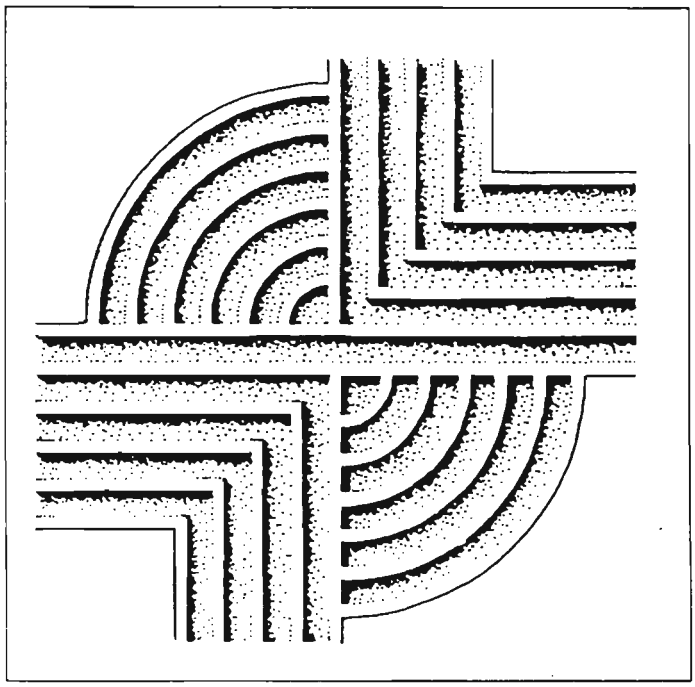
ADDITIONAL BOUNDARY RESEARCH AT THE KINGS CEMETERY (38CH1590), CHARLESTON COUNTY, S.C.



CHICORA RESEARCH CONTRIBUTION 214

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ABSTRACT

The Kings Cemetery, situated in the Parker's Ferry area in southern Charleston County, was first recorded by Chicora Foundation as part of a brief reconnaissance of the Oak Hall vicinity. At the time of this initial study, the cemetery's boundaries were incompletely understood, but it was suggested that the cemetery might be quite large. In addition, the initial reconnaissance proposed that the cemetery was potentially eligible for inclusion on the National Register of Historic Places. Subsequently, Charleston County retained the firm of Garrow and Associates to further assess the cemetery, its significance, and its boundaries. Their work, which focused on the portion of the cemetery on Westvaco lands, identified 155 graves through probing, core sampling, and mechanical stripping. As a result of this study, Garrow and Associates recommended the site as eligible for inclusion on the National Register of Historic Places under Criteria C and D. The South Carolina State Historic Preservation Office, for reasons which remain unclear, refused to concur with this assessment and the site's eligibility was reviewed by the Keeper of the National Register, who found that the site was eligible for inclusion.

The current work further refines the Garrow and Associates boundary delineation, exploring the Pyes' property south and southwest of the Westvaco tract. Using a combination of visual inspection and a penetrometer, a minimum of 28 additional graves were identified on the Pyes' property. This extends the southern and southwestern boundaries of the cemetery an additional 25 to 40 feet. At least one area was identified where it appears that there may be several intrusive graves. It seems probable based on this work that the Kings Cemetery's boundaries extend to the edge of the woods on the Pyes' property. There is no evidence that burials extend beyond the woods line into the old field area. Today, the Pyes are plowing about 30 to 35 feet south of the old field, providing an additional buffer to the cemetery. We recommend that this buffer be maintained.

This investigation also reveals extensive compaction of the cemetery soils associated with the fire plow area which has been used for the past several years as a road. This compaction, in some areas, reaches 400 psi. Although a single 4 by 4 inch post has been placed in the center of this road at each end of the cemetery, this has not blocked the road and it is still being used, contributing to the compaction. We recommend the use of concrete bollards to prevent vehicular access.

Some apparent compact was also observed in the vicinity of the bulldozer cuts used by Garrow and Associates to delimit areas of the cemetery. We are not familiar with any studies of this and recommend that the effects of mechanical stripping be studied using penetrometers. If there is a consistent increase in soil compaction then the use of such equipment, when not absolutely required, should be curtailed.

In the process of "calibrating" our penetrometer, we also noticed that there were large areas of the cemetery on the Westvaco property which yield very low (<100 to 150 psi) compaction readings, suggesting that the cemetery may contain many more than the 155 graves reported by the Garrow and Associates study. This is consistent with the topography of the cemetery, which is very undulating and suggestive of much excavation and soil movement. Similar topography is present in some areas of the Pyes' property.

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ACKNOWLEDGMENTS

This work was sponsored by Mr. and Mrs. Russ Pye and we want to thank them for their interest in the Kings Cemetery, as well as for their hospitality. Their interest in the preservation and care of this cemetery is both genuine and rare. Far too often such resources are seen as only "old and in the way."

We also want to thank both Mr. Tom Jewell and Ms. Karen W. Prisley at Westvaco, Timberlands Division, Southern Woodlands, for their support and assistance. They were very gracious and kind in assisting us with our Access Permit. In addition, Mr. Chris Espenshade, of Garrow and Associates, was very supportive in our research, freely providing copies of his field map and datum information to allow us to tie the current research into his previous work at the Kings Cemetery. This professional cooperation has allowed us to make the project much more useful to others studying not only this cemetery, but African-American grave yards in general.

INTRODUCTION

Background

The Kings Cemetery, while not appearing on the 1918 Cottageville 15' topographic map, is shown on the 1979 USGS Jacksonboro 7.5' topographic map (Figure 1). Like many small cemeteries, however, it is not named on the map and received relatively little attention. It first came to the attention of preservationists in 1992 when it was assigned a statewide survey number (U/19/0000/2480734.01) by Ms. Sarah Frick of Preservation Consultants, who was conducting a county-wide survey of historic sites. Listed as the "Encampment Plantation Oak Avenue and Cemetery," a construction date of 1825 is reported, although this almost certainly refers to the oak allée (Charleston County Historical Survey, Compiled Inventory, page F-17 in Frick [1992]).

In August of 1995 the cemetery was recorded by Chicora Foundation, Inc. as archaeological site 38CH1590 with the South Carolina Institute of Archaeology and Anthropology. The site was briefly examined during a reconnaissance of the general area, undertaken at the invitation of Mr. and Mrs. Russ Pye.

At that time the site was identified as a probable African-American cemetery, based on its location, physical setting, and appearance. At the time of this visit, the vegetation was very dense, hindering a complete examination. In spite of this, at least two areas of multiple grave depressions were recognized, as well as one grave, for Mary Simmions (1882-1933), marked with a head and foot stone. We estimated that the cemetery measures approximately 200 feet in diameter, although no clear boundaries were determined.

While no grave goods were observed during the study, we did note the presence of both yucca plants and a small cedar, both of which are often associated with graves in black culture. We noted that it is not uncommon for African-Americans to plant a number of spiritually significant plants in cemeteries and suggested that it was important to examine this cemetery carefully for additional evidence of plantings.

We found that the cemetery is situated in an area of poorly drained Youngs soils downslope from the higher, sandy fields to the south. The topographic map suggests that this is a natural drainageway from the higher elevations northwesterly to the rice fields.

Based on the limited reconnaissance we recommended this site as potentially eligible for inclusion on the National Register of Historic Places for the bioarchaeological information it contains. In addition, the site is likely significant for the information it can contribute on African-American mortuary customs, such as grave offerings, vegetative plantings, grave orientations, cemetery landscape, and coffin hardware. In addition to the site's potential significance as a heritage resource, we also pointed out that it is protected by South Carolina Code of Laws, §16-17-600, et. seq., relating to cemeteries and human graves. This law makes it a felony to destroy, damage, or desecrate human remains; to vandalize or desecrate a grave, graveyard, or place where human remains are buried; to vandalize, injure, or remove a gravestone or other memorial; to obliterate, vandalize, or desecrate a cemetery or graveyard; or to destroy or injure plants, trees, shrubs, or other items associated with a "repository for human remains."

At that time we also addressed the concern of local residents, who reported that the County had discussed pumping large quantities of water across this cemetery using the natural topography for drainage. We noted that the action might seriously damage the integrity of the cemetery, altering the soil chemistry and hence affecting both the bioarchaeological remains and

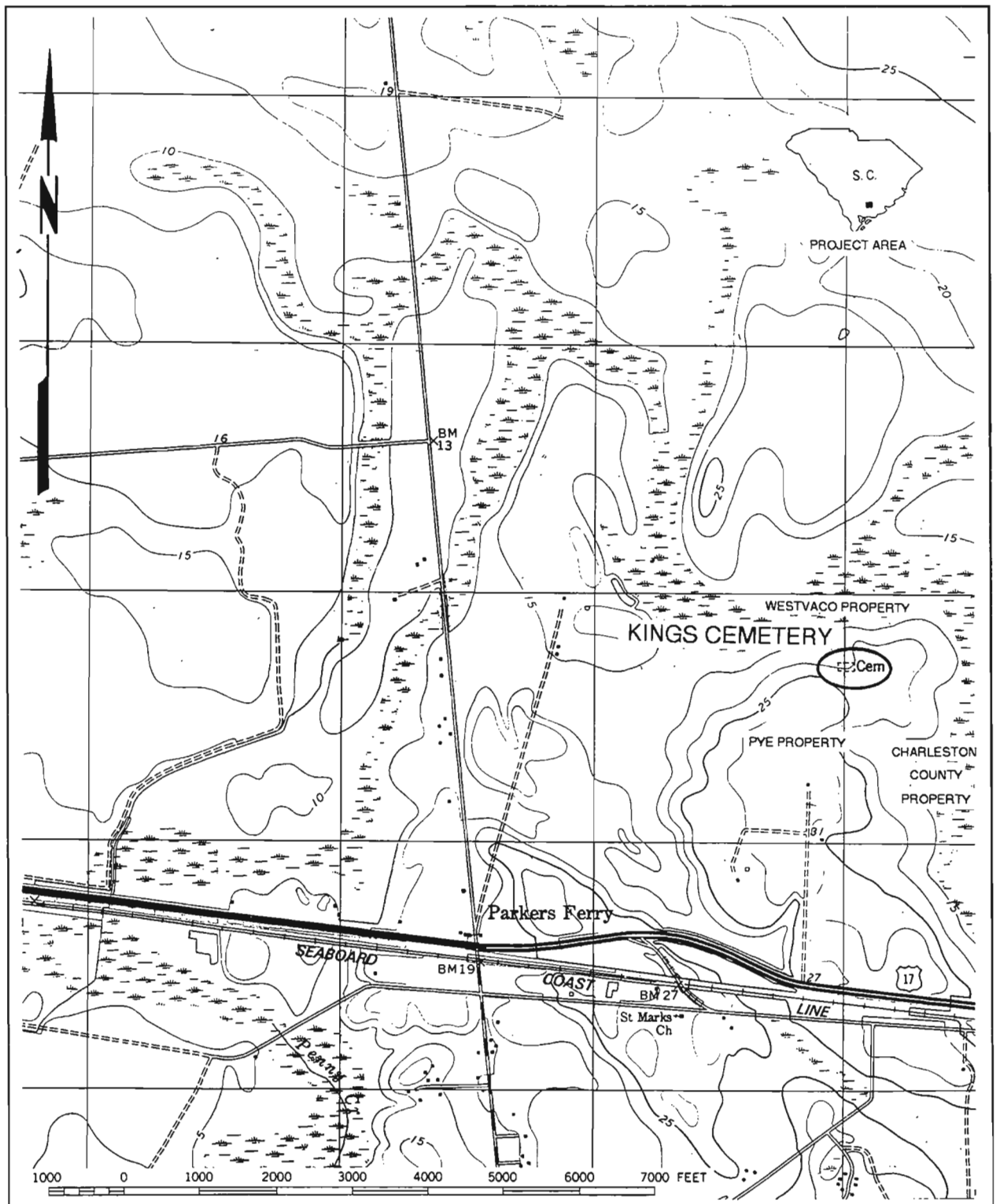


Figure 1. Portion of the Jacksonboro USGS topographic map showing the location of the King Cemetery.

also the coffins or coffin hardware. In addition, we were concerned that sheet erosion would be a significant issue, especially since the depth of human remains was unknown. And finally, we suggested that large quantities of water would result in changes to the site's vegetation, at least some of which was likely intentionally planted as memorials or had spiritual significance (Trinkley and Adams 1995:24-25).

We again visited the site in January 1996, at which time we were able to identify two additional stone markers — one for Sarah Campbell (1879-1924) and another for Venus Polite (d. 1891). The identification of the Campbell stone allowed us to find a death certificate (#4099) in the South Carolina Department of Archives and History collection which revealed this to be the Kings Cemetery. We suggest that since the property was owned by the King family, that the cemetery was named after the white owner. We also discovered that Sarah (or Sarahan, as she was listed on the death certificate) was married. Her father was Monday Parker and her mother was Harriet. The undertaker of record was Daniel Campbell, which may mean that she was buried by her family.

This death certification (the only one for the cemetery we have been able to identify) is important for another reason. The King family apparently acquired the plantation as early as 1838, holding it until after the Civil War (Jones et al. 1996:14, 19). This, coupled with the burial of Venus Polite, an individual whose death date and name suggests that she was a freed slave, hints that Kings Cemetery may have been initially used by slaves and continued to be used by the black community well into the twentieth century.

During this second investigation we also observed a great number of yuccas on the site, as well as a much larger number of grave depressions. This second visit also revealed a strong probability that the graves extended south of the Westvaco property, across the dirt road, and onto the Pyes' land. We consequently increased the estimated size of the cemetery to about 300 by 200 feet.

It is curious that several weeks after this further study, and the filing of an updated site form with the South Carolina Institute of Archaeology and Anthropology, that Ms. Mary Edmonds was still claiming that the cemetery "is reputed to be an African-American cemetery, but we don't have any historical information about it" (memorandum from Ms. Mary Edmonds to Dr. George Vogt, dated January 10, 1996).

Concern over the cemetery, and its possible impact by activities proposed to take place on the adjacent Charleston County property, finally culminated in Garrow and Associates being retained to further explore its boundaries and condition.

About this same time a local freelance reporter, Mr. John Vernelson, was succeeding in gathering very valuable oral history concerning the cemetery. Mrs. Sarah Middleton, who was 100 years old in February 1996, reported that she remembered, "walking in funeral processions to the graveyard along what is known today as 'The Old Road', a narrow tree-lined still-useable lane that runs from Highway 17 to the graveyard" ("After almost 50 years, relatives may visit graves, *Coastal Times*, February 7, 1996). It seems likely that additional oral history concerning the cemetery exists, although no organized attempt has been made to gather and interpret this information as a useful research tool.

The Garrow and Associates work at Kings Cemetery was conducted February 5 through 9. The report of that work indicates:

> As in most abandoned cemeteries, several graves had partially collapsed, leaving depressions on the surface. Orientations were recorded at [sic] approximately E20°S. Because probing is most effective when working along transects that are perpendicular to the graves, a grid oriented at N20°E was established. The cemetery boundaries were delineated by first establishing an approximately east-west baseline 100 feet south of the

southernmost surface depression. Transects were marked along the baseline at 3 foot intervals. Probe readings were taken at 1 foot intervals along each transect.

As a means to locate graves, probing has proven very effective in the neighboring state of Georgia. There, clayey soils offer a marked difference in compaction between disturbed grave fill and the surrounding undisturbed soils. In the sandy soils of the coastal plain of South Carolina, the difference between disturbed and undisturbed soils is more subtle, and in some cases difficult to determine. Therefore, a one-inch soil auger (3 feet long) was used intermittently to verify the presence of a grave. The soil augers and probes were short enough to assure that coffin or human remains were not impacted.

Once a grave was verified, the corners were located using the probe (and auger, if necessary). Each corner was marked with a pin flag, and the southeast corner of each grave was labeled according to the transect number and burial number. All graves were mapped using a transit and tapes.

The northern and southern boundaries of the cemetery were determined by extending all transects 30 feet beyond the last grave on that transect. The eastern and western boundaries were determined by working 10 negative transects (30 feet) beyond the easternmost and westernmost graves.

Once the boundaries were established via probing, soils outside the boundaries were mechanically stripped to insure that no graves had been missed. Stripped areas were mapped using transit and tapes. Any soil anomalies in the stripped areas were also mapped. Stripping began 10 feet beyond the last suspected graves and extended 30-40 feet beyond the graves (Jones et al. 1996:26).

In the conclusions to the report, some additional information is provided on the results of this methodology:

> A total of 155 graves were located during the delineation of the cemetery [see Figure 2], which measures approximately 230 by 110 feet. Boundaries for the north, west, east, and south-central and southeast parts of the cemetery were delimited during the fieldwork. The southern boundary of the cemetery was not located, the burial in that area extend to the property line separating the Westvaco Corporation property from the Pye property, and the probability that the cemetery extends onto the Pye property is high. . . . (Jones et al. 1996:64).

In addition, the Garrow and Associates report makes a clear case for the eligibility of the site to National Register of Historic Places under Criteria C and D. They suggest that the Kings Cemetery is a good, well-preserved example of "a distinctive, regionally important type of cemetery" and that:

> rural African American cemeteries of the antebellum and postbellum periods were once a common element of the Southern landscape, but many have been lost from memory, removed, or impacted by development or

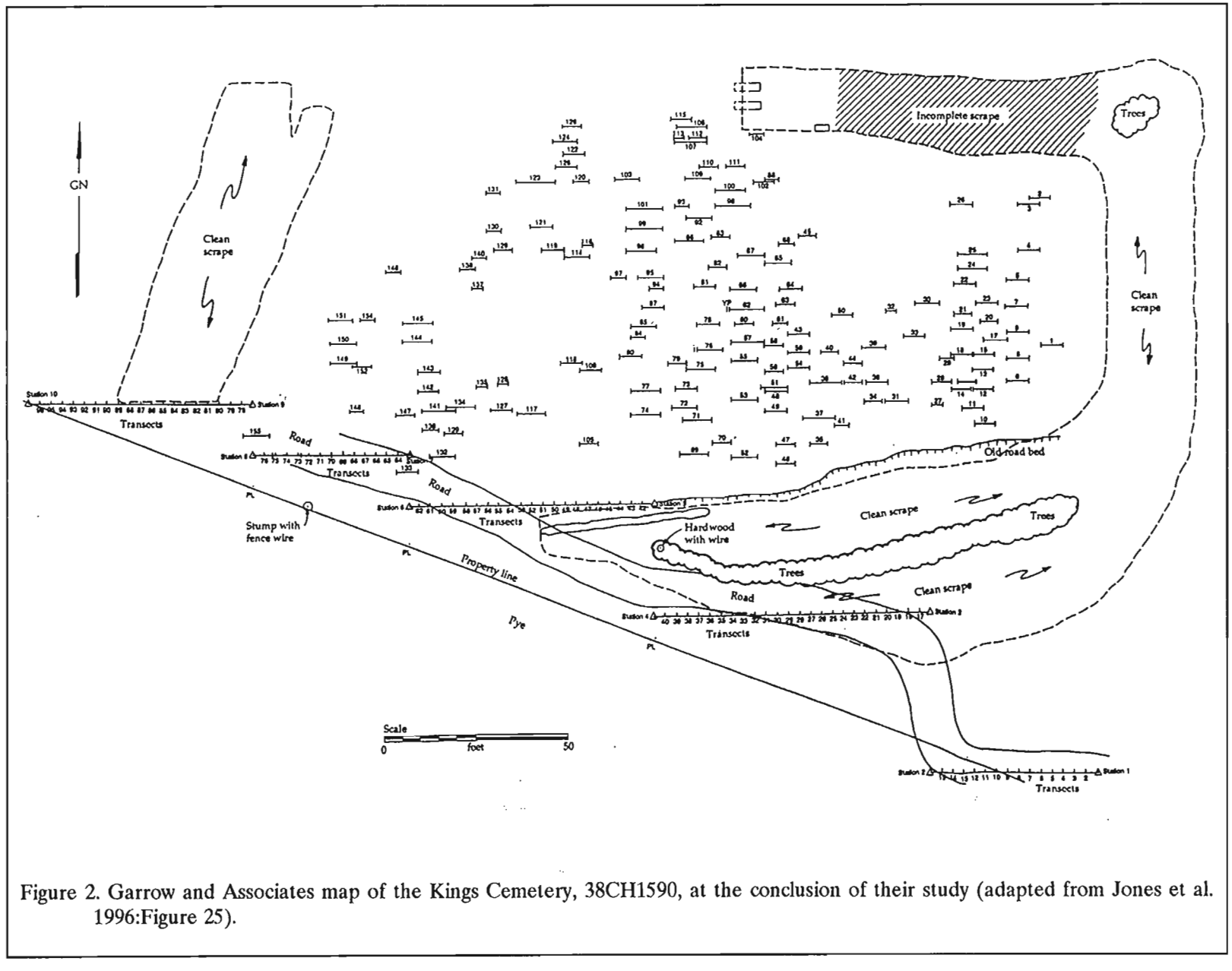


Figure 2. Garrow and Associates map of the Kings Cemetery, 38CH1590, at the conclusion of their study (adapted from Jones et al. 1996:Figure 25).

> logging. As a cemetery that embodies the distinctive characteristics of the Sea Coast African American type, site 38CH1590 is recommended as eligible under Criterion C (Jones et al. 1996:71-72).

Further, the site can provide "meaningful data on variation in grave treatments" and the "burials . . . have the archaeological potential to contribute to our knowledge of life span, health, and population dynamics through time," providing the support for eligibility under Criterion D (Jones et al. 1996:70).

Just as the work was completed, some controversy arose concerning the methods of investigation. Ms. Lynette Strangstad, with expertise in grave yard preservation efforts, visited the site and commented:

> I must say I was surprised at the site when I saw it. Using the least invasive means possible is the best way to survey a cemetery. While I am not an archaeologist and therefore will not comment on their work specifically, I will say that their use of bulldozers is more invasive, intrusive, and damaging than anything I have seen used in cemetery preservation before. From my perspective, all above-grade evidence of graves has been removed (i.e., grave depressions or grave plantings), and the digging is more destructive than I have seen used by other archaeologists using a soil scraping method. I could see no remaining indications of graves in the soil that had been scraped, but I am still not convinced there may not be graves there which in fact were obliterated by the digging. The archaeologist's letter[1] states that "all efforts will be made to preserve the integrity of the cemetery landscape." I think it can be safely said that this is not the case.
>
> As to returning the cemetery to its prior appearance after the dig, the character of the cemetery will not the be same as it was prior to digging, and unless there is documentation of plantings and depressions neither will the surface (letter from Ms. Lynette Strangstad to Mrs. Lee Pye, dated February 13, 1996).

In an unexpected move, the South Carolina State Historic Preservation Office rejected this recommendation of eligibility (letter from Ms. Mary Edmonds, Deputy State Historic Preservation Officer, to Mr. Chris Dowling, U.S. Army Corps of Engineers, dated August 29, 1996).

In response, Jones et al. (1996:72) comment that the SHPO's decision was "self-serving," "ignores the data," and "bastardizes the concept of potential." They argue that the SHPO has dangerously twisted the meaning of Criterion D and that their opinion ignores well-established policy. They conclude:

> It is unclear why the SHPO has tried so hard to make this cemetery ineligible. . . . Garrow & Associates does not see any compelling arguments in their comments. We feel that this site is clearly eligible under Criteria C and D, and we again recommend it as such. We object strongly to the SHPO dismissal of this

[1] The letter referenced is a January 29, 1996 letter from Mr. David Jones, Garrow and Associates, to Mr. Lee Tippet, South Carolina State Historic Preservation Office, outlining the methodology of the research proposed at the Kings Cemetery.

resource as ineligible (Jones et al. 1996:72).

Following this exchange, the matter was elevated by the Advisory Council on Historic Preservation to the Keeper of the National Register. The Keeper, after reviewing the available information concluded that the cemetery was eligible for inclusion on the National Register of Historic Places under Criterion D. No opinion was provided of its eligibility under Criterion C (letter from Ms. Carol D. Shull, Keeper of the Register, to Mr. John Fowler, Acting Executive Director, Advisory Council on Historic Preservation, dated January 23, 1997).

On January 28, 1997 Mrs. Lee Pye requested that Chicora Foundation provide her with a technical and budgetary proposal for exploring her property adjacent to the Kings Cemetery to determine if graves did extend across the property line. Our proposal was dated January 29 and was approved on January 30, 1997.

We contacted Westvaco on January 30 for an access permit to the portion of the cemetery site on their property. This permit was granted that same day. We also contacted Mr. Chris Espenshade with a request for a large scale version of his cemetery map, as well as notes on the placement of data, so that our efforts could be tied into their original work. He immediately provided copies of both the field map (at a scale of ca. 4 inches to 50 feet) and the associated field notes outlining the location of the various stations used to control the work at the site.

Methodologies for Cemetery Investigation

There are a variety of forensic techniques which are used to locate graves. These range from very simple and relatively inexpensive to very complex and much more expensive. There are almost always limits on the technology which is either available or which can be afforded.

Visual Inspection

Perhaps the simplest of all techniques is the visual inspection of the cemetery. Under oblique or raking light it is often possible to observe a number of depressions representing sunken grave shafts. As the coffin and human remains decompose the ground sinks. In older cemeteries (and especially African-American cemeteries), where there isn't a constant maintenance program to fill these depressions, they provide clear evidence of previous burials. These depressions can usually be confirmed as graves through an examination of the consistency of their magnetic orientation (with graves usually oriented roughly east-west). This visual inspection may be added by other grave yard features, such as seemingly insignificant rocks, plantings, or even grave goods (again, especially in the case of African-American cemeteries). This technique, however, is generally unproductive if the cemetery has been disturbed or if the graves are very old (since the depressions will gradually be filled in with leaves and a humic soil will form).

Tile Probe

Almost as simple as the visual inspection is the use of a tile probe to detect either buried stone markers or the grave shaft itself. Just as the depressions become filled with leaf litter which gradually mulches into loam, so too can markers (even field stones) be covered over with soil, becoming buried through time. A probe (a metal or fiberglass rod with a handle) can be pushed into the soil to detect these buried markers. In addition, the probe can also be used to detect the different fill of grave shafts. Areas where the soil has been excavated, and then backfilled, will not be as compacted as areas where the soil has never been disturbed. Skillful use of a probe can allow you to detect those areas where there is less compact soil from those areas where there is subsoil. This technique is particularly useful in the Piedmont or Mountain area where the subsoil is a rather stiff clay — the difference between the subsoil and fill is typically very obvious. It is often considerably less effective below the fall line, where soils are sandy and often the difference between undisturbed and disturbed soils is slight. To be effective, probing requires the use of a grid system and that probing is done perpendicular to the grave orientation. Typically, the interval is between 1 and 3 feet, depending on how large an

area is to be covered.

Penetrometer

Considerably more precise or reliable is the use of a hand penetrometer, which measures soil compaction in pounds per square inch (psi). Areas of posited graves will have lower psi readings than those where there has been no digging.

Curiously, penetrometers are rarely used by archaeologists in routine studies, although they are used by forensic anthropologists, including the Federal Bureau of Investigation. While a penetrometer may be no better than a probe in the hands of an exceedingly skilled individual with years of experience, such ideal situations are rare. In addition, a penetrometer provides quantitative readings which are replicable and which allow much more accurate documentation of cemeteries.

Like probing, the penetrometer is used at set intervals along grid lines established perpendicular to the suspected grave orientations. The readings are recorded and used to develop a map of probable grave locations. In addition, it is important to "calibrate" the penetrometer to the specific use site. Since readings are affected by soil moisture and soil texture, it is important to compare readings taken during a single investigation. It is also important to compare suspect readings to those from known areas.

Core Testing

Core testing relies on the fill from grave shafts being distinct in color from the surrounding subsoil (as I previously mentioned, this appears to be the case with the soils characteristic of the Church property). Archaeologists have long realized that it is virtually impossible to dig a hole and then fill it up without leaving evidence in the soil of the activity. The resulting discoloration in the soil is usually called a "feature" by the archaeologist. When this feature is roughly linear, is oriented approximately east-west, and has dimensions appropriate to a coffin, it is often identified as a grave. While these discolorations are most easily identified by mechanical stripping, which yields large open areas, it can also often (but not always, especially if there are extensive disturbances or if the grave yard is heavily used) be seen in close interval (at every 1 to 3 feet) sampling with a ½- to 1-inch core sampler. Samples are removed every foot in a grid pattern and when the subsoil is not found at the normal depth (ca. a foot below the ground level), this information is plotted on a map to reveal probable grave stain locations. Normally, this type of testing is conducted perpendicular to the average grave orientation.

Non-Destructive Techniques

There are also a variety of other non-destructive techniques, such as ground penetrating radar (GPR), magnetics (MAG, typically a magnetometer) and electromagnetics (EM). These techniques use the earth's physical or electrical properties to detect anomalies such as graves. In general, these techniques work best where there are no trees or other subsurface disturbances. Recent research by NecroSearch International (a non-profit organization dedicated to investigating the methods and technology involved in the location of clandestine graves) has revealed that GPR surveys are the best of these techniques for identifying graves, especially when color monitoring is used rather than the normal black and white screens (France et al. 1997).

These techniques are also significantly more expensive than the ones previously discussed and are somewhat more experimental. In addition, some techniques can be affected by iron compounds (which are fairly typical in upland clay soils, but less so on the coast). Although these methods *may* be appropriate in some situations, it is important to point out that even the Federal Bureau of Investigation (FBI) does not rely on these geophysical techniques, but rather concentrates on the use of the previously discussed techniques (especially the use of a penetrometer) to locate clandestine graves.

Mechanical Stripping

Finally, mechanical stripping can be used to quickly locate graves. This approach, we believe,

is best used when the decision has been made to remove the graves, and the grave yard and its features have been thoroughly mapped and documented. In other words, it is appropriate when *all* of the graves must absolutely be identified, but it is rarely appropriate at a survey level when the grave yard is otherwise not going to be disturbed.

There is no research (with which we are familiar) that describes the compaction or other damage resulting from mechanical stripping. Of course, since this technique is most often used with cemetery removal (and not survey), these issues are traditionally of little concern (since the graves are to be moved). We are also not familiar with research that specifically correlates survey data (using any of the variously described techniques) with the graves as revealed during stripping. In other words, there seems to be fairly limited data concerning the overall success rate of identifying graves using various techniques.

METHODS AND RESULTS

Proposed and Implemented Methods

Based on the range of possible survey methods, we recommended a combination of a visual inspection and penetrometer survey, using coring if necessary, as the most cost-effective and likely to produce clear evidence of any graves south and southwest of the Westvaco property line.

We anticipated that the field investigations would begin with a pedestrian survey to locate any unusual vegetation, the presence of grave goods, or the location of sunken areas. Any such findings would be flagged. Subsequently, we intended to establish a survey grid over an area measuring about 150 feet northwest-southeast by 50 feet northeast-southwest. The previous Garrow and Associates survey revealed that the bulk of the graves were oriented E20°S, requiring a grid oriented N20°E. Auger or core sampling would be conducted along these lines, maximizing the potential for the recovery of graves. Placing tests at every 3 feet, this will require approximately 800 holes or readings. At the conclusion of the work all identified graves would be mapped in using a transit. This will permit a map of the southern grave yard edge to be produced and tied into the Garrow and Associates research.

We believed that this was the most responsible approach for the location of graves at this site since it is not likely to damage either the natural environment or intrude on any of the human remains.

Upon arrival at the site we realized that even though the vegetation was reduced, this proposed methodology would require the cutting of extensive lines through the woods in order to establish transects. This would not only open the site, changing its appearance, but it might also result in the destruction of important (and, as yet, undocumented) plantings. Consequently, we reassessed the project and decided to focus on the identification, and verification, of graves visible on the surface. We felt this was an appropriate response, since our goal was not to identify every grave on the Pye tract, but rather to determine whether graves were present at all and to better define the cemetery boundaries in this area.

Consequently, the study began with a visual inspection of the Pye property, revealing that the woods actually consisted of two very distinct zones. Adjacent to the current cultivated field was about 30 feet of old field — previously cultivated but allowed to lapse into second growth in the past 10 to 20 years. Beyond this, however, was a forest identical to that on the Westvaco tract, dominated by a few old pines mixed with oak, chinaberry, and other hardwoods, with a light understory of herbaceous plants.

This visual inspection revealed 28 potential grave locations — sunken areas with oval or roughly rectangular shapes, or areas of plantings. These were flagged for later recordation and verification.

The Garrow and Associates Station 1, a wooden stake, was relocated. In order to establish a more permanent datum for the site, a 2-foot rebar with a stamped aluminum cap stamped "Kings 1 Chicora" was driven flush to the ground on the Pyes' property. This permanent datum was then tied into two of the previous Garrow and Associates stations in order to allow their map of the cemetery to be correlated with the additional work on the Pyes' property. All of the various potential grave sites were tied into this permanent datum using a Topcon Total Station transit.

Verification of the posited graves was conducted using a DICKEY-john penetrometer to determine soil compaction in pounds per square inch (psi) (Figures 3 and 4). In order to better calibrate the penetrometer two lines were run from the Pyes' cultivated field through the old field, into

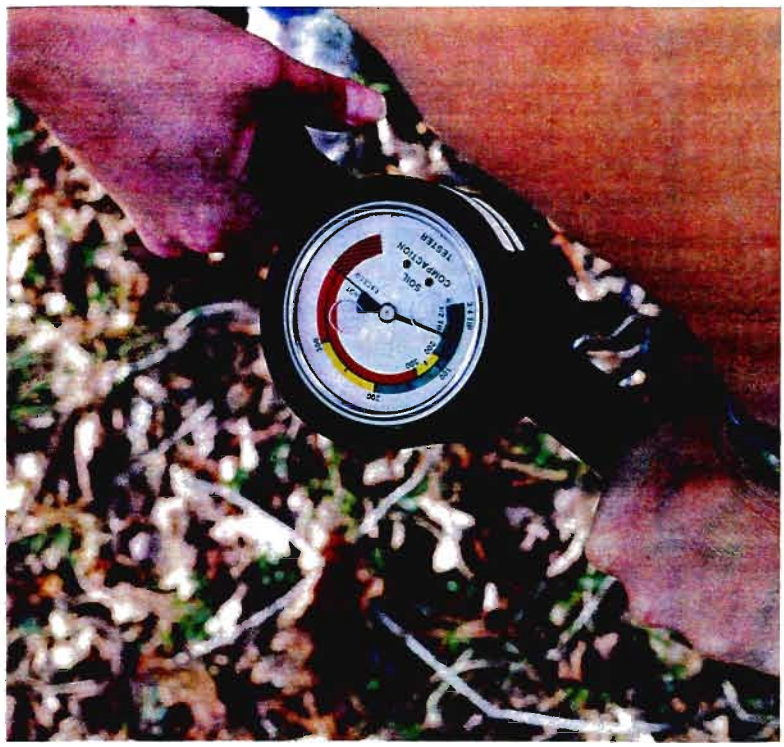


Figure 4. Dial of the penetrometer showing uncompacted soil typical of a grave location.

Figure 3. Use of a penetrometer to identify grave locations on the Pye property at the Kings Cemetery.

the woods, and onto the Westvaco cemetery property, allowing the development of a cross-section of anticipated soil compaction. In addition, two known graves were also evaluated in order to obtain information on soil compaction.

Once this had been accomplished, the soil compaction of the posited graves was evaluated with the penetrometer. Typically at least five readings were taken, bisecting the posited grave north-south and east-west. If the compaction was consistent with that found in the main cemetery, the feature was accepted as a grave. If, on the other hand, there were noticeable differences in the soil compaction, then the feature was rejected. This, we believe, was a very conservative approach and minimized the allocation of grave designations. It is likely, therefore, that the number of individuals buried on the Pyes' property exceeds the number identified in this brief evaluation.

At the conclusion of the study some notations were also made on the vegetation of the project area. This work, however, is not an adequate vegetation survey and it is likely that a great many more introduced plants exist in the cemetery.

Results

The visual inspection of the Pye property, as previously mentioned, revealed that the size of the cultivated field has declined and today there are about 30 additional feet of second growth woods between the open field and the forest typical of the cemetery. While plow ridges and furrows are not visible in this area, there is a very noticeable ridge at the edge of the old field, typical of where plowing has thrown soil up toward the outside of the field. In addition, this old field contains a number of pine and hardwood saplings under an inch in diameter, suggesting that the vegetation has grown up in the past 10 to 20 years.

Within the woods, north of the old field, the topography changes dramatically (Figure 5). Just like on the Westvaco property there are a series of rolling low mounds. We do not recall having seen this type of topography in cemeteries before, but it most closely resembles the appearance of archaeological sites which have suffered extensive pothunting or looting — with the soil repeatedly thrown out of holes, followed by uneven backfilling.

We believe that this topography is the result of extensive, and intensive, use of the cemetery. As each grave is dug, the fill is thrown out forming a heaped-up mound. Afterwards, the grave shaft is imperfectly filled, leaving an uneven terrain. As this process is repeated over and over, we believe that it leaves what appears to be a very characteristic mark on the landscape.

Our visual inspection also revealed a number of large areas of snowflakes (*Leucojum* sp.), with a few areas of daffodils (*Narcissus* sp.) (Figure 7).There were even a few areas where these plantings had not spread and still define individual graves (Figure 8).

The snowflake bulb is particularly hardy, with one author commenting that they can survive a very long time without care or division (Bales 1992:62). They tend to bloom a long time in shade and are self-sowing. Bender and Rushing report that there is concern that snowflakes are "being overharvested from the wild," (Bender and Rushing 1993:85) so special attention should be paid to protecting this plant in the Kings Cemetery.

The daffodils present at the cemetery appear to belong to what is called Division 10 plants as defined by the Royal Horticultural Society of England (Bales 1992:68-69). Although those observed in the cemetery are not among the showier of the heirloom or antique bulbs (see Bender and Rushing 1993:98-100), they are nevertheless fragrant and several reveal double blooms. Like the snowflakes, these bulbs are very long lasting.

Other flowering plants of special note at the cemetery include specimens of Indian strawberry (*Duchesnea indica*), blue violet (*Viola papilionacea*), and periwinkle (*Vinca minor*). The strawberry may be naturally occurring, although the periwinkle and violet were likely introduced. Also present on large areas of the site is prostrate knotweed (*Polygonum aviculare*). This is an annual

Figure 5. View of undulating topography suggestive of extensive graves.

Figure 6. View of the woods between the old field and road on the Pye property, looking ot the southeast.

Figure 7. Large area of snowflakes on the portion of the cemetery on Westvaco property.

Figure 8. Daffodils in the Kings Cemetery.

herb or occasionally an overwintering perennial common to disturbed soils (U.S. Department of Agriculture 1971:116-117). Although Radford et al. (1968:409) note that it usually flowers from May through November, they also reveal that it flowers earlier on overwintering specimens, such as those at Kings Cemetery.

While a cedar was originally reported for the site, we were unable to relocate it during this study and it seems likely that it may have been destroyed by the stripping efforts. Still present in relatively large numbers, however, are the yucca plants (*Yucca* sp.). The plants are propagated from seeds, from an offset, stem portions, or root tip cuttings (Bender and Rushing 1993: 67).

Also observed are numerous small hollies (*Ilex opaca*). This plant is not only frequently associated with cemeteries, but it also has herbal and medicinal uses (Morton 1974:79). Although these mature into medium or large trees (Radford et al. 1968:681), all of those present were small, under about 3 feet. This suggests that they are very recent introductions, although we can't eliminate the presence of a parent tree which has died or been removed.

Several rather dense clumps of chinaberry (*Melia azedarach*) were found, primarily on the western edge of the cemetery. This tree was commonly grown in yards and is usually considered escaped from cultivation (although it is also propagated by bird droppings). It has been extensively used as a vermifuge (Morton 1974:95) and the berries are often associated with African-American sites.

The permanent datum for these investigations was established 78.54 feet 115°03'55" (using uncorrected magnetic north for 0°) from Garrow and Associates Station 1. All subsequent readings were in relationship to this point. Twenty-six posited graves (based on sunken depressions or clusters of plantings) were identified on the Pye property (Figure 9).

Two lines were run from the Pyes' cultivated field into the old field, through the woods, across the old access road for the cemetery, and into the Westvaco portion of the grave yard (see Figure 9). Along these lines, a penetrometer was used every three feet to determine soil compact at 3 to 6 inch intervals. These, in turn, were used to create the soil density profiles shown in Figure 10.

These profiles are of special importance in our understanding of the cemetery. Beginning in the cultivated field, they both show a plowzone overlying compacted (untilled) soil. The plowzone typically produced compaction of less than 100 psi to a depth of 6 to 12 inches, followed by untilled or subsoil with a compaction of over 200 psi (up to 300 psi). Relatively little difference is seen between the current field and the old field, further confirming that the field has not been out of cultivation for a very long period.

Upon entering the woods, however, a very different profile is encountered. Compaction declines dramatically, especially on the second line which (as can be seen in Figure 9) penetrates the core of the cemetery. In the woods the compaction is consistently under 100 psi to depths of 2 feet. Below this the compact increases, with readings between 200 and 300 psi, except in a few areas on Line 1, where soils were very loose at depths of 2 to 3 feet.

On both lines the original fire lane, converted by hunters into a dirt road, reveals dense, compacted soils with readings of over 300 psi. Likewise, the recently bulldozed areas also revealed compactions in excess of 300 psi. This suggests that both areas have been impacted by either on-going (chronic) or short-term (acute) use. In the road it was possible to distinguish the difference between the wheel rut areas, where compaction was noticeable higher, from the center area, where compaction was less significant.

Once past the road, and into the core of the cemetery, soil density readings reveal a very complex profile. Areas of loose, uncompacted soil (with readings of less than 100 psi) are interspersed with small or isolated areas where the density increases to nearly 250 or even 300 psi. Where readings were associated with graves identified by the Garrow and Associates survey (specifically for

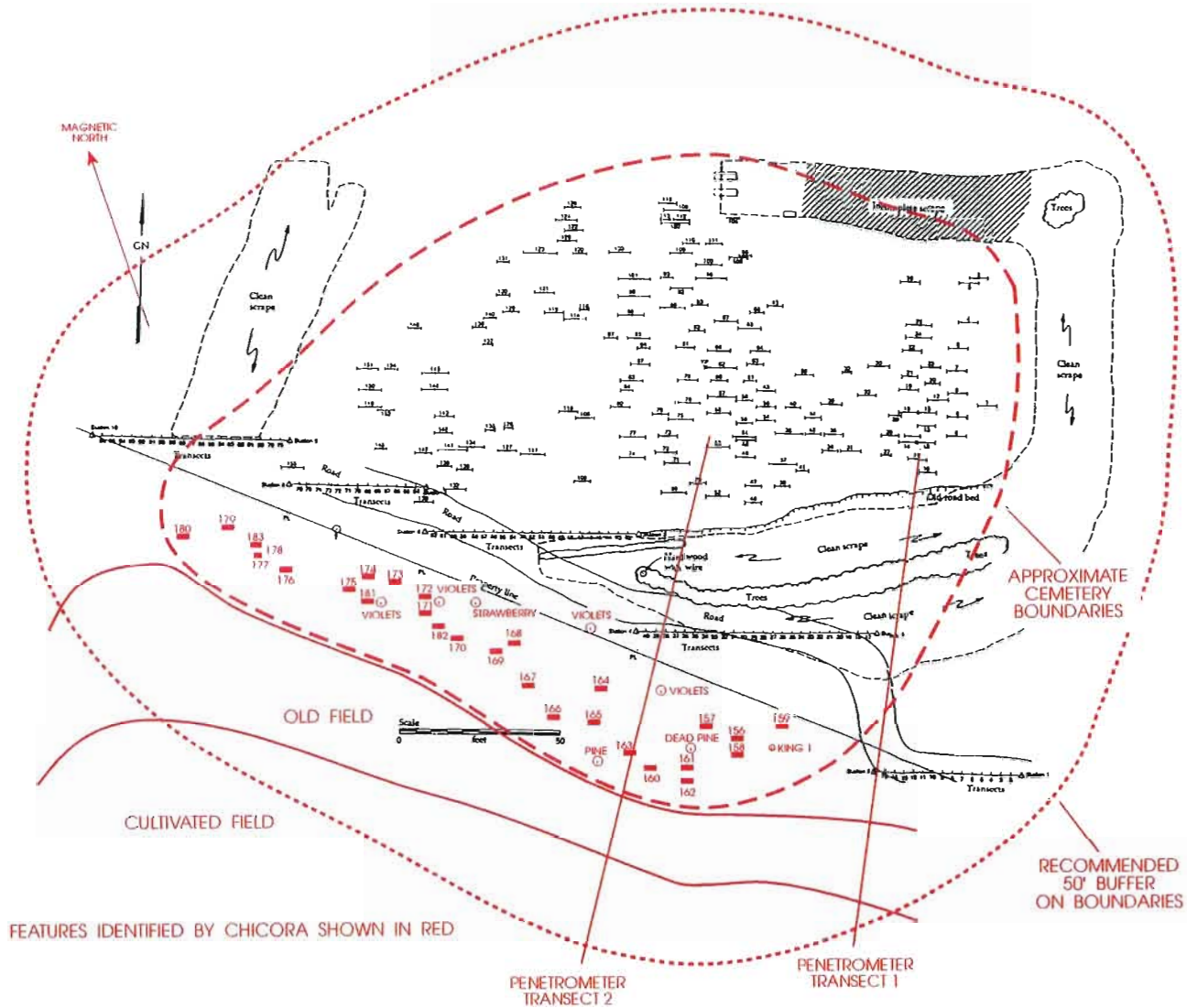


Figure 9. Kings Cemetery, showing graves on the Pyes' property (base map adapted from Jones et al. 1996:Figure 25).

Burials 10, 11, 53, 57, and 70), the burial number is shown in Figure 10.

In order to better understand the soil compaction associated with known graves, two marked graves were bisected east-west with soil compaction readings taken every foot at 6-inch levels (Figure 11). Examined was the grave of Venus Polite, who died in 1891, and Mary Simmions, who died in 1933. This provides data on graves ranging from 64 to 106 years in age.

Both reveal compaction ranging from about 100 to 250 psi down to 3 feet. In no area was the compaction over 300 psi, except for outside the graves. In general, compaction for the graves was about 150 psi, with little difference attributable to the time since burial.

When these two studies are taken together they provide very significant data on the nature of soil compaction in this particular cemetery. Within the core of the cemetery, found primarily on Westvaco property, the soils are very uncompacted, suggesting extensive digging and disturbance. This is consistent with the topographic undulations and further supports our belief that the cemetery has seen exceptionally heavy use. We are reminded of a black plaintiff in a Beaufort County court case who explained that "there was always room for one more" in an African-American cemetery. We seem to be seeing the result of this philosophy, with the soils heavily dug through.

At the edges of the cemetery, there is less frequent digging, suggesting that at least this southwestern edge was not used as frequently. Nevertheless, there are areas which suggest use, even these cross-sections.

Where there has been some recent disturbance, either by mechanical equipment or vehicles, the soils exhibit dense compaction. This compaction is of particular concern for the preservation of human remains. One study found that intentional site burial, with additional compression caused by the overlying soil, accelerated decay of bone, shell, carbonized plant remains, organic remains, ceramics, archaeological features, and soil attributes (Mathewson and Gonzales in Thorne 1989:Figure 1). Another study used only pottery (which is considerably less friable than bone) and found that 20 to 75 psi of pressure would create no damage when the materials were buried greater than 4 feet, while damage could be severe when the materials were closer to the surface (Olson 1989). Although this study is not directly applicable (bone is much more friable and sensitive to chemical conditions than pottery, and the pressures we are seeing are greater than those explored), it does suggest that compaction may be an issue in the preservation of this cemetery.

Certainly driving through the cemetery is inappropriate since it compacts the soil — this activity can be viewed as causing chronic damage. It is less clear whether mechanical stripping, considered an acute activity, is the direct cause of the compact seen at the Kings Cemetery, or if it is perhaps associated with other activities or events as well. Likewise, it isn't possible, based on this evidence, to determine if mechanical stripping should be precluded as a survey or data recovery technique. We can suggest that the current evidence is strong enough to warrant additional research on this topic.

Whether these tentative findings can be extrapolated to other low country cemeteries is uncertain. They do, however, indicate that the use of penetrometer is considerably more useful than standard probing or even soil coring. Not only is it often easier to conduct and interpret, but it provides quantifiable data potentially useful to other researchers.

This "calibration" of the penetrometer also allowed us to better evaluate the posited graves identified on the Pyes' property. Readings of less than 150 psi were almost certainly graves. Readings of less than 200 psi were likely graves, while readings greater than 200 psi were probably not graves.

With this information in hand, the grave locations based on the visual inspection were bisected with the penetrometer and the readings averaged. The results are shown in Table 1. This approach allowed us to rapidly eliminate two possible graves from consideration, while

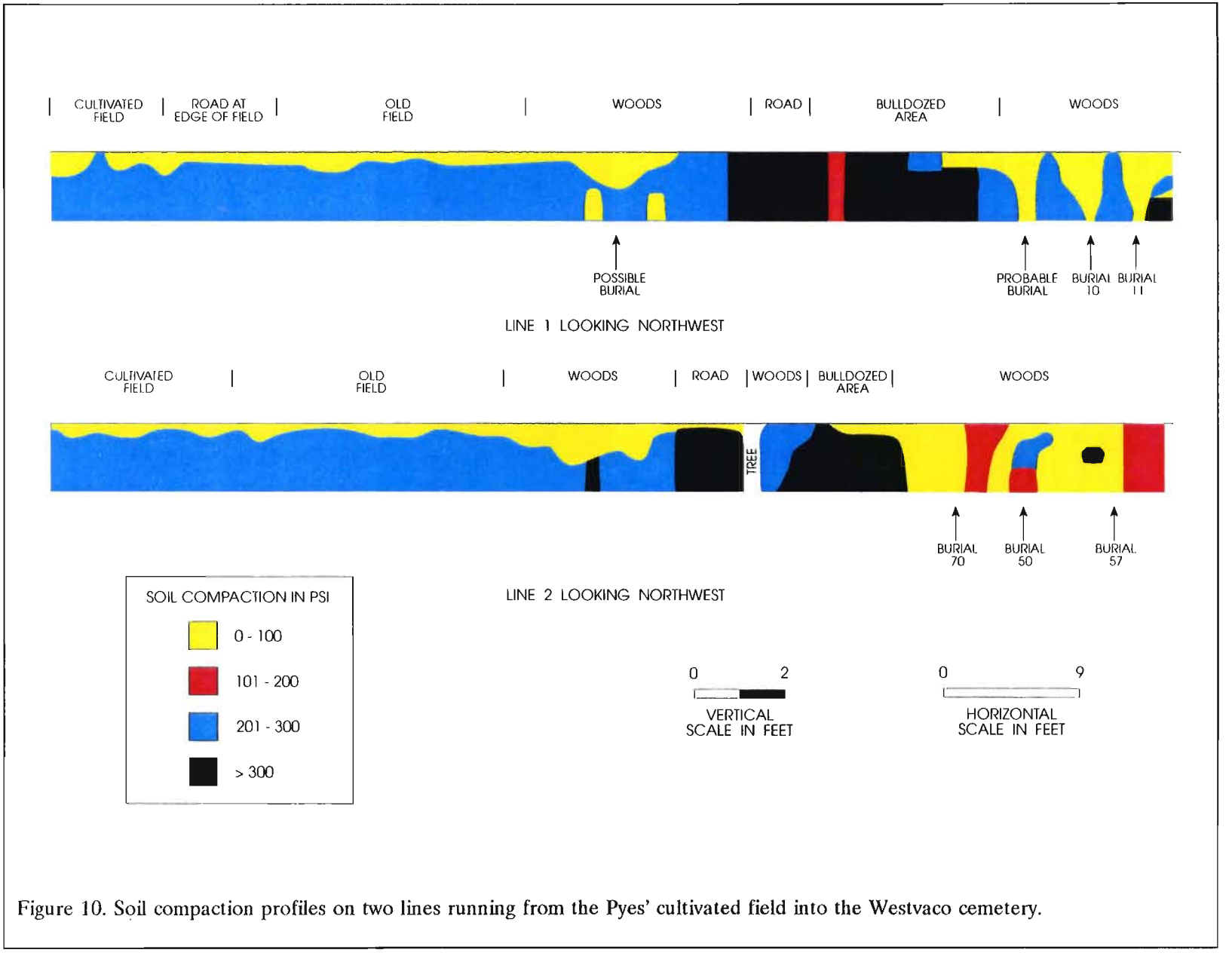


Figure 10. Soil compaction profiles on two lines running from the Pyes' cultivated field into the Westvaco cemetery.

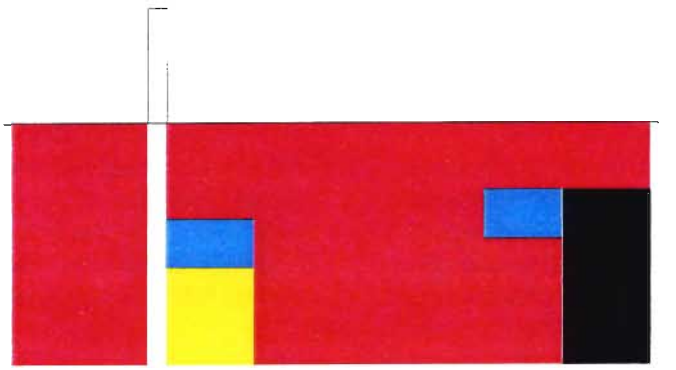
Table 1.
Soil Compaction of Posited Graves on the Pyes' Property

Grave #	Compaction (in psi)	Comments
156	100	grave (daffodils)
157	0-2' 100, 2-3 200	possible grave
158	<125	grave
159	<150	grave
160	100-150	grave
161	100-150	grave
162	<150	grave
163	0-1.5 <100, 1.5-2.5 150, 2.5-3 200	possible grave
164	<100 - 250	possible grave
165	100-150	grave
166	100	grave
167	<200	probable grave
168	<200	probable grave
169	<200	probable grave
170	0-2.5' <200, 2.5-3' >300	possible grave
171	<100	grave
172	0-2' <200, 2-3' >300	possible grave
	200-250	not a grave
173	<100	grave
174	<100	grave
175	100-150	grave
176	<150	grave
177	0-1' <100, 1-2' 200, 2-3' 250	possible grave
178	0-2' 100-150, 2-3' >200	possible grave
179	<150	grave
180	100-150	grave
	150-250	not a grave
181	<100	grave
182	<100	grave
183	<150	grave

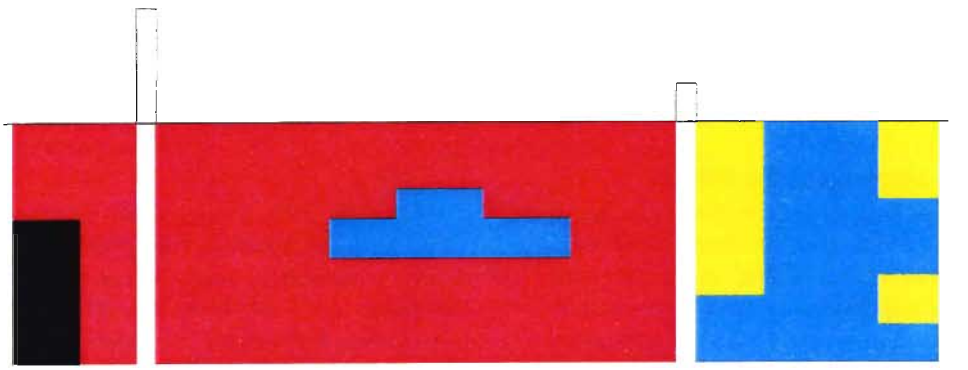
confirming the other locations. During this process, two additional grave locations were identified. The study also found a rather large area of uncompacted soil in a semi-circle of testing around one grave. This suggests that there are at least localized areas of heavily excavated soils, even on the cemetery margins, suggesting extensive use of the entire Kings Cemetery by the local African-American community.

The testing also revealed that several areas identified only by flowers also had very low soil compaction, suggesting that while no grave outline was visible, a grave was likely present. It seems that the mere presence of some plants may be sufficient to warrant attribution of a grave site.

While not a specific goal of this research, we did briefly examine one area of the Westvaco cemetery property where the Garrow and Associates survey failed to identify specific graves. This area, one of several, is north of their Stations 5 and 6. As anticipated, the visual inspection of these areas revealed no surface indications of graves (i.e., no sunken areas), although there were plantings suggestive of graves. When the penetrometer was judgmentally used in this area the readings were consistently low, typically less than 200 psi and often as low as 100 psi. In other words, it seems likely that there are a number of graves in this "blank" area.



GRAVE OF VENUS POLITE LOOKING NORTH



GRAVE OF MARY SIMMIONS LOOKING NORTH

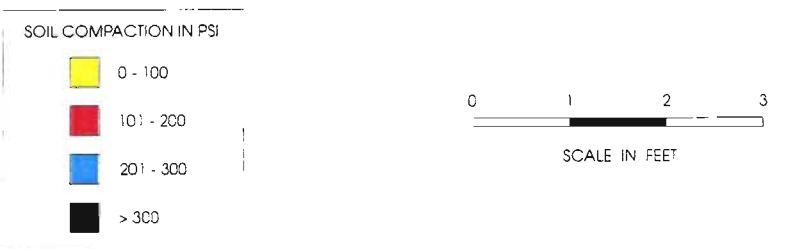


Figure 11. Soil compaction associated with two known graves at Kings Cemetery.

RECOMMENDATIONS

Summary of Findings

The current study reveals that the Kings Cemetery does extend south and southwest from the Westvaco property onto the land owned by Mr. and Mrs. Russ Pye. At least 28 additional burials are indicated for the Pyes' property and it is likely, based on the topography and several areas of random penetrometer readings, that the number may be much higher.

Likewise, the current information suggests that the number of burials on the Westvaco property is much higher than the 155 thus far identified by the Garrow and Associates survey. We hasten to add that this is not intended as a criticism of the original study, since it was intended only to delimit boundaries. Rather, our observation is pertinent in both understanding the site formation process and also in gauging the possible antiquity of the cemetery.

It seems likely that the cemetery's undulating topography and rather consistent lack of soil compaction is the result of extensive areas having received burials, perhaps even multiple burials. This is consistent with what we know about African-American cemeteries and their continued use generation after generation. The presence of marked graves reveals that the cemetery's use began at least 106 years ago. Using a very conservative 30 year figure for a single generation, then the cemetery represents use over at least three generations. Using a generational period of 20 years, the cemetery represents perhaps as many as five or six generations.

In addition, if we make the conservative assumption that 60% of the available ground within only the Westvaco-owned portion of the cemetery has received at least one burial, then Kings Cemetery may include over 800 individuals. If we make the more liberal assumption that 85% of the cemetery has been used for one or more burials, then there may be over 1,000 individuals buried on the site.

If the earliest grave in the cemetery were from ca. 1898, then we would expect that the cemetery might be named for the land owners of the period, Sanders, Alson, or perhaps Lucus. But, the cemetery was known as Kings (or King's), a reference to the family owning the property from the early 1800s through the Civil War.

When all of these data are taken together, we believe they suggest, although certainly do not prove, that the cemetery grew from an antebellum black burying ground used by slaves. This long episode of use may also explain why so many of the grave goods appear to be buried. It may be that they are below ground not because of simple bioturbation or accumulation, but rather through the process of repeated excavation and backfilling.

The Kings Cemetery also reveals a diverse range of plantings. Although some brief notations have been made by this investigation, it is clear that there is much more the cemetery can contribute to our understanding of African-American use of plants.

The penetrometer has been shown to be an indispensable tool in the examination of historic cemeteries. The instrument provides quantitative assessments of soil compaction, allowing ranges of probable grave compactions to be identified and applied over the entire cemetery area. In this particular case, it also clearly defines areas which have been used as a road, or which were mechanically stripped.

Cemetery Preservation Efforts

Our recommendations regarding the preservation of Kings Cemetery will not be limited to that portion on the Pyes' property since such "piece-meal" preservation efforts are rarely

meaningful or successful. Instead, we will offer comments for the entire site.

Fundamental to the site's preservation is the recognition that it is both a very valuable, and very fragile, resource. Thus far much of the discussion surrounding this site has focused on whether or not it extends onto the County's land. It is now important to move beyond this relatively narrowly framed question to a broader preservation perspective.

The value of the resource has been exceptionally well stated by Jones et al. (1996:64-72) and there is little need to rephrase their well reasoned arguments. Moreover, the Keeper of the National Register has concurred that the site is eligible at least under Criterion D. The fragility of the resource can only be understood if the cemetery is viewed holistically. In other words, the cemetery consists of the stones, the grave depressions, the human remains, the topography, the grave goods, and the plantings which are present. It is only within this context that the site can be truly understood. Therefore, if the plantings are destroyed, while leaving all other elements intact, the resources would be seriously damaged. If the topography were leveled, while leaving the plantings and other features intact, the site would still suffer extraordinary damage.

What this means on a practical level is that ***any*** activity within the cemetery has the potential for causing irreparable damage. Misguided efforts to "clean-up" the cemetery, continued use of the dirt road, efforts to log adjacent trees, even routine trampling, will damage the site.

Consequently, one of the first steps should be the development of a management plan which recognizes this unique resource. Such a plan might reasonably include the following provisions:

- develop at least a 30 to 50 foot buffer on ***all*** sides;

- establishment of a fire lane at the far edge of this buffer to prevent accidental fire or fire plow damage to the site during an emergency;

- development of a disaster plan that allows only hand cutting and removal of downed timber on the property in the event of a hurricane;

- permanent closure of the road through the cemetery through the use of concrete bollards that cannot be moved by hunters; and

- posting of special signs which notify visitors of the South Carolina law protecting cemeteries and that vandalism or damage to the stones, graves, or landscape is a felony.

Depending on the traffic present in this area, it may be appropriate to establish a low fence around the site. If so, we recommend the use of treated wood posts and galvanized wire rather than chain link, in order to blend the fence into the landscape. The goal should be to establish a pedestrian barrier, not to create an impenetrable security barrier.

In addition, all of the parties involved should recognize the importance of allowing site access to next of kin. Westvaco has been very generous is issuing access permits and this is good. Nevertheless, many blacks are uneasy dealing with written, legal forms and this likely minimizes the number, and spontaneity, of site visits. Ideally, some mechanism should be developed to allow freer access. Naturally, this also involves either the Pyes or Charleston County since access is most easily gained through either of these adjacent tracts.

Both Westvaco and the Pyes should consider application to the S.C. Tax Commission, Exempt Properties Section, to remove this cemetery from the tax roles. Although the reduction in taxes for both parties will be minimal, this may provide some compensation for other

incurred expenses. Application is achieved through the use of Form 401.

It is exceedingly important that this cemetery receive some degree of periodic maintenance. Although African-American cemeteries were essentially unmaintained, this does not mean that they were allowed to totally grow up in impenetrable brush. Instead, it means that they were never manicured as is the case with most white cemeteries.

We recommend that saplings under 1-inch in diameter be removed from the Kings Cemetery, along with dead wood and brambles. This would be a very conservative approach to vegetation reduction, yet would allow greater access and reduce hazards associated with visiting the site. Ideally, this work should be done only after the site has been visited by an ethnobotanist who has flagged particularly sensitive landscape plants.

No effort should be made to level the topography or fill-in sunken depressions. Likewise, any grave goods present at the site should be left in place.

As a result of this work, the previous Garrow and Associates survey, and the early reconnaissance efforts, the Kings Cemetery is one of the best understood, and documented, of all African-American cemeteries in Charleston County. Efforts should focus on maintaining the integrity of this unique resource.

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Cemetery Preservation Plans

Historical Research

Identification of Grave Locations and Mapping

Condition Assessments

Treatment of Stone and Ironwork

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