



CHICORA FOUNDATION, INC.

PRESERVING THE PAST FOR THE FUTURE

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September 21, 2010

Dr. Mark Petersen, Superintendent
Greenwood School District 52
605 Johnston Road
Ninety Six, SC 29666

Re: Penetrometer assessment of the Greenwood School District 52 site

Dear Dr. Petersen,

On September 20, 2010 I and my assistant, Nicole Southerland, visited the construction site for the Greenwood School District in Ninety Six for the purpose of assessing the area around a tombstone for the presence of a cemetery. You and Mr. Rodney Smith were there to show us the site. The goal was to determine if there was a grave associated with the stone and if other possible unmarked graves were present in the area. This letter will provide you with an overview of our work and findings.

Methods

There are a variety of geophysical techniques that can be used to identify probable grave locations. For this work we have used a penetrometer.

More precise and reliable than a probe, the hand penetrometer measures soil compaction in pounds per square inch (psi). Areas of posited graves will have lower psi readings than those areas where there has been no digging. Like probing, the penetrometer is



Figure 1. Using the penetrometer around the stone.

generally 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 this situation, we used the penetrometer to see if there was a possibility of any graves actually being located on the property. We have found very consistent ranges in soil compaction at cemeteries throughout the region and have previous experience in Piedmont and Blue Ridge areas ranging from Charlotte, North Carolina (Settlers' Cemetery) to Waynesville, North Carolina (Maple Grove Cemetery), south to a cemetery in Douglas, Georgia (City of Douglas). This is a relatively common forensic anthropology technique and the penetrometer is used extensively by the FBI to locate clandestine graves. While it is never possible in our field to offer guarantees, I have tremendous confidence in the penetrometer as our foundation has used it successfully at several dozen cemeteries.

This technique *can* be affected by very dry soils (which is currently a problem in your area), by graveled plots (of which none were present in your area), or by artificial compaction (which may also be a concern with the area). The inverse of the compaction is the disturbance of soil for something like planting a tree, which would show a reading similar to that of an occupied grave.

At this particular site, we were shown the location of the tombstone and used the penetrometer in the area surrounding the stone in an attempt to find disturbed soils. In addition to the penetrometer, we also performed a pedestrian survey in order to look for other evidence of burials such as grave depressions, other pieces of marble from the tombstones, or other large stones that could be used as markers for graves.

A brief historic study of the area was done with the maps located in the Chicora Foundation files. While no in-depth historical research was performed, the hope is to provide some groundwork for any future studies that may be needed.

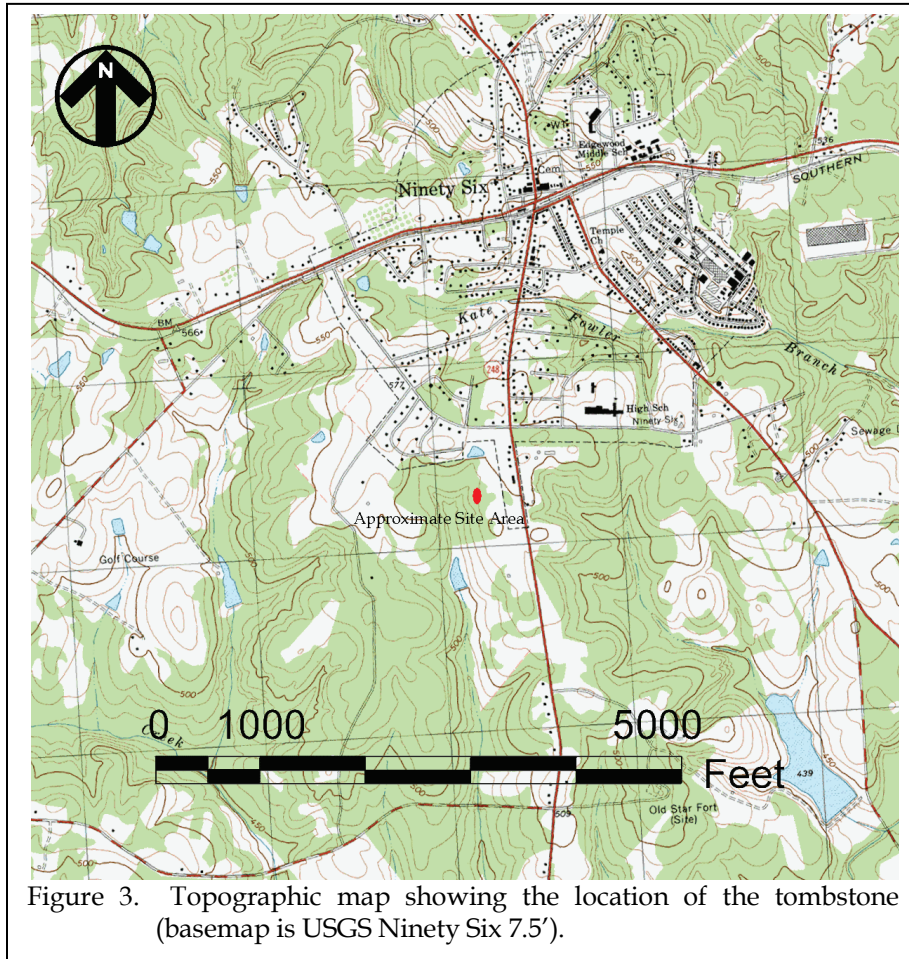
Findings

The tombstone (Figure 2) in question is marble and has been broken into 20 or more pieces. The top of the stone that would contain the name is missing as well as the very bottom of the stone. The existing pieces have been fit together. The extant engraving reveals "who die[d] []/ 1816/ Aged 50/ As a memorial of her/virtues an affectionate/husband erects this/stone.

According to the USDA Soil Survey for Greenwood County, a typical profile of the soils found in this area would have a surface layer of dark reddish brown loam that



Figure 2. View of the tombstone.



would extend to about 0.6 foot in depth. Below this would be a dark red clay loam to a depth of 1.0 foot that would turn to clay at about 2.0 feet. An erosion survey performed in 1934 for South Carolina shows this area of Greenwood having 75-100% of its surface gone and occasional gullies.

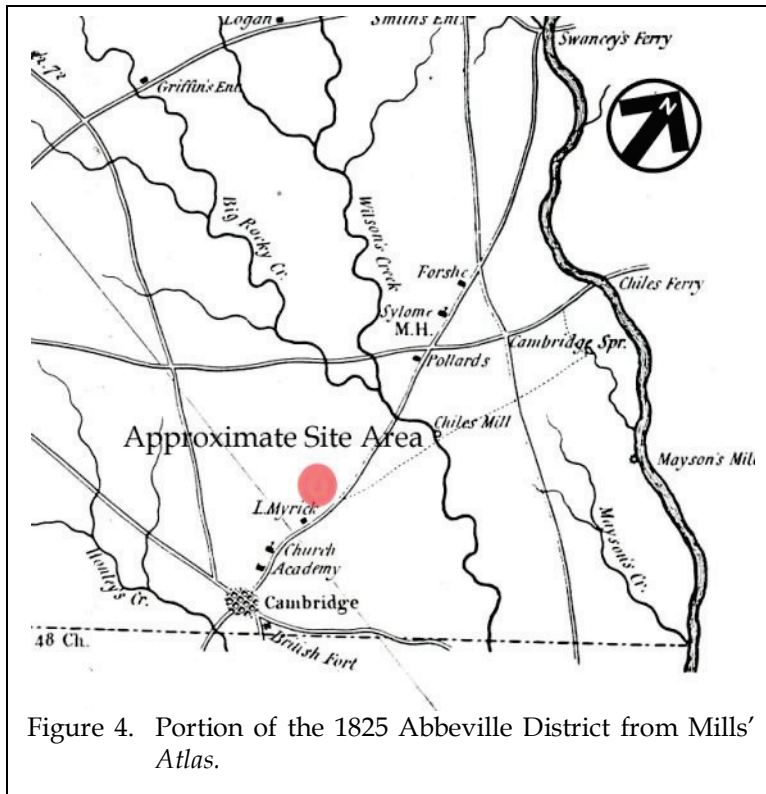
The field survey confirmed this, finding the dark red clay that would normally be found 2.0 feet below the ground, now on the surface. These soils are typically found on slopes from 6 to 10%, which can also contribute to erosion through time.

Although the removal of vegetation can also contribute to erosion, I understand that the area has only recently been cleared, grubbed, and lightly graded. While altering the ground surface and probably exposing the stone, this would not have caused 2.0 feet of damage.

Given the hard red clay and the lack of any significant rainfall, the penetrometer readings were inconclusive. All of the readings were over 300 psi at the surface.

The pedestrian survey covered an area of about 60,000 square feet (Figure 3). No other evidence of marble was found outside the known tombstone. In addition, no fieldstones or grave depressions were found. We did, however, find ten pieces of ceramic – indicative of a domestic settlement. These include four pieces of undecorated pearlware, one handpainted pearlware, one blue edge decorated pearlware, one blue transfer print pearlware, one blue transfer print whiteware, one whiteware with a green decorative band, and one white porcelain.

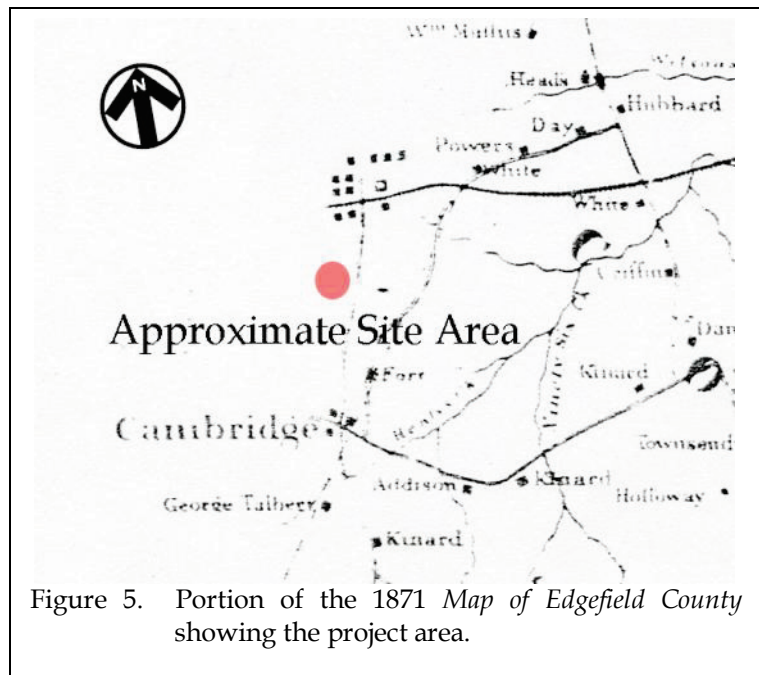
The pearlware ceramics were produced from 1780 to 1840, while the whiteware is a little later, dating from 1831 to 1865. The average date (or mean ceramic date/MCD) for the production of these ceramics is around 1811-1812, which would date almost exactly to the time of the 1816 death of the woman for which the tombstone was erected.



Several historic maps were consulted find any information on who may have lived in the area. One of the earliest maps that provide details of structures and owners of the area dates to 1825 (Mills' Atlas), when the site was located in what was know as Abbeville District (very close to the boundary with Edgefield District). At that time, the town of Ninety Six was known as Cambridge. The modern day town of Ninety Six was shifted north in 1852 when the railroad was constructed, so this earlier map shows the town before that shift. We have indicated on the map (Figure 4) the vicinity of the project area. One subscriber (home owner) is shown near the site - L. Myrick.

The next map is the 1871 *Map of Edgefield County*. By this time, the town of Ninety Six had moved north and even though Cambridge is still shown, the unlabeled Ninety Six already appears to be well settled (Figure 5). No structures, however, are shown in the area between the two settlements where the current project area is located.

The final map is the 1939 *General Highway and Transportation Map of Greenwood County* (Figure 6). It was in 1897 that the county of Greenwood was created, so by 1939, the present-day town of Ninety Six was well established. Although settlements were still located close to what is shown as the "First Site of Ninety Six" on the map, the bulk of settlements had moved north to the new part of town. In the vicinity of the project area, there appear to be a house with three tenant structures. We saw no evidence of these structures in the area immediately surrounding the tombstone.



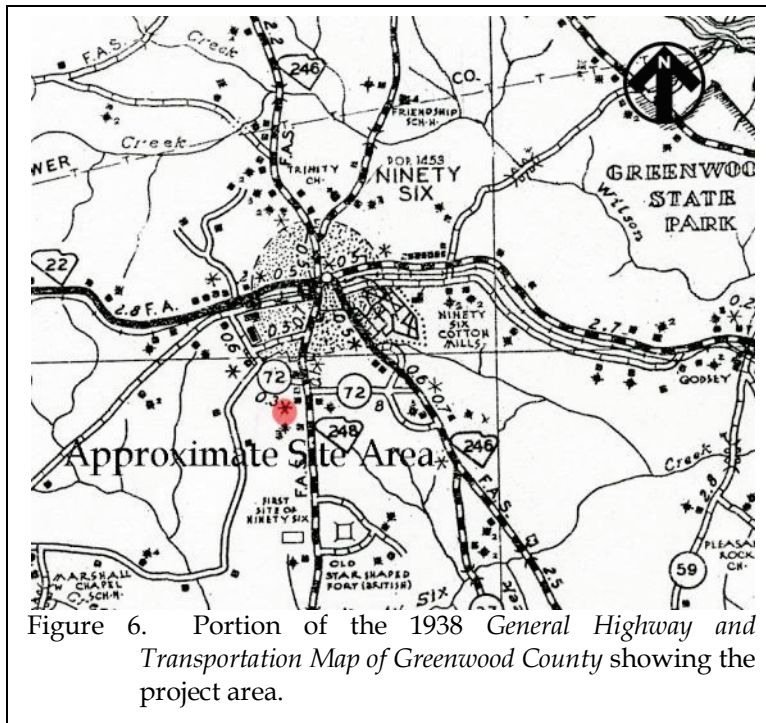


Figure 6. Portion of the 1938 General Highway and Transportation Map of Greenwood County showing the project area.

Recommendations

I have contacted GEL Geophysics in Charleston for an estimate on performing a ground penetrating radar (GPR) survey. They will be able to tell you whether the conditions are adequate for performing the survey. In perfect conditions, the GPR should provide indications of subsurface anomalies – holes, tree roots, etc. – and the expertise of the GPR operator should be able to narrow down the possibility of what the anomalies are.

If few anomalies are found, you may, depending on the layout of construction activities, be able to greenspace the area. Even if

numerous anomalies are found, greenspacing may still a viable option. If greenspacing is not possible, you may want to consider stripping the area of the topsoil to examine the ground for graves. Stripping would not intrude on a burial, but would stop just above the burial where changes in soil color would indicate a grave shaft. We will be happy to provide a cost for the monitoring if you wish.

I have already discussed the removal of the headstone to a more secure location to prevent its loss. One possibility is taking it to the Historical Ninety-Six Development Commission: Museum and Visitor Center. Wherever it is stored, the stone should have paperwork indicating from where it was taken and when. If further studies are to be performed, you will want to know the exact place the stone was located. As I mentioned, we can also repair the stone should you wish to eventually display it.

The ceramics found around the tombstone date to the same time period (the MCD for the ceramics is between 1811 and 1812 while the stone dates to 1816). It may be likely that the grave is isolated to an occupant of the house or may be a small family graveyard. If more history is performed, it may be possible to look for plats, wills, deeds, etc. for the L. Myrick that was found on the 1825 map and see if that is on or near the current property. I believe this historical research should be held in abeyance until the success of the GPR can be evaluated.

As we discussed, with no federal funding, licensing, or permitting, the State Historic Preservation Office (SHPO) has no jurisdiction. South Carolina has no unmarked burial law that would apply in this situation so far as I am aware (and of course I am not an attorney and am not offering legal advice). I would notify the local sheriff and county coroner when the GPR work is completed, simply as a matter of full disclosure.

Summary

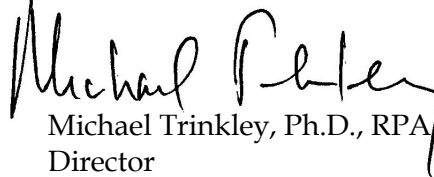
Although the penetrometer was inconclusive, the attempt should be made to perform some more work in trying to identify if one or more graves exist. As I mentioned, there are laws against disturbing graves in South Carolina, but an honest attempt should be made to try to locate the grave(s). GPR and/or stripping are good techniques to consider. Historic research may be able to provide information, although at this time period the likelihood of it producing information on burial locations (such as a plat) is remote.

If you are interested in any other services, we can either provide an estimate for work or refer you to other individuals that can help you.

I am enclosing our invoice for the work at the agreed rate.

We appreciate you contacting us and providing the opportunity to work with you. If you have any questions concerning the findings, please contact me at 803/787-6910 or by e-mail at trinkley@chicora.org.

Sincerely,



Michael Trinkley, Ph.D., RPA
Director