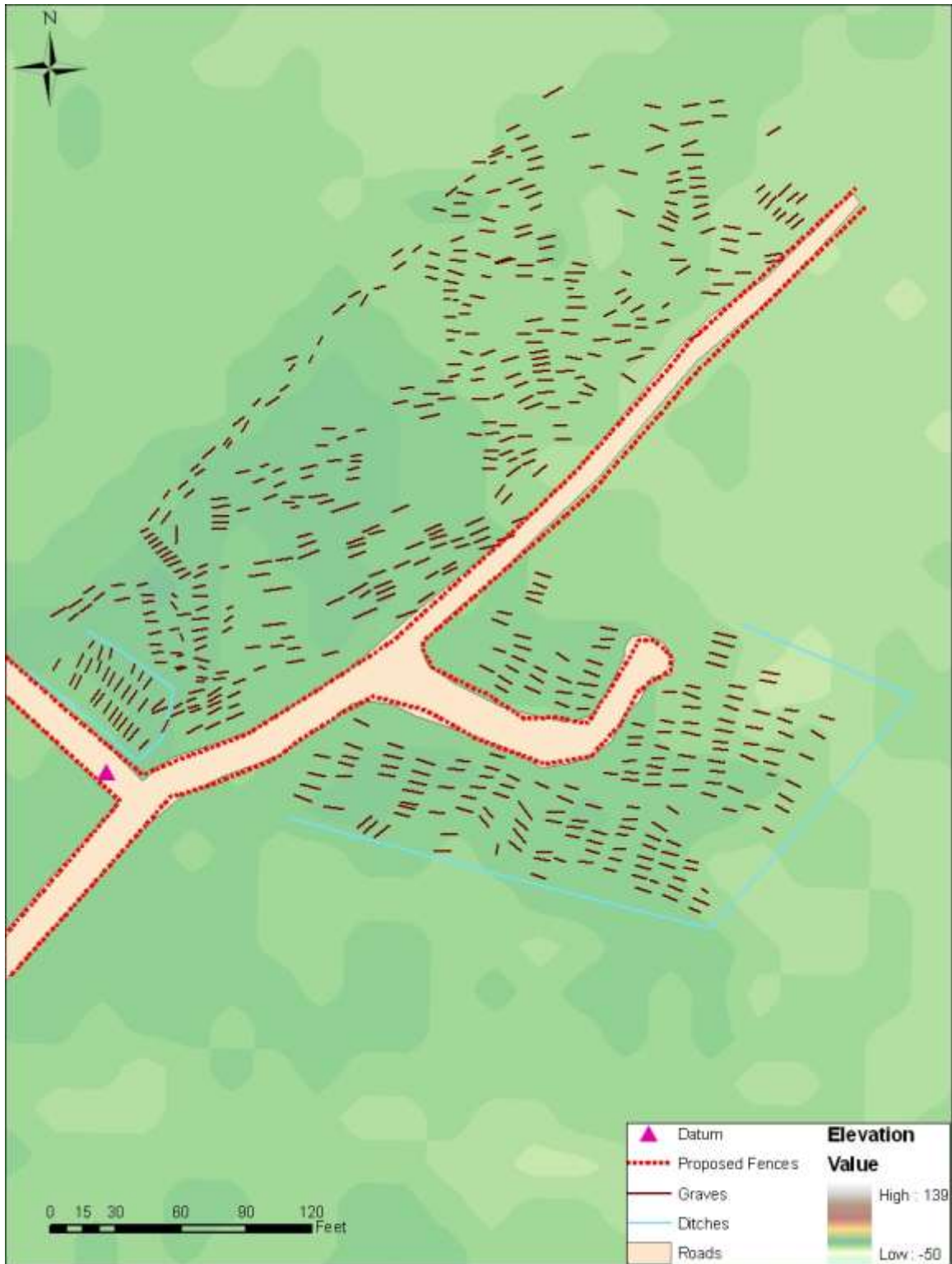
Figure A.4. Map showing the location of proposed post-and-chain fences.

Figure A.5. Map showing the location of a proposed entrance gate.

Trash receptacles will need to be provided for visitors as well, preferably along the edge of the road where they are easily accessible to both visitors and trash collectors. Like fences, trash receptacles should have a low visual impact. 55 gallon drums, for example, are effective containers but have a large visual impact and would best be located close to the entrance rather than in the center of the cemetery.

Final aspects of preservation include written guidelines for the cemetery. Guidelines include not only the rules for visitors to follow, but a general plan of development for the cemetery. These guidelines should be developed with community input and can cover topics such as visiting hours, future improvements, the role of the cemetery in local tourism, whether the cemetery will be promoted as part of tourism, and accessibility of the cemetery for future burials.

There are numerous resources available in both print and on-line for cemetery preservation. The author recommends *Old School Cemetery: Mapping Documentation, Preservation, and Interpretation of a Significant Historic African-American Site*, prepared by New South Associates (Joseph 2008), as an excellent resource containing a chapter on maintaining a cemetery with a similar history to Black Bottom Memorial Cemetery. In addition, *A Graveyard Preservation Primer* by Lynette Strangstad (1995) and *Grave Concerns: A Preservation Manual for Historic Cemeteries in Arkansas* by Tammie Trippe-Dillon (2000) contains information and advice pertinent to Black Bottom Memorial Cemetery. Online resources include the Association for Gravestone Studies at http://www.gravestonestudies.org and the Chicora Foundation at http://www.chicora.org.

Appendix B: Marked Graves

Grave#	Lastname	Firstname	MiddleName	Date Of Birth	Date of Death
1	Harrell	Essie		9-May-04	22-Nov-1939
2	Hosley	Henry	H	25-Nov-1869	12-Dec-1938
3					
4					
5					
6					
7	Ward	George		??-Feb-1881	??-May-1937
8	Ward	Martha			??-???-1932
9					
11					
12					
13	Jenkins	Mary		07-Apr-1893	12-Oct-1948
14					
15					
16	Boyd	J		??-Mar-1886	19-Mar-1936
17					
18					
19	Lanier	J	H		
20	Whitfield	Cathrine		18-Aug-1896	??-Jan-1938
22					
23	Wahab	Rosa		10-Sep-1902	10-Aug-1959
24	Wahab	John			22-May-1953
25					
27					
33					
34					
35	Gaynor	Benjamin	McKinley	1-Aug-22	14-Mar-48
36					
40					
47	Kinsley	Atheline		14-Oct-1842	15-Nov-25
48	***PRESS	L****A	I		
49					
50					
51					
52	Clark	Charles	E		13-May-38
53	Clark	Eunice	A	25-Oct-1878	9-Apr-16
54	Clark	John	C	25-Nov-1862	18-Sep-16
55	Hill	Betie			22-Jun-16
56					
57	White	Robert	H	04-Dec-1899	22-Jul-16
58	Clark	Bessie			
59					
60					
61					

62					
63					
64					
65					
66					
67	Bradshaw	Arinda			??-Feb-1948
68					
69					
70					
71					
72	Northen	Eotah			05-Apr-1936
73					
74					
75		Mrs. Emma		27-Jul-1890	13-May-1941
76					
77					
78	Jenkins	Alfred			02-Aug-1941
79					
80					
81					
82	Lane	T.J.		13-Mar-1887	
83					
85					
86	Mann	Allen		05-May-1878	7-Sep-1916
87	Mann	William		07-Oct-1873	3-Aug-1925
88					
89					
90					
91	Mann	John			
92	Fogk	Holly		14-Nov-1901	??-Dec-1929
93					
94					
95		Wawhiti			04-29-1913
96					
97		L.R.			
100					
101	Topping	Zida		04-Mar-1877	04-Mar-1952
102					
103					
105					
113					
115	Boyd	M			
116					
117					
119	Clark	Sophie		??-???-1861	??-???-1910
120	White	Louisa		20-Sep-1880	??-Sep-????
121					

123					
124	Pearson	Mr. John	H		
125	B.F.B				
126					
127					
128					
129	Simpson	John		15-Feb-1873	10-Aug-1930
130	Simpson	Mary		9-Sep-1912	1-Jun-1932
131					
132					
133					
134					
135	Clark	Willie	G	15-May-1900	29-Apr-1920
136					
137					
138	Smith	WM	H	??-???-1870	15-Sep-1936
139		Dave			
140	Beebe	G.W.H		16-Jun-1907	11-Sep-1909
141					
142	Harper	Mr. M			??-Feb-1934
143					
144					
145					
146	Phonveil	Maheley		15-Nov-1907	30-May-1909
149					
152	Barber	Mamie			12-Jun-1950
153					
154	Simpson	M		??-Sep-190?	10-May-1937
155					
156					
157					
158	Doole	John	P	??-???-1881	24-Feb-1949
159					
160					
161					
163	Rarker	Seneh		03-Aug-1878	12-Dec-1907
164					
165					
168					
174					
175					
176					
177					
181	Otis	Borros		16-Jul-1909	14-Aug-1947
182	Collins	Jones	J		
183	Robinson	Nonic		??-???-1900	??-Mar-1947
184					
185	Cambel				

187	Collins	Joseph	B	10-Jul-1918	9-Jun-1955
188					
190					
192	Sebo**	Tomas		??-???-1880	
193					
194					
195	Jennett	John	E	04-Jul-1884	18-Apr-1952
197	Coval	William		15-Apr-1888	22-Jul-1952
198	Horvey	Josephine	A.	15-Oct-1890	05-Sep-1952
200	Mann	Marnia		04-Jul-1854	01-Sep-1953
201	Respass	Willie		12-Jun-1905	29-Aug-1953
202					
203	Moore	William	J	18-Sep-1887	25-Apr-1954
204	Simpson	John		27-Mar-1904	24-Apr-1953
205	Welch	Addie		24-Oct-1876	17-Nov-1952
206	Jacocks	Dr. Richard	Copland	21-Nov-1872	09-Jan-1953
208	Barnhill	John		01-Dec-????	17-Nov-????
209	Barnhill	Minnie		16-Sep-1880	20-Jan-1954
211	Hill	Annie	L	18-Feb-18?8	20-May-19?4
212	Whitehill	Elizabeth			28-Sep-1954
216	Moore	Joe	W	21-Apr-1915	06-Feb-1955
220					
221	Robuck	Mrs. Lula	M.	28-May-1912	07-Sep-1955
223	Hemby	John		07-Oct-1876	13-Oct-1955
224	Robuck	Mrs. Lula	M.	28-May-1912	09-May-1955
225					
226					
227	Brinkle	Edith	E	05-Jan-1929	21-Aug-1956
238					
241					
242	Buckingham	Idalia		20-Mar-1896	20-Oct-1957
244	Jones	Mamie	C	08-May-1898	18-Jan-1975
245	Brinkley	William	H	15-Dec-1909	10-Feb-1975
246	Thompson	Leo		11-Feb-1918	04-Jan-1958
251	White	Mamie	T	30-Apr-1899	28-Oct-1974
252	Simpson	Hannah		15-May-1878	01-Feb-1958
258	Hogon	Robert	L	16-Feb-1942	
260	Halsey	James	O	09-Jan-1910	27-Jan-1969
263	Spencer	Vera	P	05-Jan-1942	12-Oct-1969
269	Covel	David		15-Dec-1896	03-Oct-1960
273	Sadler	W	L	??-???-????	08-Jan-1969
274	Dills	Connie		13-Sep-1913	12-Feb-1968
275	Smith	Joseph	A	??-???-????	22-Oct-1968
276	Bunch	Oswald	Lee	01-Aug-1943	29-Jul-1969
278	Bunch	Claude	L	10-Mar-1889	18-Aug-1968
279	Freeman	Edward		01-Sep-1947	12-Nov-1968
280	Barber	James	A	22-Feb-1911	22-Jan-1959

281	Martin	William	J	April 27, 1882	1-Mar-1960
282	Swindell	Joseph	N	22-Sep-1904	06-Jun-1960
283	Harrel	Alfred	B	05-Mar-1901	12-Jun-1960
286	Griffin	Mary	E	16-Feb-1911	21-Oct-1960
288	Wilder	Alice	D	18-Oct-1892	27-Dec-1968
289	Ebron	Stronnie	N	01-Oct-1900	17-Aug-1967
291	Davis	George		10-Mar-1901	13-Apr-1967
293	White	Milton		05-May-1897	02-Jan-1968
293	Satterwaite	Rodman		02-Jan-1898	23-Jun-1968
297	Harrel	Sharon	M	19-Aug-1939	02-Nov-1960
298	Gillian Corr	Annie	B	18-Apr-1888	18-Jan-1961
302					
303	Jones	Allice	G	23-Jul-1896	04-Oct-1966
304					
306	Barber	Garland		05-May-1895	02-Jun-1966
308	Rodman	Taylor		30-Mar-1887	19-Mar-1966
309	Ballard	Thomas			
311	Hassell	Mollie		09-Apr-1885	10-Dec-1959
313					
316	Adams	James		10-May-1892	04-May-1967
318	?ollins	?arol		??-???-????	??-???-1965
322	Chesson	Dorothy	L	01-Jun-1932	03-Aug-1966
326					
331	Satchel	James		07-Jul-1953	04-Oct-1965
335	Brimmage	Lester	C	08-Jun-1894	16-Dec-1962
336	Windley	John		06-Sep-1891	26-Mar-1963
337	Murray	Anne	R	15-Oct-1885	08-Feb-1965
338	Johnson	Julia		10-Mar-1887	02-Feb-1964
339	Clark	Malmeta		24-Dec-1899	20-Apr-1965
340	Chesson	Andrew	J.	14-Sep-1986	12-Jan-1966
341	Johnson	Jennie	H	08-Feb-1879	12-Jul-1966
342	Davis	Hubert	E	20-Apr-1935	26-Jul-1966
343	Davis	James, Sr	A	19-Nov-1890	3-Feb-1967
344	Davis	Pecola	J	??-???-1897	18-Jun-1909
345	Davis	Thelma	W	02-May-1920	26-Apr-1999
346	Whitaker	Addie	Davis	14-Feb-1918	22-Sep-1999
347	Whitaker	William	N	18-Mar-1924	20-Mar-1999
348	Whitaker	Cynthia	N	04-May-1909	22-Jun-1909
349	Whitaker	Marshall	B	23-Jan-1948	13-May-1997
352	Collins	Otis		22-Dec-1889	21-Mar-1970
353	Poole	John	H.	15-Jul-1909	26-Apr-1970
355	Bunch	Minnie	W	5-Jan-1949	23-May-1971
356					
357	Mackey	Kelvin	K	10-May-1909	25-May-1909
363	Barber	Claude		16-Jun-1888	05-Oct-1970
364	Satterwaite	Rodman		02-Jan-1898	23-Jun-1968
365	Covel	Golet, Jr		23-Oct-1909	09-Feb-1972
367	Mann	Odessa		22-Mar-1906	14-Mar-1970

368	Harris	Bessie	J	29-Sep-1922	03-Feb-1971
369	Harris	Maggie	W	10-Dec-1914	31-May-1971
370					
371	Barrow	Nancy		11-Dec-1901	06-May-1977
372	Gibbs	Darkies		30-Nov-1879	09-Jul-1973
373	Barrow	Rev. Willie	T	12-Jul-1885	21-Mar-1972
374	McAllister	Mary	S	18-Jan-1893	15-Apr-1974
376	Reddick	Willie		18-Nov-1896	18-Dec-1971
377	Jones	John	Robert	18-Jan-1890	30-Mar-1972
407					
435					
436					
438	Lanier	Carrie			??-???-1933
437	Lanier	M. A.			2-Apr-1931
445					
448					
450					
451	Harvey	A.	L.	10-Aug-????	1-Mar-1930
455					
457	Clark	C.E. Jr			
459					
461					
465	Boyd	Meleda		??-???-????	27-Jan-1944
466					
467					
468					
469					
470		Neil		??-???-1915	??-???-1947
471					
472					
473					
474					
475	Barnhill	Sudie	B.	25-Mar-1907	11-Sep-1998
476	Barnhill	William		10-Sep-1902	27-Mar-1990
477					
478	Burrus	Gearge	E		1949
479	Burrus	William	H	02-Oct-1939	03-Apr-1959
480	Burrus	Edna	Louise	25-Jan-1941	31-Mar-1967
481	Burrus	Edward	J	13-Apr-1919	27-Jun-1996
482	Burrus	Harry	Lee	23-Dec-1943	24-Jun-1984
483	Burrus	Mildred		10-Feb-1921	03-Jan-1975

Grave#	Northing	Easting	Description*
913	630.695852	717.672167	grave 424
914	631.738512	725.354079	grave 424f
915	633.912751	715.387828	grave 425
916	636.036609	722.403251	grave 425f
917	641.530219	714.736319	grave 426
918	642.613798	719.164308	grave 426f
919	645.896668	711.627246	grave 427
920	646.984408	718.290878	grave 427f
921	653.988760	711.061919	grave 428
922	655.098433	719.179435	grave 428f
923	698.344635	716.107301	grave 430
924	699.624095	725.122488	grave 430f
925	614.333255	729.153312	grave 431
926	613.596389	735.988212	grave 431f
927	621.024660	729.189119	grave 432
928	619.844918	735.316869	grave 432f
929	636.338766	724.997996	grave 433
930	636.457756	731.865524	grave 433f
931	642.380165	725.419262	grave 434
932	641.891638	732.567165	grave 434f
933	646.551407	724.445067	grave 435
934	646.504556	732.119412	grave 435f
935	649.778376	724.793080	grave 436
936	649.420032	732.768977	grave 436f
937	652.619973	724.600146	grave 437
938	655.379145	724.641087	grave 438
939	655.350339	732.834202	grave 438f
940	652.637547	732.735780	grave 437f
941	660.714496	723.485944	grave 439
942	658.992141	730.819389	grave 439f
943	665.361517	720.334444	grave 440
944	664.170011	726.521294	grave 440f
945	665.573872	729.376689	grave 441
946	663.745909	736.416526	grave 441f
947	670.049646	725.205852	grave 442

948	670.181842	733.280214	grave 442f
949	691.056041	724.506567	grave 443
950	690.310138	731.637076	grave 443f
951	696.318513	726.268006	grave 444
952	694.487126	732.563960	grave 444f
953	709.085265	727.224766	grave 445
954	709.565659	735.185666	grave 445f
955	713.331108	735.285706	grave 446f
956	712.837578	728.005678	grave 446
957	629.945718	738.277553	grave 447
958	629.142169	742.308657	grave 447f
959	633.773906	743.132716	grave 448
960	631.455754	748.866528	grave 448f
961	637.332880	746.339071	grave 449
962	633.607645	751.192847	grave 449f
963	640.601344	742.757912	grave 450
964	640.745290	747.191177	grave 450f
965	644.710596	735.243901	grave 451
966	644.112918	742.459157	grave 451f
967	651.121052	740.158577	grave 452
968	648.782363	746.926021	grave 452f
969	662.630403	740.221230	grave 453
970	660.065062	747.411599	grave 453f
971	667.855531	742.005748	grave 454
972	666.695832	748.715122	grave 454f
973	673.656029	744.793855	grave 455
974	671.526321	753.168841	grave 455f
975	677.465395	746.144236	grave 456
976	676.167417	753.279902	grave 456f
977	681.656469	746.083474	grave 457
978	681.213559	748.940555	grave 457f
979	685.896526	745.845378	grave 458
980	683.627633	752.128218	grave 458f
981	689.489234	746.990433	grave 459
982	687.108663	755.679135	grave 459f
983	692.867761	750.437479	grave 460
984	690.232842	756.975183	grave 460f
985	688.084370	736.869152	grave 461
986	686.877366	740.610125	grave 461f
987	696.217486	735.201969	grave 462
988	696.363358	742.585159	grave 462f

989	701.651450	736.946824	grave 463
990	706.267604	736.838631	grave 464
991	669.357010	806.621953	grave 465
992	667.200294	814.830734	grave 465f
994	703.341453	792.569987	grave 466
995	699.160961	799.202620	grave 466f
996	706.361272	795.023461	grave 467
997	702.772071	801.253797	grave 467f
998	712.869404	797.201197	grave 468
999	748.803351	797.032302	grave 469
1000	744.687692	804.324088	grave 469f
1001	746.919249	810.790504	grave 470
1002	746.047807	820.578217	grave 470f
1003	687.325910	818.725414	grave 471
1004	684.090497	826.068479	grave 471f
1005	670.197706	821.803943	grave 472
1006	680.737942	838.196257	grave 473
1007	680.749110	845.927311	grave 473f
1008	677.406658	838.100862	grave 474
1009	690.676148	852.400898	grave 475
1010	694.641264	858.795298	grave 475f
1011	693.700393	850.521379	grave 476
1012	697.296395	856.878518	grave 476f
1013	695.881379	846.296444	grave 477
1014	698.856504	850.942827	grave 477f
1015	698.410832	845.195843	grave 478
1016	700.905728	848.773406	grave 478f
1017	701.852625	841.757370	grave 479
1018	706.428259	848.540388	grave 479f
1019	705.270214	839.550713	grave 480
1020	709.035060	845.443516	grave 480f
1021	701.926299	856.503141	grave 481
1022	705.010958	861.995352	grave 481f
1023	703.572808	852.702871	grave 482
1024	706.643809	858.078341	grave 482f
1025	706.692837	849.011873	grave 483
1026	711.219903	855.588480	grave 483f
1027	650.812725	750.764692	grave 484
1028	648.402130	755.706628	grave 484f
1029	656.317442	753.950076	grave 485
1030	655.328996	761.814114	grave 485f

1031	666.634866	760.733168	grave 486
1032	668.148113	766.949783	grave 486f
1033	639.473291	764.105489	grave 487
1034	634.083253	769.592427	grave 487f
1035	644.503517	767.895949	grave 488
1036	645.386666	775.642204	grave 488f
1037	648.778596	775.070358	grave 489
1038	647.089149	780.790622	grave 489f
1039	653.309273	763.700387	grave 490
1040	653.587682	771.033529	grave 490f
1041	661.071057	764.340324	grave 491
1042	660.327939	771.744992	grave 491f
1043	658.671013	773.851766	grave 492
1044	658.062140	781.061862	grave 492
1045	662.327057	775.304687	grave 493
1046	662.293400	778.955377	grave 493f
1047	666.256239	773.632821	grave 494
1048	668.283773	779.600531	grave 494f
1049	670.297876	769.380403	grave 495
1050	672.946001	774.762060	grave 495f
1051	675.205619	767.808694	grave 496
1052	676.809378	772.609633	grave 496f
1	500.000000	500.000000	pri datum
2	512.546230	511.987111	grave 1
3	515.026244	510.412211	grave 2
4	518.407423	508.142104	grave 3
5	520.586486	506.785639	grave 4
6	523.312078	505.267857	grave 5
7	526.782828	503.266113	grave 6
8	531.235543	500.096918	grave 7
9	533.074156	498.813718	grave 8
10	540.190630	492.490628	grave 9
11	542.234609	490.702312	grave 10
12	550.285371	484.244197	grave 11
13	514.018185	528.322147	grave 12
14	522.630982	526.131039	grave 13
15	524.574483	525.593724	grave 14
16	525.151858	519.295825	grave 15
17	529.437685	515.345155	grave 16
18	532.411489	512.702830	grave 17
19	536.091621	510.212899	grave 18

20	538.962069	507.438285	grave 19
21	541.726995	505.440992	grave 20
22	545.908199	503.702646	grave 21
23	546.926450	498.717685	grave 22
24	504.941622	539.886535	grave 23
25	507.992600	539.663691	grave 24
26	511.176954	539.429194	grave 25
27	520.238880	533.753542	grave 26
28	523.560898	535.639791	grave 27
29	532.129449	531.733137	grave 28
30	534.812866	523.656332	grave 29
31	538.747691	521.801038	grave 30
32	542.867700	519.463195	grave 31
33	551.341585	510.573937	grave 32
34	551.947552	505.352985	grave 33
35	571.818872	495.084641	grave 34
36	574.283899	501.228184	grave 35
37	578.418128	508.236312	grave 36
38	557.895209	523.939886	grave 37
39	557.172634	534.681829	grave 38
40	566.320532	532.713662	grave 39
41	571.445706	535.948638	grave 40
42	546.527502	541.519279	grave 41
43	556.629233	544.285623	grave 42
44	565.539981	544.179542	grave 43
45	571.594897	542.735598	grave 44
46	575.411224	544.020181	grave 45
47	520.315764	542.315369	grave 46
48	528.898797	543.794978	grave 47
49	533.119607	551.498427	grave 48
50	540.827492	550.061929	grave 49
51	544.616921	548.873659	grave 50
52	548.081436	549.966429	grave 51
53	552.287080	550.444080	grave 52
54	557.097503	549.804452	grave 53
55	562.120170	550.958030	grave 54
56	566.232839	553.623663	grave 55
57	572.267177	553.469476	grave 56
58	576.385227	553.986518	grave 57
59	580.842697	555.158636	grave 58
60	584.620687	546.373807	grave 59

61	588.203236	544.281267	grave 60
62	590.433627	542.975972	grave 61
63	592.870483	541.586209	grave 62
64	595.032683	540.099949	grave 63
65	597.638660	538.507378	grave 64
66	600.112010	537.546564	grave 65
67	576.979315	524.591908	grave 66
68	581.859090	548.298908	grave 67
69	584.896246	557.749596	grave 68
70	590.039852	559.307731	grave 69
71	593.234863	560.489606	grave 70
72	596.810496	561.731189	grave 71
73	597.788778	550.017119	grave 72
74	607.990848	544.952251	grave 73
75	511.317707	548.153521	grave 74
76	520.256361	565.725263	grave 75
77	518.041836	550.415848	grave 76
78	521.396173	550.878768	grave 77
79	524.099345	551.249182	grave 78
80	526.253220	551.713744	grave 79
81	533.089232	555.416037	grave 80
82	535.955461	557.665109	grave 81
83	553.783134	563.803576	grave 82
84	558.658097	565.299051	grave 83
85	563.894125	567.245428	grave 84
86	583.149333	567.627195	grave 85
87	585.766501	567.896486	grave 86
88	591.163753	569.518041	grave 87
89	595.866116	570.890453	grave 88
90	598.193090	571.921322	grave 89
91	600.454926	572.517030	grave 90
92	603.515058	573.187314	grave 91
93	606.500841	573.863143	grave 92
94	612.827040	575.305568	grave 93
95	514.406685	558.647376	grave 94
96	519.362337	560.211327	grave 95
97	524.293650	560.965497	grave 96
98	529.704707	564.062428	grave 97
99	534.279345	574.666858	grave 98
100	544.967678	572.729983	grave 99
101	553.206052	582.546448	grave 100

102	576.941079	580.019585	grave 101
103	581.787613	583.223644	grave 102
104	590.085006	578.832608	grave 103
105	603.693278	582.995598	grave 104
106	618.837085	589.459870	grave 105
107	543.181773	584.258630	grave 106
108	569.134744	585.340454	grave 107
109	582.077402	593.294395	grave 108
110	591.788887	595.679418	grave 109
111	607.722644	601.006070	grave 110
112	615.634986	598.684070	grave 111
113	622.303566	598.951147	grave 112
114	534.909599	590.535679	grave 113
115	541.640858	591.784933	grave 114
116	545.292010	590.775583	grave 115
117	548.733964	597.929431	grave 116
118	568.825785	607.550940	grave 117
119	581.707454	603.619577	grave 118
120	586.433929	604.868277	grave 119
121	590.875815	604.817460	grave 120
122	535.554971	606.279729	grave 121
123	567.977295	610.645705	grave 122
124	545.854297	614.732638	grave 123
125	557.685286	613.118829	grave 124
126	561.667320	623.400717	grave 125
127	549.296592	623.215622	grave 126
128	558.705663	627.806602	grave 127
129	561.981641	625.525208	grave 128
130	563.720884	624.954425	grave 129
131	577.875663	626.070937	grave 132
132	581.858759	626.581468	grave 133
133	583.478679	626.970087	grave 134
134	582.753753	627.038220	grave 134
135	587.747591	635.219883	grave 135
136	604.660167	616.827850	grave 138
137	607.666555	613.865247	grave 139
138	617.534949	611.731599	grave 140
139	621.193332	612.040860	grave 141
140	612.745081	631.671082	grave 142
141	617.102059	632.800253	grave 143
142	620.475372	635.119644	grave 144

143	623.257525	635.662911	grave 145
144	622.518412	624.645419	grave 146
145	599.358295	621.933893	grave 147
146	631.903732	630.909885	grave 148
147	634.016108	640.042616	grave 149
148	546.696888	643.245492	grave 152
149	555.836229	636.321598	grave 153
150	567.180633	633.646450	grave 154
151	586.402459	637.101569	grave 155
152	594.711355	649.265208	grave 156
153	569.684203	646.141551	grave 157
154	577.240085	653.093760	grave 158
155	634.740581	670.186671	grave 160
156	640.259741	668.046557	grave 161
157	643.653964	658.428249	grave 162
158	649.546933	663.178014	grave 163
159	641.766666	679.561421	grave 165
160	645.082571	673.568102	grave 166
161	650.212512	680.281770	grave 167
162	551.859039	653.947866	grave 169
163	561.937615	659.535571	grave 170
164	562.240263	667.582799	grave 171
165	564.934967	667.919211	grave 172
166	569.456735	655.434184	grave 173
167	575.696088	664.890854	grave 174
168	578.978793	664.432105	grave 175
169	581.117148	664.168149	grave 176
170	583.539867	663.417239	grave 177
171	573.609732	675.170061	grave 180
172	576.945241	673.580004	grave 181
173	570.751703	685.929253	grave 182
174	578.063867	683.276646	grave 183
175	582.700080	681.865829	grave 184
176	588.317478	680.666219	grave 185
177	573.718987	694.464106	grave 187
178	587.121489	694.042777	grave 188
179	579.819909	702.591438	grave 189
180	574.685175	684.221991	grave 190
181	593.119525	689.940731	grave 191
182	558.827179	635.959674	grave 193
183	561.505620	635.780816	grave 194

184	464.802674	579.219813	grave 195
185	468.765296	583.466986	grave 196
186	472.703295	587.751999	grave 197
187	479.310879	593.376150	grave 198
188	457.363525	591.082343	grave 199
189	467.457316	600.073533	grave 200
190	472.586452	603.390701	grave 201
191	475.600927	605.578903	grave 202
192	480.220842	608.523619	grave 203
193	489.646053	615.981952	grave 204
194	441.341320	602.228366	grave 205
195	438.479992	604.174445	grave 206
196	449.264335	619.004052	grave 208
197	462.596244	618.509342	grave 209
198	465.689420	621.217372	grave 210
199	469.936965	623.806003	grave 211
200	474.112052	627.038400	grave 212
201	437.598622	617.065387	grave 213
202	443.690768	620.633362	grave 214
203	445.743896	623.582577	grave 215
204	452.349452	627.334251	grave 216
205	455.189289	630.995346	grave 217
206	459.479628	633.951731	grave 218
207	463.380269	637.265457	grave 219
208	430.625677	627.153489	grave 220
209	438.929620	635.501039	grave 221
210	448.738471	643.091388	grave 222
211	455.033087	649.750630	grave 223
212	457.436045	654.644594	grave 224
213	421.367256	632.630298	grave 225
214	427.302675	637.389930	grave 226
215	436.658059	648.513077	grave 227
216	441.086730	652.182830	grave 228
217	444.375493	657.345386	grave 229
218	448.097772	662.835570	grave 230
219	451.553811	666.677470	grave 231
220	455.661694	670.048381	grave 232
221	430.093788	656.756191	grave 233
222	433.070207	660.022611	grave 234
223	438.112152	666.386717	grave 235
224	441.066343	670.698611	grave 236

225	444.270051	674.406035	grave 237
226	410.838195	659.472718	grave 238
227	415.135615	666.775546	grave 239
228	419.704915	670.164401	grave 240
229	424.026686	672.277183	grave 241
230	431.556589	676.444962	grave 242
231	437.328265	686.076070	grave 243
232	404.168408	675.484070	grave 244
233	406.745940	677.340695	grave 245
234	419.276291	685.578004	grave 246
235	421.875457	687.413198	grave 247
236	427.733135	694.406285	grave 248
237	431.392648	698.968151	grave 249
238	398.059278	688.743145	grave 250
239	410.225855	692.630984	grave 251
240	413.474732	694.440404	grave 252
241	415.893075	697.318453	grave 253
242	420.446174	704.954634	grave 254
243	431.542387	717.579494	grave 255
244	396.779584	694.504565	grave 256
245	400.488170	699.082013	grave 257
246	404.897792	700.912889	grave 258
247	408.041766	704.908543	grave 259
248	426.813863	724.687660	grave 260
249	429.436887	726.416750	grave 261
250	433.811013	727.515174	grave 262
251	440.660675	731.274324	grave 263
252	444.394259	733.207852	grave 264
253	449.642151	736.351553	grave 265
254	389.827769	704.350886	grave 266
255	397.718793	711.304262	grave 267
256	402.894127	714.358695	grave 268
257	406.505699	716.859777	grave 269
258	408.476556	719.465976	grave 270
259	414.188250	722.788248	grave 271
260	420.645452	733.120976	grave 272
261	424.501877	735.816693	grave 273
262	429.289815	737.297647	grave 274
263	431.304994	740.029045	grave 275
264	436.834421	743.051843	grave 276
265	441.953201	746.382086	grave 277

266	447.003152	749.449497	grave 278
267	458.845153	754.410295	grave 279
268	406.804258	729.593262	grave 280
269	402.826946	736.458777	grave 280f
270	412.546069	729.069192	grave 281
271	409.028186	736.031495	grave 281f
272	416.674180	731.270452	grave 282
273	412.856929	738.577533	grave 282f
274	420.538824	733.322971	grave 283
275	416.988875	740.192487	grave 283f
276	425.125082	736.532897	grave 284
277	421.784984	742.499980	grave 284f
278	429.314464	738.715365	grave 285
279	425.365259	744.649411	grave 285f
280	434.043686	742.364777	grave 286
281	428.999483	748.449028	grave 286f
282	440.604632	750.176319	grave 287
283	449.988063	753.222998	grave 288
284	447.925213	760.938027	grave 288f
285	456.485291	755.840980	grave 289
286	454.448546	763.182250	grave 289f
287	462.862438	759.813293	grave 290
288	460.124711	766.944580	grave 290f
289	476.935238	764.221576	grave 292
290	474.880470	770.994581	grave 292f
291	473.182710	762.618201	grave 291
292	469.771430	771.035743	grave 291f
293	484.224049	765.866043	grave 293
294	482.199113	773.314801	grave 293f
295	490.191317	766.263559	grave 294
296	485.994423	773.327002	grave 294f
297	493.836968	768.425193	grave 295
298	490.938099	774.977926	grave 295f
303	436.567390	754.910652	grave 287f
304	408.266433	736.949155	grave 296
305	406.157913	740.517800	grave 296f
306	415.482853	742.345698	grave 297
307	411.747013	749.418533	grave 297f
308	420.769519	743.981429	grave 298
309	417.259847	751.484411	grave 298f
310	424.960919	747.856043	grave 299

311	421.039876	753.711103	grave 299f
312	444.027280	766.870989	grave 300
313	440.945290	773.426094	grave 300f
314	448.419604	769.917934	grave 301
315	445.911413	776.791277	grave 301f
316	453.179841	772.630340	grave 302
317	458.072525	772.244156	grave 303
318	455.336338	779.838209	grave 303f
319	462.728783	775.340812	grave 304
320	466.479475	776.109852	grave 305
321	464.059394	782.705816	grave 305f
322	471.364395	778.675833	grave 306
323	468.065339	785.691818	grave 306f
324	475.988794	780.799851	grave 307
325	472.515920	787.830372	grave 307f
326	481.656781	783.762426	grave 308
327	477.914713	790.613663	grave 308f
328	485.685891	786.170907	grave 309
329	482.461678	792.936395	grave 309f
330	489.822975	788.118476	grave 310
331	486.993369	795.233311	grave 310f
332	400.771030	741.805893	grave 311
333	397.016678	747.979568	grave 311f
334	403.980689	745.184240	grave 312
335	400.766082	750.783416	grave 312f
336	408.292281	748.101490	grave 313
337	405.123751	753.202806	grave 313f
338	411.586966	753.437575	grave 314
339	408.785193	758.929739	grave 314f
340	415.136822	754.975166	grave 315
341	412.233457	760.160850	grave 315f
342	435.573995	775.408089	grave 316
343	432.284686	781.027133	grave 316f
344	444.598741	779.437134	grave 317
345	440.551890	785.598509	grave 317f
346	457.645386	788.016893	grave 318
347	453.321147	794.513510	grave 318f
348	462.966566	790.137636	grave 319
349	460.323897	796.553787	grave 319f
350	470.072380	792.525295	grave 320
351	467.099358	799.198351	grave 320f

352	476.494608	796.860854	grave 321
353	473.558599	804.017682	grave 321f
354	493.756875	803.840029	grave 322
355	490.732262	811.457074	grave 322f
356	393.108857	752.244721	grave 323
357	389.465422	757.197127	grave 323f
358	397.413081	755.002313	grave 324
359	392.064501	761.429042	grave 324f
360	400.398672	759.572593	grave 325
361	397.851870	762.502522	grave 325f
362	434.914245	785.752542	grave 326
363	431.494090	792.145665	grave 326f
364	447.166502	798.223097	grave 327
365	444.952404	801.667480	grave 327f
366	453.720340	797.658708	grave 328
367	450.102268	804.077676	grave 328f
368	458.734874	799.424395	grave 329
369	455.515205	806.979341	grave 329f
370	465.030987	806.050471	grave 330
371	461.321528	812.745508	grave 330f
372	471.586315	806.866908	grave 331
373	475.141592	810.994671	grave 332
374	472.598259	816.811208	grave 332f
375	423.621459	791.821752	grave 333
376	420.069062	796.402468	grave 333f
377	432.038723	799.211809	grave 334
378	427.384279	804.574796	grave 334f
379	437.355560	801.649552	grave 335
380	432.466900	808.001256	grave 335f
381	442.646519	806.127396	grave 336
382	438.047578	812.063355	grave 336f
383	453.717808	813.991330	grave 337
384	449.276045	820.153768	grave 337f
385	463.156332	821.438855	grave 338
386	457.799754	827.171259	grave 338f
387	469.435308	826.494537	grave 339
388	465.910137	832.672422	grave 339f
389	490.207499	802.547861	grave 340
390	486.971081	809.490006	grave 340f
391	502.469350	779.395224	grave 341
392	498.149806	787.795715	grave 341f

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394	502.233653	789.580670	grave 342f
395	511.468405	783.556199	grave 343
396	506.735108	792.917756	grave 343f
397	514.809281	785.188326	grave 344
398	510.467230	794.725635	grave 344f
399	518.810953	775.215782	grave 345
400	528.265174	759.692041	grave 346
401	532.854505	761.858531	grave 347
402	530.687710	751.027136	grave 348
403	536.261579	753.962693	grave 349
404	491.776846	717.006755	grave 350
405	490.046754	722.822251	grave 350f
406	497.453216	721.070248	grave 351
407	495.125237	726.084970	grave 351f
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410	508.447048	723.704850	grave 353
411	504.577923	730.213201	grave 353f
412	513.134359	725.844160	grave 354
413	509.038481	732.515605	grave 354f
414	518.777592	729.300103	grave 355
415	515.769454	736.799613	grave 355f
416	520.848319	733.203975	grave 356
417	519.468806	735.330022	grave 356f
418	526.358830	734.487809	grave 357
419	522.539350	740.649252	grave 357f
420	496.212206	707.880099	grave 358
421	493.344262	714.065465	grave 358f
422	501.415630	709.782678	grave 359
423	498.437181	716.248976	grave 359f
424	507.664257	711.209679	grave 360
425	503.659952	716.925992	grave 360f
426	505.932278	695.536469	grave 361
427	501.475018	701.801426	grave 361f
428	510.376725	698.732896	grave 362
429	505.610215	704.593712	grave 362f
430	514.200193	701.337014	grave 363
431	510.210029	706.937445	grave 363f
432	518.649395	712.931841	grave 364
433	513.773831	717.805588	grave 364f

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435	504.050120	687.761895	grave 365f
436	512.800467	684.993035	grave 366
437	507.522713	690.091351	grave 366f
438	516.901711	688.762200	grave 367
439	512.524519	693.947525	grave 367f
440	520.797340	692.388475	grave 368
441	516.525934	697.932803	grave 368f
442	525.283209	694.246052	grave 369
443	521.174170	701.518751	grave 369f
444	529.942676	695.170151	grave 370
445	526.536426	702.210266	grave 370f
446	545.626758	703.132745	grave 371
447	541.891825	709.843323	grave 371f
448	548.657904	704.119068	grave 372
449	545.645767	711.369834	grave 372f
450	552.015350	707.488008	grave 373
451	548.252954	713.395048	grave 373f
452	556.285511	709.650673	grave 374
453	552.727748	716.452128	grave 374f
454	519.001177	677.199311	grave 375
455	514.384957	683.156272	grave 375f
456	525.493120	684.589117	grave 378
457	522.603303	689.797306	grave 378f
458	538.916947	686.586662	grave 376
459	534.440751	692.729957	grave 376f
460	541.876325	689.304132	grave 377
461	538.942515	695.601247	grave 377f
501	590.012495	699.566521	grave 379
502	593.577382	705.203136	grave 379f
503	593.251448	697.325545	grave 380
504	597.854290	702.593608	grave 380f
505	607.454237	694.247305	grave 381
506	606.085088	699.900252	grave 381f
507	611.919680	695.559399	grave 382
508	609.814298	701.302194	grave 382f
509	614.807214	696.093689	grave 383
510	613.955007	702.644255	grave 383f
511	624.573369	690.256095	grave 384
512	622.360720	696.183087	grave 384f
513	651.047895	686.112761	grave 385

514	651.678269	691.116504	grave 385f
515	657.322002	686.674288	grave 386
516	655.658756	692.808123	grave 386f
517	662.023614	693.272732	grave 387
518	659.734879	698.119803	grave 387f
519	668.436358	688.307518	grave 388
520	667.492301	691.517827	grave 388f
521	672.515417	689.000414	grave 389
522	670.363893	694.595643	grave 389f
523	679.154604	691.018168	grave 380
524	677.138750	694.243901	grave 390f
525	686.648190	689.909115	grave 391
526	686.003864	692.740997	grave 391f
527	685.681180	694.213056	grave 392
528	684.715358	696.473082	grave 392f
529	690.868625	690.553507	grave 393
530	689.058655	696.372412	grave 393f
531	695.152823	691.992398	grave 394
532	692.591258	697.572207	grave 394f
533	699.396006	694.138967	grave 395
534	696.120444	700.611602	grave 395f
535	704.224196	696.246143	grave 396
536	701.648079	702.660581	grave 396f
537	707.905758	697.791239	grave 397
538	706.631421	703.861002	grave 397f
539	731.111945	717.802729	grave 398
540	731.590668	724.161729	grave 398f
541	720.709206	713.581840	grave 399
542	717.860674	719.054992	grave 399f
543	715.169008	711.530919	grave 400
544	712.554197	718.601549	grave 400f
545	704.703236	708.179324	grave 401
546	701.614044	714.335550	grave 401f
547	694.439076	708.626282	grave 402
548	692.962851	713.026574	grave 402f
549	686.790562	702.255788	grave 403
550	683.584260	708.326981	grave 403f
551	683.078561	697.560267	grave 404
552	681.364281	701.394127	grave 404f
553	679.233438	696.137606	grave 405
554	677.868540	700.536562	grave 405f

555	669.359457	696.813945	grave 406
556	668.449671	702.999210	grave 406f
557	602.022246	704.053797	grave 407
558	605.383869	711.419644	grave 407f
559	608.216258	705.944309	grave 408
560	609.350133	710.431116	grave 408f
561	611.973825	702.497973	grave 409
562	613.129194	709.302727	grave 409f
563	618.221832	703.767068	grave 410
564	619.180861	710.487398	grave 410f
565	622.591957	697.723773	grave 411
566	621.800535	704.668148	grave 411f
567	628.125280	697.537859	grave 412
568	627.300986	704.102761	grave 412f
569	639.652618	695.042587	grave 413
570	638.060547	702.196026	grave 413f
571	647.819355	695.920742	grave 414
572	647.545616	701.704147	grave 414f
573	652.280901	697.643183	grave 415
574	652.934808	703.163521	grave 415f
575	655.822511	695.523314	marker 1
576	658.688591	702.067956	grave 416
577	659.432449	709.110155	grave 416f
578	698.877189	716.258238	grave 417
579	699.991053	723.631718	grave 417f
580	599.833171	716.073311	grave 418
581	603.753117	723.153780	grave 418f
582	605.585192	712.150313	grave 419
583	607.089162	718.292089	grave 419f
584	610.400264	712.822368	grave 420
585	611.426818	719.866809	grave 420f
586	618.982901	712.223293	grave 421
587	617.852680	718.687477	grave 421f
588	625.265947	705.743781	grave 422
589	624.128384	712.218137	grave 422f
590	638.189549	704.101277	grave 423
591	638.815389	709.426220	grave 423f
268	406.804258	729.593262	grave 280
269	402.826946	736.458777	grave 280f
270	412.546069	729.069192	grave 281
271	409.028186	736.031495	grave 281f

272	416.674180	731.270452	grave 282
273	412.856929	738.577533	grave 282f
274	420.538824	733.322971	grave 283
275	416.988875	740.192487	grave 283f
276	425.125082	736.532897	grave 284
277	421.784984	742.499980	grave 284f
278	429.314464	738.715365	grave 285
279	425.365259	744.649411	grave 285f
280	434.043686	742.364777	grave 286
281	428.999483	748.449028	grave 286f
282	440.604632	750.176319	grave 287
283	449.988063	753.222998	grave 288
284	447.925213	760.938027	grave 288f
285	456.485291	755.840980	grave 289
286	454.448546	763.182250	grave 289f
287	462.862438	759.813293	grave 290
288	460.124711	766.944580	grave 290f
289	476.935238	764.221576	grave 292
290	474.880470	770.994581	grave 292f
291	473.182710	762.618201	grave 291
292	469.771430	771.035743	grave 291f
293	484.224049	765.866043	grave 293
294	482.199113	773.314801	grave 293f
295	490.191317	766.263559	grave 294
296	485.994423	773.327002	grave 294f
297	493.836968	768.425193	grave 295
298	490.938099	774.977926	grave 295f
299	493.195054	792.978806	transervse1
301	629.177870	727.869804	transervse2
303	436.567390	754.910652	grave 287f
304	408.266433	736.949155	grave 296
305	406.157913	740.517800	grave 296f
306	415.482853	742.345698	grave 297
307	411.747013	749.418533	grave 297f
308	420.769519	743.981429	grave 298
309	417.259847	751.484411	grave 298f
310	424.960919	747.856043	grave 299
311	421.039876	753.711103	grave 299f
312	444.027280	766.870989	grave 300
313	440.945290	773.426094	grave 300f
314	448.419604	769.917934	grave 301

315	445.911413	776.791277	grave 301f
316	453.179841	772.630340	grave 302
317	458.072525	772.244156	grave 303
318	455.336338	779.838209	grave 303f
319	462.728783	775.340812	grave 304
320	466.479475	776.109852	grave 305
321	464.059394	782.705816	grave 305f
322	471.364395	778.675833	grave 306
323	468.065339	785.691818	grave 306f
324	475.988794	780.799851	grave 307
325	472.515920	787.830372	grave 307f
326	481.656781	783.762426	grave 308
327	477.914713	790.613663	grave 308f
328	485.685891	786.170907	grave 309
329	482.461678	792.936395	grave 309f
330	489.822975	788.118476	grave 310
331	486.993369	795.233311	grave 310f
332	400.771030	741.805893	grave 311
333	397.016678	747.979568	grave 311f
334	403.980689	745.184240	grave 312
335	400.766082	750.783416	grave 312f
336	408.292281	748.101490	grave 313
337	405.123751	753.202806	grave 313f
338	411.586966	753.437575	grave 314
339	408.785193	758.929739	grave 314f
340	415.136822	754.975166	grave 315
341	412.233457	760.160850	grave 315f
342	435.573995	775.408089	grave 316
343	432.284686	781.027133	grave 316f
344	444.598741	779.437134	grave 317
345	440.551890	785.598509	grave 317f
346	457.645386	788.016893	grave 318
347	453.321147	794.513510	grave 318f
348	462.966566	790.137636	grave 319
349	460.323897	796.553787	grave 319f
350	470.072380	792.525295	grave 320
351	467.099358	799.198351	grave 320f
352	476.494608	796.860854	grave 321
353	473.558599	804.017682	grave 321f
354	493.756875	803.840029	grave 322
355	490.732262	811.457074	grave 322f

356	393.108857	752.244721	grave 323
357	389.465422	757.197127	grave 323f
358	397.413081	755.002313	grave 324
359	392.064501	761.429042	grave 324f
360	400.398672	759.572593	grave 325
361	397.851870	762.502522	grave 325f
362	434.914245	785.752542	grave 326
363	431.494090	792.145665	grave 326f
364	447.166502	798.223097	grave 327
365	444.952404	801.667480	grave 327f
366	453.720340	797.658708	grave 328
367	450.102268	804.077676	grave 328f
368	458.734874	799.424395	grave 329
369	455.515205	806.979341	grave 329f
370	465.030987	806.050471	grave 330
371	461.321528	812.745508	grave 330f
372	471.586315	806.866908	grave 331
373	475.141592	810.994671	grave 332
374	472.598259	816.811208	grave 332f
375	423.621459	791.821752	grave 333
376	420.069062	796.402468	grave 333f
377	432.038723	799.211809	grave 334
378	427.384279	804.574796	grave 334f
379	437.355560	801.649552	grave 335
380	432.466900	808.001256	grave 335f
381	442.646519	806.127396	grave 336
382	438.047578	812.063355	grave 336f
383	453.717808	813.991330	grave 337
384	449.276045	820.153768	grave 337f
385	463.156332	821.438855	grave 338
386	457.799754	827.171259	grave 338f
387	469.435308	826.494537	grave 339
388	465.910137	832.672422	grave 339f
389	490.207499	802.547861	grave 340
390	486.971081	809.490006	grave 340f
391	502.469350	779.395224	grave 341
392	498.149806	787.795715	grave 341f
393	506.494712	781.471817	grave 342
394	502.233653	789.580670	grave 342f
395	511.468405	783.556199	grave 343
396	506.735108	792.917756	grave 343f

397	514.809281	785.188326	grave 344
398	510.467230	794.725635	grave 344f
399	518.810953	775.215782	grave 345
400	528.265174	759.692041	grave 346
401	532.854505	761.858531	grave 347
402	530.687710	751.027136	grave 348
403	536.261579	753.962693	grave 349
404	491.776846	717.006755	grave 350
405	490.046754	722.822251	grave 350f
406	497.453216	721.070248	grave 351
407	495.125237	726.084970	grave 351f
408	503.191176	719.568643	grave 352
409	499.929588	728.025661	grave 352f
410	508.447048	723.704850	grave 353
411	504.577923	730.213201	grave 353f
412	513.134359	725.844160	grave 354
413	509.038481	732.515605	grave 354f
414	518.777592	729.300103	grave 355
415	515.769454	736.799613	grave 355f
416	520.848319	733.203975	grave 356
417	519.468806	735.330022	grave 356f
418	526.358830	734.487809	grave 357
419	522.539350	740.649252	grave 357f
420	496.212206	707.880099	grave 358
421	493.344262	714.065465	grave 358f
422	501.415630	709.782678	grave 359
423	498.437181	716.248976	grave 359f
424	507.664257	711.209679	grave 360
425	503.659952	716.925992	grave 360f
426	505.932278	695.536469	grave 361
427	501.475018	701.801426	grave 361f
428	510.376725	698.732896	grave 362
429	505.610215	704.593712	grave 362f
430	514.200193	701.337014	grave 363
431	510.210029	706.937445	grave 363f
432	518.649395	712.931841	grave 364
433	513.773831	717.805588	grave 364f
434	508.692198	682.302123	grave 365
435	504.050120	687.761895	grave 365f
436	512.800467	684.993035	grave 366
437	507.522713	690.091351	grave 366f

438	516.901711	688.762200	grave 367
439	512.524519	693.947525	grave 367f
440	520.797340	692.388475	grave 368
441	516.525934	697.932803	grave 368f
442	525.283209	694.246052	grave 369
443	521.174170	701.518751	grave 369f
444	529.942676	695.170151	grave 370
445	526.536426	702.210266	grave 370f
446	545.626758	703.132745	grave 371
447	541.891825	709.843323	grave 371f
448	548.657904	704.119068	grave 372
449	545.645767	711.369834	grave 372f
450	552.015350	707.488008	grave 373
451	548.252954	713.395048	grave 373f
452	556.285511	709.650673	grave 374
453	552.727748	716.452128	grave 374f
454	519.001177	677.199311	grave 375
455	514.384957	683.156272	grave 375f
456	525.493120	684.589117	grave 378
457	522.603303	689.797306	grave 378f
458	538.916947	686.586662	grave 376
459	534.440751	692.729957	grave 376f
460	541.876325	689.304132	grave 377
461	538.942515	695.601247	grave 377f
501	590.012495	699.566521	grave 379
502	593.577382	705.203136	grave 379f
503	593.251448	697.325545	grave 380
504	597.854290	702.593608	grave 380f
505	607.454237	694.247305	grave 381
506	606.085088	699.900252	grave 381f
507	611.919680	695.559399	grave 382
508	609.814298	701.302194	grave 382f
509	614.807214	696.093689	grave 383
510	613.955007	702.644255	grave 383f
511	624.573369	690.256095	grave 384
512	622.360720	696.183087	grave 384f
513	651.047895	686.112761	grave 385
514	651.678269	691.116504	grave 385f
515	657.322002	686.674288	grave 386
516	655.658756	692.808123	grave 386f
517	662.023614	693.272732	grave 387

518	659.734879	698.119803	grave 387f
519	668.436358	688.307518	grave 388
520	667.492301	691.517827	grave 388f
521	672.515417	689.000414	grave 389
522	670.363893	694.595643	grave 389f
523	679.154604	691.018168	grave 380
524	677.138750	694.243901	grave 390f
525	686.648190	689.909115	grave 391
526	686.003864	692.740997	grave 391f
527	685.681180	694.213056	grave 392
528	684.715358	696.473082	grave 392f
529	690.868625	690.553507	grave 393
530	689.058655	696.372412	grave 393f
531	695.152823	691.992398	grave 394
532	692.591258	697.572207	grave 394f
533	699.396006	694.138967	grave 395
534	696.120444	700.611602	grave 395f
535	704.224196	696.246143	grave 396
536	701.648079	702.660581	grave 396f
537	707.905758	697.791239	grave 397
538	706.631421	703.861002	grave 397f
539	731.111945	717.802729	grave 398
540	731.590668	724.161729	grave 398f
541	720.709206	713.581840	grave 399
542	717.860674	719.054992	grave 399f
543	715.169008	711.530919	grave 400
544	712.554197	718.601549	grave 400f
545	704.703236	708.179324	grave 401
546	701.614044	714.335550	grave 401f
547	694.439076	708.626282	grave 402
548	692.962851	713.026574	grave 402f
549	686.790562	702.255788	grave 403
550	683.584260	708.326981	grave 403f
551	683.078561	697.560267	grave 404
552	681.364281	701.394127	grave 404f
553	679.233438	696.137606	grave 405
554	677.868540	700.536562	grave 405f
555	669.359457	696.813945	grave 406
556	668.449671	702.999210	grave 406f
557	602.022246	704.053797	grave 407
558	605.383869	711.419644	grave 407f

559	608.216258	705.944309	grave 408
560	609.350133	710.431116	grave 408f
561	611.973825	702.497973	grave 409
562	613.129194	709.302727	grave 409f
563	618.221832	703.767068	grave 410
564	619.180861	710.487398	grave 410f
565	622.591957	697.723773	grave 411
566	621.800535	704.668148	grave 411f
567	628.125280	697.537859	grave 412
568	627.300986	704.102761	grave 412f
569	639.652618	695.042587	grave 413
570	638.060547	702.196026	grave 413f
571	647.819355	695.920742	grave 414
572	647.545616	701.704147	grave 414f
573	652.280901	697.643183	grave 415
574	652.934808	703.163521	grave 415f
575	655.822511	695.523314	marker 1
576	658.688591	702.067956	grave 416
577	659.432449	709.110155	grave 416f
578	698.877189	716.258238	grave 417
579	699.991053	723.631718	grave 417f
580	599.833171	716.073311	grave 418
581	603.753117	723.153780	grave 418f
582	605.585192	712.150313	grave 419
583	607.089162	718.292089	grave 419f
584	610.400264	712.822368	grave 420
585	611.426818	719.866809	grave 420f
586	618.982901	712.223293	grave 421
587	617.852680	718.687477	grave 421f
588	625.265947	705.743781	grave 422
589	624.128384	712.218137	grave 422f
590	638.189549	704.101277	grave 423
591	638.815389	709.426220	grave 423f
747	449.151231	670.901647	b foot 11
748	444.746583	668.549809	b foot 12
749	436.549406	671.095738	b foot 13
750	445.120814	687.925810	b foot 14
751	440.497321	685.715748	b foot 15
752	435.384804	684.211369	b foot 16
753	431.479160	680.937092	b foot 17
754	454.956386	711.888284	b foot 18

755	446.044137	703.854547	b foot 19
756	441.300819	701.788272	b foot 20
757	428.561280	694.688866	b foot 21
758	425.203104	693.282471	b foot 22
759	417.146227	689.908248	b foot 22
760	491.076234	763.604035	b foot 23
761	477.107228	760.140296	b foot 24
762	473.720148	758.222236	b foot 25
763	465.741858	756.042623	b foot 26
764	462.372562	753.071822	b foot 27
765	458.105813	751.623595	b foot 27
766	454.563451	750.021180	b foot 28
767	450.466682	749.273433	b foot 29
768	437.089705	736.365093	b foot 29
769	431.925507	734.887652	b foot 29
770	430.175492	730.240830	b foot 30
771	424.121887	728.116485	b foot 31
772	418.793585	725.954687	b foot 31
773	414.720852	722.578972	b foot 32
774	478.208019	746.604684	b foot 32
775	463.762906	740.553061	b foot 32
776	463.732393	740.518123	b foot 33
777	457.327990	740.369185	b foot 33
778	432.609433	720.864958	b foot 34
779	428.334148	718.383208	b foot 34
780	424.854074	715.924522	b foot 35
781	433.291649	709.094884	b foot 35
782	436.931317	711.447358	b foot 36
783	439.956221	713.473491	b foot 36
784	458.427048	730.731823	b foot 37
785	508.082450	517.022666	grave 0
786	511.314956	522.012585	foot 0
787	523.182366	525.262206	grave 13 reshot
788	545.740631	530.913786	unmarked 1
789	545.518432	535.942917	unmarked 1f
790	550.188804	530.029118	unmarked 2
791	549.940258	535.633000	unmarked 2f
792	554.251015	529.901858	unmarked 3
793	553.728234	535.283532	unmarked 3f
794	559.189732	530.111700	unmarked 4
795	559.273665	536.131513	unmarked 4f

796	564.808130	530.079113	unmarked 5
797	564.561793	535.830162	unmarked 5f
798	568.490655	529.337446	unmarked 6
799	568.590436	534.967424	unmarked 6f
800	573.839748	529.616875	unmarked 7
801	573.941068	535.261480	unmarked 7f
802	576.783266	530.058830	unmarked 8
803	576.365016	535.391226	unmarked 8f
804	581.700123	529.065329	unmarked 9
805	582.393575	533.850413	unmarked 9f
806	573.284244	539.006950	unmarked 10
807	573.330145	544.775552	unmarked 10f
808	567.831910	539.666448	unmarked 11
809	567.941214	545.175652	unmarked 11f
810	559.188152	540.037830	unmarked 12
811	558.989931	544.609239	unmarked 12f
812	548.486584	538.523853	unmarked 13
813	548.133226	543.642418	unmarked 13f
814	541.669015	539.603894	unmarked 14
815	542.043744	543.979187	unmarked 14f
816	610.365713	539.109648	unmarked 15
817	615.274982	545.120981	unmarked 15f
818	619.320221	547.717973	unmarked 16
819	622.146242	551.394337	unmarked 16f
820	622.104515	555.217845	unmarked 17
821	625.108773	559.994294	unmarked 17f
822	617.977643	556.962074	unmarked 18
823	620.712301	562.145006	unmarked 18f
824	626.571478	563.728034	unmarked 19
825	628.771246	568.160884	unmarked 20f
826	629.077282	561.893492	unmarked 21
827	631.980915	566.547932	unmarked 21f
828	634.171255	568.535823	unmarked 22
829	638.246120	574.836039	unmarked 22f
830	638.433506	578.858818	unmarked 23
831	641.105221	582.432293	unmarked 23f
832	636.667278	579.839690	unmarked 24
833	639.428577	583.207757	unmarked 24
834	646.161935	584.897607	unmarked 25
835	649.600824	590.546967	unmarked 25f
836	642.862824	587.822976	unmarked 26

837	647.181374	592.053486	unmarked 26f
838	653.725260	595.468538	unmarked 27
839	656.518459	599.159409	unmarked 27f
840	652.776248	601.035201	unmarked 28
841	655.897608	607.965396	unmarked 28f
842	658.157039	609.048659	unmarked 29
843	660.366324	612.858403	unmarked 29
844	666.541996	614.538432	unmarked 30
845	669.331244	617.870997	unmarked 30f
846	671.686715	613.093110	unmarked 31
847	672.400419	618.955756	unmarked 31f
848	668.779000	623.873451	unmarked 32
849	671.466226	626.345246	unmarked 32f
850	675.956370	629.489362	unmarked 33
851	679.554564	632.023304	unmarked 33f
852	689.024006	638.844882	unmarked 34
853	690.323280	651.804709	unmarked 35
854	694.653504	656.125126	unmarked 35f
855	585.277478	563.522079	redo 85
856	583.634856	570.753422	redo 85f
857	590.001067	563.465900	redo 86
858	589.740496	571.717286	redo 86f
859	595.831939	565.266646	redo 87
860	593.912891	573.402126	redo 87f
861	598.288654	566.099124	redo 88
862	596.316466	573.561838	redo 88f
863	601.387125	566.757323	redo 89
864	600.770562	574.317092	redo 89f
865	604.441837	567.512598	redo 90
866	602.625045	574.999448	redo 90f
867	607.356243	568.082897	redo 91
868	605.770830	575.623691	redo 91f
869	610.761555	568.756877	redo 92
870	610.614152	576.811256	redo 92f
871	614.899509	568.686521	redo 93
872	614.410955	576.635646	redo 93f
873	617.641835	616.914051	grave 139f
874	624.545324	611.666411	grave 140f
875	628.837104	609.708221	grave 141f
876	637.698194	624.978797	unmarked 36
877	637.060064	630.393886	unmarked 36f

878	609.366183	605.010796	unmarked 37
879	608.763871	610.850788	unmarked 37f
880	604.546523	604.485718	unmarked 38
881	604.979237	608.587960	unmarked 38f
595	517.433292	518.442352	foot 1
596	520.172652	516.201524	foot 2
597	523.380136	513.958107	foot 3
598	525.790553	512.246255	foot 4
599	528.422294	510.609387	foot 5
600	531.744660	508.136701	foot 6
601	535.624285	505.497247	foot 7
602	538.050966	503.783087	foot 8
603	545.577072	496.466362	foot 9
604	547.257835	494.622612	foot 10
605	518.713024	532.484610	foot 12
606	524.662576	533.067305	foot 13
607	528.784737	532.056093	foot 14
608	530.066581	524.770291	foot 15
609	534.597659	520.685774	foot 16
610	537.502839	517.819913	foot 17
611	541.345495	515.400214	foot 18
612	544.722669	511.834797	foot 19
613	547.073636	509.936657	foot 20
614	550.784450	506.783610	foot 21
615	552.536542	502.858050	foot 22
616	555.470612	499.482296	foot 23
617	539.150612	528.095169	foot 24
618	542.610948	524.988588	foot 26
619	546.499072	521.665037	foot 27
620	555.277780	512.294158	foot 28
621	557.390571	508.420692	foot 29
622	560.531713	505.360902	foot 30
623	577.896302	495.127615	foot 31
624	580.136543	503.302285	foot 32
625	585.143714	510.121375	foot 33
626	583.385031	523.676383	foot 34
627	545.084747	536.875894	foot 34
628	550.617011	536.349690	foot 35
629	554.491178	535.520470	foot 36
630	559.200781	535.768979	foot 37
631	564.138670	535.479511	foot 38

632	568.594184	535.699419	foot 39
633	573.443856	536.034980	foot 40
634	541.084950	544.733927	foot 41
635	547.188637	544.235649	foot 42
636	553.171781	545.426368	foot 42
637	558.405874	546.032001	foot 43
638	567.522325	545.584879	foot 44
639	573.540656	545.614417	foot 45
640	507.359547	547.547402	foot 46
641	510.447928	547.252216	foot 47
642	513.677596	547.048795	foot 47
643	518.140085	547.400725	foot 48
644	523.361245	547.345876	foot 49
645	526.618733	546.664978	foot 50
646	534.422477	553.022848	foot 51
647	538.651887	553.542905	foot 52
648	541.754589	555.642786	foot 53
649	549.344144	555.496306	foot 54
650	553.212871	556.361277	foot 55
651	557.210739	557.798994	foot 55
652	561.685731	558.748231	foot 56
653	566.948314	558.775287	foot 57
654	570.995532	559.288412	foot 58
655	576.758634	559.895542	foot 59
656	582.816910	561.185034	foot 60
657	585.982969	561.832451	foot 61
658	590.192760	563.104789	foot 62
659	593.992916	564.211147	foot 63
660	597.951120	564.559613	foot 64
661	589.598970	550.623869	foot 65
662	592.193381	549.200836	foot 66
663	594.622301	547.105364	foot 67
664	597.094483	545.465160	foot 68
665	599.426223	543.967399	foot 69
666	601.840503	542.374732	foot 70
667	604.111086	540.757025	foot 71
668	607.026818	538.834158	foot 72
669	605.348562	551.502107	foot 73
670	615.372912	545.585574	foot 74
671	513.664094	555.647697	foot 74
672	517.530254	557.214843	foot 75

673	520.122872	557.354911	foot 76
674	523.376898	557.795304	foot 77
675	526.028708	558.006734	foot 78
676	529.289579	558.465157	foot 79
677	533.163497	561.498411	foot 80
678	560.978582	570.278475	foot 81
679	565.061801	570.260353	foot 81
680	583.344308	570.726279	foot 82
681	589.694952	571.709397	foot 83
682	593.870470	573.259064	foot 84
683	595.773166	573.662848	foot 85
684	599.854725	574.598998	foot 85
685	602.570374	575.028173	foot 86
686	605.727060	575.743547	foot 86
687	610.691640	576.702115	foot 87
688	614.519897	576.648310	foot 88
689	638.283518	575.146941	foot 88
690	516.222424	567.665189	foot 88
691	521.841164	567.492864	foot 89
692	526.618577	567.893535	foot 89
693	531.143221	570.287872	foot 90
694	548.439535	574.294287	foot 91
695	556.773034	579.953074	foot 92
696	576.843375	582.955056	foot 93
697	581.494271	586.119213	foot 94
698	591.795911	582.448147	foot 95
699	607.956051	585.940505	foot 96
700	625.159522	588.964509	foot 96
701	583.088346	594.790442	foot 97
702	588.097482	597.167452	foot 98
703	611.983882	599.196019	foot 99
704	620.083029	594.675267	foot 100
705	626.037626	598.048938	foot 101
706	541.498631	597.403386	foot 102
707	546.404685	595.909623	foot 103
708	550.425960	596.387665	foot 104
709	554.678093	596.017677	foot 105
710	574.864730	604.779085	foot 106
711	594.847442	608.944049	foot 106
712	544.808252	610.603153	foot 107
713	554.675238	620.089557	foot 107

714	561.925246	618.459064	foot 108
715	568.767658	620.494661	foot 109
716	606.301955	621.766812	foot 100
717	613.824308	618.758264	foot 101
718	617.537523	617.025785	foot 113
719	624.605527	611.736735	foot 114
720	628.523965	611.281881	foot 115
721	633.144629	610.669715	foot 116
722	630.451173	625.889705	foot 117
723	655.936331	608.260891	foot 118
736	459.526928	616.586698	b foot 1
737	456.901699	618.554658	b foot 2
738	454.166325	625.444236	b foot 3
739	448.215566	635.422841	b foot 4
740	444.086657	653.158413	b foot 5
741	440.251201	650.790755	b foot 6
742	440.240122	650.829390	b foot 6
743	437.004721	649.626273	b foot 7
1053	684.874018	772.799786	grave 497
1054	682.710773	776.509882	grave 497f
1055	713.220762	775.717962	grave 498
1056	709.072168	782.310424	grave 498f
1057	731.291827	779.799729	grave 499
1058	727.511922	786.954864	grave 499f
1059	734.150190	765.929704	grave 500
1060	734.220198	772.803623	grave 500f
1061	749.524396	760.645561	grave 501
1062	749.476657	768.169860	grave 501f
1063	769.971306	751.118401	grave 502
1064	773.073066	760.140418	grave 502f
1065	725.263401	801.724725	grave 503
1066	725.718943	806.435469	grave 503f
1067	721.025988	799.715510	grave 504
1068	721.435772	806.746755	grave 504f
1069	716.296417	800.307674	grave 505
1070	716.385874	807.493902	grave 505f
1071	708.622655	797.180691	grave 506
1072	704.815747	802.188128	grave 506f
1073	694.762404	792.900251	grave 507
1074	692.188225	798.215970	grave 507f
1075	659.026839	783.811115	grave 508

1076	659.628691	789.373472	grave 508f
1077	665.451923	787.690090	grave 509
1078	667.221851	790.780771	grave 509f
1079	648.958557	797.284899	grave 510
1080	650.535919	802.490691	grave 510f
1081	679.532242	797.116625	grave 511
1082	682.030559	803.718527	grave 511f
1083	686.557776	795.403658	grave 512
1084	684.874872	802.329050	grave 512f
1085	695.727215	811.131191	grave 513
1086	697.272608	817.721434	grave 513f
1087	702.539531	808.662235	grave 514
1088	704.439263	816.219166	grave 514
1089	707.770503	809.909002	grave 515
1090	708.758515	816.546584	grave 515f
1091	712.392245	810.357148	grave 516
1092	711.581240	817.291185	grave 516f
1093	717.309774	809.914450	grave 517
1094	716.803156	817.280403	grave 517f
1095	721.591579	810.307932	grave 518
1096	720.741871	817.527203	grave 518f
1097	725.805066	810.344579	grave 519
1098	725.780006	816.942344	grave 519f
1099	732.561004	808.778867	grave 520
1100	731.357795	818.452168	grave 520f
1101	736.491269	809.116198	grave 521
1102	737.613474	816.676004	grave 521f
1103	738.084817	793.085129	grave 522
1104	738.757895	801.104206	grave 522
1105	758.398618	796.124323	grave 523
1106	754.457524	813.254161	grave 524
1107	754.324119	820.703399	grave 524f
1108	754.185898	825.653953	grave 525
1109	753.761773	832.027854	grave 525f
1110	747.882725	825.616260	grave 526
1111	747.017197	832.324004	grave 526f
1112	735.152586	849.178648	grave 527
1113	737.451384	855.197025	grave 527f
1114	675.760371	823.708062	grave 528
1115	674.139486	830.295224	grave 528f
1116	679.485378	810.556925	grave 529

1117	677.339066	816.643524	grave 529f
1118	691.705518	820.440107	grave 530
1119	689.459629	827.151369	grave 530f
1120	691.629492	832.391282	grave 531
1121	690.563741	838.039011	grave 531f
1122	697.524307	822.200023	grave 532
1123	694.887055	829.473140	grave 532f
1124	709.922552	839.642218	grave 533
1	500.000000	500.000000	pri datum
913	738.095515	738.341393	grave 569
914	738.322502	745.503938	grave 569f
915	742.268624	738.922470	grave 570
916	743.007554	745.842089	grave570f
917	747.031505	736.645078	grave571
918	748.444732	744.127815	grave571f
919	753.618062	740.979495	grave572
920	752.649851	735.361591	grave572f
921	757.053073	731.860519	grave 573
922	759.475971	737.952889	grave 573f
923	719.981073	735.678776	grave 574
924	721.469149	741.687988	grave 574f
925	725.520118	734.782745	grave 575
926	727.264138	742.421958	grave 575f
927	729.865001	732.823586	grave 576
928	731.001420	740.129202	grave 576f
929	733.637767	727.874869	grave 577
930	735.098095	735.000443	grave 577f
931	743.803991	721.399887	grave 578
932	744.397926	724.525629	grave 578f
933	745.283246	729.682473	grave 579
934	745.567333	731.908791	grave 579f
935	748.777645	722.738008	grave 580
936	749.135410	729.591371	grave 580f
937	714.725038	711.982398	grave 581
938	712.625962	719.084740	grave 581f
939	720.248436	712.616201	grave 582
940	717.997937	719.436906	grave 582f
941	723.832485	722.453491	grave 583
942	723.658369	726.580301	grave 583f
943	730.974631	717.739042	grave 584
944	731.846792	724.630847	grave 584f

945	738.076000	708.376755	grave 585
946	740.094759	713.852279	grave 585f
947	745.620979	713.394712	grave 586
948	744.942646	719.326249	grave 586f
949	748.219044	721.162264	grave 587
950	749.086789	730.111111	grave 587f
951	707.638338	697.710184	grave 588
952	707.181032	703.881177	grave 588f
953	711.648389	697.428924	grave 589
954	712.949558	703.740938	grave 589f
955	723.450264	700.208338	grave 590
956	721.959573	707.983836	grave 590f
957	728.727877	702.438279	grave 591
958	728.568595	707.098457	grave 591f
959	733.604194	704.883649	grave 592
960	731.177749	710.381201	grave 592f
961	733.143796	699.238240	grave 593
962	736.267949	704.650887	grave 593f
963	728.452273	692.739267	grave 594
964	726.182050	697.937308	grave 594f
965	698.409189	683.518824	grave 595
966	696.069678	688.674729	grave 595f
967	702.999518	684.066757	grave 596
968	700.333584	690.077667	grave 596f
969	710.175373	679.460443	grave 597
970	708.595638	687.300103	grave 597f
971	703.566028	669.902261	grave 598
972	706.511101	675.587786	grave 598f
973	710.189659	669.698607	grave 599
974	712.293458	675.055194	grave 599f
975	696.675250	659.160654	grave 600
976	697.157457	664.705415	grave 600f
977	694.939171	647.425781	grave 601
978	696.702524	652.568292	grave 601f
979	689.230804	639.407762	grave 602
980	692.038048	645.540485	grave 602f
981	705.439985	681.509307	p ditch 1
982	685.170016	653.842376	p ditch 2
983	633.228609	585.083343	p ditch 3

*an "f" denotes the foot/eastern-most end of the grave, point without "f" indicates head/western-most end.

Appendix D: Custom Projection Metadata for Black Bottom Memorial Cemetery

Projection: Transverse_Mercator

False_Easting: 500.000000

False_Northing: 500.000000

Central_Meridian: -76.616092

Scale_Factor: 1.000000

Latitude_Of_Origin: 35.544862

Linear Unit: Foot_US (0.304801)

Geographic Coordinate System: GCS_WGS_1984

Angular Unit: Degree (0.017453292519943299)

Prime Meridian: Greenwich (0.000000000000000000)

Datum: D_WGS_1984

 Spheroid: WGS_1984

   Semimajor Axis: 6378137.000000000000000000

   Semiminor Axis: 6356752.314245179300000000

   Inverse Flattening: 298.257223563000030000