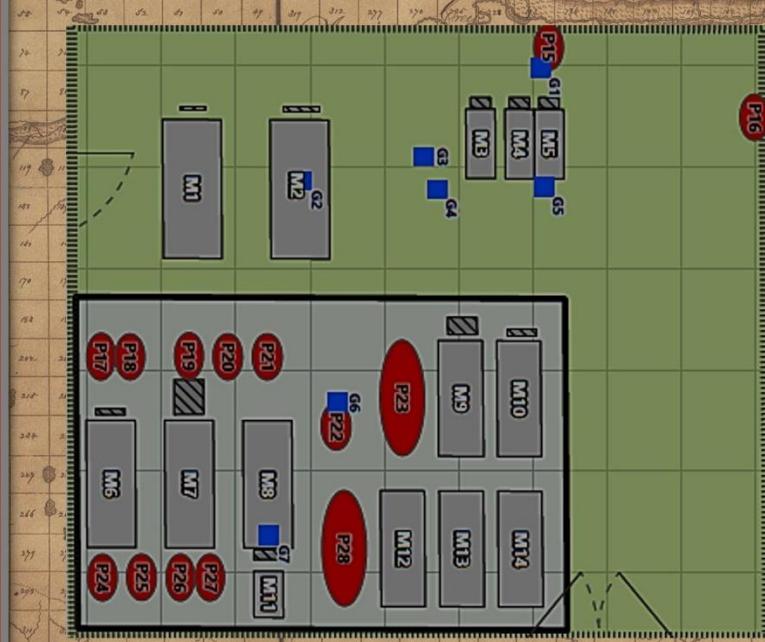


Archaeological Delineation of the McCoy-Mathews-Ryals Burial Ground (9HT305), Houston County, Georgia

by Stephen A. Hammock, R.P.A.



**Archaeological Delineation of the McCoy-Mathews-Ryals Cemetery (9HT305),
Houston County, Georgia**

for

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MANAGEMENT SUMMARY

John S. Ryals consulted with Archaeologist/Historian Stephen A. Hammock on conducting an archaeological delineation of the McCoy-Mathews-Ryals Cemetery in Houston County, Georgia to determine whether any unmarked graves were present. Historical Research, Archaeological Probing, and Ground-Penetrating Radar (GPR) were the methodologies utilized. The following report is the result of this investigation.

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1.0 INTRODUCTION

John S. Ryals consulted with Archaeologist/Historian Stephen A. Hammock (SAH) for an archaeological delineation of the McCoy-Mathews-Ryals Cemetery (9HT305) in Houston County, Georgia to determine whether any unmarked graves were present. Historical Research, Archaeological Probing, and Ground-Penetrating Radar (GPR) were the methodologies utilized. Hammock brought in Archaeologist/GPR Specialist Daniel T. Elliott of the LAMAR Institute, Inc. to conduct the remote sensing aspect of the project. Archaeological Probing was conducted on October 9, 2025, and remote sensing on October 16, 2025.

2.0 EFFECTIVE ENVIRONMENT

2.1 Environmental Setting

The McCoy-Mathews-Ryals Cemetery is located on a .11-acre tract in northwestern Houston County, within the Fort Valley Plateau in the north-central Southern Coastal Plain of Georgia (Hodler and Schretter 1986:16-17, 36). The cemetery's location is shown in Figure 1 on the USGS Warner Robins SW 7.5' minute topographic quadrangle map, and is approximately 420 feet above sea level.

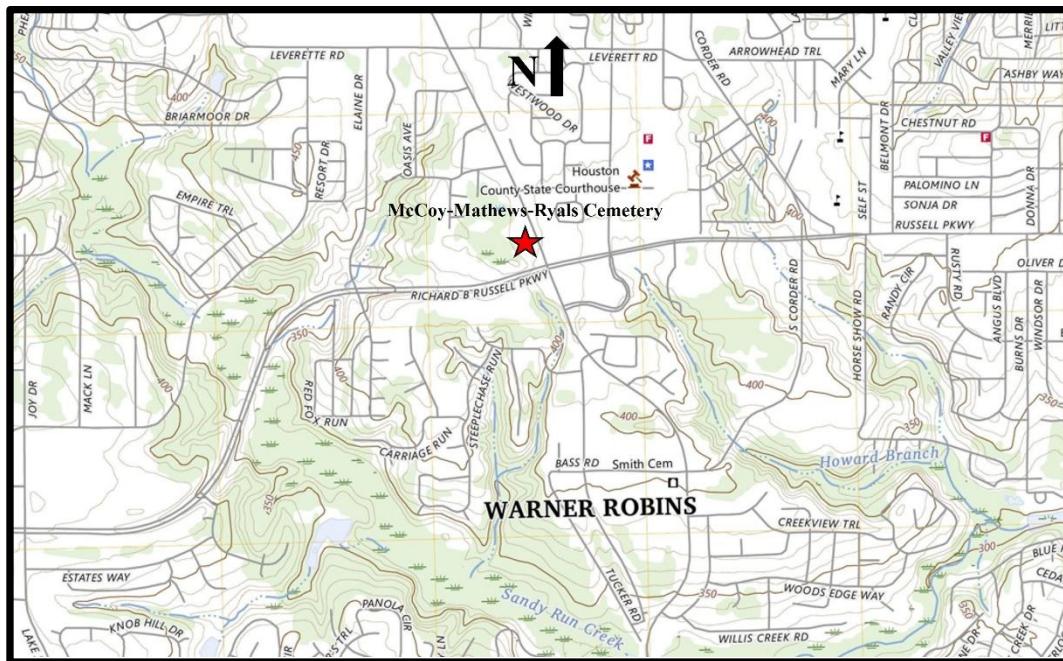


Figure 1. The McCoy-Mathews-Ryals Cemetery location shown on the 2024 USGS 7.5 Minute Warner Robins SW Quadrangle Map (1:24,000)

2.2 Physiography, Geology, Climate, Flora, and Fauna

The cemetery is situated in the Fort Valley Plateau within the north-central Southern Coastal Plain of Georgia. This part of northwestern Houston County “consists of broad, nearly level or gently sloping uplands, but some areas along small creeks and drainageways are strongly sloping to steep. The flood plains of the rivers and large creeks are level or nearly level” (Woods 1967:1).

The soils in the project area are Orangeburg series (OgA) loamy fine sand, 0-2% slopes. “This is a deep, well-drained, friable soil on nearly level uplands. The surface layer is dark grayish-brown loamy fine sand 6 to 10 inches thick. The subsoil commonly is red or yellowish red, friable sandy clay loam that has weak subangular blocky structure, but in a sizable acreage the soil is dark red” (Woods 1967:22). The average lowest monthly temperature in Houston County between 1975 and 2025 was 36° F in January 1977, while the average highest monthly temperature during the same period was 70° F in October 2019 (NOAA/NCEI 2025). Much higher temperatures in the mid- to upper-90’s are common from June through September. Fauna noted in the urbanized project area was limited to *Homo sapiens sapiens*, commonly known as modern human beings.

3.0 SOUTHERN BURIAL TRADITIONS



Figure 2. The Funeral Mound (Mound C) at Ocmulgee Mounds National Historical Park in Macon in 2015, courtesy SAH

3.1 Prehistoric Burial Methods

Little is known of Pre-Clovis or Paleoindian mortuary rituals in North America, other than that isolated skeletal remains have been found across North America over the last 150 years in California, Florida, Idaho, Nevada, Texas, Washington, and other states, mostly associated with few or no artifacts. During the Archaic Period, Indians were burying their dead “in a fully flexed position” around 7,000 years ago (Wormington 1957:149). Other rituals included bundle burials or reburials that included chert tools, worked animal bones and shells, and projectile points. Cremation and inhumation (interment) were additional burial techniques in use at this time (Wormington 1957:152,199). Except for infant and bundle burials, Archaic remains excavated from Stallings Island in the Savannah River were found to be “in a semi-flexed or closely flexed position” and only a few contained artifacts like spear heads, knives, bannerstones, beads, and shell artifacts (Claflin 1931:43-46).

Several kinds of burial practices have been documented in connection with the Woodland Period in the Southeastern United States (Smith 1984:74). These range from simple single inhumations lacking grave goods to elaborate mound burials with prestigious goods; cremation burials have also been documented. Some Woodland societies buried their dead in residential areas like under the floors of their houses, while

others segregated burials into distinct cemeteries adjacent to their villages. Interments range from single individuals to a small number of individuals, and in some instances, such as with the Algonquin societies of the Mid-Atlantic region, consist of numerous individuals reburied in secondary contexts termed Ossuaries. Some Woodland-era individuals at the Kolomoki Mounds site in southwestern Georgia were discovered to have been interred in pits, some of which were lined with logs (Pluckhahn 2003:60-62). Others were cremated, covered by rock slabs, covered by earthen mounds, or buried in bundles after defleshing and curation. Grave goods recovered with these burials included copper cymbals, shell beads, mica disks, and projectile points.

Mississippian Indians were even more elaborate in their grave offerings for leaders. A chief of the large Mississippian chiefdom Cahokia “was found lying on a bed of some 20,000 shell-beads,” while 800 stone arrowheads and a few copper and mica plates were laid beside him at his death around 1,000 years ago (Kerrigan 2007:29). Embossed copper plates featuring a motif known as the Birdman, along with shell gorgets, stone blades, stone celts, and a variety of copper headdress pieces, were recovered from burials within one mound at the Etowah Mounds site in northern Georgia, as were two life-like marble statues (King 2004:156). There were 94 burials excavated at the Macon Plateau site (9BI1) in Macon during the 1930s. These burials contained projectile points, shell beads, pottery, copper-covered puma jaws and copper plates, gorgets, and pipes found with the prehistoric dead (Powell 1994:117-119). Some people were interred in log tombs, and many were secondary burials of rearticulated bones (Fairbanks 2003:47). Archaeologists have also found burials of some Late Mississippian Lamar Indians and a subset of their Historic Ochese Creek Indian descendants that exhibited cranial modification (Hally 2008: 348-349; Hammock 2018:24-25). Between A.D. 1690 and 1715, Creek Indians occupying the Ocmulgee River Valley laid their dead to rest within their villages, and often interred them with their Ocmulgee Fields pottery and European trade goods. These trade items included glass trade beads, scissors, brass and shell ornaments, guns, gunflints, lead

musket balls, and gorgets that may have been the personal property of the deceased (Powell 1994:124; Mason 2005:75-76). Archaeological investigations also showed that before the middle of the eighteenth century, the dead were regularly buried in “partially flexed positions, typically on their backs with arms and legs folded to the right,” though later they were laid out straight with their heads to the west (Pluckhahn 1997:223).



Figure 3. Bruton Parish Churchyard, Williamsburg, VA in 2025, courtesy SAH

3.2 Churchyards

Churchyards were first established in England around A.D. 752 by Cuthbert so that prayers for the dead would be more likely and to “remind the living...of their own physical mortality and...put them in the right frame of mind as they entered the church” (Bailey 1994:20). When Christianity was first brought to North America during the colonial period, missions and churches were established immediately. The European tradition of burying the dead in and around churches, as well as memorializing the elite inside them (Penny

1977; Newham 2022:xi), continued in Britain's North American colonies. Churchyards were normally surrounded by fences or walls to keep them sacrosanct and to keep out animals. One of the earliest extant churchyards in North America is at Bruton Parish Church in Williamsburg, Virginia, where the earliest burial dates to around 1683 (Boller 2023:xv). They can be found in all our oldest American cities through the first quarter of the nineteenth century, and endured much later in rural areas. Churchyards fell from fashion as "critics became insistent that the grave presented a peril to the innocent bystander because its decaying matter created a dangerous atmosphere for disease and more death" (Sloane 1991:29).



Figure 4. Detail of the Dr. Samuel Vickers gravestone in Colonial Park Cemetery, Savannah, GA in 2021, courtesy ASQ

3.3 Colonial Graveyards

Throughout the sixteenth, seventeenth, and eighteenth centuries, European colonists interred their dead in traditional European-style graveyards. Early on, most of these were associated with churches or missions. Excavations of burials at Jamestown, Virginia have shown that gabled coffins held together by iron nails

were in use in America in the early seventeenth century (Kelso 2006:139). Another important study documented the stylistic evolution of New England gravestones over the course of the seventeenth and eighteenth centuries from an anthropological perspective (Deetz and Dethlefsen 1978), some of the earliest of which were beautifully photographed for a more recent work (Gilson and Gilson 2012). And a study of the surviving colonial gravestones of Georgia and South Carolina found that although their makers were mostly from New England, these itinerant carvers altered their styles to please their Southern clients (Combs 1986). Savannah's Colonial Park Cemetery (1750) is one of the oldest graveyards in Georgia.

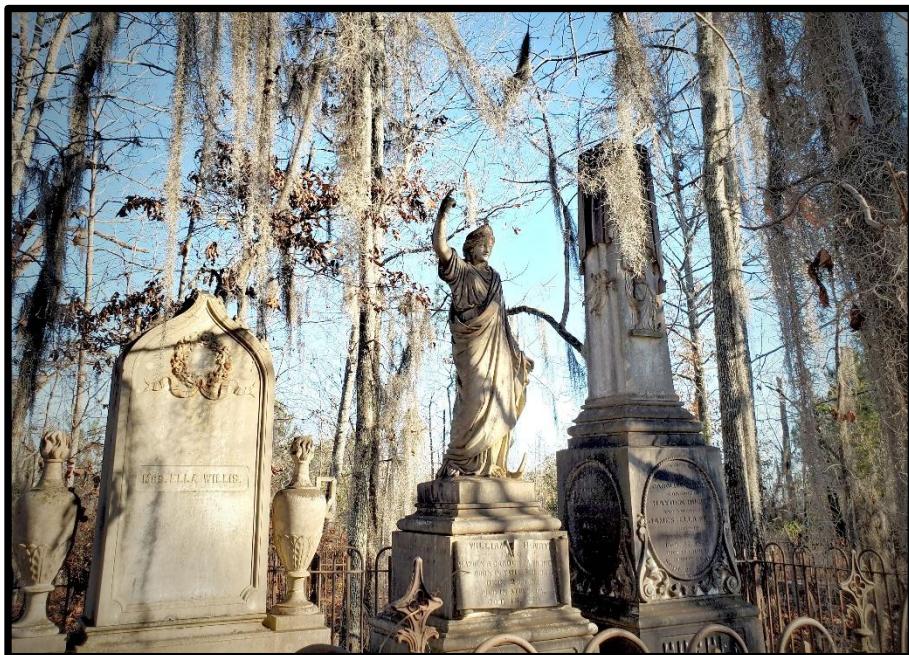


Figure 5. Hughes Family Burial Ground, Twiggs County, GA in 2021, courtesy ASQ

3.4 Family Burial Grounds

Although many changes have occurred during the evolution of American cemeteries over the last 200 years, until the mid-20th century the South's largely decentralized population tended to prefer "individual family plots on private land" (French 1974:40). One of the earliest studies described how communities in the Appalachian Mountains rallied around families who experienced the death of a loved one, bringing food, observing the wake (sitting up all night with the deceased and the family the night of the death), making the

coffin, preparing the body for burial, delivering the dead to the church, and even digging the grave (Wigginton 1973). Several recent books and articles have investigated other aspects of Southern folk cemeteries, including gravestone art, grave symbolism, and the origins of grave-shelters (Solomon 2004; Keister 2008; Jeane 1995:126). By far the most in-depth look at the region's folk cemeteries and burial customs is *Death and Dying in Central Appalachia* (Crissman 1994), which applies to most of the Southeastern United States. The South is literally covered with these small family graveyards, which proliferated during the 19th century, with hundreds of them in nearly every county across the region. While larger, more modern cemeteries are normal for burials today, some families continue to use these traditional spaces to lay their loved ones to rest in the 21st century.



Figure 6. Milledgeville's Memory Hill Cemetery in 2025, courtesy ASQ

3.5 City Cemeteries

The New Haven Burying Ground (1796) was the first chartered, private city cemetery established in America (Sloane 1991: 29-34). Paths and lots were established on a grid, a pattern that nearly all city cemeteries, whether private or municipal, followed over the next several decades. Perhaps the earliest and largest

example of this type of cemetery in Middle Georgia is Memory Hill Cemetery (ca. 1810), formerly known as Milledgeville City Cemetery. Other local examples include Culloden City Cemetery and Forsyth City Cemetery. These types of graveyards were generally laid out on flat terrain, and carriage paths were laid out at right angles in a grid pattern, as can be seen in **Figure 6**. It was during the early 1800s that “competition for material gain and efforts to enhance social standing in life were transferred, postmortem” - via the memorials, obsequies, and monuments for the dead - to the surviving family (Laderman 1996:40). Thus, were social distinctions further emphasized even in death, primarily in urban areas. Such stratifications would reach its apogee in the next period.



Figure 7. Macon's Rose Hill Cemetery in 2021, courtesy ASQ

3.6 Garden or “Rural” Cemeteries

The Rural Cemetery Movement began as a reaction against the “unattractive necessities” of prior places of interment, and even gave rise to the use of the word “cemetery” as opposed to “burial ground” or “graveyard” (French 1974:38-39). Beginning in 1804 with Paris’s Père Lachaise Cemetery (Campbell 2019) and its

American descendants Mt. Auburn in Boston (1831), Laurel Hill in Philadelphia (1836), Greenwood in New York City (1838), Rose Hill in Macon (1840), Hollywood in Richmond (1847), Cave Hill in Louisville (1848), Laurel Grove in Savannah (1850), Oconee Hill in Athens (1855), and many others throughout the east, this new type of last resting place was “designed not only to be a decent place of interment, but to serve as a cultural institution as well” (French 1974:38). These garden cemeteries were meant not only to avoid “the potential menace to public health of cemeteries in the center of densely populated cities,” but were also a means through which urban dwellers romanticized nature in a park-like setting (Bender 1974:203). This combination of nature, artistic gravestones, and imposing monuments altered the prevalent thinking of the graveyard as “a shunned place of horror into an enchanting place of succor and [moral] instruction” (French 1974:46-47). Marble monuments and gravestones truly became works of art during the mid-1800s, and their designers and carvers enjoyed such immense fame and fortune that many of them “signed” their names or the names of their companies to the marble. This is exemplified by the work of John B. Artope of Macon and his family and apprentices, whose extensive body of work has recently been documented widely across Middle Georgia (Quinn 2023). The greatest number of these can still be seen today in the most famous garden cemetery in Middle Georgia - Rose Hill Cemetery in Macon (**Figure 7**), which was one of the earliest of this type (Cothran and Danylchak 2018:74-76). A study of one of its most imposing monuments was recently written by the author (Hammock 2023a).

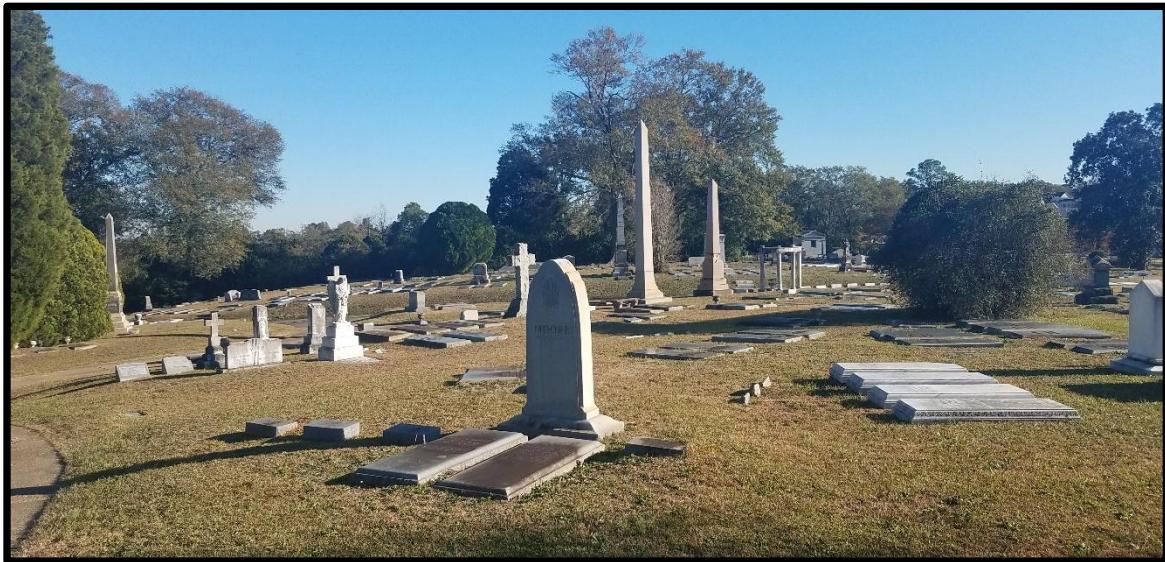


Figure 8. View of Riverside Cemetery in Macon, GA in 2020, courtesy SAH

3.7 Lawn-Park Cemeteries

Adolph Strauch is credited with first establishing this type at Spring Grove Cemetery in Cincinnati, Ohio during his tenure as superintendent starting in the late 1850s. The principles he adhered to included opening up the property “to allow more light, more space, and more lawn” (Sloane 1991:100). He rebelled against the previous garden movement and insisted those cemeteries had too many monuments, too many fences, too many streets, and too many plantings. His influence as a landscape architect was instrumental in the evolution of cemetery design in America. But what emerged as lawn-park cemeteries proliferated across the nation was actually an amalgamation of the ideas on garden cemeteries and Strauch’s designs, since “Americans still wanted to display their wealth and their material success in their cemeteries, and the open lawns enabled them to highlight their grand mausoleums and their statues” (Baugher and Veit 2014:145). The best local example is Macon’s Riverside Cemetery (1887), where the older sections exhibit precisely this combination.



Figure 9. Macon Memorial Park in 2019, courtesy SAH

3.8 Memorial Park Cemeteries

Since the mid-twentieth century, and primarily since World War II, plainer private cemeteries in park-like settings have become prevalent. The first of these was Glendale, California's Forest Lawn Cemetery (1913), which was the brainchild of Hubert Eaton. He "removed most traces of death from the landscape, improved the business operations of the cemetery....eliminated the family monument, restructured the grounds to expand the lawn" and "streamlined the process of burial by joining the functions of the funeral director, cemetery, and monument dealer" (Sloane 1991:159). These cemeteries largely allow only simple headstones, flat ledgers, and lawn-type markers (Chicora Foundation 1999), and have traditionally been family-owned and operated. However, conglomerates like Service Corporation, Dignity, StoneMor, and Carriage Services have been steadily buying up thousands of funeral homes and cemeteries across the nation over the last two decades. There is usually at least one of these modern cemeteries in every community of any size in America. Notable local examples include Macon Memorial Park (1935) and Magnolia Park Cemetery (1949) in Warner Robins.

4.0 METHODOLOGY

4.1 Historical Research

The author consulted historical maps, county records and histories, oral history, and internet resources while conducting the historical background aspect of this project. A title search for deeds pertaining to the property was performed in Perry in the Houston County Superior Court records room, and will, estate inventory and sales, marriage, and minute books were all consulted in the Houston County Probate Court records room. Investigations continued in Macon at Washington Memorial Library's Genealogical & Historical Room, where both primary and secondary sources proved helpful. Information was also gathered from Mr. John S. Ryals, who commissioned this project and is the direct descendant of the McCoys, Mathews, and Ryals. This included copies of documents, oral and written family history, and photographs relating to the individuals interred in the cemetery.

4.2 Archaeological Probing

A thorough pedestrian surface inspection of all exposed ground within and immediately surrounding the McCoy-Mathews-Ryals Cemetery was performed to locate evidence of east-west depressions, since these can be indicators of unmarked graves. Archaeological probing was one of two specific archaeological methodologies utilized for this project, and involved employing four-foot-long tile probe rods at six-inch intervals over the entire cemetery and adjacent areas. A penetrometer, or soil compaction probe, was also employed during remote-sensing to determine if soils had been disturbed or remained undisturbed inside and immediately outside the cemetery (Matternes et al. 2012:147). Probing is a method used by professional archaeologists on a widespread basis, and constitutes an accepted form of "ground-truthing." It has been used on several Middle Georgia cemetery projects over the last several decades (Garrow and Holland 1993; Hammock 2012; Matternes et al. 2012). All grave locations (both marked and unmarked) were individually

documented using a Garmin GPSMap 65S hand-held Global Positioning System (GPS) receiver joined via Bluetooth technology to its related smart phone app for greater accuracy.

4.3 Remote-Sensing

There are several types of remote-sensing utilized by archaeologists for delineating cemeteries, including Ground-Penetrating Radar (GPR), magnetometry, resistivity, and electromagnetic conductivity (Conyers 2004:3). GPR is more widely used than the others. Accordingly, Archaeologist Dan Elliott of the LAMAR Institute was brought in to conduct the remote-sensing part of this project using GPR. To quote his report: “GPR is a useful tool for archaeologists and urban planners. It is the only remote-sensing technology that provides a 3-Dimensional view of the underground environment. It has been shown to be well-suited for the historical archaeology of the southeastern coastal plain, and particularly for delineating historic cemeteries” (Elliott 2025:2). Elliott has conducted numerous GPR surveys across Georgia over the last two decades, and is a well-respected specialist in this field. Other successful cemetery delineations that have used GPR have been conducted locally in Houston and Bibb counties during the same time frame (Hammock et al. 2008; Hammock and Thieme 2012; Matternes et al. 2012:159-162). For Elliott’s full report on his findings at the McCoy-Mathews-Ryals Cemetery, including his explanation on his methodology, see the **Appendix** at the end of this report.

5.0 RESULTS

A summary of this project's findings follows below.

5.1 Results of Historical Research

Georgia is the only state to have used a unique system of eight land lotteries for disbursing much of its land between 1805 and 1833 (Graham 2010:1). Land grants were awarded only after: 1) a treaty with either the Creek or Cherokee Indians ceded the land to the state; 2) legislators passed a law outlining distribution, 3) state-approved land surveyors surveyed in the area with larger land districts and smaller land lots, and drew official plats for each new county; 4) eligible participants registered for the lottery; 5) the lottery was held and those who won lots (“Fortunate Drawers”) were chosen; and 6) the winners received their land grants from the state (Graham 2010:5). The 1821 (or 4th) Land Lottery concerned Houston and other counties just west of the Ocmulgee River, and is the one addressed below.

The McCoy-Mathews-Ryals Cemetery is situated in Houston County Land District 5 in the extreme southern part of Land Lot 142. This lot consists of the standard 202.5 acres. The Fortunate Drawer of Land Lot 142 was Jacob Woodcock of Bulloch County, Georgia, who apparently did not take out the grant for the lot he had won in 1821 until January 10, 1829 (State of Georgia n.d.). This was apparently not uncommon, as other winners also waited years to do so. Interestingly, Woodcock had given his attorney, Jesse Durrance of Tattnall County, legal permission to sell the lot for him on March 13, 1824. This agreement was not recorded in the Superior Court until March 1839. Neither was the actual sale via Durrance, which transferred the property to Ezekiel Clifton of Tattnall County on January 16, 1830 in exchange for \$150 (HCSC DB G:585). Perhaps Woodcock had never actually taken out a grant for the land, and when this was brought to his realization, he did so merely to sell it off. No further mention of Clifton was found in deed book indices.



Figure 10. An 1866 Copy of the 1821 Plat of original Houston County's 5th Land District showing Land Lot 142 (GA 1866)

Recorded 23 February 1839

Figure 11. Sale of LL 142 by Jacob Woodcock to Ezekiel Clifton in 1830 (HCSC DB G:585)

Despite not being able to locate documentation tying Clifton to later owners, Mr. John S. Ryals told the author that his ancestors, the McCoys, owned this property by around 1835 - a mere five years later.

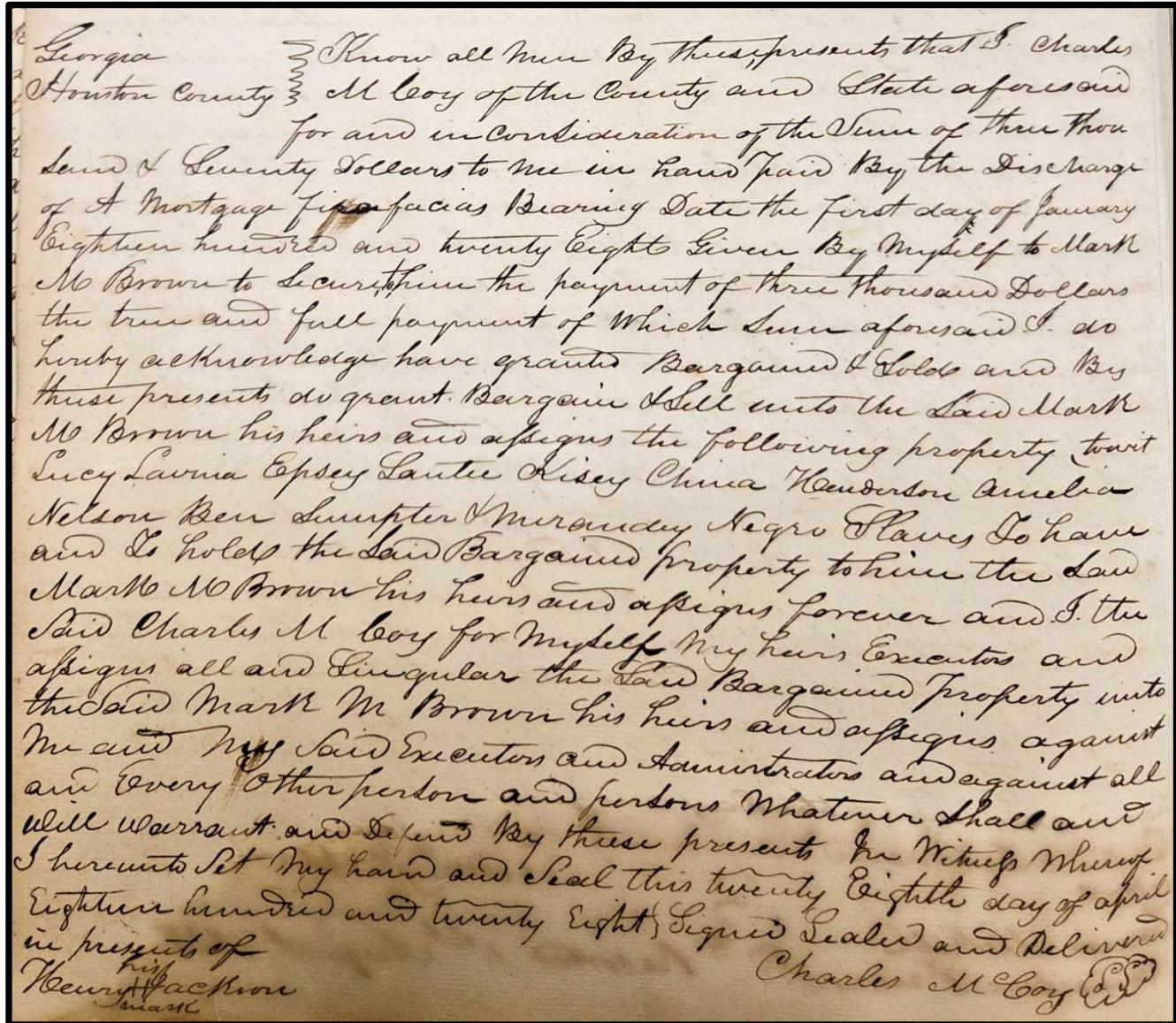


Figure 12. Charles McCoy settled a property lien against him with Mark Brown in 1830 (HCSC DB G:455)

While we know that the oldest marked burial in the cemetery is that of Charles M. McCoy, we also know that his father was also named Charles McCoy. There was a Charles McCoy who paid what appears to read \$5 1/4 in taxes just across the Ocmulgee River in Robert Belcher's Militia District in Twiggs County in 1818, but it is not certain if this was the same man (TCTD 1818). The earliest Houston County document found indicates that on April 28, 1828, Charles McCoy (the elder) settled a \$3,000 lien against himself by

transferring 12 slaves worth \$3,070 to Mark M. Brown. This document was recorded twice, with different spellings for the names, but as near as can be determined these people were Lucy, Lavinia, Epsey, Santee, Kisey, China, Henderson, Amelia, Nelson, Ben, Sumpter, and Mirandey (HCSC DB G:455, 462). A notice in the local paper of record provided a list of both names and ages, with still different spellings.

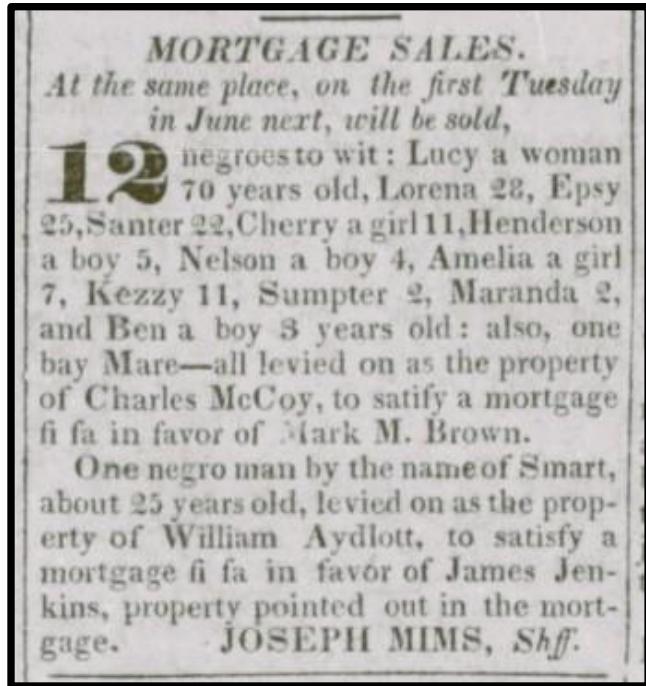


Figure 13. April 28, 1828 mortgage sale for property lien against Charles McCoy (GM 1828)

The elder McCoy was also listed in the 1830 Census of Houston County as being the head of a household having 2 white males, 4 white females, and 9 slaves (USCO 1830; Henry 1986a). He apparently also had some experience in appraising horses, as indicated by another newspaper item.

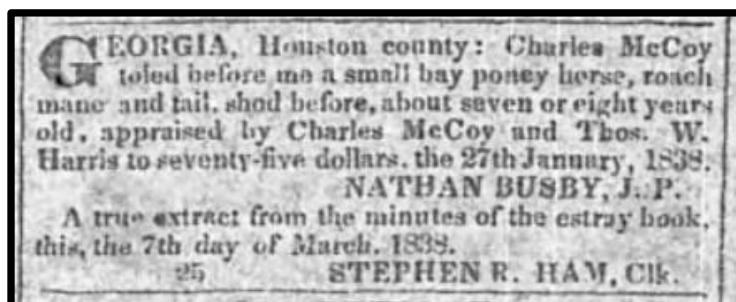


Figure 14. Charles McCoy, an appraiser of horses (MGT 1838)

Though the actual date of his death is in question, the elder Charles McCoy passed away sometime before March 6, 1839, as indicated in a newspaper notice that Charles M. McCoy had applied to administer his estate. This suggests that the elder McCoy had not left a will, and, indeed, this research could not locate one in the relevant Houston County Probate Court will book.

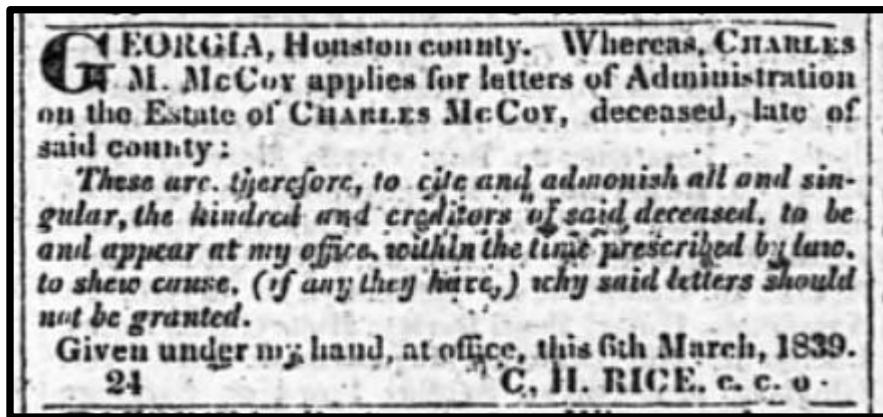


Figure 15. Charles McCoy deceased ((MGT 1839a)

Although we don't know when he acquired it or who he bought it from, we do know that the elder McCoy owned the land lot where the McCoy-Mathews-Ryals-Cemetery is located because his son advertised Land Lots 142 and 143 as part of his father's estate sale in late 1839.

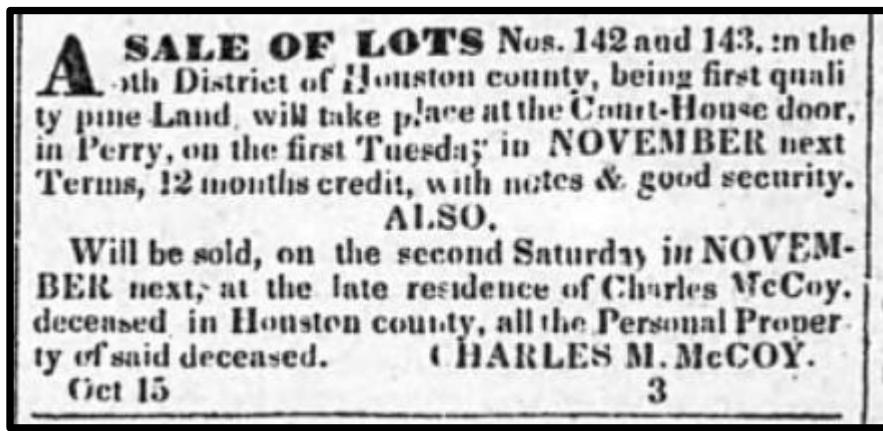


Figure 16. Advertisement for sale of Land Lots 142 and 143 (MGT 1839b)

It would appear, however, that the land was not sold at that time, since further legal developments occurred. One George A. Minshew applied to serve as administrator of the elder McCoy's estate in March 1843.

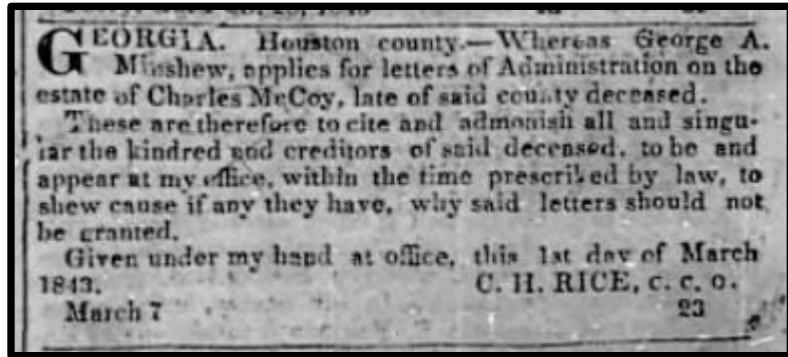


Figure 17. Announcement of George A. Minshew's application to administer Charles McCoy's estate (MGT 1843)

He must have been related to the Nathan Minshew who owned property in the northeast part of the same 5th Land District, where the author once performed a prior cemetery delineation on the Minshew-Thomas-Sullivan burial ground (Hammock 2012:6-7). That cemetery was also briefly mentioned by the author in the cemetery preservation plan written for Robins AFB (Hammock 2011). It is not known in what capacity the McCoys and Minshews knew each other, but we do know the outcome. Charles M. McCoy contested Minshew's application to be declared the administer of his father's estate, and was himself declared administrator before May 1843, being "the only son and nearest relation" (HCPC ICM B:102).

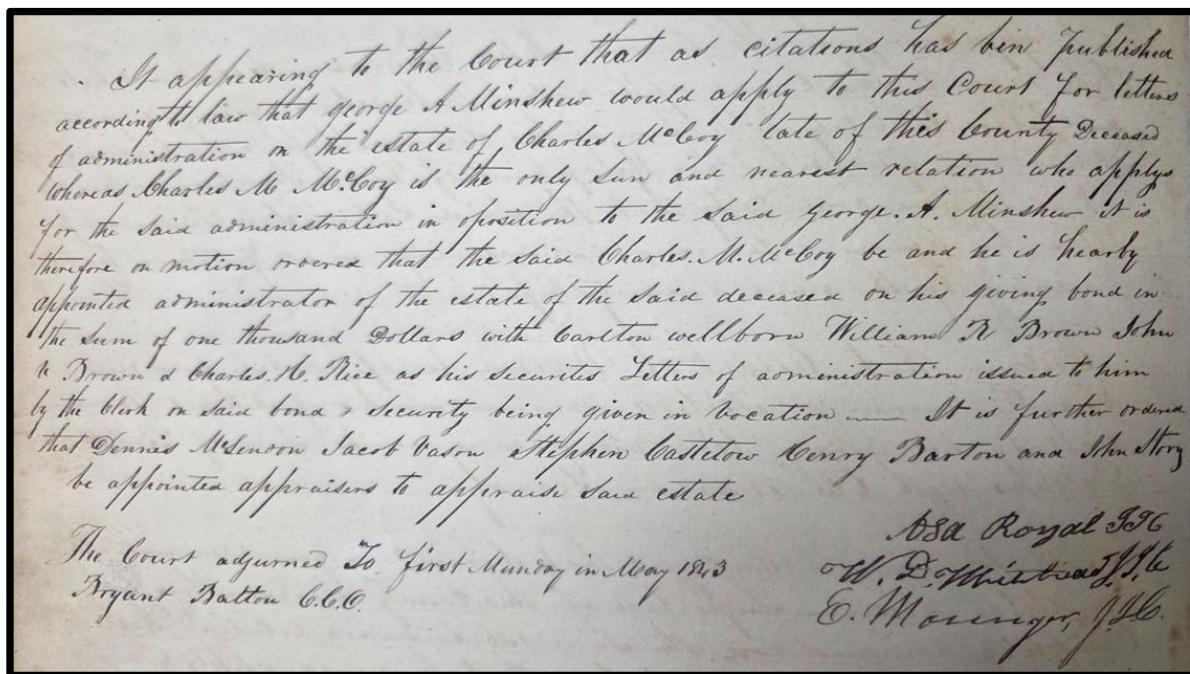


Figure 18. Charles M. McCoy declared administrator of his father Charles McCoy's estate in 1843 (HCPC ICM B:102)

He also announced his intention to sell all his father's lands, and was granted this permission by the court on November 6, 1844 (HCPC ICM B:232). As we will see later, it appears that he must have retained some or all this property himself. He also administered the estate of Miner McCoy in 1848 (GT 1848).

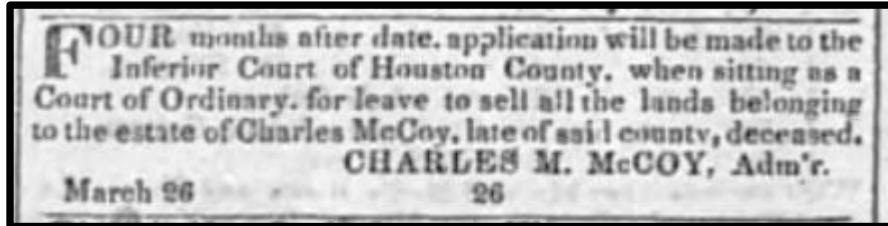


Figure 19. Charles M. McCoy announces he plans to sell his father Charles McCoy's land (GT 1844)

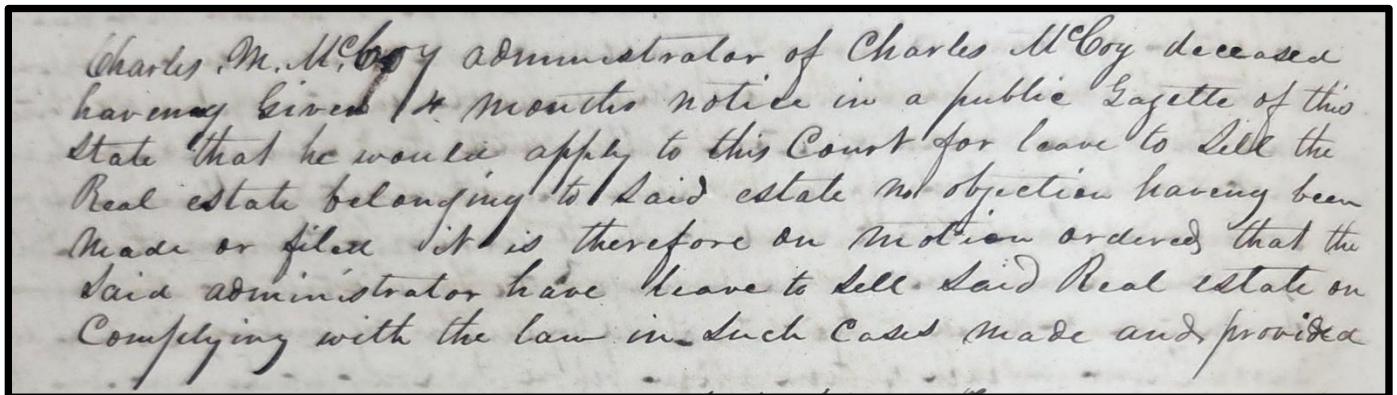


Figure 20. Charles M. McCoy granted permission to sell his father Charles McCoy's land (HCPC ICM B:232)

While dealing with these legal issues, the younger McCoy was also raising a family. According to information supplied by their descendant Mr. John S. Ryals, Charles McKelvy McCoy (November 5, 1804-August 5, 1882) and Julia Statham (March 5, 1813-October 5, 1885) were married on July 4, 1830. Their children included:

- 1) Martha A McCoy (May 12, 1831-December 11, 1845)
- 2) William McCoy (April 26, 1833-February 24, 1839)
- 3) Meredith McCoy (September 3, 1834-August 1900)
- 4) Erasmus William McCoy (November 5, 1837-January 11, 1844)
- 5) Charles Erastus McCoy (April 23, 1840-January 9, 1844)
- 6) Azariah McCoy (October 23, 1843-August 5, 1864)
- 7) Harriett Williams McCoy (September 11, 1845-November 3, 1914)

- 8) Frances Mary Anne McCoy (September 25, 1847-January 30, 1911)
- 9) McKelvy M McCoy (April 25, 1850-September 7, 1852)
- 10) Lane McCoy (?-October 8, 1853)

Indeed, Charles was listed as the head of a family with 4 white males, 2 white females, and 4 slaves in the 1840 Census of Houston County (USCO 1840; Henry 1986b). By the time of the 1850 Census, the first one in which other names were listed, Charles was listed as a male farmer of 45 years who owned 1,000 acres and who was born in South Carolina. The rest of the family had all been born in Georgia, including his wife Julia Ann, a woman of 35, and their children Meredith (male, 14), Azariah (male, 6), Harriett (female, 5), Francis M. (female, 3), and McKelvy (male, 4 months) (USCO 1850; Henry 1986c:10). He also owned six slaves by 1850 (Cox 2001:203).

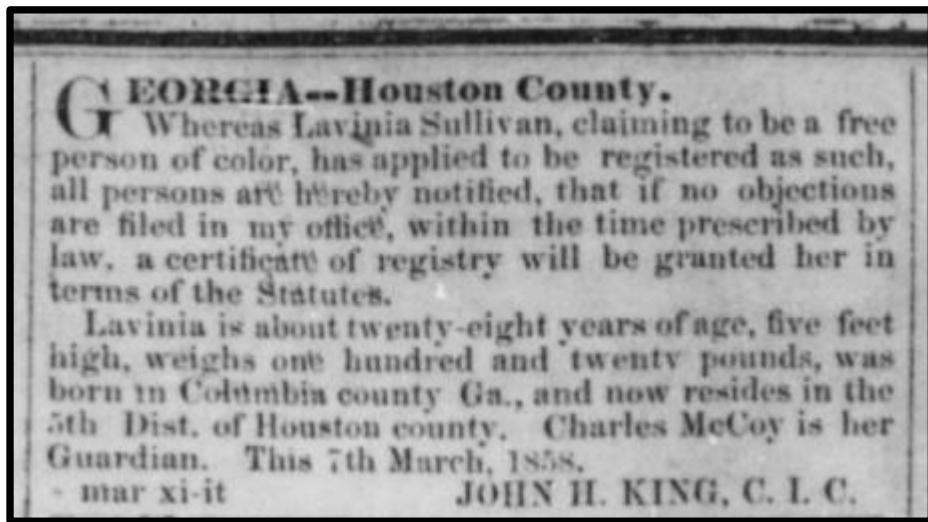


Figure 21. Announcement that Lavinia Sullivan will be registered as a free person of color (SP 1858)

The next mention found of Charles M. McCoy was when, as her legal guardian, he supported the registration of Lavinia Sullivan as a free person of color (SP 1858). In fact, in the 1860 Census of Houston County, Lavinia was described as a mulatto [part white/part black] (female, 30), as were her presumed children Houston (male, 15) and Francis (female, 13). McCoy was shown to still be her guardian, and her family appears to have lived on or near the McCoy farm. His own household consisted only of himself (male, 56, farmer) and his wife Julia (female, 45), and he owned real estate worth \$3,000 and personal property worth

\$10,396 (USCO 1860). We do know that in 1864 he owned 400 acres and 7 slaves, so apparently some of his 1860 personal worth included slaves (CGGS 1998:123).



Figure 22. Gravestones of Charles M. & Julia McCoy in the McCoy-Mathews-Ryals Burial Ground, courtesy SAH

Charles M. McCoy died in 1882 and his wife Julia died in 1885, and were laid to rest in the family burial ground in Houston County. There are eight other named burials in the cemetery, including Josiah Bass, his wife Harriet (daughter of Charles and Julia McCoy), and their son Charles Edward Bass.

Josiah and Harriet Bass were married on October 24, 1872. They had been born on the same day. Josiah was a Confederate veteran, having served in the 5th Georgia Reserves. This was a state unit based in Macon that served on guard duty at Camp Oglethorpe in Macon and at Camp Sumter in Andersonville, Georgia guarding Union prisoners of war, and helped defend Savannah in December 1864 (Derry 1899:142; Davis 2010:31). His unit also guarded the approaches to Macon, and probably surrendered to Union General Wilson's cavalry when it captured Macon on April 20, 1865 (Iobst 1999:390).

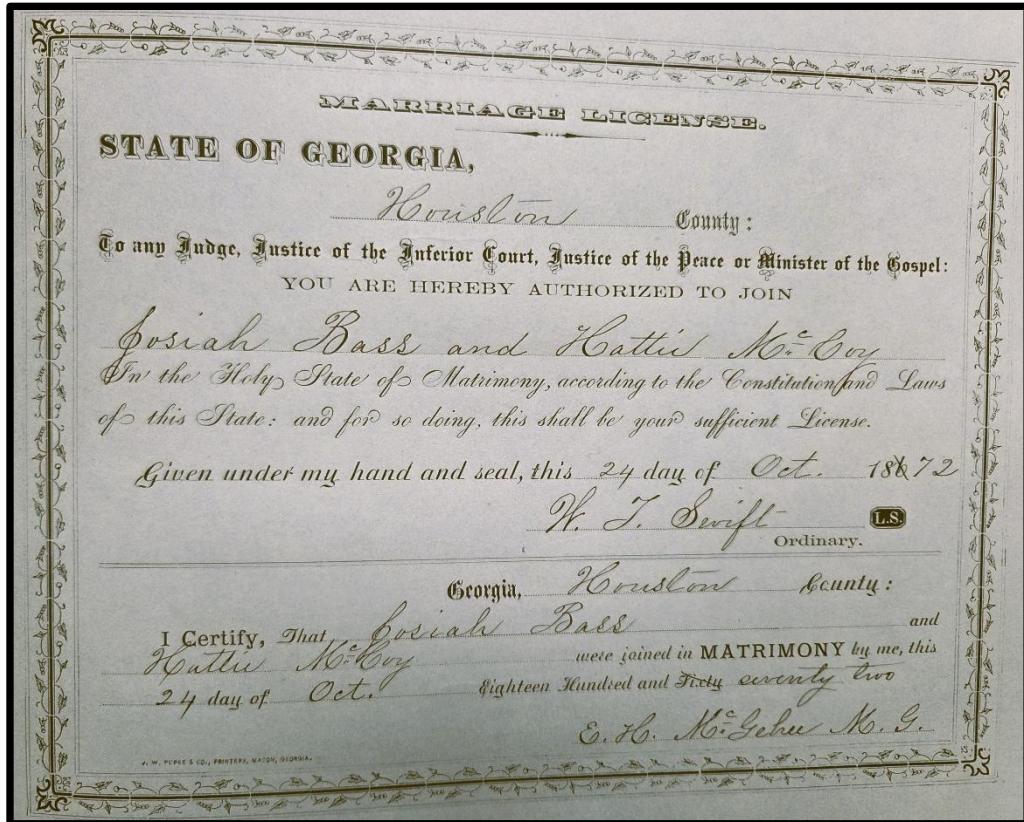


Figure 23. Marriage License of Josiah Bass and Hattie McCoy (HCPC M C:222)

Josiah and Hattie both died in 1914, having been preceded by their son Charles, who died in 1894.



Figure 24. Monument of Josiah, Charles, and Hattie Bass, courtesy SAH

Five more named burials are in the cemetery, including Charles W. Mathews (December 4, 1840-November 11, 1936) and his wife Frances M. (September 25, 1847-January 30, 1911), who was another daughter of Charles M. and Julia McCoy. Charles was a native of Bibb County, and another Confederate veteran, having served in Company C of the 8th Georgia Infantry, C.S.A. This unit served in numerous battles with Robert E. Lee's Army of Northern Virginia from First Manassas to Lee's surrender at Appomattox (Derry 1899:31-32; Zettler 1912; Wilkinson and Woodworth 2002).

Despite being seriously wounded Charles Mathews survived the war, and Charles and Francis were married on February 23, 1875. Their children included:

- 1) Mamie Lizzie Mathews (December 15, 1877-June 4, 1918)
- 2) Ollie Julia Mathews (December 9, 1879-12 July 12, 1983)
- 3) Two unnamed infant girls and one boy (all buried in the cemetery)
- 4) Annie Clyde Mathews (July 15, 1885-January 26, 1976)



Figure 25. Charles and Frances Mathews ca. 1900 (Nelson 1998:90)



Figure 26. Charles and Frances Mathews ca. 1910 (Nelson 1998:155)

Frances McCoy Mathews died on January 30, 1911, but Charles Wesley Mathews survived until 1936. Both were laid to rest in the McCoy-Mathews-Ryals burial ground. Charles was the last surviving Confederate veteran of Houston County, and became a fixture at veteran parades and events. His granddaughter documented what he told her about the war, and her words are quoted in full below.



Figure 27. Gravestones of Frances and Charles Mathews, courtesy SAH

My grandfather, Charles W. Mathews, was born in a community known as Skipperton in Bibb County, Georgia, on December 4, 1840. He enlisted in the Confederate States' Army on July 15, 1861, in Bibb County, Georgia, as a Private in Company "C" of the 8th Regiment, Georgia Volunteer Infantry, Army of Northern Virginia. He was paroled at Appomattox Courthouse, Virginia, on April 9, 1865, after the surrender. Charles served the entire 4 years in the areas of Virginia, Maryland, and Pennsylvania. He received three minor and two major wounds with complications but he survived the war and returned home. Charles had a 15-year-old brother, James (Jack) who wanted to go along with him and who falsified his age to volunteer. James was killed at the Battle of the Wilderness on May 4, 1864. Charles was also seriously wounded at the same time. The battle was supposedly over, but an enemy shell was thrown into a group of Rebels at the river where they were caring for the wounded and refreshing themselves. Charles and James were sitting on the ground side by side. James was hit by the enemy shell and he died in Charles' arms. Charles, also wounded, was carried to a hospital; therefore, he had no information about James' burial – only that there were so many casualties, the bodies were buried in mass graves. My grandfather related to his children and grandchildren how often he'd lie down on the cold ground and put his blanket over him, only to awaken the next morning covered with snow. This was disturbing to us as children and we would question him "Was he not terribly cold?" His reply was "not so cold as it might seem because the snow packed down, keeping out a draft and body heat was able to withstand the bitter cold." He also related on their long marches how they would stop and build a campfire to cook their food. Many times, they got orders to move; and they would extinguish the campfire and take their partially-cooked food along to eat on their journey. By April of 1865, it became apparent that General Lee's Army of Northern Virginia could not proceed any further without great bloodshed and loss of life. The supply lines had not been able to reach the troops for several days. During this time, their rations consisted of sparse amounts of parched corn. The few horses that belonged to officers survived on grass or whatever else they could find on the ground. For a long time, clothing was at a premium; and, many times, usable garments were removed from the dying and dead on the battlefield. After several days of studying the situation, General Lee decided to surrender to General Grant at Appomattox Courthouse on April 9, 1865. After the signing of the surrender, General Lee mounted his gray horse, "Traveler," went to his troops and had them gather around him for his forthcoming announcement of the surrender. What a sight it was! The soldiers, many of them having been wounded in previous battles, were dressed in tattered uniforms – weary, undernourished and yet courageous and proud but not in despair. My grandfather, Charles W. Mathews, was fortunate to be so near General Lee that he could hear every word of Lee's farewell message to his comrades. He praised them for their gallantry and for a job well-done despite the fact that it was not victorious for them. In his remarks, he said, "Boys, we were not whipped but overpowered because our enemy had more men, and supplies were easily accessible to them due to their location." Further, he told them that they were paroled from service and could return home or do whatever they wished but that the army had nothing to offer them at this time. He knew it meant a long journey for many of these men, and he advised them that any time they could find a train in operation, even though it might be for a short distance, just to hop aboard for a free ride. It was a long homeward journey to Middle Georgia, sleeping out in the open or in a vacant house and occasionally staying overnight with families who could accommodate soldiers. Food was very scarce but people were willing to share what little they had. One afternoon at a farm in Virginia, my grandfather and a group came upon some geese. The men immediately had the idea that some of these would provide a feast that night. Several of the geese were enticed to follow as the men dropped on the ground some corn which they had picked along the way. A short distance down the road, they came upon a vacant two-story house and, with darkness approaching, they saw this as a haven. In an upstairs room, the geese were picked and cleaned and prepared for roasting. The feathers were thrown out a window. After a good meal, the men were ready for sleep. Upon arising the next morning, the men arose and looked outside. What a sight they did behold! A yard full of white feathers, making it look as if a feather mattress had been emptied! My grandfather finally got home to his mother and the family who had waited so patiently during the war years. The homecoming was saddened because James would not be returning. My grandfather was embarrassed to face his family because he was so ragged and dirty. His mother began the task of weaving cloth to make her son some clothes. He began planning to earn a livelihood to help his widowed mother and the family rebuild their lives. As a true Southerner, he engaged in farming. Nine years later, he moved to Houston County near what is now Centerville. Here he met and married the young maiden next door, Frances McCoy. They established a Christian and happy home. Six children were born to this union, but three



Figure 28. Charles W. Mathews, Confederate Veteran, ca. 1930, courtesy John S. Ryals

died in infancy. He was a successful farmer, landowner, and respected citizen, contributing much to the community in his quiet, affable, and gentle manner. From early childhood, he was a devoted member of the Methodist Church, serving for 50 years on the Board of Stewards. My grandfather was interested in knowing what his grandchildren were learning from their history textbooks about his period of history. He read our books with great interest and, at this time, he would tell some of his own experiences. He enjoyed a number of reunions with his Confederate comrades. In later years when the wearers of the Gray and Blue had dwindled to a small number, a joint reunion was held at Richmond, Virginia. This one he wanted to attend but his health would not permit. The last reunion he attended was in 1930 at Savannah, Georgia, where he led the Grand March. He always kept in step while walking, never forgetting his military training. He continued to enjoy a band; and, when "Dixie" was played or sung, one could easily see it had a special meaning for him and brought back many memories. He never failed to observe Southern Memorial Day on April 26, and he taught others, including his children and grandchildren, to respect the day. He attended Memorial Day exercises, which were held in Perry, Georgia. He always wore his uniform and he would stay dressed until we grandchildren came home from school to see him. How proud we were of him and how handsome he was in that gray uniform! Today, I am proud of my Southern heritage. On November 11, 1936, while the nation was paying tribute to their war veterans, Charles W. Mathews passed away at the age of 96. As he had requested, he was buried in the gray uniform of which he was justly proud. Thus, Houston County's last surviving Confederate veteran joined his comrades. The thought he passed on to his successors is that he and his fellow soldiers fought hard and honorable and endured much suffering for what they believed to be right (Ryals n.d.)

The three remaining named burials in the cemetery include: the daughter of Charles and Frances Mathews - Annie Clyde Mathews Ryals (July 15, 1885-January 26, 1976), her husband John Thomas Ryals (August 13, 1882-December 31, 1949), and their daughter Katherine L. Ryals (August 24, 1917-September 23, 1996). John and Annie Ryals were married on November 17, 1909.



Figure 29. Grave markers of Katherine, Annie, and John Ryals, courtesy SAH

There are also four marked infant burials without names. The Mathews infants were the children of Charles and Frances Mathews, while the Stafford infant (October 9-October 30, 1896) was their grandchild by their daughter Mamie and her husband W. B. Stafford (Douglas:2019:19).



Figure 30. Gravestones of the 3 Mathews infants and the Stafford infant, courtesy SAH

Finally, there are reports of other unmarked children's graves within the cemetery. Mr. John S. Ryals reported that he thought he remembered wooden markers for two other children, but he was not exactly certain where they might have been – perhaps west of and near to the grave of Julia McCoy.

5.2 Results of Archaeological Probing

This cemetery was previously documented by a local historian as having 14 marked graves (Howell 1982:75). It was later visited, but not recorded as a site, during an archaeological project in 1997, when Russell Parkway had been proposed for extension west of Houston Lake Road (Elliott 1997:9). At the time of the current delineation, 14 marked graves and 14 more unmarked graves in the traditional east-west Christian burial tradition were noted. No unmarked graves were documented outside the cemetery. No infant/child graves were identified near the grave of Julia McCoy.

Archaeological probing was conducted both inside and outside the cemetery fence. The soils outside the fence, on all four sides surrounding the cemetery, were heavily compacted, probably from decades of heavy equipment being used on the adjacent farm fields. No obvious grave shafts were encountered using the tile probe rods or the penetrometer. Things were more complicated inside the cemetery fence, which is the variety known as the scalloped picket cast iron fence (Chicora Foundation n.d.).



Figure 31. Scalloped picket cast iron fence around the McCoy-Mathews-Ryals Burial Ground, courtesy SAH

There are two gates that allow entrance into the cemetery. Both were made by the same company, though at different times. The Champion Fence Company was established in 1876 in Kenton, Ohio, and incorporated as the Champion Iron Fence Company in 1878. It became the Champion Iron Company in

1899. The main entrance gate's maker's shield was in use by Champion Iron Fence Company before 1899, while the side entrance gate's maker shield was in use by Champion Iron Company after 1899 (Glassian n.d.)



Figure 32. Champion Iron Co. shield on side gate (post-1899) vs. Champion Iron Fence Co. shield on main gate (pre-1899), courtesy SAH



Figure 33. Archaeological Probing inside the McCoy-Mathews-Ryals Burial Ground, courtesy SAH

When probing was conducted inside the cemetery, 14 potential graves were identified. Two of these were larger in size and are here identified as potential unmarked adult graves. Twelve others of a much smaller size were identified as potential unmarked infant/child graves. These potential graves can be seen in red on the project map below (**Figure 34**), while marked graves are contrasted in gray. The blue squares indicate places where the GPR suggests a soil disturbance that could be a potential grave. The standard Latitude and Longitude coordinates of each feature shown on the map is included in **Figure 35**.

The map also shows that the cemetery is located nearly but not quite right on the line between Land Lots 142 and 143. In fact, the corner between Land Lots 142/143 and Land Lots 119/118 is 152 meters, 43 centimeters west of the cemetery's southwest corner, or about 500 feet. This is interesting and provides more proof that some landowners in centuries past did not want their family burial grounds in the middle of farm fields, where they would interfere with plowing and working. In fact, the Minshew-Thomas-Sullivan Cemetery and the Parker Cemetery in Houston County, and the Avondale Cemetery in southern Bibb County were all laid out on the boundaries between four land lots, indicating that this was not uncommon (Hammock 2011:26; Hammock 2012:16; Matternes et al. 2012:15).

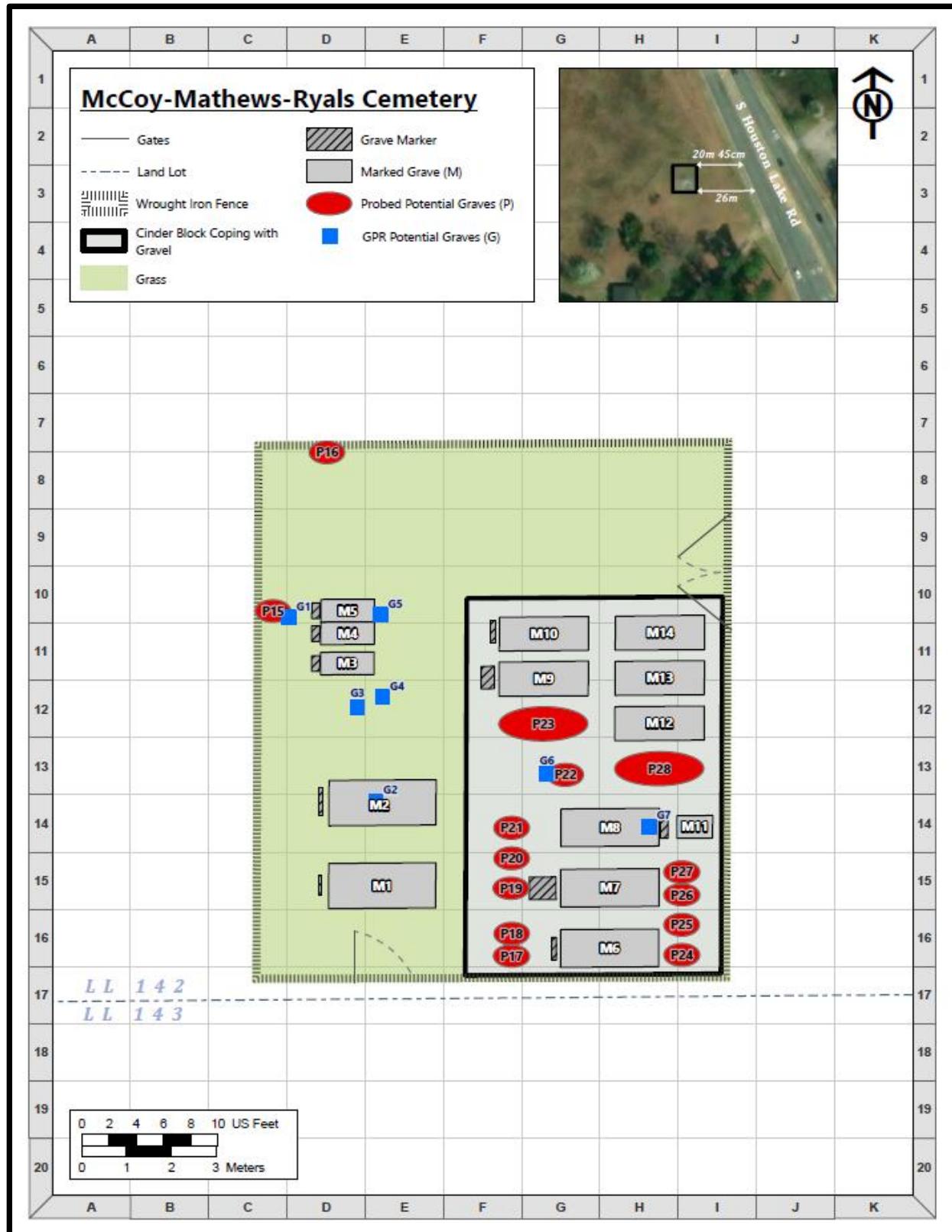


Figure 34. Project Map of the McCoy-Mathews-Ryals Cemetery

Grave ID	Name/Epitaph	Latitude	Longitude
M1	Tablet: JULIA McCOY/1813-1885	32.59413	-83.66943
M2	Tablet: C.M. McCOY/1804-1802	32.59415	-83.66943
M3	Tablet: MATHEWS INFANT	32.59419	-83.66944
M4	Tablet: MATHEWS INFANT	32.59419	-83.66944
M5	Tablet: MATHEWS INFANT	32.5942	-83.66944
M6	Family Monument (south): JOSIAH BASS/SEPT. 11, 1845,/FEB. 3 1914. Confederate tablet: CORP JOSIAH BASS/CO C/ 5 GA RES/C.S.A. Ledger: AT REST	32.59412	-83.66938
M7	Family Monument (east): C.E. BASS/Son of/JOS. & HATTIE/BASS/BORN/DEC. 28, 1873/DIED/AUG. 11, 1894	32.59413	-83.66938
M8	Family Monument (north): HARRIET TW./Wife of/JOSIAH BASS/SEPT. 11 1845,/NOV. 3, 1914. Ledger: IN HEAVEN	32.59415	-83.66938
M9	Tombstone: FRANCES MARY/WIFE OF/C.W. MATHEWS/DIED JAN. 30, 1911/AGE 63 YRS/A faithful wife and a lov-/ing mother Ledger: TWAS HARD TO GIVE THEE UP BUT THY WILL, O GOD BE DONE	32.59418	-83.6694
M10	Confederate tablet: CORP./CHARLES W. MATHEWS/CO C/8 GA INF/C.S.A. Ledger: CHARLES W. MATHEWS/DEC. 4, 1840/NOV. 11, 1936/CORP. CO. C/8 GA. INF./C.S.A.	32.59419	-83.6694
M11	Tablet: STAFFORD/INFANT/OCT. 9, 1896/OCT. 30, 1896	32.59415	-83.66936
M12	Ledger: KATHERINE L. RYALS/AUG. 24, 1917/SEPT. 23, 1996	32.59417	-83.66937
M13	Ledger: ANNIE CLYDE RYALS/JULY 15, 1885/JAN. 26, 1976	32.59418	-83.66937
M14	Ledger: JOHN THOMAS RYALS/AUG. 13, 1882/DEC. 31, 1949	32.59419	-83.66937
P15	N/A	32.5942	-83.66946
P16	N/A	32.59424	-83.66945
P17	N/A	32.59412	-83.6694
P18	N/A	32.59412	-83.6694
P19	N/A	32.59413	-83.6694
P20	N/A	32.59414	-83.6694
P21	N/A	32.59415	-83.6694
P22	N/A	32.59416	-83.66939
P23	N/A	32.59417	-83.6694
P24	N/A	32.59412	-83.66936
P25	N/A	32.59412	-83.66936
P26	N/A	32.59413	-83.66936
P27	N/A	32.59414	-83.66936
P28	N/A	32.59416	-83.66937
G1	N/A	32.5942	-83.66946
G2	N/A	32.59415	-83.66944
G3	N/A	32.59418	-83.66944
G4	N/A	32.59418	-83.66943
G5	N/A	32.5942	-83.66943
G6	N/A	32.59416	-83.6694
G7	N/A	32.59415	-83.66937

Figure 35. Grave Identification Table

5.3 Results of Remote-Sensing

As previously stated, Archaeologist Dan Elliott of the LAMAR Institute was brought in to conduct the remote sensing part of the project. His use of Ground-Penetrating Radar helped to verify that no graves are likely to be located outside of the cemetery fence. This correlated with the negative findings of the archaeological probing. There were, however, mixed results inside the cemetery. While his entire report can be found in the appendix at the end of this report, a short summary is provided here.

“The results from the GPR survey indicate that the likelihood of human burials located immediately outside of the cast iron cemetery enclosure is extremely low. The GPR data were examined using a range of specialized filters and a wide variety of plan views, overlay views, 3-D views, and individual radargrams to reach this conclusion. The GPR survey within the cemetery fence is more problematic. In addition to the known graves (based on tombstone inscriptions), there may be additional interments that are not marked on the ground surface. The more recent graves in the cemetery produced extremely strong radar reflections....These reflect likely result from large amounts of metal in the coffin and/or burial vault. The GPR survey findings indicate that some grave markers are offset from subsurface radar anomalies that likely associated with those interments” (Elliott 2025:19).



Figure 36. Ground-Penetrating Radar in use outside the McCoy-Mathews-Ryals Burial Ground, courtesy SAH



Figure 37. GPR and Penetrometer in use outside the McCoy-Mathews-Ryals Burial Ground, courtesy ASQ



Figure 38. GPR in use inside the McCoy-Mathews-Ryals Burial Ground, courtesy SAH

6.0 RECOMMENDATIONS

Before 1993, Georgia law allowed undertakers and funeral home operators to remove cemeteries to new locations whenever the need and desire arose. But a new state law called Abandoned Cemeteries and Burial Grounds (OCGA 2022) was passed making cemetery removal more difficult, and called for archaeologists to be placed in charge of any projects involving the removal of historic cemeteries (Elliott et al. 2014:2). Specifically, the law states in GA Code § 36-72-15 that: “Any disinterment and disposition of human remains or burial objects permitted under this chapter shall be supervised, monitored, or carried out by the applicant’s archeologist and shall be done at the expense of the person or entity to whom the permit is issued” (OCGA 2022).

The result has been that fewer Georgia cemeteries have been removed to other locations, and, of those that have, more mortuary and funerary data has been gathered than ever before, though little in-depth analysis has been performed (Joseph et al. 2004:186). Within the past 25 years, cemetery delineations involving a combination of probing and some form of remote sensing, such as ground penetrating radar (GPR), magnetometry, or soil resistivity, have become quite common tools in Georgia. In 2000, it was estimated that there were at least 15,000 graveyards and cemeteries in Georgia, and that of these, 100 had been delineated by archaeologists, while 25 had been excavated by archaeologists during relocation projects (Elliott et al. 2014:14). A few of the important publications that have come out of regional cemetery studies in the past 40 years include articles on nineteenth and twentieth century coffin hardware (Garrow 1987), an analysis of the diets of tenant farmers (Braley and Moffat 1996), home-made brick grave markers (D’Angelo 2008), the documentation of a large black cemetery in Washington, Georgia (Richey et al. 2008), and mid-nineteenth century cast iron coffins (Gardner 2007; Hammock 2023b). Archaeologists have also benefited greatly from the guidance of the National Park Service regarding locating and identifying historic cemeteries (Bevan and DeVore 2006).

Based on the findings of the archaeological probing and the GPR as explained in this report, and based on the law cited above, the archaeological recommendations for the McCoy-Mathews-Ryals Burial Ground are as follows:

- Preservation-in-Place is the first and strongest recommendation. The King Cemetery on the Wal-Mart property on Booth Road in Warner Robins is not far away, and was preserved-in-place at the back of the parking lot and surrounded by a protective chain link fence about 20 years ago. This has worked well and met the expectations of the local historic preservation community.
- If Preservation-in-Place is impossible, and the decision to remove this historic cemetery to make way for development is made, then per GA Code § 36-72-15, as quoted above, the hiring of a competent and experienced archaeological firm is recommended for the excavation and removal of this cemetery. The entire area inside the cemetery, and at least 10 feet on all sides of the cemetery outside the fence, should be excavated with extreme care as there may be unmarked graves in these areas that the probing and GPR did not locate. A great amount of important knowledge can be garnered from the scientific excavation of cemeteries by professional archaeologists, including information on the diets, health, burial traditions, and even the lives of the people interred.

7.0 ACKNOWLEDGEMENTS

A sincere thank you is extended to John S. Ryals for the opportunity to perform this cemetery delineation. MGPA Research Associate Ashley Quinn provided much appreciated assistance in the field, took the photographs labeled ASQ, and assisted with graphic design. GIS specialist Danielle Floyd created the excellent project map that is the cornerstone of this report. Archaeologists Dan Elliott and Rita Folse Elliott collaborated on the GPR aspect of the project, and were excellent company in the field. Librarian James

O’Neal of Macon’s Washington Library assisted in locating information on the 4th land lottery. Genealogist Yvonne Mashburn Schmidt provided the reference to Charles McCoy of Twiggs County. Surveyor Jim Preston provided electronic copies of some of the older maps used herein. Historian Alan Marsh and Archaeologist James Gazaway reviewed this report. A grateful and hearty thanks is due one and all!

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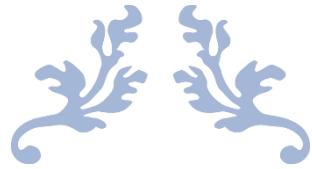
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9.0 APPENDIX



GPR SURVEY OF THE MCCOY-MATHEWS-RYALS CEMETERY, HOUSTON COUNTY, GEORGIA



Authored by Daniel T. Elliott

I. Introduction

This appendix details the Ground Penetrating Radar (GPR) survey and historical research by the LAMAR Institute, Inc. of the McCoy-Mathews-Ryals cemetery site located on property in Houston County, Georgia (Figure 1). This research was conducted at the request of archaeologist Stephen Hammock. The survey was performed under contract with the LAMAR Institute. This GPR report outlines the goals, research plan, methods, results, and interpretations for this undertaking.

Chapter 2 describes the research methods. Chapter 3 presents the GPR survey results. Chapter 4 contains an interpretation of the findings from the survey and integrates these findings with other archaeological data sets. The report concludes with a bibliography of references cited. This GPR appendix was authored by Daniel T. Elliott.



Figure 1. McCoy-Mathews-Ryals Cemetery GPR Project Location, Houston County, Georgia.

II. Research Methods

The research goal for this project was to conduct a Ground Penetrating Radar survey of a small tract in Houston County, Georgia, locally known as the McCoy-Mathews-Ryals cemetery to identify anomalies that may represent human burials. This cemetery contains the marked graves of 14 deceased people. These were mapped by Stephen Hammock and given numbers 1-14.

GPR is a useful tool for archaeologists and urban planners. It is the only remote-sensing technology that provides a 3-Dimensional view of the underground environment (Conyers and Goodman 2007; Conyers 2004, 2012; Goodman and Piro 2013). It has been shown to be well suited for the historical archaeology of the southeastern coastal plain, and particularly for delineating historic cemeteries (Elliott 2006, 2009, 2010, 2013, 2014; Elliott and Elliott 2016, 2022a-b). The GPR technology worked well in the sandy soils of Houston County.

GPR does not generate a photograph of the objects underground. Rather, when processed with the proper software it provides interpolated maps of the hundreds of thousands of individual radar reflections generated by the GPR equipment. It should be noted that large, dense metal objects inhibit GPR radar signal propagation, and this can block our remote-sensing views to the underground. Concrete-reinforced rebar and steel mesh also affects the GPR imagery, although it typically does not completely prohibit its use and effectiveness. GPR does not provide a complete identification of what it is imaging, so ground-truthing excavations are required to fully understand any curious radar anomaly.

Field Survey

The LAMAR Institute conducted the GPR survey on October 16, 2025. Mr. Daniel T. Elliott served as the GPR Specialist for this GPR project. He was assisted by GPR Technician, Ms. Rita Folse Elliott. Figure 2 shows the GPR survey in progress.

The GPR equipment included a MÅLA X3M RAMAC radar unit and shielded antenna (500 MHz), connected to a RAMAC XV monitor and battery, all mounted on a 3-wheeled cart. This hardware suite allowed accurate radar mapping to a depth of about three meters. Data were collected unidirectionally using *GroundVision* software (Version 2.1). Field forms were maintained for each GPR survey cell, which contained comments and distances for each radargram (sample transects). Radargrams were spaced 50 cm apart and all sections within the project area were sampled where feasible. Exceptions include areas blocked by large grave markers, cement borders, and the cast iron cemetery fence.

The machine settings for the GPR equipment were as follows:

- Transect interval: 50 centimeters
- Stacks: 4
- Antenna Separation: 0.18 m
- Number of Samples per Trace: 536
- Cart Settings: 500-800 Cart
- Antenna Type: 500 MHz, Shielded
- Time Window: 90.4 nanoseconds (ns)
- Estimated Soil Velocity: 80 m/nanoseconds
- Wheel Trigger: 0.02 meters
- Sampling Frequency: 5596.59 MHz

The LAMAR Institute survey team explored one rectangular GPR Block, designated GPR Block A, which measured 33.5 meters north-south by 20 meters east-west. The oN, oE point (or southwest corner) on the GPR plan maps shown in this report is located at: UTM Zone 17S E 249433.85 m, N 3609213.07 m (Google Earth 2025).

Grid North for the GPR block was oriented to True North. The southern baseline for the survey extended True East a distance of 20 meters from Datum A. The GPR survey extended from oE to 20E along this line.

A total of 65 radargrams was collected, which covered an irregular polygon that was approximately 33.5 m grid north-south and 20 m grid east-west. Radargram locations are shown in the schematic diagram in Figure 3. The total length of these radargrams in Block A measured 1340.1 m. The GPR survey covered an area of approximately 670 m² (approximately 0.17 acre).

Post-Processing and Reporting

Once the field survey was completed the GPR data were transported to the LAMAR Institute's Middleground Laboratory in Rincon, Georgia for post-processing and reporting. GPR-Slice software (version 7.0) was used for data post-processing and GPR plan map generation. Mr. Elliott entered the



Figure 2. GPR Survey in Progress.

GPR data into the GPR-Slice software on October 20-21 to produce plan and profile images of the cemetery locale. These plan maps and profile views are interpreted and discussed next in this report.

This GPR report conforms to international standards for GPR subsurface surveys, as outlined by ASTM International (2024).

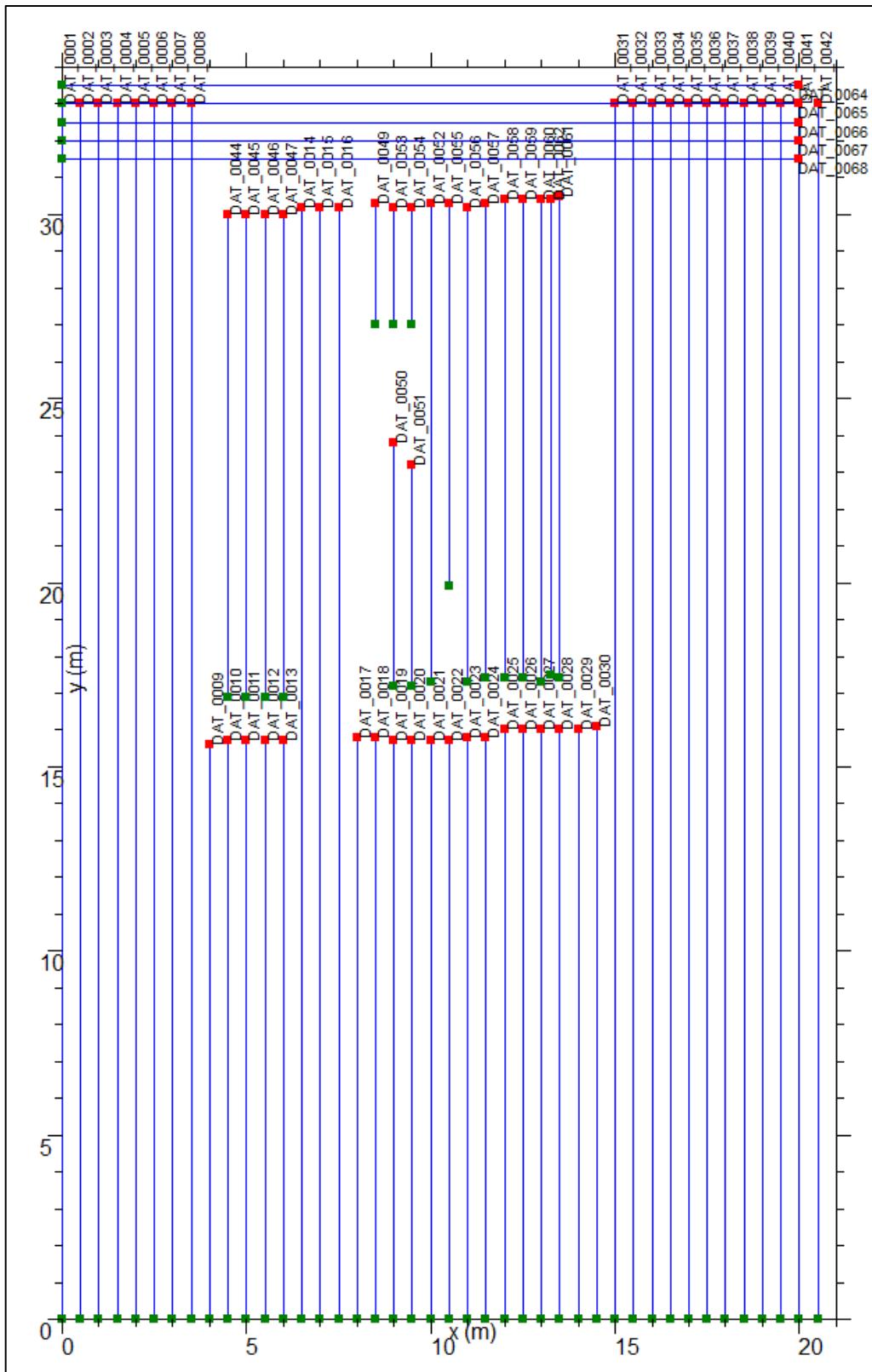


Figure 3. Radargram Schematic Plan Map, McCoy-Mathews-Ryals Cemetery GPR Survey.

III. Results of the GPR Survey

Selected Radargrams

Representative examples of radargrams collected by the GPR survey are shown in Figures 4 and 5. Both of these two radargrams display strong radar anomalies (hyperbolas).

Figure 4 shows Radargram 8, which is located west of the cemetery fence. Figure 5 shows Radargram 14, which runs through the center of the fenced enclosure, nearly bisecting the cemetery (see Figure 3 for radargram locations.)

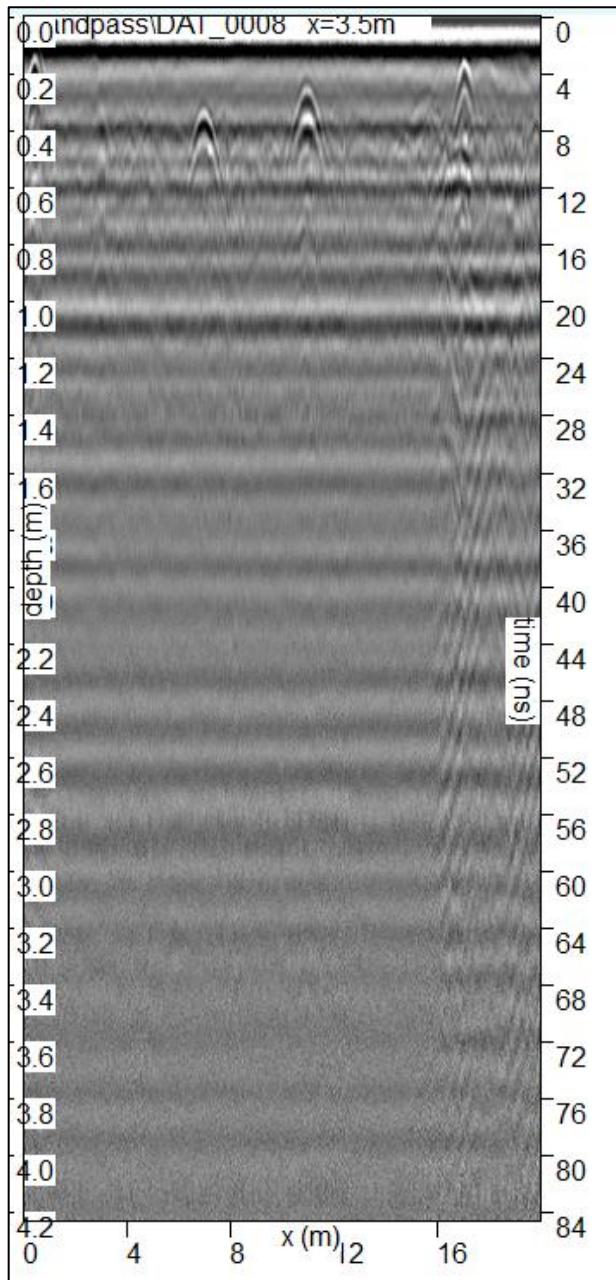


Figure 4. Radargram 8, GPR Block A.

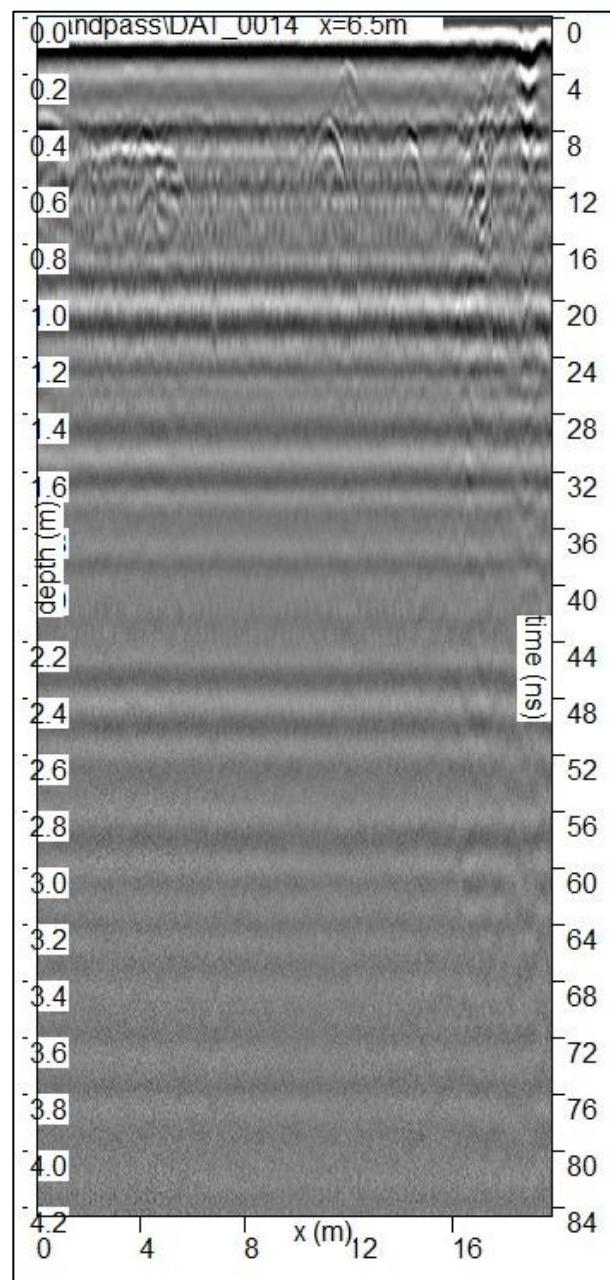


Figure 5. Radargram 14, GPR Block A.

GPR Plan Views

Figures 6-12 show a series of GPR plan views of Block A. Strong radar reflections are shown as red areas on these maps and areas of lesser radar reflections are shown in shades of brown. The portions shown in white indicate areas not covered by the GPR equipment due to immovable obstacles.

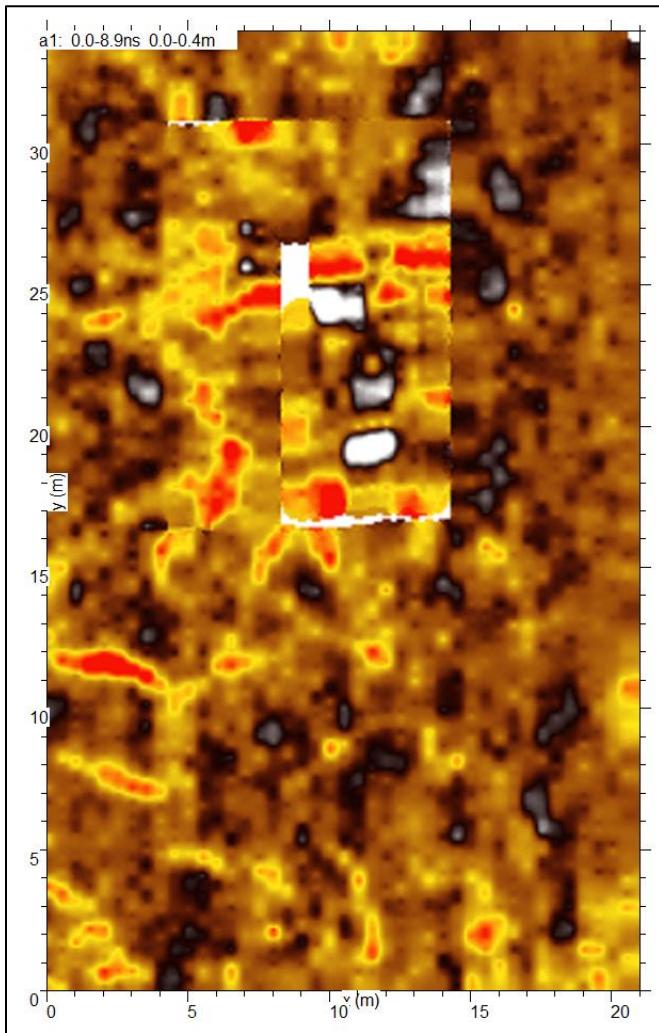


Figure 6. GPR Plan Map, Timeslice 1 (0-8.9 ns (nanoseconds, or billionth of a second).

Figure 6 shows the radar reflections in Timeslice 1. This soil zone begins at the ground surface and it contains many natural soil disturbances from plants, animals and humans.

Figures 7 and 8 are quite similar, both showing the newer graves within the cemetery enclosure. Figures 9-11 also show these graves, as well as a north-south oriented ditch feature along the western fence. Figure 12 is a composite of all time slices combined.

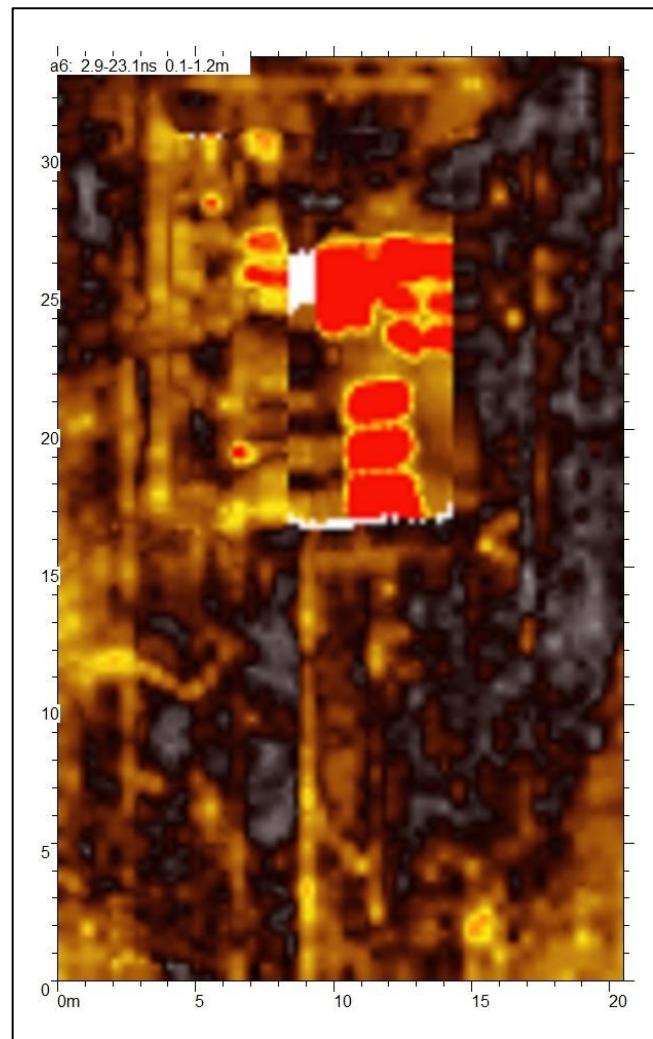


Figure 7. GPR Plan Map, Overlay of Timeslices from 2.9-23.1 ns.

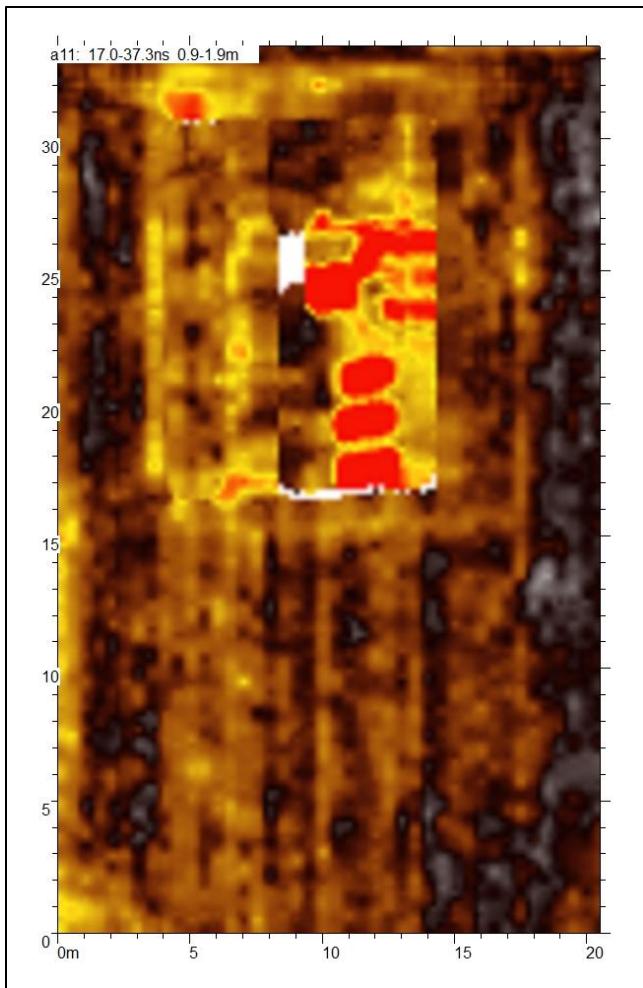


Figure 8. GPR Plan Map, Overlay of Timeslices from 17-37.3 ns.

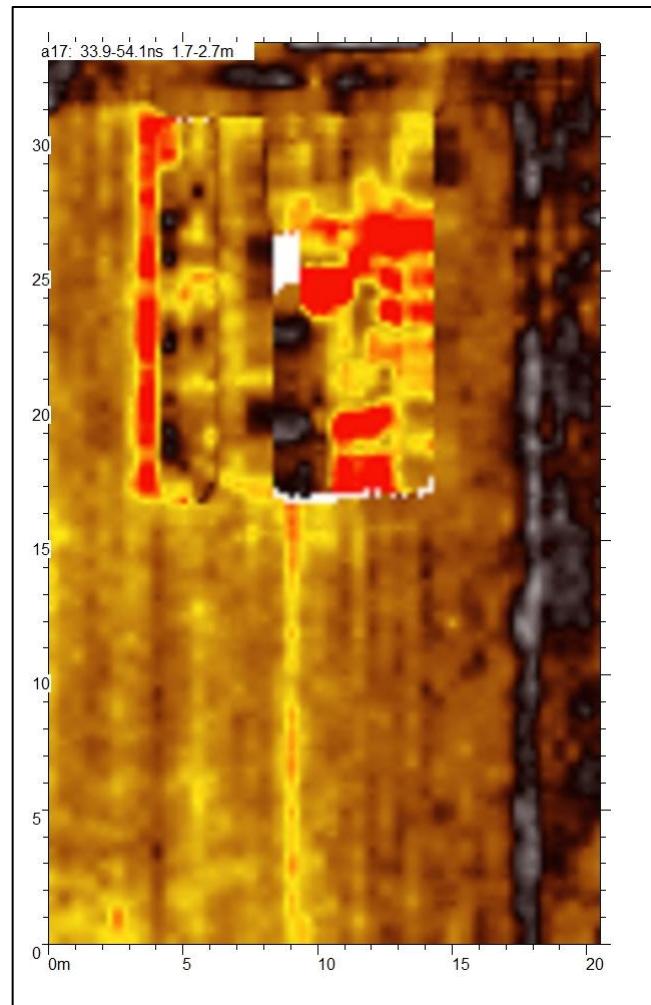


Figure 9. GPR Plan Map, Overlay of Timeslices from 33-54.1 ns.

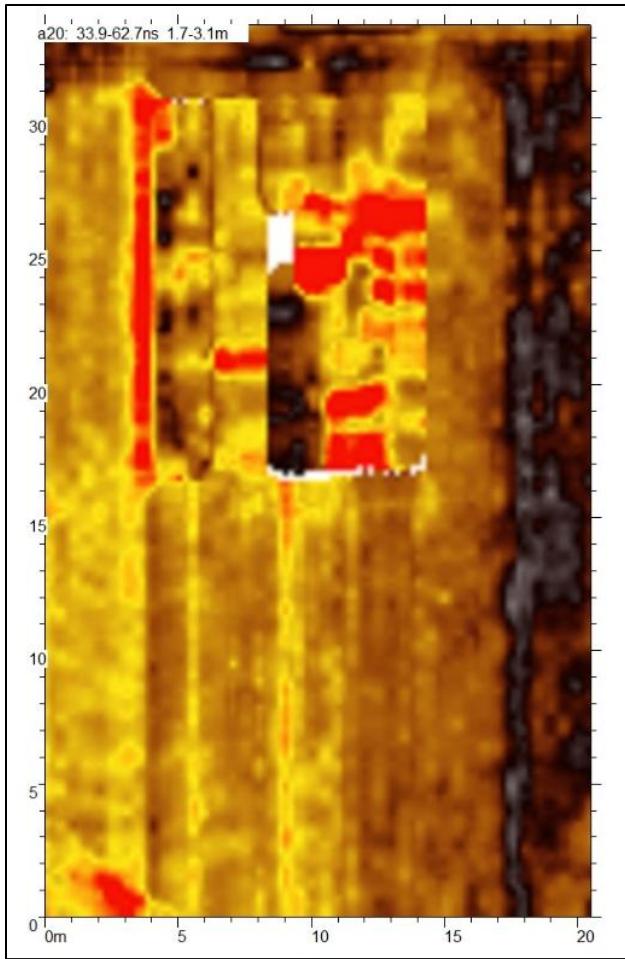


Figure 10. GPR Plan Map, Overlay of Timeslices from 33.5-62.7 ns.

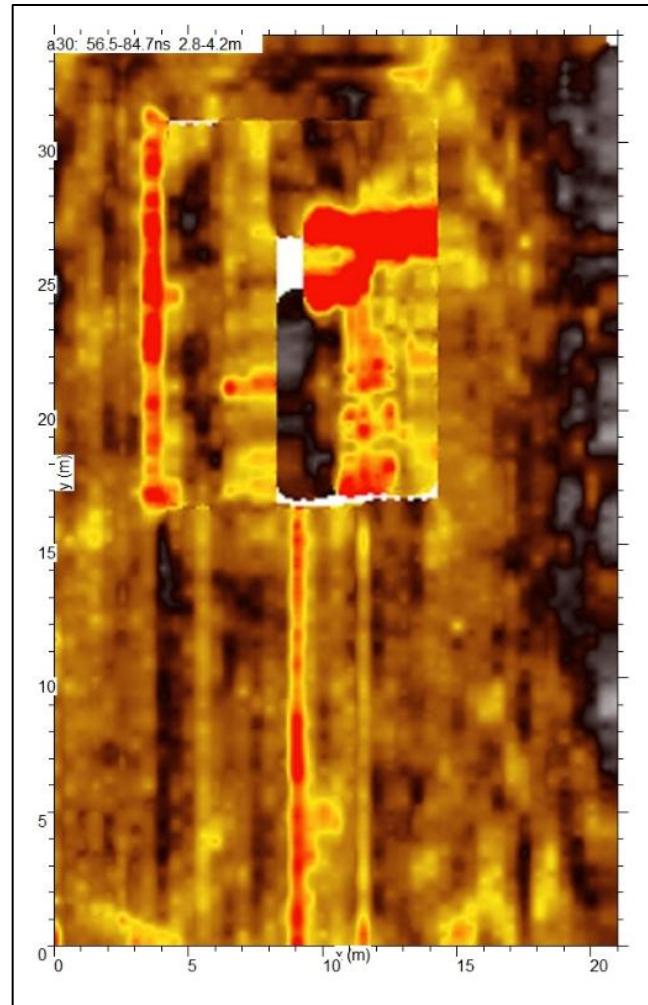


Figure 11. GPR Plan Map, Overlay of Timeslices from 56.5-84.7 ns.

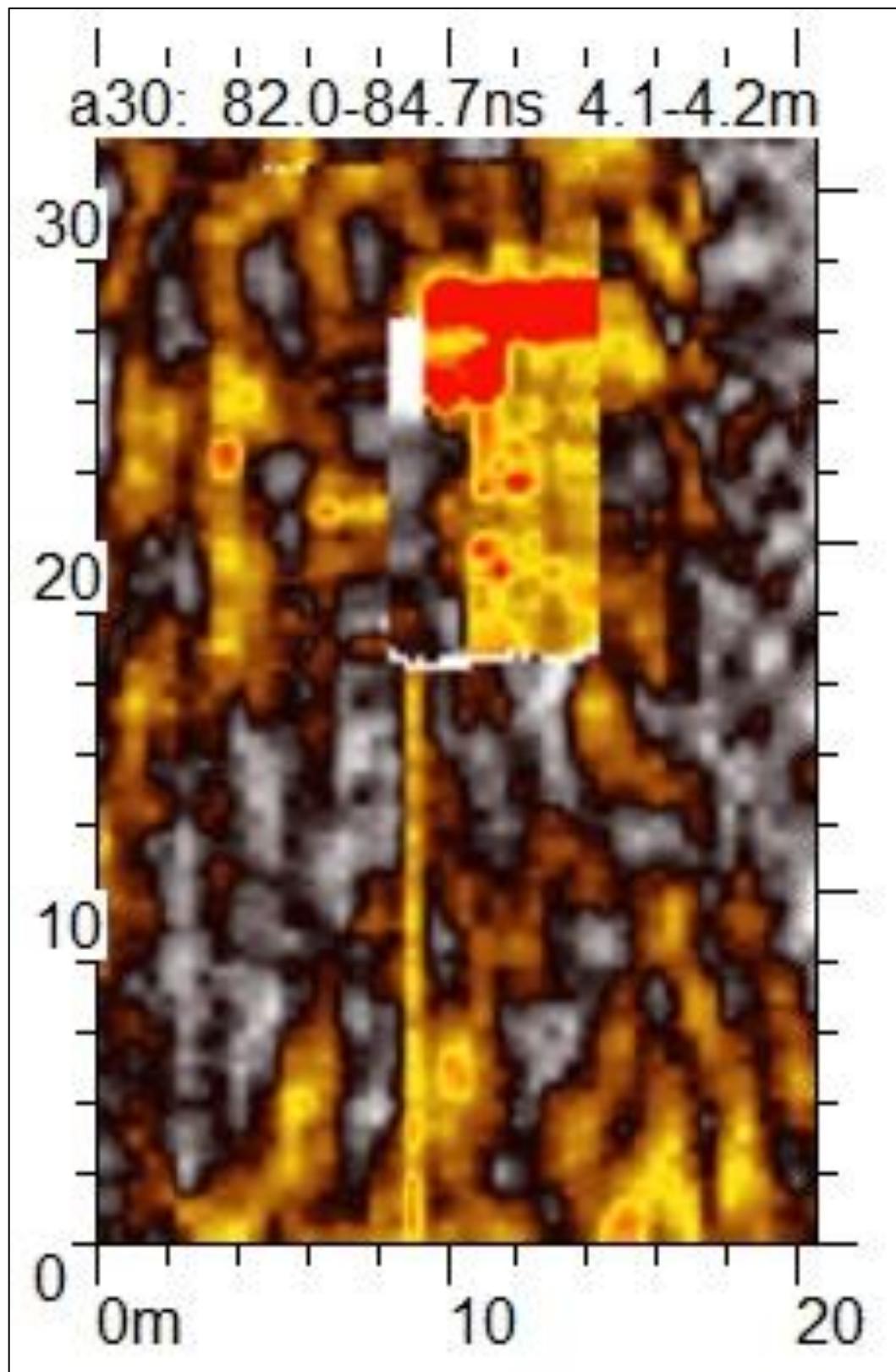


Figure 12. GPR Plan Map, All Timeslices Combined.

Selected 3D Views

Unlike other remote sensing technologies, Ground Penetrating Radar may be viewed in three dimensions. Figures 13-15 show perspective isomorphic views of GPR Block A. The radar anomalies are shown as yellow-

brown shapes on these three maps. Figures 14 and 15 also have plan maps superimposed at increasing depth. Figure 14 is at 23 ns and Figure 15 is at 47.4 ns.

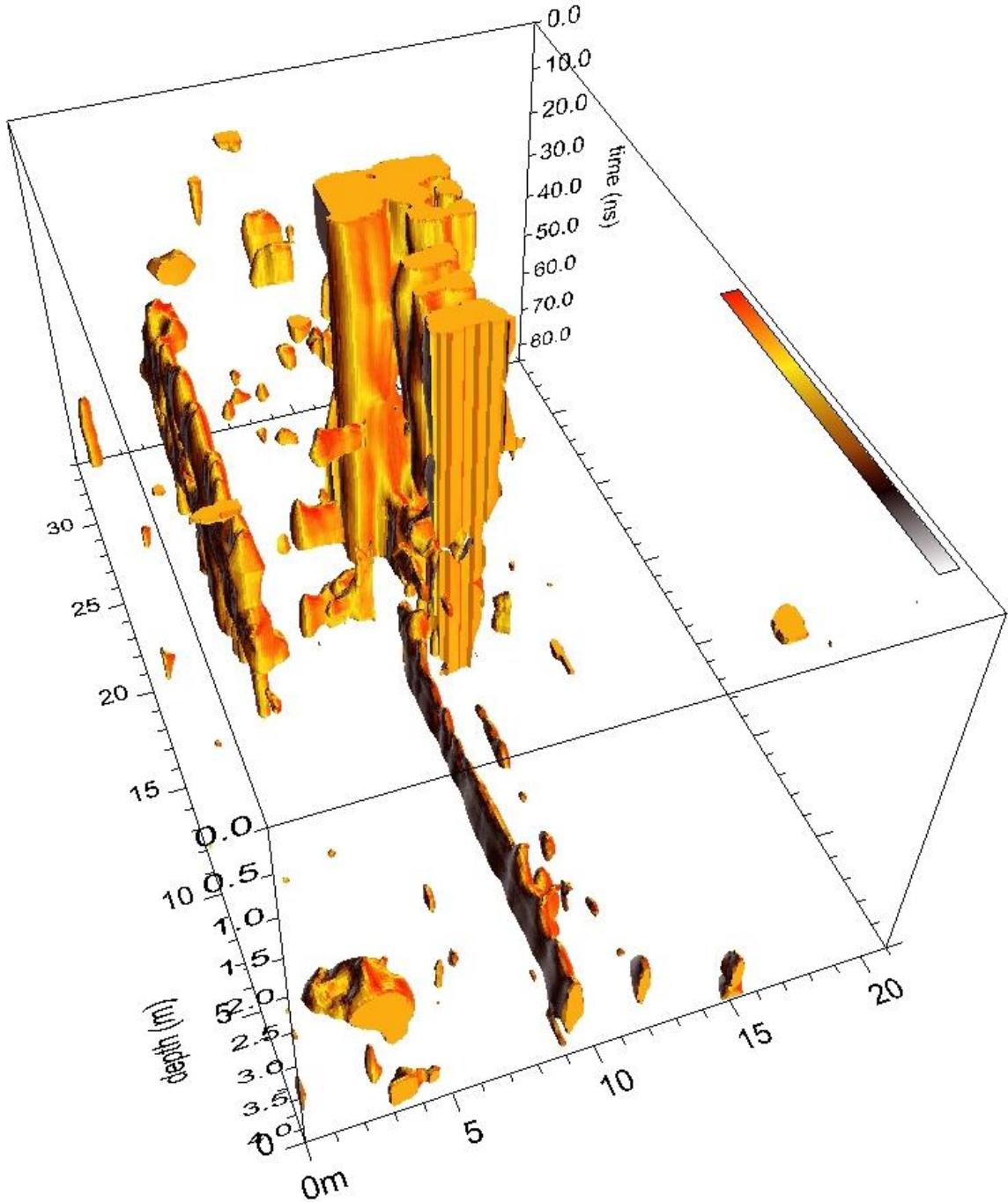


Figure 13. 3D View of Potential Human Grave GPR Signatures.

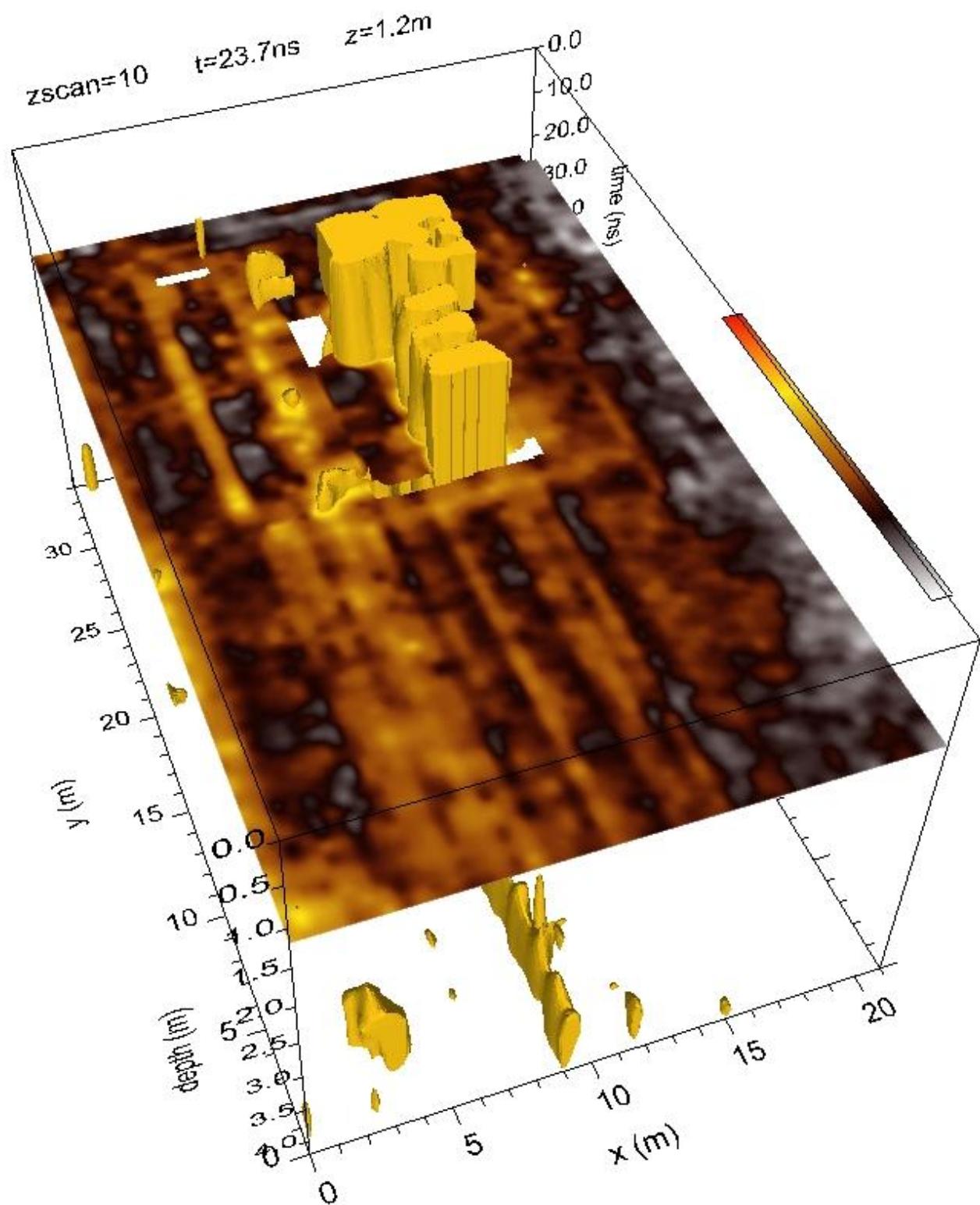


Figure 14. Composite 3-D View and Plan Map at Approximately 1.2 m Depth of GPR Block A.

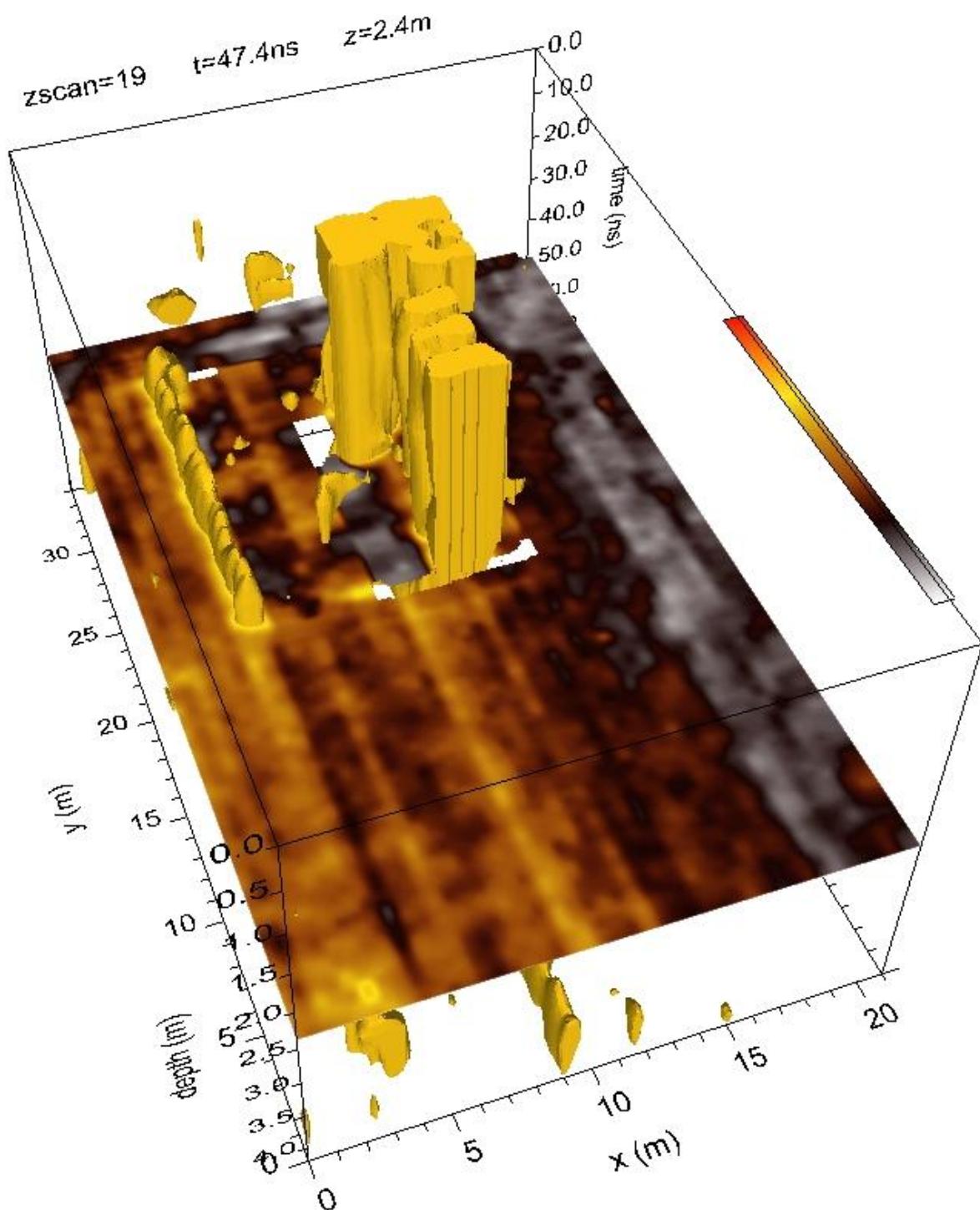


Figure 15. Composite 3-D View and Plan Map at Approximately 2.4 m Depth of GPR Block A.

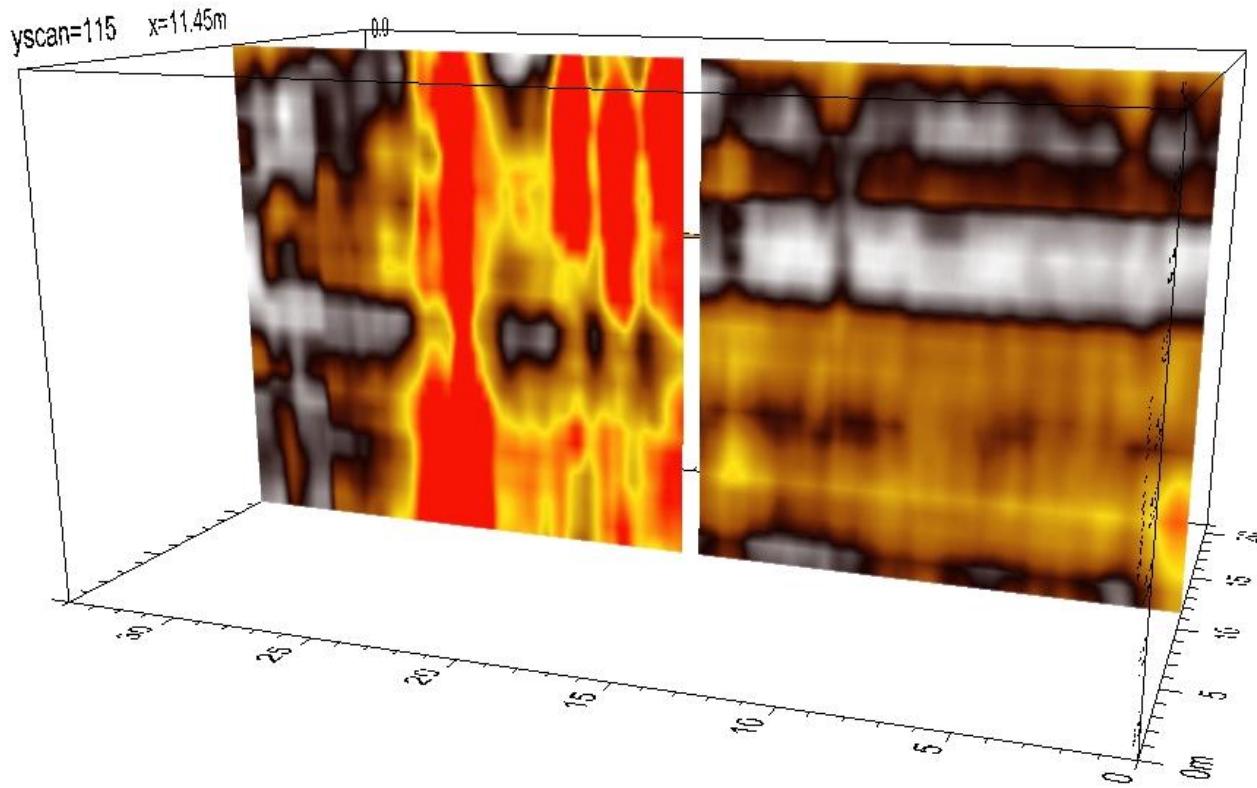


Figure 16. Perspective Profile View of GPR Block at 11.45 m East.

Figure 16 shows an eastern profile of the radar data at 11.45 m east of the 0,0 point. The marked graves on the eastern side of the cemetery enclosure appear in red on the northern part of this map.

Mapping Potential Human Graves

In addition to the mapping of radar data in GPR Block A, two additional datasets were mapped using different strategies. The first method was recording suspected human burials during the actual field survey. For this, the LAMAR Institute team recorded 21 GPS locations that produced human burial-like signatures on individual GPR transects. These were particularly strong hyperbolas located beneath the plow-disturbed soil zone. The GPS data was collected using a Juniper

Geode, which has the capability of sub-meter accuracy mapping.

Previous mapping of the cemetery by Stepehen Hammock identified 14 graves identified by surface markers and other suspected graves located by probing the cemetery with a metal rod. These features and potential features are plotted in Figure 17 and are listed in Table 1. The second method took place in the laboratory, as each radargram was reviewed for similar subsurface features with the aforementioned radar signatures. Since the radargram transects in GPR Block A were spaced 50 cm apart, many potential burials appeared multiple times in adjoining transects. Others, such as likely children's burials may only have been sampled by a single radargram.

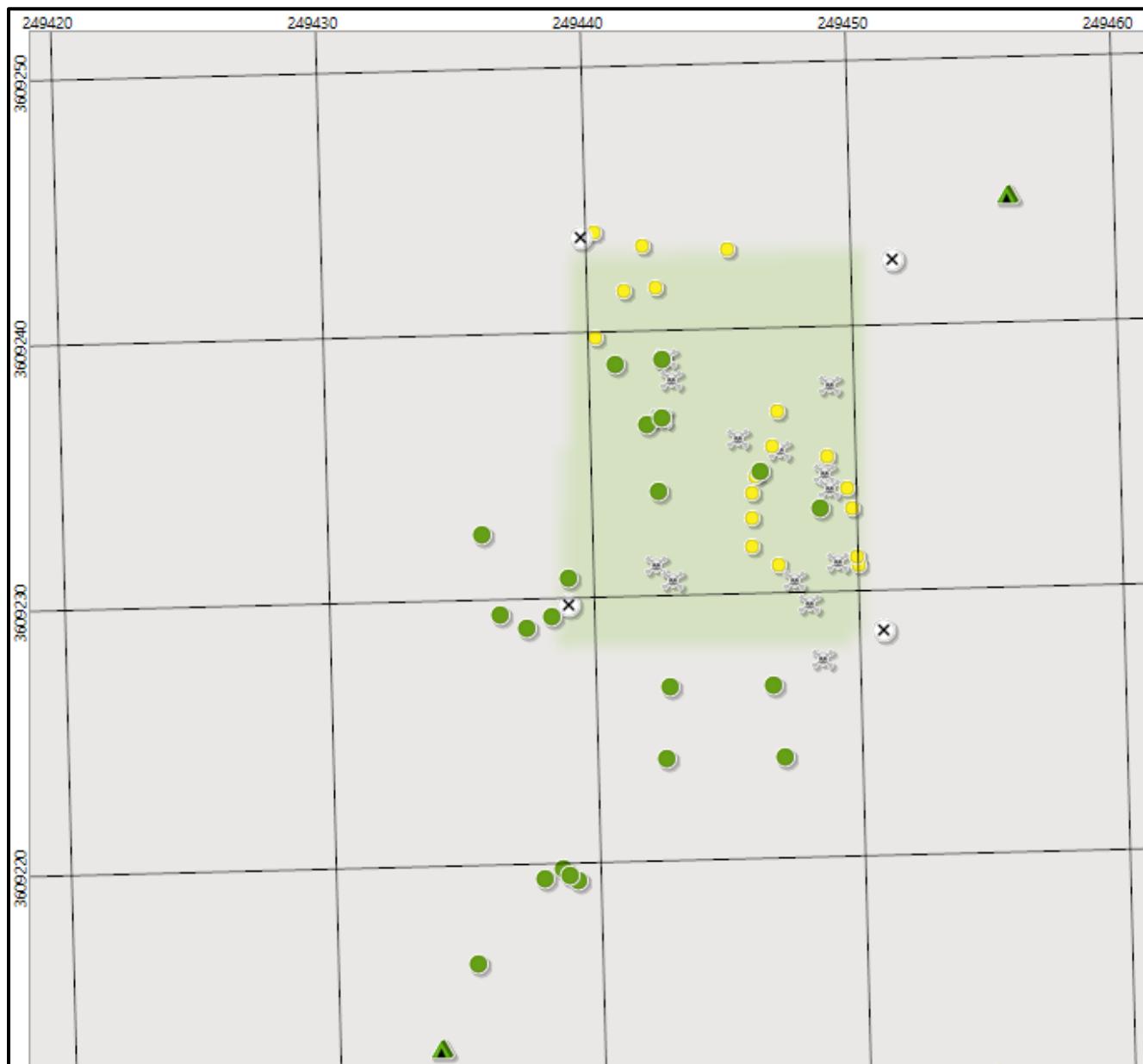


Figure 17. Potential Cultural Features identified by surface observation, metal probing (yellow circles), preliminary GPR field observations (green circles), and grave markers (skull and crossbones) at McCoy-Mathews-Ryals Cemetery. Green triangles mark the GPR survey boundary.

Easting	Northing	Zone	Name
249433.85	3609213.07	17S	GPR SW corner (NAD27)
249456.01	3609244.78	17S	GPR NE corner (uncorrected GPS)
249454.78	3609211.60	17S	GPR SE corner (uncorrected GPS)
249442.37	3609231.15	17S	Marked grave 1
249443.01	3609230.58	17S	Marked grave 2
249442.70	3609236.69	17S	Marked grave 3
249443.10	3609238.12	17S	Marked grave 4
249442.94	3609238.90	17S	Marked grave 5
249448.57	3609227.44	17S	Marked grave 6
249448.16	3609229.55	17S	Marked grave 7
249447.61	3609230.46	17S	Marked grave 8
249447.17	3609235.36	17S	Marked grave 9
249445.59	3609235.84	17S	Marked grave 10
249449.23	3609231.08	17S	Marked grave 11
249449.01	3609233.87	17S	Marked grave 12
249448.84	3609234.42	17S	Marked grave 13
249449.11	3609237.74	17S	Marked grave 14
249440.33	3609239.74	17S	Hammock pb 15
249442.63	3609241.57	17S	Hammock pb 16
249447.06	3609231.03	17S	Hammock pb 17
249446.05	3609231.72	17S	Hammock pb 18
249446.07	3609232.82	17S	Hammock pb 19
249446.10	3609233.72	17S	Hammock pb 20
249446.21	3609234.38	17S	Hammock pb 21
249446.90	3609235.47	17S	Hammock pb 22
249447.11	3609236.80	17S	Hammock pb 23
249450.07	3609230.96	17S	Hammock pb 24
249449.98	3609231.29	17S	Hammock pb 25
249449.84	3609233.07	17S	Hammock pb 26
249449.68	3609233.85	17S	Hammock pb 27
249448.95	3609235.09	17S	Hammock pb 28
249441.41	3609241.49	17S	Hammock pb 29
249440.34	3609243.74	17S	Hammock pb 30
249442.20	3609243.14	17S	Hammock pb 31
249445.39	3609242.94	17S	Hammock pb 32
249451.58	3609242.45	17S	Cemetery Fence NE corner
249439.86	3609243.53	17S	Cemetery Fence NW corner
249450.94	3609228.49	17S	Cemetery Fence SE corner
249439.04	3609229.68	17S	Cemetery Fence SW corner
249439.17	3609219.31	17S	Hyperbola, strong
249438.61	3609219.76	17S	Hyperbola, strong
249446.73	3609226.48	17S	Hyperbola, strong
249438.41	3609229.28	17S	Hyperbola, strong
249435.87	3609232.40	17S	Hyperbola, strong
249435.35	3609216.26	17S	Hyperbola, strong
249437.94	3609219.38	17S	Hyperbola, strong
249438.86	3609219.49	17S	Hyperbola, strong
249442.60	3609223.79	17S	Hyperbola, strong
249447.13	3609223.79	17S	Hyperbola, strong
249442.81	3609226.55	17S	Hyperbola, strong
249437.45	3609228.85	17S	Hyperbola, strong
249436.47	3609229.37	17S	Hyperbola, strong
249439.07	3609230.68	17S	Hyperbola, strong
249448.67	3609233.09	17S	Hyperbola, strong
249442.56	3609233.90	17S	Hyperbola, strong
249446.41	3609234.53	17S	Hyperbola, strong
249442.21	3609236.41	17S	Hyperbola, strong
249442.78	3609236.67	17S	Hyperbola, strong
249441.05	3609238.73	17S	Hyperbola, strong
249442.80	3609238.85	17S	Hyperbola, strong

Table 1. Features and Potential Features at the McCoy-Mathews-Ryals Cemetery, Houston County, Georgia.

IV. Interpretive Summary

The LAMAR Institute is pleased to submit this GPR cemetery survey report to Stephen Hammock, for inclusion in his report. The GPR mapping project of the McCoy-Mathews-Ryals cemetery by the LAMAR Institute geophysical team yielded important new facts.

The results from the GPR survey indicate that the likelihood of human burials located immediately outside of the cast iron cemetery enclosure is extremely low. The GPR data were examined using a range of specialized filters and a wide variety of plan views, overlay views, 3-D views, and individual radargrams to reach this conclusion.

The GPR survey within the cemetery fence is more problematic. In addition to the known graves (based on tombstone inscriptions), there may be additional interments that are not marked on the ground surface. The more recent graves in the cemetery produced extremely strong radar reflections, as evidenced in Figures 13-16. These reflect likely result from large amounts of metal in the coffin and/or burial vault. The GPR survey findings indicate that some grave markers are offset from subsurface radar anomalies that likely associated with those interments. Other markers appear to have no corresponding grave-like radar anomaly, which may indicate that the grave markers are either in the wrong location, are cremations, or that perhaps these markers are cenotaphs placed to commemorate those whose remains are located elsewhere in the world.

As Figure 16 illustrates, the strong hyperbolas that were identified while in the field mostly correspond to strong radar reflections (shown in red) on the plan map. Figures 17 and 18 show the locations of 14 marked graves

(indicated by skull and crossbones or human outline symbols) and locations where Stephen Hammock's probing suggested potential burials were present. The 14 marked graves mostly have corresponding GPR signatures beneath the tombstones, or slightly offset from the tombstones.

The areas shown as green circles on Figures 17 and 18 denote strong radar reflections (containing well-defined hyperbolas in the individual radargrams) identified during the field data collecting. As Figure 18 reveals, many of these hyperbolas correlate with the red blobs on the surface map. Others do not. After careful study in the laboratory, Mr. Elliott determined that those located outside of the cemetery fence do not likely represent human burials.

Our survey of the cemetery did not include any ground disturbance, so the full understanding of the subsurface environment at the McCoy-Mathews-Ryals Cemetery awaits more archaeological exploration. The GPR survey provides one strong line of evidence that delineates the outer extent of the graveyard.

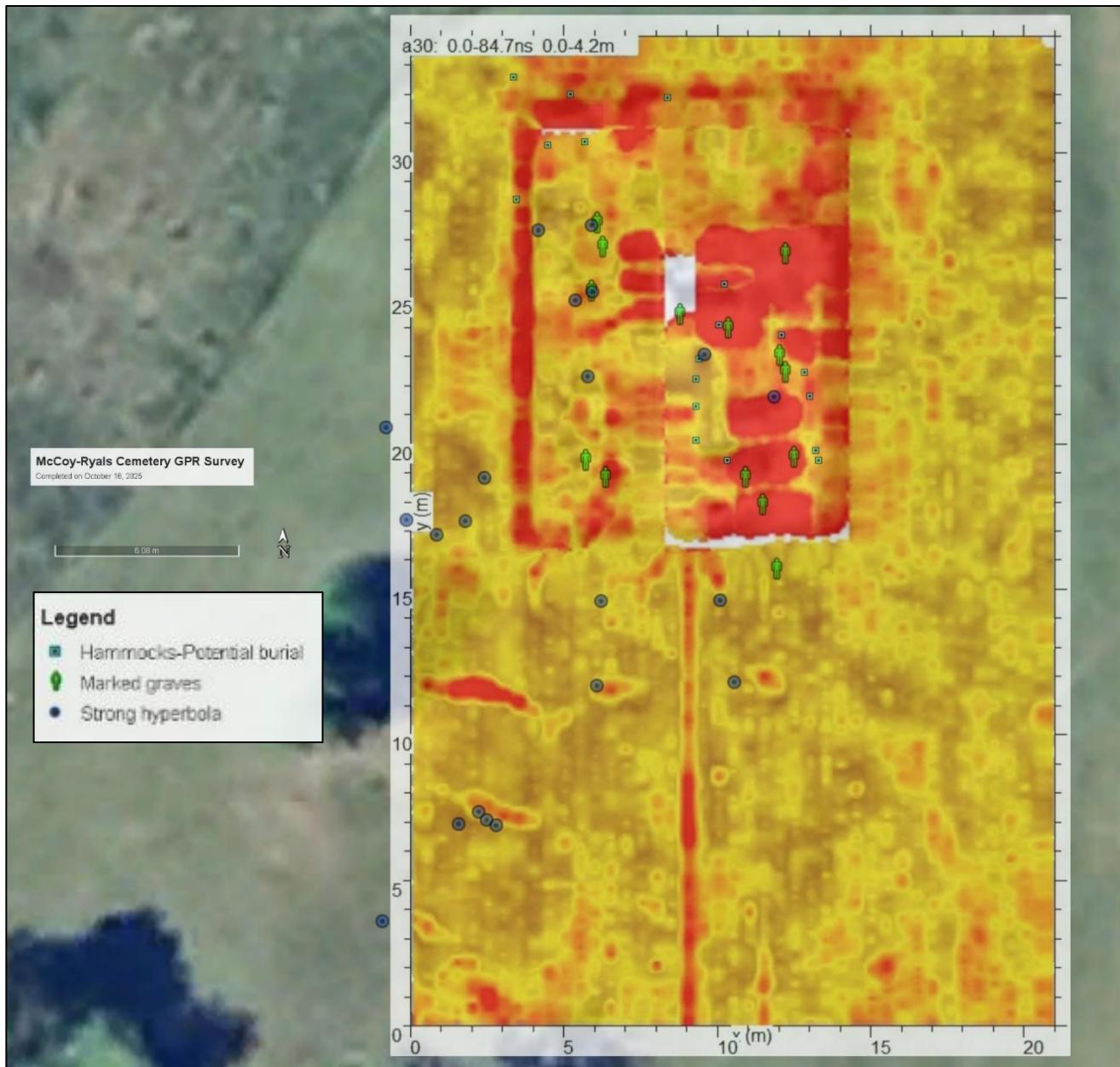


Figure 18. Composite GIS Map of GPR Overlay, Strong Hyperbolas, Marked Graves and Hammock's potential burials, McCoy-Mathews-Ryals Cemetery.

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