

LOCATING UNMARKED GRAVES AT AN ACTIVE MILITARY TRAINING BASE USING GEOPHYSICAL METHODS

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Numerous small, privately owned cemeteries throughout the United States offer a rich treasury of historical information that is valued by archaeologists, anthropologists, and the descendants of the deceased. Many of these cemeteries are centuries old, subjecting the headstones to damage over years by poor property management or, more commonly, natural weathering processes. In order to document and preserve one such cemetery, located within Camp Atterbury Joint Maneuver Training Center (CAJMTC), multiple geophysical methods were used to confirm existing graves and identify potential unmarked grave locations.

Three non-intrusive geophysical methods were utilized to characterize the cemetery grounds. First, electromagnetic terrain conductivity was used to map variations in soil conductivities due to historical disturbances caused by grave excavation activities. Next, time-domain electromagnetic metal detection was used to characterize the distribution of buried metallic objects typically associated with burials, such as reinforced concrete or metal burial vaults. The third technique, ground penetrating radar, provided the highest level of detail for graves containing metallic objects and graves retaining little more than disrupted soil strata and human remains. All geophysical data was collected across the entire cemetery property with local grid and GPS control to produce map outputs of the data. To aid in the interpretation of the geophysical survey, photo documentation, GPS locating, and historical records search were also conducted. This combination of geophysical methods proved highly effective for identifying historic grave locations while avoiding unnecessary disturbance at the site. As a result of this geophysical approach, CAJMTC was provided with thorough grave documentation of 205 existing grave markers and insight into the locations of 49 potentially unmarked graves.