

# PROJECT PROFILE

## GEOPHYSICAL CHARACTERIZATION OF HISTORICAL SITES

English settlers arrived at what is now St. Mary's City, Maryland in 1634. Among the settlers were several Jesuit priests. A wooden chapel was built, and this building was the founding place of the Roman Catholic Church in English America. The wooden chapel was

the field as the place where the 1667 Chapel had stood.

In the 1980s, as part of the celebration of the founding of Maryland, the foundations of the 1667 Chapel were excavated. Three sealed lead coffins were discovered in 1990. One of the coffins contained the remains of Phillip Calvert, sixth son of the first Lord Baltimore and a wealthy and influential man of the times.

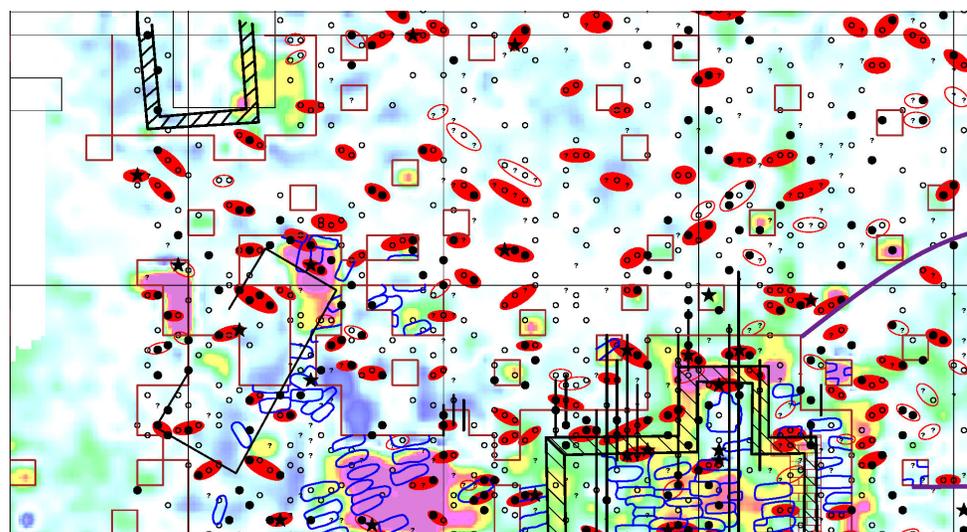


*Archaeological excavation being performed at 1667 Chapel site.*

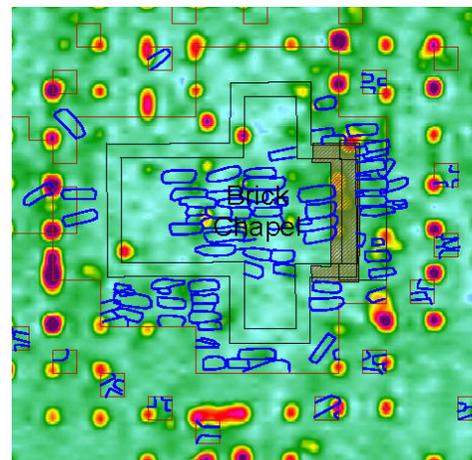
burned in 1645, and a new brick chapel was constructed in 1667. This structure was built in the shape of a cross with dimensions of 54 feet long and 57 feet across the "arms" of the cross. The 1667 Chapel served as the focal point of the Catholic faith in Maryland until 1704, at which time the royal governor ordered the building locked and never again used for religious purposes. The land was subsequently used for farming, but local lore continued to identify

one in a portion of St. Mary's City known as "The Triangle," where a new museum is planned, and the second in the area of the 1667 Chapel. Work at "The Triangle" led to the subsequent identification of building remains, tentatively associated with the 18<sup>th</sup> century.

D'Appolonia was retained by the St. Mary's Historical Commission to perform geophysical studies in the construction area for the purpose of identifying burial sites in the surrounding churchyard and to verifying that there were no more lead coffins at the site. D'Appolonia conducted two surveys:



*Portion of geophysical interpretation in the area of the Chapel.*



*Results of EM61 metal detection survey in the vicinity of the 1667 Chapel. The unusual distribution of metal was caused by survey pins left in the ground from previous archaeological investigations. The results confirmed that no more lead coffins were present at the 1667 Chapel site.*

one in a portion of St. Mary's City known as "The Triangle," where a new museum is planned, and the second in the area of the 1667 Chapel. Work at "The Triangle" led to the subsequent identification of building remains, tentatively associated with the 18<sup>th</sup> century.

Most of the geophysical survey work was performed in the vicinity of the 1667 Chapel. One of the surveys was deep metal detection with an EM-61 instrument, which confirmed that no additional lead coffins were present in the immediate vicinity. The grid established for archaeological unit excavations was readily apparent due to the presence of metal survey pins. These metal survey pins also interfered with the magnetic gradiometer data and ground penetrating radar (GPR), and, as a result, DC resistance measurements became the main survey tools.

The GPR data proved to be the most effective for identifying disturbed ground that could be related to graves or previously unknown buildings. Hundreds of burial sites were identified from the GPR data, consistent with estimates from historical records.