

Scott Cemetery

Thoroughfare, Prince William County, Virginia

WSSI #21466.03

Ground Penetrating Radar (GPR) & Electromagnetic (EM) Investigations

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ABSTRACT

GeoModel, Inc and Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc. (WSSI), conducted a non-invasive archeological investigation involving ground-penetrating radar (GPR) and electromagnetic conductivity (EM) survey of a ± 1 -acre study area within the vicinity of the location of the Scott Cemetery, approximately 280 feet south of James Madison Highway (Route 55) in Prince William County, Virginia.

The GPR investigations, conducted by GeoModel, Inc. staff, resulted in the identification of eleven anomalies (Features 1-11) that may be human burials based on the arrangement and position of the features. The EM survey did not identify any potential cemetery features, nor did it show any correlation with the GPR anomalies.

Due to the limitations of the GPR survey, we recommend the soil anomalies identified as possible grave features during the GPR survey should be verified or “ground-truthed” through archeological excavation to confirm if they represent grave shafts. This is necessary due to the possibility of false positives and false negatives generated during the remote sensing surveys. We also recommend that at a minimum, public meetings should be conducted prior to any ground disturbing archeological work to review results of the GPR and EM investigations, and again, to present the results of the archeological investigations and receive public comments.

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INTRODUCTION

This report presents the results of a non-invasive archeological investigation of the reported site of the Scott Cemetery, which is located along John Marshall Highway (Route 55) in the unincorporated town of Thoroughfare, Prince William County, Virginia (Figure 1). Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc. (WSSI) and GeoModel Inc. (under subcontract to WSSI) conducted the study described in this report for Broad Run Nurseries of Prince William County, Virginia. The fieldwork involved a combination of Ground Penetrating Radar (GPR) and Electromagnetic Conductivity (EM) surveys and was conducted in June 2021 by Matthew S. Turner, P.G. (GeoModel, Inc.). John P. Mullen M.A., RPA served as Principal Investigator for this project.

The Scott Cemetery, a family burial plot associated with the local African American, Native American, and other residents of Thoroughfare, was recorded by Ronald Turner of Prince William County in 1996 and in 2001 (Appendix I). Mr. Turner described its location as “about 165 feet south of John Marshall Highway (Route 55) and roughly 100 yards east of 16111 John Marshall Highway” with the approximate coordinates: N38° 49.190 W077° 40.143. The cemetery was overgrown and neglected at the time of its recordation. Turner estimated that the cemetery contained between 75 and 100 burials, although no one he interviewed could recall any burials in the previous 30-40 years. Although some gravesites were reportedly marked with fieldstones, the cemetery also was thought to contain unmarked graves.

The fieldwork followed a specific Scope of Work (SOW) approved by the Prince William County Archaeologist. In general, fieldwork and report contents conformed to the guidelines set forth by the Virginia Department of Historic Resources (DHR) for a Phase I identification level survey as outlined in their 2017 *Guidelines for Conducting Historic Resources Survey in Virginia* (DHR 2017) as well as the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (DOI 1983).

The purpose of the survey was to locate possible grave features within the reported location of the cemetery. Verification or “ground-truthing” of any soil anomalies identified as possible grave features during the fieldwork should be conducted through archeological excavation to confirm if they represent grave shafts. This next step is necessary due to the possibility of false positives and false negatives generated during the remote sensing surveys. No ground disturbance or disturbance of *in-situ* human remains is intended or expected for the non-invasive GPR and EM survey.

Research data, and field data resulting from this project are currently on repository at the GeoModel offices in Leesburg, Virginia and the Thunderbird offices in Gainesville, Virginia.

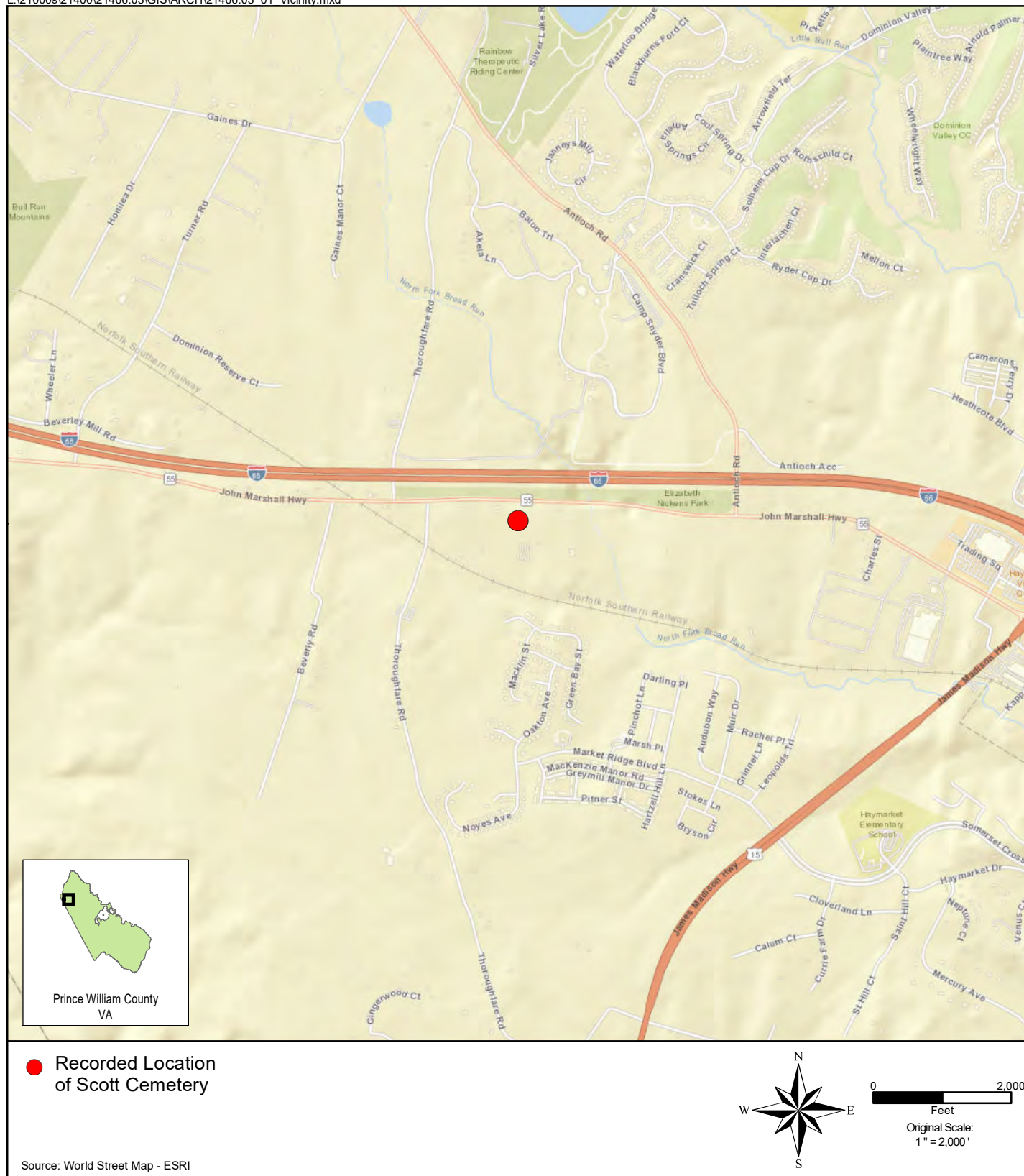


Figure 1: Vicinity Map

ENVIRONMENTAL SETTING

Prince William County encompasses portions of the Coastal Plain Province and the Outer Piedmont Plateau, the Piedmont Triassic Lowland, and Inner Piedmont sub-provinces (Fenneman 1938; Bailey 1999). The Piedmont is underlain by igneous and metamorphic rocks of various origins that were folded during the Paleozoic as the North American and African plates converged. Later, in the Mesozoic, rifting occurred as Pangea broke apart and the Atlantic Ocean formed. The Piedmont ranges from 200 feet above mean sea level (a.m.s.l.) at the Fall Line to circa 1,000 feet a.m.s.l. in the western portion at the Blue Ridge. Because of the intensive weathering of the underlying rocks in the Piedmont's humid climate, bedrock is generally buried under a thick, 6- to 60-foot blanket of saprolite.

The Piedmont Province has been sub-divided into three sub-provinces: the Outer Piedmont Plateau, the Triassic Lowlands, and the Inner Piedmont Plateau. The project area lies in the Triassic Basin, or Triassic Lowlands. These are long, narrow rift valleys, or basins, formed during the Triassic period. These valleys, underlain by Mesozoic sedimentary and igneous rocks, have filled with sandstones and basalts. Elevations range from 200 to 400 feet a.m.s.l.

The unincorporated town of Throughfare and the study area is relatively level terrain located at near confluence of North Fork and an unnamed tributary (Figure 2). The study area occupies a low to moderate relief landform that separates the two bodies of water west of their confluence. North Fork flows southeast into Broad Run at Lake Manassas about three and one-half miles to the southeast. The study area vicinity was originally forested but was cleared of vegetation beginning in the spring of 2021 (Figures 3 and 4).

PALEOENVIRONMENTAL BACKGROUND

The basic environmental history of the area has been provided by Carbone (1976) (see also Gardner 1985, 1987; Johnson 1986). The following will present highlights from this history, focusing on those aspects pertinent to the project area.

At the time of the arrival of humans into the region, about 11,000 years ago, the area was beginning to recover rapidly from the effects of the last Wisconsin glacial maximum of circa 18,000 years ago. Vegetation was in transition from northern dominated species and included a mixture of conifers and hardwoods. The primary trend was toward a reduction in the openness which was characteristic of the parkland of 14-12,000 years ago. Animals were undergoing a rapid increase in numbers as deer, elk and, possibly, moose expanded into the niches and habitats made available as the result of wholesale extinctions of the various kinds of fauna that had occupied the area during the previous millennia. The current cycle of ponding and stream drowning began 18-16,000 years ago at the beginning of the final retreat of the last Wisconsin glaciation (Gardner 1985); sea level rise has been steady since then.

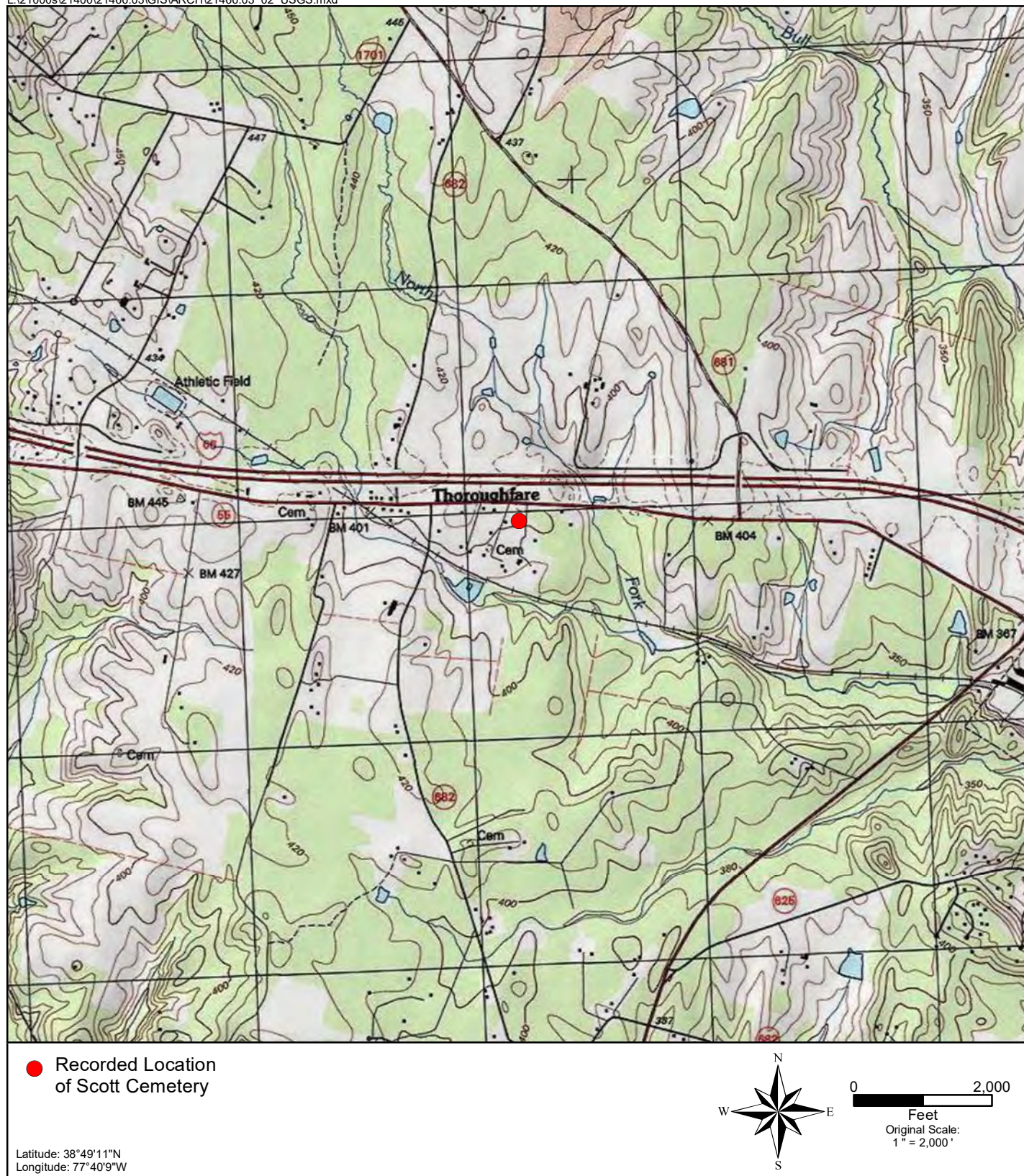


Figure 2: 1998 USGS Quadrangle, Thoroughfare Gap, VA



Figure 3: Spring 2017 Near Color Infrared Imagery



Figure 4: February 2021 Natural Color Imagery

These trends continued to accelerate over the subsequent millennia of the Holocene. One important highlight was the appearance of marked seasonality circa 7000 BCE. This was accompanied by the spread of deciduous forests dominated by oaks and hickories. The modern forest characteristic of the area, the mixed oak-hickory-pine climax forest, prevailed after 3000-2500 BCE. Continued forest closure led to the reduction and greater territorial dispersal of the larger mammalian forms such as deer. Sea level continued to rise, resulting in the inundation of interior streams. This was quite rapid until circa 3000-2500 BCE, at which time the rise slowed, continuing at a rate estimated to be ten inches per century (Darmody and Foss 1978). This rate of rise continues to the present. Based on archeology (see Gardner and Rappleye 1979), it would appear that the mid-Atlantic migratory bird flyway was established circa 6500 BCE. Oysters had migrated to at least the Northern Neck by 1200 BCE (Potter 1982) and to their maximum upriver limits along the Potomac near Popes Creek, Maryland, by circa 750 BCE (Gardner and McNett 1971), with anadromous fish arriving in the Inner Coastal Plain in considerable numbers circa 1800 BCE (Gardner 1982).

During the historic period, circa 1700 CE, cultural landscape alteration becomes a new environmental factor (Walker and Gardner 1989). Around this time, Euro-American settlement extended into the Piedmont/Coastal Plain interface. With these settlers came land clearing and deforestation for cultivation, as well as the harvesting of wood for use in a number of different products. At this time the stream tributaries to the Potomac, were broad expanses of open waters from their mouths well up their valleys to, at, or near their "falls" where they leave the Piedmont and enter the Coastal Plain. These streams were conducive to the establishment of ports and harbors, elements necessary to commerce and contact with the outside world and the seats of colonial power. Most of these early ports were eventually abandoned or reduced in importance, for the erosional cycle set up by the land clearing resulted in tons of silt being washed into the streams, ultimately impeding navigation.

The historic vegetation would have consisted of a mixed oak-hickory-pine forest. Associated with this forest were deer and smaller mammals and turkey. The nearby open water environments would have provided habitats for waterfowl year round as well as seasonally for migratory species.

CULTURAL HISTORICAL BACKGROUND

Prehistoric Overview

The following section provides a brief overview and context of the general prehistory of the region. A number of summaries of the archeology of the general area have been written (see Gardner 1987; Johnson 1986; Walker 1981); Gardner, Walker, and Johnson present essentially the same picture, with the major differences lying in the terminology utilized for the prehistoric time periods. The dates provided below for the three general prehistoric periods, and associated sub-periods, follow those outlined by the Virginia Department of Historic Resources (DHR 2017:107-108).

Paleoindian Period (15,000-8000 BCE)

The Paleoindian period corresponds to the end of the Late Pleistocene and beginning of the Early Holocene of the Late Glacial period, which was characterized by cooler and drier conditions with significantly less seasonal variation than is evident in the region today. The cooler conditions resulted in decreased evaporation and, in areas where drainage was restricted by topography, could have resulted in the development of wetlands in the Triassic Lowlands (Walker 1981; Johnson 1986:P1-8). Generally speaking, the nature of the vegetation was marked by open forests composed of a mix of coniferous and deciduous elements. The individual character of local floral communities would have depended on drainage, soils, and elevation, among other factors. The structure of the open environment would have been favorable for deer, bear, moose, and, to a lesser degree, elk, which would have expanded rapidly into the environmental niches left available by the extinction and extirpation of the large herd animals and megafauna characteristic of the Late Pleistocene.

The fluted projectile point is considered the hallmark of the Paleoindian lithic toolkit. Based on his work at the Flint Run Complex, Gardner identified three distinct sub-phases within the larger fluted point phase (Gardner 1974). The oldest of the Paleoindian sub-phases is identified by the now classic Clovis point, a large, bifacially flaked tool with a channel or flute removed from both sides of its base. Regionally, the widely accepted beginning date for Clovis type points is circa 9500 BCE; however, some data has suggested a pre-11,000 BCE beginning date for Clovis points (McAvoy and McAvoy 1997; Johnson 1997). The Clovis sub-phase is followed in time by the Middle Paleo sub-phase, defined by smaller fluted points. The Dalton-Hardaway sub-phase is the final one of the period, and is characterized by the minimally fluted Dalton and Hardaway projectile points. This three-period subdivision is well supported by stratigraphy. Associated with these projectile points are various other tools that usually cannot be taken by themselves as diagnostic Paleoindian indicators. Examples of such stone tools include end or side scrapers, bifaces, blades, and spokeshaves, which are all associated with the hunting and processing of game animals.

Possible evidence for pre-Clovis colonization of the Americas has been found at the Cactus Hill site (44SX0202) in Virginia, where an ephemeral component dating from 15,000 to 13,000 BCE included prismatic blades manufactured from quartzite cores and metavolcanic or chert pentagonal bifaces (Haynes 2002: 43-44; Johnson 1997; McAvoy 1997; McAvoy and McAvoy 1997). Generally, lanceolate projectile points, prismatic blades, pentagonal bifaces, polyhedral blade cores, microflakes and microlithic tools comprise possible pre-Clovis assemblages and a preference for cryptocrystalline lithic material such as chert and jasper is noted (Goodyear 2005). Cactus Hill and other reportedly pre-Clovis sites, including SV-2 (44SM0037) in Saltville, Virginia (McDonald 2000; McDonald and Kay 1999) and the Meadowcroft Rock Shelter in western Pennsylvania (Adovasio et al. 1990; Adovasio et al. 1998), have been the subject of much controversy and no undisputed pre-Clovis sites or sites representing substantial pre-Clovis occupations have been identified in the region.

Paleoindian archaeological assemblages rarely contain stone tools specifically designed for processing plant material such as manos, metates, or grinders. This general absence or rarity of such tool categories does not mean that use of plant resources was unimportant; rather, it may suggest that a far greater emphasis was placed on hunting versus gathering, at least when viewed from the perspective of an assemblage of stone tools. For instance, carbonized plant materials have been found in Paleoindian contexts and plant remains have been recovered from some Paleoindian sites. The remains of acalypha, blackberry, hackberry, hawthorn plum, and grape were recovered from a hearth in the Paleoindian portion of the Shawnee-Minisink Site in eastern Pennsylvania (Dent 1991). Although hard evidence is lacking for the immediate study area, the subsistence settlement base of Paleoindian groups in the immediate region likely focused on general foraging, drawing a comparison with the Shawnee-Minisink data, and certainly focused on hunting (Gardner 1989 and various).

The settlement pattern of Paleoindian peoples has been described as being quarry-centered, with larger base camps being situated in close proximity to localized sources of high quality cryptocrystalline lithic raw materials, such as chert, jasper, and chalcedony. Smaller exploitative or hunting and/or gathering sites are found at varying distance from these quarry-centered base camps (Gardner 1980). This model, developed from Gardner's work at the Thunderbird site complex in the Shenandoah River Valley, has wide applicability throughout both the Middle Atlantic region and greater Eastern United States. The extreme curation (or conservation) and reworking of the blade element exhibited by many stray point finds recovered throughout the Middle Atlantic region, especially specimens from Coastal Plain localities, is a strong argument supporting the quarry-base camp settlement model. Gardner has argued that once a tool kit has been curated to its usable limit, a return to the quarry-tied base camp would be made in order to replenish raw materials (Gardner 1974).

Sporadic Paleoindian finds are reported in the Potomac Valley, but, overall, these distinctive projectile points are not too common in the local area (Gardner 1985; Brown 1979). Paleoindian fluted points have been found as isolated finds in the county; however, at the time of this writing no intact sites have yet been documented.

Early Archaic Period (8000-6000 BCE)

The Early Archaic period coincides with the early Holocene climatic period. The warming trend, which began during the terminal Late Pleistocene and Paleoindian period, continued during the Early Archaic period. Precipitation increased and seasonality became more marked, at least by 7500 BCE. This period encompasses the decline of the open grasslands of the previous era and the rise of closed boreal forests throughout the Middle Atlantic region; this change to arboreal vegetation was initially dominated by conifers, but soon gave way to a deciduous domination. Arguably, the reduction of these open grasslands led to the decline and extinction of the last of the Pleistocene megafauna, as evidence suggests that the last of these creatures (e.g., mastodons) would have been gone from the area around the beginning of the Early Archaic period. Sea level throughout the region rose with the retreat of glacial ice, a process that led to an increase in the number of poorly drained and

swampy biomes; these water-rich areas became the gathering places of large modern mammals.

Similar to the Paleoindian period, the subsistence settlement strategy of Early Archaic peoples was one focused on seasonal migration and hunting and gathering. Early Archaic humans were drawn to the wet biomes resulting from sea level rise because the abundant concentration of game animal, such as white-tailed deer, elk, and bear, made for excellent hunting. As the arboreal vegetation became more abundant and deciduous forests spread, the exploitation of newly available and abundant plant resources, such as fruits, nuts, and acorns increased among Early Archaic populations (Egloff and Woodward 1992:13-14).

Although the manufacturing techniques of projectile points and the favored use of cryptocrystalline raw materials of the Paleoindian period remained unchanged throughout the Early Archaic period, stylistic changes in the lithic toolkit of Early Archaic peoples are evident. The switch from the fluting of projectile points to notching is generally considered to mark the end of the Paleoindian and the beginning of the Archaic period; examples of Early Archaic point types include Amos Corner Notched, Kirk and Palmer Corner Notched, Warren Side Notched and Kirk Stemmed varieties. Gardner has demonstrated that while corner notched and side notched points show a stylistic change from the earlier fluted varieties, they all occurred within a single cultural tradition (Gardner 1974). The transition from fluting to notching is not a radical change, but the gradual replacement of one attribute at a time. The fluting, which was nearly absent during the Dalton-Hardaway sub-phase, is replaced by corner notching, which is then gradually replaced by side notching in the Archaic sequence. The initial reason for the change in hafting and related modifications of the basal elements of Early Archaic points is likely related to the introduction of the atlatl or spear-thrower, which increased the accuracy and force with which spears could be thrown; the fluted forms may have been utilized mainly as thrusting tools, while the earlier notched forms may have been mounted onto a smaller lance with a detachable shaft and powered by the atlatl. As in the earlier Paleoindian period, stone tools designed for the processing of plant materials are rare in Early Archaic assemblages.

Toward the close of the Early Archaic period, trends away from a settlement model comparable to the earlier Paleoindian quarry-focused pattern are evident. A major shift is one to a reliance on a greater range of lithic raw materials for manufacture of stone tools rather than a narrow focus on high quality cryptocrystalline materials. Lithic use was a matter of propinquity; stone available was stone used. However, extensive curation of projectile points is still evident up until the bifurcate phases of the subsequent Middle Archaic period. It may be that while a reliance on high quality lithic materials continued, other kinds of raw material were used as needed.

This pattern is not readily documented during the earlier Paleoindian period. Johnson argues that the shift to a wider range of materials occurs in the gradual shift from the Palmer/Kirk Corner Notched phases of the Early Archaic to the later Kirk Side Notched/Stemmed or closing phases of the period (Johnson 1983; 1986:P2-6). Changes in lithic raw material selection are likely related to movement into a wider range of habitats

coincident with the expansion of deciduous forest elements. Early Archaic period sites begin to show up in areas previously not occupied to any great extent if at all. Additionally, the greater number of sites can be taken as a rough indicator of a gradual population increase through time.

Middle Archaic (6000-2500 BCE)

The chronological period known as the Middle Archaic coincides with the appearance of full Holocene environments. Climatic trends in the Holocene at this time are marked by the further growth of deciduous forests, the continuing rise of sea levels, and warm and moist conditions. This change led to the spread of modern temperate floral assemblages (such as mesic hemlock and oak forests), modern faunal assemblages, and seasonal continental climates. The advent of such climates and related vegetation patterns allowed for the development of seasonally available subsistence resources, which led to base camps no longer being situated near specific lithic sources, but closer to these seasonal resources. This shift also led to an increase in the number of exploited environmental zones. The moist conditions favored the spread of swamps and bogs throughout poorly drained areas like floodplains, bays, or basins. Rising sea level and overall moist conditions helped form these swamps and basins; sea level had risen too rapidly to allow the growth of large, stable concentrations of shellfish. Estuarine resources were scarce and the inhabitants relied on varied animal resources for sustenance. Essentially modern faunal species were spread throughout the various biomes, but their distributions would have been somewhat different than that known for today. The prevalent species included deer, turkey, and smaller mammals.

The initial technological shift in lithic projectile points between the Early and Middle Archaic periods is generally considered to be marked by the introduction of bifurcate base projectile points, such as St. Albans, LeCroy, and Kanawha types (Broyles 1971; Chapman 1975; Gardner 1982). Other researchers place the bifurcate phase within the Early Archaic period. The bifurcate points do not occur throughout the entire Middle Archaic period; however, they appear to be constrained to the earlier portion of the period and disappeared sometime before 5000 BCE (Chapman 1975, Dent 1995; Bergman et al. 1994). Several other marked changes occurred along with the onset of the bifurcate points. Ground stone tools, such as axes, gouges, grinding stones, and plant processing tools, were introduced along with bifurcate points (Chapman 1975, Walker 1981). These new tools are evidence for the implementation of a new technology designed to exploit vegetable/plant resources. Also, a shift to the use of locally available lithic raw material, which began during the closing phases of the Early Archaic, is manifest by the advent of the bifurcate phases.

The major stemmed varieties of projectile point that follow the earlier bifurcate forms and typify the middle portion of the Middle Archaic period include the Stanly, Morrow Mountain I and Morrow Mountain II varieties. Coe (1964) documented a Stanly-Morrow Mountain sequence at the Doerschuk Site in the North Carolina Piedmont, and similar results were recorded at the Neville Site in New Hampshire (Dincauze 1976) and the Slade Site in Virginia (Dent 1995). The projectile points marking the latter portion of the Middle

Archaic period are the lanceolate shaped Guilford type and various side notched varieties (Coe 1964; Dent 1995). Vernon points, common at the Accokeek Creek Site in Prince George's County, Maryland, are considered to be local variants of Halifax points (McNett and Gardner 1975:9). This data seems to indicate that a similar Middle Archaic projectile point chronology exists in the Virginia-Maryland area.

It is during the Middle Archaic period that prehistoric human presence becomes relatively widespread in a wide range of environmental settings (Gardner 1985, 1987; Johnson 1986; Weiss-Bromberg 1987). As far as the inhabitants of the Middle Archaic period are concerned, there is an increase in population, which can be seen in the sheer number of sites (as represented by the temporally diagnostic point types) throughout the Middle Atlantic region. Temporally diagnostic artifacts from upland surveys along and near the Potomac show a significant jump during the terminal Middle Archaic and beginning Late Archaic; Johnson noted in his overview of Fairfax County archeology a major increase in the number of sites (as measured by temporally diagnostic point types) during the bifurcate phase and the later phases of the Middle Archaic period (Johnson 1986:P2-14). With the increasing diversity in natural resources came a subsistence pattern that was predicated on the seasonal harvest of various nut species and other plant resources that characterized deciduous forest environments. Base camps were located in high biomass habitats or areas where a great variety of food resources could be found (Walker 1981). These base camp locations varied according to the season and were located on floodplains, interior fluvial swamp settings, and in some cases, within interior upland swamp settings. The size and duration of the base camps appear to have depended on the size, abundance, and diversity of the immediately local and nearby resource zones.

Late Archaic (2500-1200 BCE)

The rise in sea level continued during the Late Archaic period, eventually pushing the salinity cline further upstream and creating tidal environments; a corresponding movement of various riverine and estuarine species took place with the development of tidal conditions in the embayed section of the Potomac and its main tributary streams. Freshwater spawning fish had to travel farther upstream to spawn, fostering extensive seasonal fish runs. The development of brackish water estuaries as a result of an increase in sea level in the Hudson, Delaware, and Chesapeake Bay regions led to the spread of various shell species, such as oysters and crabs (Gardner 1976; Gardner 1982). In general, climatic events approached those of modern times during the Late Archaic period.

Throughout the Eastern United States, distinctive patterns of the Native-American landscape become evident by about 3000/2500 BCE, marking a significant shift with earlier Middle Archaic components. The Late Archaic period is characterized by an increase in population over that documented for the Early and Middle Archaic periods, based on an increase in both the number of identified sites dating to this period and in their size and widespread distribution. An increasingly sedentary lifestyle evolved, with a reduction in seasonal settlement shifts (Walker 1981; Johnson 1986:5-1). Food processing

and food storage technologies were becoming more efficient, and trade networks began to be established.

In parts of the Middle Atlantic region, the development of an adaptation based on the exploitation of riverine and estuarine resources is apparent. Settlement during the Late Archaic period shifted from the interior stream settings favored during earlier periods to the newly embayed stream mouths and similar settings (Gardner 1976). Although Late Archaic populations continued a foraging pattern linked to dense forests and their seasonally available plant resources, interior sites became minimally exploited, though not abandoned, sustaining smaller hunting camps and specialized exploitative stations; sites in these areas exhibit varying emphasis on procurement of locally available cobble or tabular lithic sources, such as chert, quartz, and quartzite, as well as a variety of plant species. In settlement-subsistence models presented by Gardner, this shift is linked with the development of large seasonal runs of anadromous fish. These sites tend to be concentrated along the shorelines near accessible fishing areas. The adjacent interior and upland zones become rather extensively utilized as adjuncts to these fishing base camps.

The Late Archaic technological assemblage continued an emphasis on ground stone tools first noted in the Middle Archaic period. Steatite net weights and carved steatite bowls with lug handles, which would not break when heated during cooking, first appeared during this period and are common throughout the Eastern United States from Maine to Florida. The use of steatite bowls is often seen as an indicator of increased sedentism among Late Archaic populations, as the vessels would have been heavy and difficult to transport (Egloff and Woodward 1992:26). In Virginia, outcrops of steatite have been identified in the eastern foothills of the Blue Ridge Mountains, though in limited numbers, from Fairfax County to Carroll County in southern Virginia. Archeologically, fragments of steatite bowls have been recovered in Late Archaic contexts in varying physiographic settings in the Middle Atlantic, often at great distances from steatite outcrops and quarry sites, which many have interpreted as evidence of widespread trading between Late Archaic peoples across the region. Kavanagh's (1982) study of the Monocacy River watershed in Maryland suggests that dug-out canoes were being produced during the Late Archaic period, based on the greater occurrences of gouges and adzes recovered from Late Archaic contexts (Kavanagh 1982: 97); canoes would have allowed for increased mobility and facilitated trading among Late Archaic groups via the various rivers and streams in the region.

The most easily recognizable temporally diagnostic projectile point in the Middle Atlantic region is the parallel stemmed, broad-bladed Savannah River point, which has a number of related cognate types and descendant forms, such as the notched broadspears, Perkiomen and Susquehanna, Dry Brook and Orient, and more narrow bladed, stemmed forms such as Holmes. Defined by Coe based on work in the Carolina Piedmont (Coe 1964), the Savannah River point represents what could be, arguably, a typological horizon throughout the Eastern United States east of the Appalachians, dating from about 2600 to perhaps as late as 1500 BCE. Gardner (1987) separates the Late Archaic into two phases: Late Archaic I (2500-1800 BCE) and Late Archaic II (1800-1000 BCE). The Late Archaic I corresponds to the spread and proliferation of Savannah River populations, while the Late Archaic II is

defined by Holmes and Susquehanna points. The distribution of these two, Gardner (1982; 1987) suggests, shows the development of stylistic or territorial zones. The Susquehanna style was restricted to the Potomac above the Fall Line and through the Shenandoah Valley, while the Holmes and kindred points were restricted to the Tidewater and south of the Potomac through the Piedmont. Another aspect of the differences between the two groups is in their raw material preferences: Susquehanna and descendant forms such as Dry Brook and, less so, Orient Fishtail, tended to be made from rhyolite, while Holmes spear points were generally made of quartzite.

Early Woodland (1200-500 BCE)

The Early Woodland period corresponds generally to the Sub-Atlantic episode, when relatively stable, milder, and moister conditions prevailed; although short-term climatic perturbations were present. By this point in time, generally, the climate had evolved to its present conditions (Walker 1981).

The major artifact hallmark and innovation of the Early Woodland period is the appearance of pottery (Dent 1995; Gardner and McNett 1971). Archeologists believe that ceramic technology was introduced to Virginia from people living on the coasts of Georgia and South Carolina, where pottery had been made by prehistoric populations since approximately 2500 BCE (Egloff and Woodward 1992:26). It is important to note that pottery underscores the sedentary nature of the local resident populations, as clay ceramics of the period would have been fragile and cumbersome to transport. Further evidence of this sedentism has been identified in the region in the form of subsurface storage pits (likely for foodstuffs), platform hearths, midden deposits, and evidence of substantial pole-constructed structures. This is not to imply that Early Woodland populations did not utilize the inner-riverine or inner-estuarine areas, but rather that this seems to have been done on a seasonal basis by people moving out from established bases; this settlement pattern is essentially a continuation of Late Archaic lifeways with an increasing orientation toward seed harvesting in floodplain locations (Walker 1981). Small group base camps would have been located along Fall Line streams during the spring and early summer in order to take advantage of the anadromous fish runs. Satellite sites such as hunting camps or exploitive foray camps would have operated out of these base camps.

In the middle to lower Potomac River Valley, as well as most of the surrounding Middle Atlantic region, the earliest known ceramics begin with a ware known as Marcey Creek. In chronological terms, Marcey Creek likely falls within the first 200 years of the final millennium BCE, or roughly 1000 to 800 BCE. This ware is a flat bottomed vessel tempered with crushed steatite or, in the Eastern Shore region, other kinds of crushed rock temper (Manson 1948). Based on vessel shape, this distinctive ware is interpreted as a direct evolution or development from the flat bottomed stone bowls of the Late Archaic period. Vessels of this ware frequently exhibit the same lugs on the side walls as seen on Late Archaic steatite bowls. As a ceramic ware group, Marcey Creek is short lived in terms of its position in the chronological record. The earliest dates for Marcey Creek are 1200

BCE in the Northern Neck (Waselkov 1982) and 950 BCE at the Monocacy site in the Potomac Piedmont (Gardner and McNett 1971).

Shortly after about 800 BCE, conoidal and somewhat barrel shaped vessels with cord marked surfaces enter the record in the Middle Atlantic region and greater Northeast; whether these evolved from the flat bottomed Marcey Creek vessels or simply replaced them is unknown. Locally, such a ware has been designated Accokeek Cord Marked, first described from the Accokeek Creek Site in Prince George's County, Maryland (Stephenson et al. 1963). Radiocarbon dates for Accokeek place it between approximately 750 BCE and 300/400 BCE, when it is superseded by net impressed varieties, including Popes Creek and related wares (Gardner and McNett 1971; Mouer et al. 1981; Mounier and Cresson 1988). Accokeek ware was tempered with both sand and crushed quartz, although any suitable stone may have been used for the grit source, including steatite. In many cases, temper selected for use by Accokeek potters appears to have been based on propinquity to specific resources. In the Coastal Plain settings of the Maryland and Virginia, Accokeek typically has a "sandier" paste and could be said to have sand as a tempering agent. However, when large enough sherds are analyzed, crushed quartz tempering is invariably found in this ware. Whether or not the paste of the vessel is sandy or more clayey in texture (or "feel") depends on the clay source, either Piedmont or Coastal Plain. Clay sources from Coastal Plain settings usually contain greater amounts of sand.

Some chronological frameworks for the Middle Atlantic region, particularly in Maryland, suggest a transitional ware, such as Selden Island (Slattery 1946), between Marcey Creek and Accokeek and its cognate wares. While this concept of a transitional ware has logical merit, it cannot be demonstrated conclusively with the evidence currently available. In many cases, the excavated sites show depositional contexts from this period with little vertical separation between Late Archaic and Early Woodland deposits. A more refined chronology that clarifies such issues of ceramic change still needs to be developed.

Generally, temporally diagnostic projectile points from the Early Woodland period include smaller side notched and stemmed variants such as Vernon and Calvert, and diagnostic spear points such as Rossville/Piscataway points. The lobate based Piscataway point has been associated archeologically with Accokeek pottery at a number of sites in the Middle Atlantic region; locally these points have been termed "Teardrop" points by Mounier and other investigators (Mounier and Cresson 1988). This point type has been found in association with Accokeek pottery at sites in New Jersey (Mounier and Cresson 1988; Barse 1991), in Maryland (Barse 1978), and in Virginia (Mouer et al. 1981; McClearen 1991). These points continue into the early phases of the Middle Woodland period and have been found in contexts containing Popes Creek, Albemarle, and early variants of Mockley ceramics along the Potomac River (Barse 2002).

Middle Woodland (500 BCE-900 CE)

The Middle Woodland period is characterized by an increase in population size and increased sedentism. With the emergence of Middle Woodland societies, an apparent

settlement shift occurred compared to those seen in the intensive hunter-gatherer-fisher groups of the Late Archaic and Early Woodland periods. In brief, it appears that a selection to broader floodplain localities and the development of larger storage facilities at base camp localities dominated settlement patterns at this time (Cross 1956). Some degree of seasonal occupation and migration centered on natural food resources still occurred; potentially the year was split between more permanent settlements located in the inner Coastal Plain region and the Piedmont uplands. In general, from 200 CE to approximately 900 CE, settlement in the Potomac Piedmont was sparse. Smaller exploitative sites are also known and found as small shell middens in estuarine settings and interior or inter-riverine hunting stations along the drainage divides between the Delaware River and its tributaries. Essentially all available food resources were now utilized, including fresh and saltwater aquatic species (i.e., oysters, fish, crab, etc.), deer, turkey, and migratory waterfowl. People also began to intensively harvest and store a variety of locally available plants, seeds, and nuts, such as amaranth seeds, chenopod seeds, wild rice, hickory nuts, acorns, and walnuts.

The Middle Woodland period is best interpreted as a gradual development from the Early Woodland and, despite clear continuity, is marked by innovations in the ceramic realm. One notable addition to ceramic technology, and one clearly widespread throughout the Middle Atlantic region, is the inception of vessels exhibiting net impressed surface treatments. A wider range of vessel forms and sizes also can be documented compared to earlier vessel assemblages. The net impressed surfaces and greater variation in vessel size and shape represent a significant change used for defining the Middle Woodland period in the Middle Atlantic region from areas south of the James River through the Chesapeake region and into the lower Susquehanna and Delaware River drainages. Accokeek and related wares of the Early Woodland period gradually developed into what has become known as the Albemarle ware group, commonly found in the Piedmont of Virginia and, perhaps, Pennsylvania and Maryland; it does not appear to be present in the Delaware Valley area.

Based on work in the lower Potomac River Valley and the upper Delaware River Valley, net impressed ceramics enter the chronological record around 500 BCE (Gardner and McNett 1971). More recently, AMS dating on carbon taken from a sherd of Popes Creek recovered in Charles County, Maryland returned a slightly younger date of 2235 ± 100 B.P., or 285 ± 100 BCE (Curry and Kavanagh 1994). In the upper Delaware River area, Broadhead net impressed ceramics, which have been considered as a northern Popes Creek cognate, have been dated to 480 ± 80 BCE in New Jersey (Kinsey 1972:456). Other similar wares include the net impressed varieties of Wolf Neck and Colbourn ceramics from the Eastern Shore of Maryland and Delaware. Comparisons could also be extended to the Prince George Net Impressed ceramics from southern Virginia and the Culpepper ware in the Triassic Lowlands of the Piedmont; Culpepper ware is a sandstone tempered ceramic occasionally found in the Piedmont and is recognized by some archeologists working in Fairfax County, but has not been clearly defined in the literature. These wares or ware groups are circum-Chesapeake Bay in their geographic distribution, pointing to close interrelationships between the societies making these wares. All of these groups were undoubtedly participating in a growing Middle Woodland interaction sphere widespread

throughout the James, Potomac, lower Susquehanna, Delaware, and even lower Hudson River Valleys.

Popes Creek ceramics developed into the shell tempered Mockley ceramics, a ware that has both net impressed and cord marked surfaces. Many, if not most, radiocarbon dates associated with Mockley ceramics bracket the ware between about 250/300 CE to approximately 800 CE, after which it develops into the Late Woodland Townsend Ware. Why the shift from sand to shell tempering occurred is unknown, although it was widespread in the Middle Atlantic region. In the lower Potomac Valley, Mockley may have been tied to the intensive exploitation of oyster beds, a phenomenon first manifested in the earlier Popes Creek phase of the Middle Woodland period. Mockley ware exhibits relationships with the earlier Popes Creek ceramics and its cognate wares in basic attributes such as rim form, vessel shapes, and the range of vessel sizes (Barse 1990).

Thurman has termed the developmental trajectory of Mockley to Townsend the “Mockley continuum”, a time span that saw gradual population growth and increasing village size leading up to the Late Woodland period (Thurman 1985). For the earlier end of this continuum, Potter (1993) has reported dates in the last 200 years of the final millennium BCE for Mockley ceramics in the lower Potomac Valley in Virginia. The emergence of Mockley ware from Popes Creek was likely a gradual process, not a single historical event. It is also likely that, during this transition, both wares coexisted (as recognized archeologically), perhaps unevenly across the region. Both wares would have been contemporaneous at some point in this transition, as evidenced by their association in the large refuse pits excavated at the Fletchers Boathouse Site in Washington, D.C. (Barse 2002). At some point in the developmental trajectory, however, Mockley ware superseded the heavy, coarse, sand tempered Popes Creek ceramics and dominated the Middle Atlantic region.

Popes Creek and Mockley ware ceramics are not as common in Piedmont settings as they are in Coastal Plain settings where they are prevalent. Albemarle ceramics, bearing mostly cord marked exterior surfaces that show continuity with the earlier Accokeek ware, are commonly found in Middle Woodland contexts in the Potomac Piedmont. This ware was found associated with Mockley ceramics at the Fletchers Boathouse site in pit contexts (Barse 2002) along with small quantities of Mockley and Popes Creek ceramics. Radiocarbon dates from several of the large pits at this site fall between 100 BCE and 100 CE, suggesting that Popes Creek was in the process of being replaced by the shell tempered Mockley ceramics. Albemarle is considered to be contemporary with both, though more commonly found in the Piedmont; as a ware it continued up to and perhaps into the Late Woodland period. Gardner and Walker (1993:4) suggested that fabric impressed wares become more common toward the end of the Middle Woodland period. This surface treatment is restricted to Albemarle wares though and does not really occur on Mockley ceramics. Fabric impressing on shell tempered ceramics by default is identified as Townsend ware.

Lithic artifacts associated with Middle Woodland occupations frequently include side notched and parallel stemmed points manufactured from rhyolite, argillite, and Pennsylvania jasper. Such points are known as Fox Creek in the Delaware Valley and Selby Bay in the Chesapeake region. The Middle Woodland people also manufactured and used a stone axe called a celt, used for woodworking. The celt differed from the earlier axes because it was not grooved; rather, it was hafted into a socketed wooded handle.

Late Woodland (900 CE to 1600 CE/European Contact)

The Late Woodland period begins around 1000 CE, the result of a culmination in trends concerning subsistence practices, settlement patterns, and ceramic technology. A trend toward sedentism, evident in earlier periods, and a subsistence system emphasizing horticulture eventually led to a settlement pattern of floodplain village communities and dispersed hamlets reliant on an economy of both hunting and the planting of native cultigens.

In the early part of the Late Woodland, the temporally diagnostic ceramics in the Northern Virginia Piedmont region include Potomac Creek, Shepard, and, in the upper Coastal Plain, Townsend ware ceramics; as noted above, Townsend ware is a shell tempered ware that developed from Mockley. Shepard ceramics are likely an outgrowth of the Albemarle wares, given similar attributes of paste and surface treatment. The surfaces of the above noted wares are almost exclusively cord marked, with the exception of the fabric impressed Townsend series specimens. In most cases, the cord marked surfaces were smoothed prior to firing the vessel, in some cases nearly obliterating the surface treatment. This is a trend that seems to become more popular through the Late Woodland period.

In the Potomac Piedmont, the crushed rock wares are replaced by a shell tempered ware that spread out of the Shenandoah Valley to at least the mouth of the Monocacy River at about 1350-1400 CE. Shell tempered Keyser ceramics, a downstream variant of the Late Woodland Monongahela ware common in the Upper Ohio River Valley, extend nearly to the Fall Line, although they are not found in Coastal Plain settings. Triangular projectile points indicating the use of the bow and arrow are often considered diagnostic of this period as well. However, triangular projectile points have also been recovered from well-defined and earlier contexts at regional sites such as the Abbot Farm site in central New Jersey, the Higgins site on the Inner Coastal Plain on Maryland's Western Shore, and the Pig Point site in Anne Arundel County, Maryland (Stewart 1998; Ebright 1992; Luckenbach et al. 2010). Additionally, triangular points have been found in context with Savannah River points in Fairfax County, although the context appears to have been mixed (Christopher Sperling, personal communication 2015).

The Late Woodland period is also marked by a marked increase in ceramic decoration. Most of the motifs are triangular in shape and applied by incising with a blunt-tipped stylus. The marked increase of ceramic decoration and the various design motifs on Late Woodland pottery compared to earlier periods likely reflect the need to define ethnic boundaries and possibly smaller kin sets. Neighboring groups that may have been in low

level competition for arable riverine floodplains may have used varied embellishments of basic design elements to set themselves apart from one another. Additionally, in a noncompetitive setting, ceramic designs simply may have served to distinguish between individual social groups, as the region now sustained the highest population level of the prehistoric sequence. As such, ceramic design elements functioned as a symbolic means of communication among groups, serving as badges of ethnic identity or, perhaps, smaller intra-group symbols of identity.

As noted above, Late Woodland societies were largely sedentary with an economy relying on the growth of a variety of native cultigens. Late Woodland settlement choice reflects this horticultural focus in the selection of broad floodplain areas for settlement. This pattern was characteristic of the Piedmont as well as the Coastal Plain to the east and the Shenandoah Valley to the west (Gardner 1982; Kavanagh 1983). The uplands and other areas were also utilized, for it was here that wild resources would have been gathered. Smaller, non-ceramic yielding sites are found away from the major rivers (Hantman and Klein 1992; Stevens 1989).

Most of the functional categories of Late Woodland period sites away from major drainages are small base camps, transient, limited purpose camps, and quarries. Site frequency and size vary according to a number of factors, e.g., proximity to major rivers or streams, distribution of readily available surface water, and the presence of lithic raw material (Gardner 1987). Villages, hamlets, or any of the other more permanent categories of sites are rare to absent in the Piedmont inter-riverine uplands.

Perhaps after 1400 CE, with the effects of the Little Ice Age, an increased emphasis on hunting and gathering and either a decreased emphasis on horticulture or the need for additional arable land required a larger territory per group, and population pressures resulted in a greater occupation of the Outer Piedmont and Fall Line regions (Gardner 1991; Fiedel 1999; Miller and Walker n.d.). The 15th and 16th centuries were a time of population movement and disruption from the Ridge and Valley to the Piedmont and Coastal Plain. There appear to have been shifting socio-economic alliances over competition for resources and places in local exchange networks. Factors leading to competition for resources may have led to the development of more centralized forms of social organization characterized by incipiently ranked societies. Small chiefdoms appeared along major rivers at the Fall Line and in the Inner Coastal Plain at about this time. A Fall Line location was especially advantageous for controlling access to critical seasonal resources as well as being points of topographic constriction that facilitated controlling trade arteries (Potter 1993; Jirikowic 1999; Miller and Walker n.d.).

Although European exploration of the Chesapeake Bay area began in the late 1500s, there is minimal evidence for contact between Europeans and the native populations in the Chesapeake before the 17th century. French or Spanish explorers likely observed the Chesapeake Bay earlier in the 16th century; circa 1527 the Chesapeake was marked on the official Spanish *Padrón General* maps as the *Bahia de Santa Maria* (Potter 1993:161). French, Spanish, Portuguese, and Italian ships sailed the lower Chesapeake throughout the

remainder of the 16th century, but none appear to have ventured as far north as Maryland. These ships were probably involved in slave hunting, missionary work, and mapping (Potter 1993: 162). During this period, Spanish colonialism focused on *La Florida*, where several mission settlements were established by 1570.

In the early 1600s, Captain John Smith made contact with local populations in the Upper Potomac Coastal Plain and Henry Fleet lived among and traded with the Native Americans on the Chesapeake. Based on their comments, the upper Potomac may have served as a gateway location where Native Americans from diverse regions came to trade (see Potter 1993). Native Americans along the Potomac appear to have adopted a range of social strategies during this period based on varying archeological evidence for European trade goods in aboriginal household assemblages and interpretations of how such goods were incorporated into traditional practices and social relations (Gallivan 2010).

Following his voyage up the Potomac in 1608, Captain John Smith described several substantial aboriginal occupations along the banks of the Potomac and Anacostia Rivers. Smith mapped several Native American settlements along the Potomac River in northern Virginia. These include four hamlets or villages associated with the Tauxenent, Taux, or Dogue Indians, including Pamacocack, on Quantico Creek; Namassingakent on the north bank of Dogue Run; Assaomeck, on the south side of Hunting Creek, and the village of Tauxenent, near lands that would become George Washington's Mount Vernon plantation on Dogue Run.

This area lay at the northern fringe of the Powhatan Confederacy, a large polity centralized in Tidewater Virginia (Rountree 1989). At the time of the initial reported contact with Europeans, the most numerous Native American groups along the Potomac belonged to chiefdom called the Conoy by their Iroquoian adversaries (Potter 1993:19) and the Piscataway, descendants, evidently, of the prehistoric Potomac Creek populations was the most numerous of the Conoy (Potter 1993:19). They dominated the eastern bank of the Potomac River and are generally believed to have been comprised of Coastal Algonquian linguistic group peoples (Humphrey and Chambers 1977, 1985; Potter 1993). Relatively little is known of the Tauxenent or Dogue people; they were possibly Algonquian speakers allied with the Piscataway (Mayre 1935; Cissna 1986). Potter (1993:197) states that around 1650, the Dogue were still living in what is now Mason Neck and by 1654 some may have moved to lands along the Rappahannock River. The Indian groups of this region effectively disappeared from the historic record in the beginning of the 18th century, although small groups of Native Americans likely remained after that time (Cissna 1986).

Historic Overview

Early English explorations to the American continent began in 1584 when Sir Walter Raleigh obtained a license from Queen Elizabeth of England to search for "remote heathen lands" in the New World, but all of his efforts to establish a colony failed. In 1606, King James I of England granted to Sir Thomas Gates and others of "The Virginia Company of London" the right to establish two colonies or plantations in the Chesapeake Bay region of

North America in order to search “.... For all manner of mines of gold, silver, and copper” (Hening 1823, Vol. I:57-75).

It was in the spring of 1607 that three English ships--the *Susan Constant*, the *Godspeed*, and the *Discovery*, under the command of Captains Newport, Gosnole, and John Smith--anchored at Cape Henry in the lower Chesapeake Bay. After receiving a hostile reception from native inhabitants, exploring parties were sent out to sail north of Cape Henry. Following explorations in the lower Chesapeake, an island 60 miles up the James River was selected for settlement (Kelso 1995:6-7) and the colonists began building a palisaded fort which came to be called Jamestown. In 1608, Captain Smith surveyed and mapped the Potomac River, locating the various native villages on both sides of the Potomac River. Captain Smith's "Map of Virginia" supplies the first recorded names of the numerous native villages along both sides of the Potomac River. The extensive village network along the Potomac was described as the "trading place of the natives (Gutheim 1986:22-23, 28). After 1620, Indian trade with the lower Coastal Plain English became increasingly intense. Either in response to the increased trade, or to earlier inter-Native American hostilities, confederations of former disparate aboriginal groups took place.

Reaffirmed by an "Ancient Charter" dated May 23, 1609, King James outlined the boundaries of the charter of "The Virginia Company":

...in that part of America called Virginia, from the point of land, called Cape or Point Comfort, all along the sea coast, to the northward two hundred miles, and from the said point of Cape Comfort, all along the sea coast to the southward two hundred miles, and all that space and circuit of land, lying from the sea coast of the precinct aforesaid, up into the land, throughout from sea to sea, west and northwest; and also all the islands, lying within one hundred miles, along the coast of both seas... (Hening 1823, Vol. II:88)

In 1611, John Rolfe (who later married Pocahontas in 1614) began experimenting with the planting of "sweet scented" tobacco at his Bermuda Hundred plantation, located at the confluence of the James and Appomattox Rivers. Rolfe's experiments with tobacco altered the economic future of the Virginia colony by establishing tobacco as the primary crop of the colony; this situation lasted until the Revolutionary War (O'Dell 1983:1; Lutz 1954:27). Tobacco was used as a stable medium of exchange; promissory notes, used as money, were issued for the quantity and quality of tobacco received (Bradshaw 1955:80-81). Landed Virginia estates, bound to the tobacco economy, became independent, self-sufficient plantations, and few towns of any size were established in Virginia prior to the industrialization in the south following the Civil War.

A number of early English entrepreneurs were trading along the Potomac River in the early 1600s for provisions and furs. By 1621, the numbers of fur trappers had increased to the point that their fur trade activities became regulated. Henry Fleet, among the better known of the early Potomac River traders, was trading in 1625 along the Potomac River as far

north as the Falls, with English colonies in New England, settlements in the West Indies; and across the Atlantic to London (Gutheim 1986:28-29, 35, 39).

The first Virginia Assembly, convened by Sir (Governor) George Yeardley at James City in June of 1619, increased the number of corporations or boroughs in the colony from seven to eleven. In 1623, the first laws were made by the Virginia Assembly establishing the Church of England in the colony. These regulated the colonial settlements in relationship to Church rule, established land rights, provided some directions on tobacco and corn planting, and included other miscellaneous items such as the provision "...That every dwelling house shall be pallizaded in for defence against the Indians" (Hening 1823, Vol. I:119-129).

In 1617, four parishes--James City, Charles City, Henrico and Kikotan--were established in the Virginia colony. By 1630, the colony had expanded, now comprised of a population of about 5,000 persons; this necessitated the creation of new shires, or counties, to compensate for the courts which had become inadequate (Hiden 1980:3, 6). In 1634, that part of Virginia located south of the Rappahannock River was divided into eight shires called James City, Henrico, Charles City, Elizabeth Citty [sic], Warwick River, Warrosquyoake, Charles River, and Accawmack, all to be "...governed as the shires in England" (Hening 1823, Vol. I:224). Ten years later, in 1645, Northumberland County, located on the north side of the Rappahannock River, was established "...for the reduceing of the inhabitants of Chickcouan [district] and other parts of the neck of land between Rappahanock River and Potomack River," thus enabling European settlement north of the Rappahannock River and Northern Virginia (Hening 1823, Vol. I:352-353).

Early settlers who had seated plantations in Northern Virginia along the Potomac River shipped their tobacco crops by means of trading ships; these were able to find convenient anchorages at the mouths of the creeks and rivers. In order to control tobacco shipping and trade and to afford protection for the early settlers, the first Acts of the Virginia Assembly for Northern Virginia and the Potomac River were to establish forts "within command of which forts all ships trading to these respective places may conveniently, and in all probability securely ride and load." (Hening 1823, Vol. II:256). The first fort in Prince William County was ordered to be built in 1667 on the Potomac River near the mouth of Yehocomico (Neabsco Creek), "ten foote high and toward the [Potomac] river or shipping tenn foote thick at least." (Hening 1823, Vol. II:257). The second Act establishing a fort at this location was passed on April 2, 1679:

And because there is noe neighbouring Indians on Virginia side resideing near the garrison on Potomack river, the commander in cheife of that garrison is hereby impowered and requested to hyre fowre of the Matteoman Indians in Maryland for the service of that garrison (Hening 1823, Vol. II:438).

Prior to 1692, most lands in the Virginia Colony were issued by the Governor of the colony as Virginia Land Grants. In 1618, a provision of 100 acres of land had been made for

"Ancient Planters," or those adventurers and planters who had established themselves as permanent settlers prior to 1618. Thereafter, Virginia Land Grants were issued by the "headright" system by which "any person who paid his own way to Virginia should be assigned 50 acres of land...and if he transported at his owne cost one or more persons he should...be awarded 50 acres of land" for each (Nugent 1983:XXIV).

King Charles I was beheaded in January 1648/9 during the mid-17th century Civil Wars in England. His son, Prince Charles II, was crowned King of England by seven loyal supporters, including two Culpeper brothers, during his exile near France in September 1649. For their support, King Charles granted his loyal followers "The Northern Neck," or all that land lying between the Rappahannock and Potomac Rivers in the Virginia colony; the grant was to expire in 1690. King Charles II was subsequently restored to the English throne in 1660.

In 1677, Thomas, Second Lord Culpeper became successor to Governor Berkley in Virginia, and by 1681, he had purchased the six Northern Neck interests of the other proprietors. The Northern Neck grant (due to expire in 1690) was reaffirmed by England in perpetuity to Lord Culpeper in 1688. Lord Culpeper died in 1689, and four-fifths of the Northern Neck interest passed in 1690 to his daughter, Katherine Culpeper, who married Thomas, the fifth Lord Fairfax. The Northern Neck became vested and was affirmed to Thomas, Lord Fairfax, in 1692 (Kilmer and Sweig 1975:5-9). In 1702, Lord Fairfax appointed an agent, Robert Carter of Lancaster County, Virginia, to rent the Northern Neck lands for nominal quit rents, usually two shillings sterling per acre (Hening 1820, Vol. IV:514-523; Kilmer and Sweig 1975:1-2, 7, 9).

The extent and boundaries of the Northern Neck were not established until two separate surveys of the Northern Neck were conducted. These were begun in 1736, and a final agreement was reached between 1745 and 1747 (Kilmer and Sweig 1975:13-14).

In 1730/31, Prince William County was established from the northern part of Stafford County (Hening 1820, Vol. IV:303) and was named for William Augusta, Duke of Cumberland, the second son of King George II of England. Parent counties of Prince William County were Northumberland (1645-1651), Lancaster (1651-1653), Westmoreland (1653-1664), and Stafford (1664-1730/31). In 1742, the county was divided in half, and all of the northern part of Prince William County above the Occoquan River and Bull Run became the county of Fairfax (Hening 1819, Vol. V:207-208). In 1759, Fauquier County was established from the western part of Prince William County (Hening 1820, Vol. VII:311-312).

Dumfries, the oldest town in Prince William County, began with the establishment of Richard Gibson's mill site at the mouth of Quantico Creek in about 1690. By 1713, merchants from Glasgow, Scotland, had moved into the area then known as the settlement town of Quantico and began a flourishing tobacco trade on the Potomac River. To prevent the exportation of bad quality "trash" tobacco from being shipped from Virginia to England, the Virginia Assembly passed an Act in 1730 establishing houses for the

inspection and grading of tobacco prior to its shipment. A tobacco warehouse was established at Quantico (Dumfries) on Robert Brent's land in 1730/31. Until 1763, Dumfries was the second leading port for tobacco shipping in Colonial America (Martin 1836:274).

U.S. Route 1, running through the town of Dumfries, was originally known as the "Potomac Path." Throughout the 1700s and 1800s the Potomac Path had various names including "King's Highway," the "Dumfries and Occoquan Road, and "the Richmond-Washington Highway;" today it is known as the "Jefferson Davis Highway." The first Prince William County courthouse was located on the Potomac Path, near the south side of the Occoquan River, a short distance above the town of Colchester (Harrison 1987:311-312, 315).

At a Council held at the Capitol at Williamsburg on October 22, 1742, a second Prince William County courthouse was proposed:

It was referred to Col Henry Fitzhugh Col Will.m. Fairfax and Col John Colvil to view the several places proposed for fixing the Courthouse of Prince William County...In obedience to which Order they met at the Iron Mines at Niapso [sic; Neabsco Creek] and having heard all Parties & Evidences are of the opinion that Philemon Water's Plantacon [sic] is the most Convenient place to fix the Courthouse for the sd. County And have accordingly given the same under their hands dated 23d Nov.r. 1742...It is Ordered That the Courthouse of the County of Prince William Be Erected at the Plantation of Philemon Waters accordingly (Hall 1945:109).

The location of the second courthouse is thought to have been located at the forks of the Dumfries Road on Water's plantation named *Ashmore* (Harrison 1987:316).

Poll lists of inhabitants in Prince William County in 1749 enumerated 2,222 white males of the age of 18 or older. In 1755, the poll lists show 1,384 white males age 18 or older and 1,414 slaves (Greene 1932:151). In 1762, 215 "land holders" paid land taxes in Prince William County. A total of 16 large "land holders", or lease holders on this list, held between 1,000 and 10,000 acres of land. The remainder of the Prince William County land holders at this time held an individual average of between 100 and 300 acres of land (Huntington Library 1762).

The Prince William County militia during the French and Indian Wars was made up of 17 officers, 39 troopers and 21 foot soldiers. Wages and claims for military supplies needed for the protection of the colony's frontiers were generally paid in tobacco from an optional tax of one shilling in cash, or 10 pounds of tobacco from each tithable, collected in the respective counties (Hening 1820, Vol. VII:11, 24-25); a tithable was a free person aged 16 years and over.

The 18th century witnessed a change from the planting of tobacco crops in the Piedmont counties to the cultivation of wheat and the introduction of plows:

...some years before the outbreak of the [Revolutionary] war the cultivation of this grain [wheat] had already been undertaken with more enthusiasm in this region [Prince William County]: that is after the profit from their tobacco had been greatly lessened by the heavy duties imposed in England; and besides, their lands, even then exhausted, not producing such large crops of tobacco, the profitable culture of wheat gave the land a new and greater value (Harrison 1987:403).

Private claims to fishing shores in Virginia became a contentious issue with the Colony of Maryland along the Potomac River. Maryland's claims on the Potomac included all the fishing and shipping rights from Maryland to the Virginia shoreline (Smith 1980:16). In 1785, representatives from Maryland and Virginia met at George Washington's Mount Vernon estate to mediate, among other issues, fishing regulations and toll fares across the Potomac River. Negotiations reached a compromise, allowing Virginians to fish the Potomac River in exchange for the free entry of Maryland ships thorough the Virginia capes (Wharton 1957:65).

Among the various species of fish in the Potomac River, and the Potomac River tributaries during the eighteenth century, identified by their common names, were: sturgeon, bass, carp, perch, rock fish, and the spring runs of herring and shad. Shad was also identified during the colonial period as "white fish" (Neitzey 1991:48; Wharton 1957:64). Colonial fish preservation depended on curing by salting and packing in barrels either to be sold to local planters for their slaves or to be shipped abroad (Wharton 1957:66; Jackson and Twohig 1976, Vol. II:218).

During the first half of the 18th century, siltation of the harbor at Dumfries, a result of upland soils washing down Quantico Creek, had caused increasing economic and shipping problems:

For that portion of the 18th century that Dumfries was a major tobacco part, the land that is now Prince William Forest Park was extensively farmed in tobacco. As the land was denuded for this purpose, serious erosion took place. Tons of silt washed down the water shed of the North and South Branches of Quantico Creek and ruined the harbor at Dumfries (Curtis 1988:40).

During the Revolutionary War, the Virginia General Assembly passed Acts to draft men from each county in Virginia for military service. Colonel Henry Lee of Leesylvania, commander of the Prince William County militia, submitted a final summary on the annual drafts from the county dating from 1776 through 1780, listing 269 men who had been drafted. By a further Act requiring an additional draft in 1780, 48 men were drafted: "2 of whom cut off their fingers after the draft, 1 was discharged as being a Lunatick, 9 deserted, & 1 remains in the County armed" (McIlwaine 1930:163).

British subjects who held land and property in the Virginia colony were deemed to be

enemy aliens and their lands and personal property in Virginia, including slaves, were ordered by the Virginia Legislature to be seized as Commonwealth property in 1777 (Hening 1822, Vol. X:66-71). Heirs to the Fairfax family holding the Northern Neck were considered enemy aliens and subject to losing their land. “American citizens” in possession of leased Northern Neck lands at the time the Fairfax lands escheated obtained fee simple titles to the property by obtaining a certificate from the Governor of the Commonwealth, completing a Northern Neck Survey of the leased lands and paying a small fee.

Impacts to Prince William County during the Revolutionary War occurred late in the conflict and included the plundering of plantations along the Potomac River by privateers. On the first of April 1781, a tender to the privateer *Trimer* went up the Potomac River, robbing the plantations as far as Alexandria in Fairfax County, where they were discovered attempting to capture a vessel. Henry Lee had, in the meantime, called out the militia to protect the warehouses on Quantico Creek near Dumfries. Prisoners of the privateer later revealed that they had intended to burn George Washington's houses at Mount Vernon, were planning to plunder Colonel Mason at Gunston Hall and Henry Lee at Leesylvania and had also planned to take Henry Lee as a prisoner (Palmer 1881:21-22).

In September 1781, the final battle of the Revolutionary War at Yorktown, Virginia, was preceded by the movement of Washington's Continental Army, combined with Rochambeau's French Army, from Mount Vernon in Fairfax County through Prince William County via the town of Dumfries.

In 1787 a new town called Newport, located at the mouth of Quantico Creek on the Potomac, was authorized by the Virginia Assembly to be established on 30 acres of the property of Cuthbert Bullitt (Hening 1823, Vol. XII:603-604). In 1788, the Virginia Assembly authorized the town of Carrborough to established on 50 acres of Willoughby Tebbs' property on the south side of Quantico Creek (Hening 1823, Vol. XII:684; Harrison 1987:664). Unfortunately, neither the town of Newport nor the town of Carrborough was ever fully developed because of the increasing siltation, and the Scottish merchants moved to more favorable places (WPA 1941:91). On December 7, an Act was passed by the Virginia Assembly to discontinue the inspection of tobacco at Dumfries warehouse. Jesse Ewell, proprietor of the warehouse, stated in a petition that the warehouse was no longer necessary for the reception and inspection of tobacco (Shepherd 1970:264).

Martin's *Gazetteer of Virginia*, published in 1836, lists seven towns, or post offices, in existence in the county: Buckland, Dumfries, Hay Market, Liberia, Occoquan, Thoroughfare, and Brentsville, the county seat at that time. Data from the 1830 U.S. Census Records indicates that the county had been showing a population decrease for the past 20 years, going from 11,311 people in 1810 to 9,320 in 1830 – almost an 18% decrease in the population (Martin 1836:273-275).

Major agricultural shipping and transportation impacts to Prince William County began in the early 1850s when the Orange and Alexandria Railroad was incorporated by an Act of the Virginia Assembly on March 27, 1848 (Commonwealth of Virginia 1850:190-193).

Construction of this railroad began in 1850 in Alexandria and reached Tudor Hall (Manassas Junction) in October of 1851 (Harrison 1987:340). The Manassas Gap Railroad, routed through Thoroughfare Gap in northern Prince William County, was incorporated by an Act of the Virginia Assembly on March 9, 1850 (Commonwealth of Virginia 1851:73-74).

The plan for the two railroad systems was to extend the railroad lines from a junction of the two railroads at Tudor Hall (Manassas) through Manassas Gap to Strasburg in Shenandoah County, then to run south to Harrisonburg in Rockingham County, Virginia. The Warrenton branch of the Orange and Alexandria Railroad, with a connection to the Manassas Gap Railroad, was surveyed in 1850 (Salmon 1996:49). After the Civil War, the Manassas Gap Railroad merged with the Orange and Alexandria Railroad; in 1898, the Orange and Alexandria Railroad system became the Southern Railroad line (McCarty 1974:109).

On the night of December 26, 1860, Major Robert Anderson moved his troops from Fort Moultrie to Fort Sumter in the harbor of Charleston, South Carolina. Subsequently, on April 15, 1861, President Lincoln sent a reinforcement fleet of war vessels from New York to Fort Sumter to suppress the rebellion in the southern states. Two days later, the Commonwealth of Virginia seceded from the Union, adopting the Virginia Ordinance of Secession on April 17, 1861, and forming a provisional Confederate government (Gallagher 1989:29; Boatner 1991:729; Church and Reese 1965:134). The State formally seceded from the Union on May 23, 1861, by a vote of 97,000 to 32,000 (Bowman 1985:51, 55).

In Virginia, Confederate regiments formed by Prince William County residents included the "Bull Run Rangers", the "Prince William Cavalry", the "Prince William Rifles", the Quantico Guards" and the "Prince William Rangers" (WPA 1941:49).

From April 19, 1861, until March of 1862, the Potomac River was blockaded by the U.S. Navy under order of President Lincoln. In return, Confederate army batteries were established at critical points on the Virginia side of the Potomac River. One of the first Confederate batteries was established at Aquia Creek, where the Confederates destroyed the buoys and channel markers on the river, making navigation difficult for those unfamiliar with the channel (Wills 1978:22). Other batteries established in the area that at Evansport, at Shipping Point at the mouth of Quantico Creek, at Possum Point, at Cockpit Point south of Cherry Hill, and at Stoney Point on the Leesylvania Plantation at the mouth of Neabsco Creek. Confederate Brigadier General W. H. C. Whiting's Brigade, which was camped in and around Dumfries, helped man the batteries and guard the Potomac and Occoquan Rivers against a Union Attack (Wills 1978).

The First Battle of Manassas, occurring along Bull Run from July 18th through July 21, 1861, was the first engagement of the Civil War. It took place north of the town of Manassas, in Prince William County. The second Battle of Manassas, August 29-30, 1862, began at the railroad station at Manassas Junction and extended to the town of Haymarket

in Prince William County. Both battles were decisive victories for the Confederate army (Boatner 1991:507; Bowman 1985:111).

On March 8, 1862, the Confederate Army of the Potomac was withdrawn from northern Virginia and moved south to defend Richmond against an easterly advance by the Union Army under General McClellan, coming from Fort Monroe at the mouth of the James River. A Union reconnaissance of northern Virginia on March 15, 1862 found part of the Confederate Army in force at Warrenton Station in Fauquier County, Virginia, as well as two regiments of cavalry with three companies of infantry posted on Cedar Run south of Manassas in Prince William County (OR 1881:1.5:550).

During the winter of 1861/1862, concurrent with the Potomac River blockade, the right flank of the Confederate army commanded by General Johnston was kept on alert in the Occoquan and Dumfries sector to counter a possible attack from either the Occoquan or the Potomac front (Hanson 1951:41). On December 12, 1862, a raid was made on the Confederate telegraph station in Dumfries. Colonel Anson Stager, superintendent of the U. S. Military Telegraph, reported:

Hampton, with 800 cavalry, made a raid on Dumfries at 5 o'clock this a.m.; cut telegraph and captured two operators and one repairer; also several officers, orderlies, &c. They left Dumfries about 8 o'clock, taking [the] road toward Bristoe. They stated that they were only a detachment of the force that had crossed with them, saying they expected, and came to meet, a large force of our cavalry. General Steinwehr's division marched into Dumfries at 10 this a. m. We have heard firing near Dumfries and to westward of it, which shows he has met the rebels and engaged them. The rebels paroled the officers, but retained the telegraphers (OR 1888:689).

McDowell's 1862 map is a crude representation of the vicinity of the towns of Thoroughfare Gap and Haymarket that shows minimal detail. The study area is depicted as lying within wooded and agricultural land between the two towns (Figure 5). The Manassas Gap Railroad is depicted in the vicinity.

Until the late summer and early fall of 1863, the war effort in Prince William County remained relatively quiet. On October 9, 1863, in a maneuver to flank Union General Meade's Army of the Potomac, C.S.A. General Lee moved his army from the Rapidan River to the west and north, toward Meade's army who were occupying Culpeper Courthouse in Culpeper County. (General Meade relieved General Joseph Hooker as commander of the Army of the Potomac in June 1863). Pushing Meade's army toward Washington, C.S.A. General A.P. Hill's Third Corps attacked the Union army near Bristoe Station, south of Manassas, on October 14, 1863. However inconclusive, both armies suffered severe casualties during the short battle and the Confederates did manage to force Meade back toward Washington. Lee's armies remained in the Prince William county area until October 17, 1863, when they retreated south to the Rappahannock River (Bowman 1985:168-172).

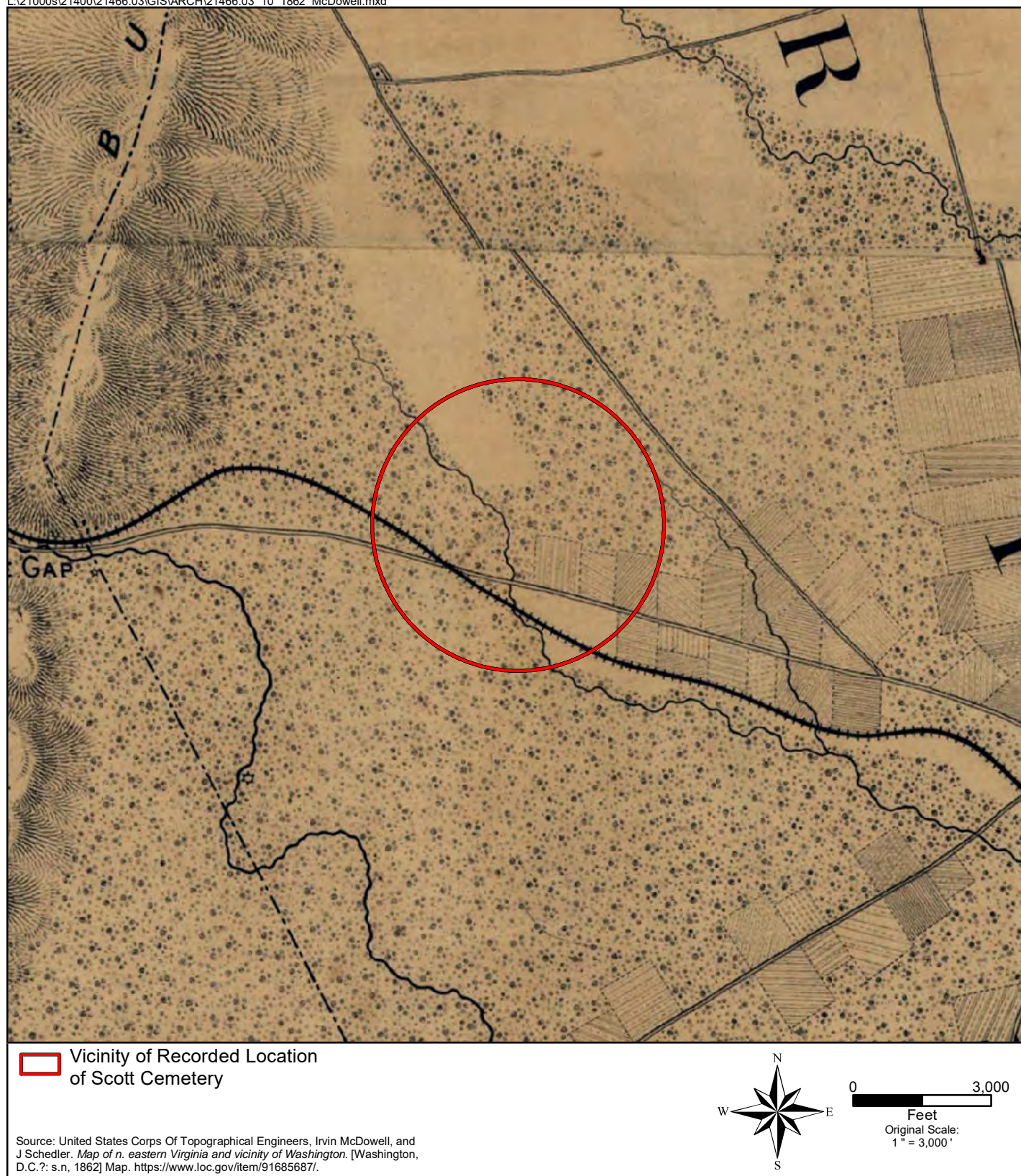


Figure 5: 1862 McDowell Map, Northeast Virginia and Washington DC

During the period of post-Civil War reconstruction, the Underwood Convention held in Richmond from December 1867 through April 1868 led to the new Virginia Constitution of 1869. The Virginia Constitution, ratified on July 6, 1869, provided for the division of each county into townships (later magisterial districts) and for the development of a revolutionary educational system. In 1871-1872 the Virginia Public Free School system was adopted. The Virginia Constitution also disenfranchised all southerners who had served in a civil capacity or in the military and required an oath by anyone seeking public office (Church and Reese 1965:134; Woods 1901:24, 25, 119).

The first railroad in the southeastern part of Prince William County was the Richmond, Fredericksburg and Potomac Railroad, constructed from Richmond to Fredericksburg in Spotsylvania County prior to January of 1837. The railroad line reached Aquia Creek in Stafford County in November of 1842, when the extension of the railroad was abandoned. In 1869/1870, the Alexandria and Fredericksburg Railroad began purchasing rights-of-way through Prince William County (Prince William County Deeds 28:118) and the railroad was extended to Quantico Creek by 1872 (Curtis 1988:65).

The town of Manassas, established in 1854 as the Manassas Gap Railroad station, was incorporated by an Act of the Virginia Assembly on April 2, 1873. On March 12, 1873, an Act to allow the citizens of Prince William County to vote on the question of the removal of the courthouse from Brentsville to Manassas was authorized by the Virginia Assembly (Commonwealth of Virginia 1884:699-700; 1888:370-372). Prince William County residents approved the courthouse move, and the Prince William County seat was moved to Manassas in 1892.

Having been bypassed as a suburban area of Washington, D.C., the interior of Prince William County was considered rural at the turn of the century, with dairying one of the major sources of incomes. Along the Potomac River however, the economic sources changed to commercial fishing and lumbering. Prince William County's population at the turn of the turn of the century was approximately 11,000, showing little or no growth since the Revolutionary War (Prince William County Population Census 1900).

The 1904 Burr map shows the vicinity of Thoroughfare as a combination of forested and cultivated land; corn appears to have been grown within a vicinity of the study area in that year and the Fletcher dwelling is located nearby (Figure 6).

In 1917, the U. S. Government leased two tracts of land in southeastern Prince William County which included 4,885.096 acres of hard land, 467.06 acres of marsh land, and 3.58 acres of submerged land, for a total of 5,355.736 acres of land collectively known as the "Hutchison Tract" and the "Quantico Company Tract." The Hutchison Tract (3,160.28 acres) was subsequently purchased from Hugh B. Hutchison in 1918, and the Quantico Company Tract (2,102.6 acres) was purchased in 1919.

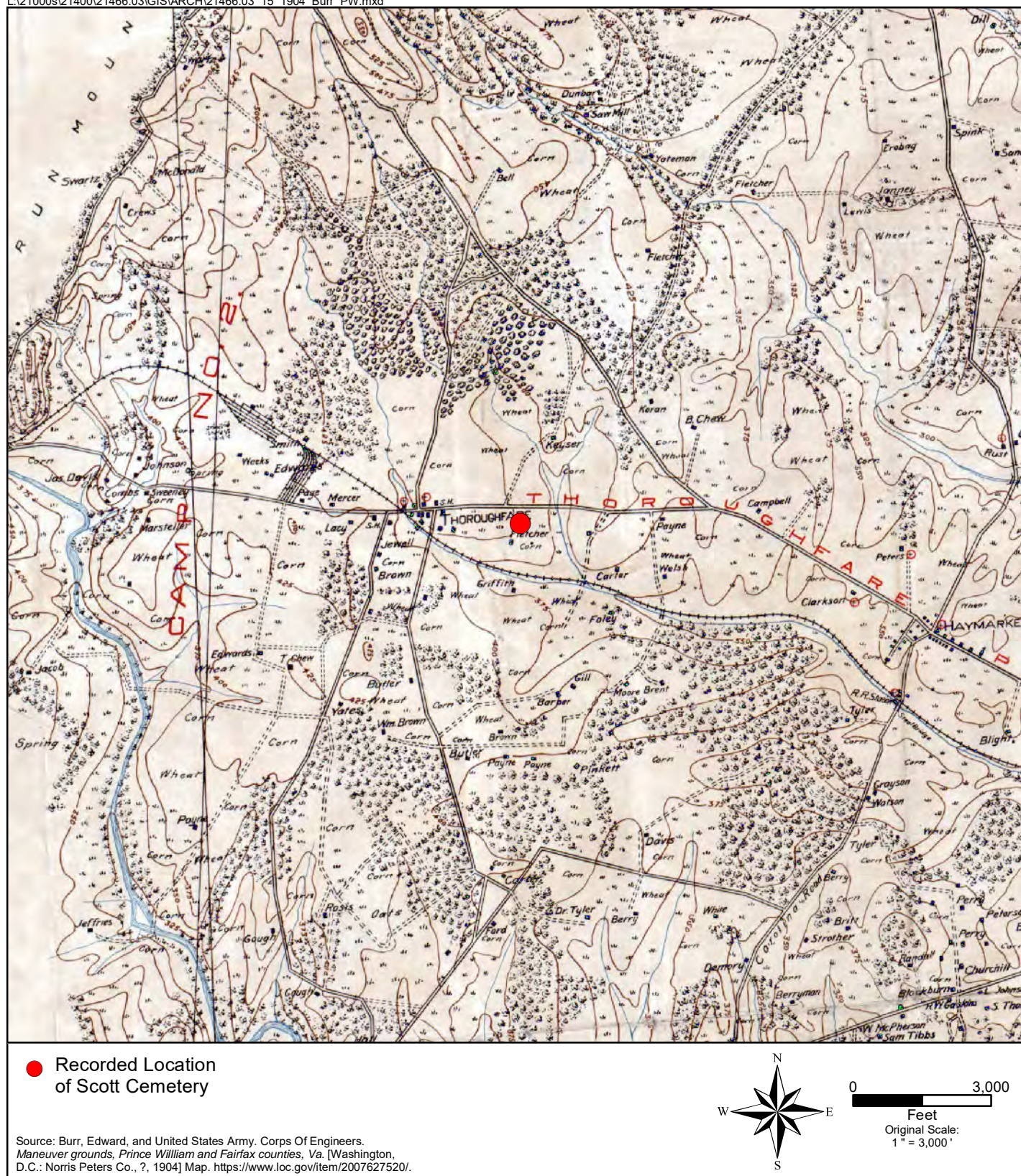


Figure 6: 1904 Burr Map, Prince William & Fairfax Counties, VA

The two purchases were the beginning of the current Quantico Marine Base to which other purchases of land in Stafford County and Fauquier County, as well as in Prince William County, have been added throughout the 20th century (Department of the Navy Bureau of Yards and Docks 1937:371-372). The Quantico Marine Base currently occupies properties adjoining the south side of the Prince William Forest Park.

The Prince William Forest Park was established during the early years of the Great Depression of the 1930s. In 1933, the United States Government declared approximately 15,000 acres of the Quantico Creek watershed in Prince William County as "sub marginal," or "severely depressed farm area" lands in order to develop a "new project called Chopawamsic Demonstration Area" to form the Emergency Conservation Work Program (Civilian Conservation Corps). The Civilian Conservation Corps operated from 1933 until the beginning of World War II as a government agency to provide work for low-income young men. Approximately 150 farms were condemned, and the families were relocated. In 1940, the property was transferred to the jurisdiction of the U.S. National Park system (Curtis 1988:41; Evans 1989:104, 118; VDHR Site Forms 76-299, 76-135).

The introduction in the 1920s of the automobiles and trucks after World War I and the subsequent development and improvement of roadways throughout the county prior to World War II in the 1940s led to the decline of the railroad system in northern Virginia. Although railroading as a form of transportation and shipping saw a revival during World War I, the revival was only temporary.

Following World War II, the population of Prince William County doubled from approximately 11,000 individuals enumerated in the 1900 census, to 21,000 people residing in the county in 1950. Within 40 years, more than 2.5 million new residents moved into the Washington metropolitan region (Evans 1989:130).

In 1956, the U.S. Congress passed legislation creating the Highway Trust Fund; this was the beginning of the development of the Interstate Highway System. Construction of I-95 was begun in 1958. Interstate I-95 was extended south from the Leesburg Pike (Route 7) to a junction with U.S. 1 in Woodbridge in Prince William County, allowing the eastern portion of the county to spread. Condemnations for the route of Interstate 66 across northern Virginia began in circa 1962 (Evans 1989:130; Netherton et al. 1992:596).

United States Geological Survey (USGS) quadrangles and historic aerial photographs document conditions within and changes to the study area and its vicinity throughout the 20th century. The 1937 aerial imagery shows the study area along a driveway leading to a farm complex; several other dwellings and farmsteads are depicted to the west (Figure 7). The study area is surrounded by cleared agricultural fields and the few trees depicted border the driveways or dwellings. The 1943 USGS map shows the town of "Thorofare" in greater detail near the junction of Route 55 and the Southern Railway, with a scatter of buildings to the southeast near the study area. Oakland Church is also identified in the northern portion of the town (Figure 8).



Figure 7: Spring 1937 Black and White Imagery

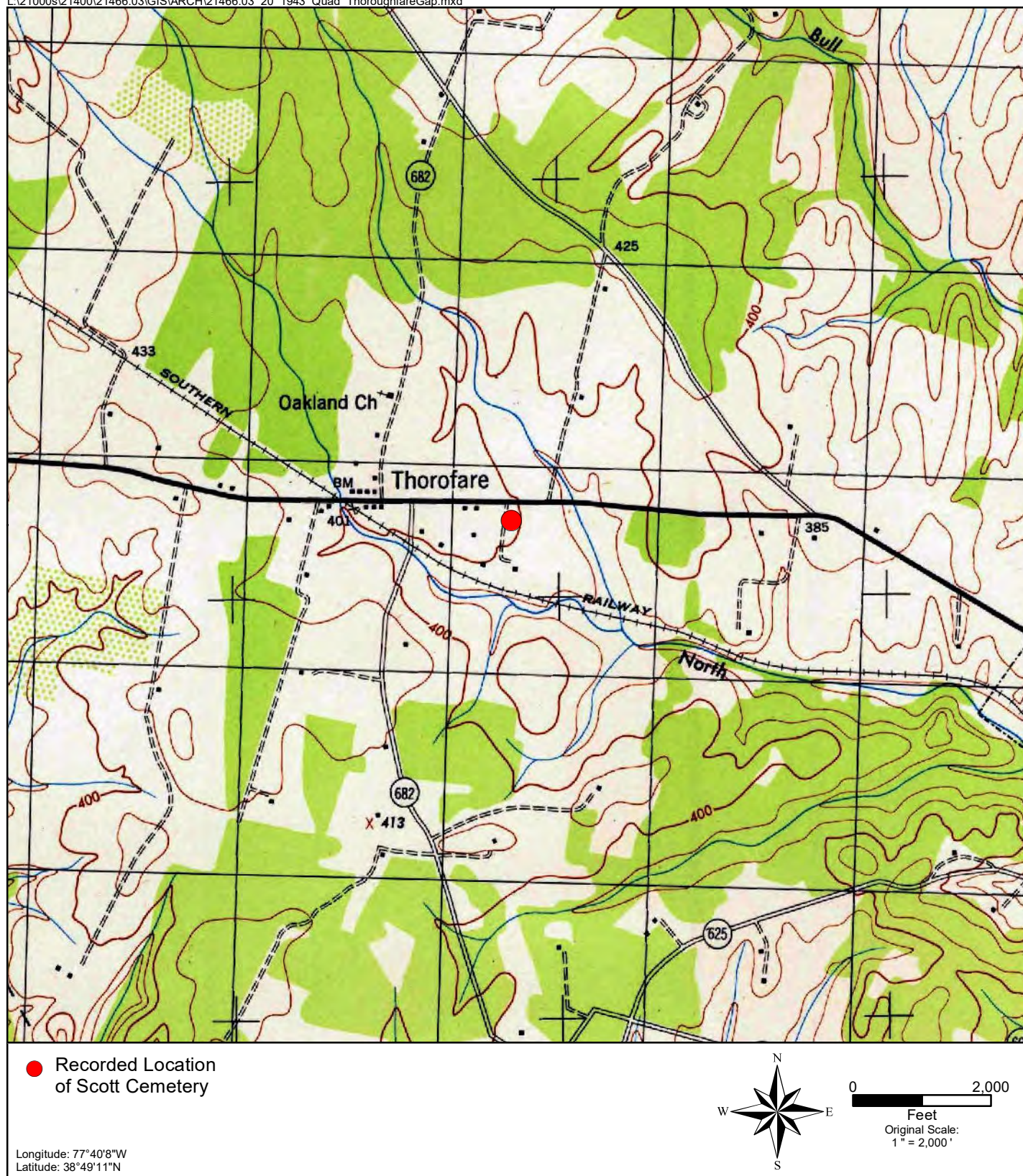


Figure 8: 1943 USGS Quadrangle, Thoroughfare Gap, VA

Additional details on the 1926 USGS map include driveways leading to each house in the project area vicinity and ponds along the North Fork tributary (Figure 9). A cemetery is also identified to the southwest of the study area, in the approximate location of the Allen Homeplace. Few changes are depicted on USGS maps until 1984, when Route 66 had been constructed (Figure 10); however late-20th century aerial imagery show the study area has been reforested (Figures 11-13).

PREVIOUS CULTURAL RESOURCES RESEARCH

The following inventory of previously recorded cultural resources within and near the project area was established by using the Virginia Department of Historic Resources' (DHRs) online Virginia Cultural Resource Information System (V-CRIS), as well as examining cultural resource files and reports at the Thunderbird Archeology office in Gainesville, Virginia. No archeological sites and no historic properties have been recorded within the current study area, although the study area lies within the Thoroughfare Historic District and within the boundaries of three Civil War battlefields that are treated as eligible to the National Register of Historic Places (NRHP).

The Thoroughfare Historic District (076-5150) encompasses the community of Thoroughfare, which was established around 1852 when the Manassas Gap Railroad was constructed, and the Carter's Switch station was established where the railroad crosses Thoroughfare Road. The founders of the community were former enslaved individuals of mixed white, African American, and Native American extraction, who originally settled a short distance to the west at Thoroughfare Gap to work at Chapman's Mill. After the community moved to the vicinity of Carter's Crossing station, Johnson's Church (now the Oakrum Baptist Church) was founded, which also served as a school for children of the area. The church persists as the focal point and community center for the Thoroughfare community. Thoroughfare remained a small, agriculture-based village through the years of the World Wars and after, although the village began to decline during the Great Depression of the 1930s. The spread of development from the Washington D.C. area is beginning to affect the village as long-time residents sell off family properties or pass away.

The Thoroughfare Historic District was deemed by DHR to be eligible for inclusion in the NRHP in 2005; however, efforts are currently underway to update the district to reflect the local significance of the free black and Native American history and settlement in the area. The potentially significant resources identified in 2005 that should be include:

House at 16111 John Marshall Highway (076-0594)
Fletcher House at 16123 John Marshall Highway
Allen Homeplace Cemetery or "Potter's Field"
Allen House at 16127 John Marshall Highway
Oakrum Baptist Church Graveyard at or near 16117 John Marshall Highway
Oakrum Baptist Church at 16419 Thoroughfare Road
Primas Cemetery at 16417 John Marshall Highway (076-5140)
Primas House at 16413 John Marshall Highway (076-5139)
Repass Train Depot at 16704 John Marshall Highway (076-0151)

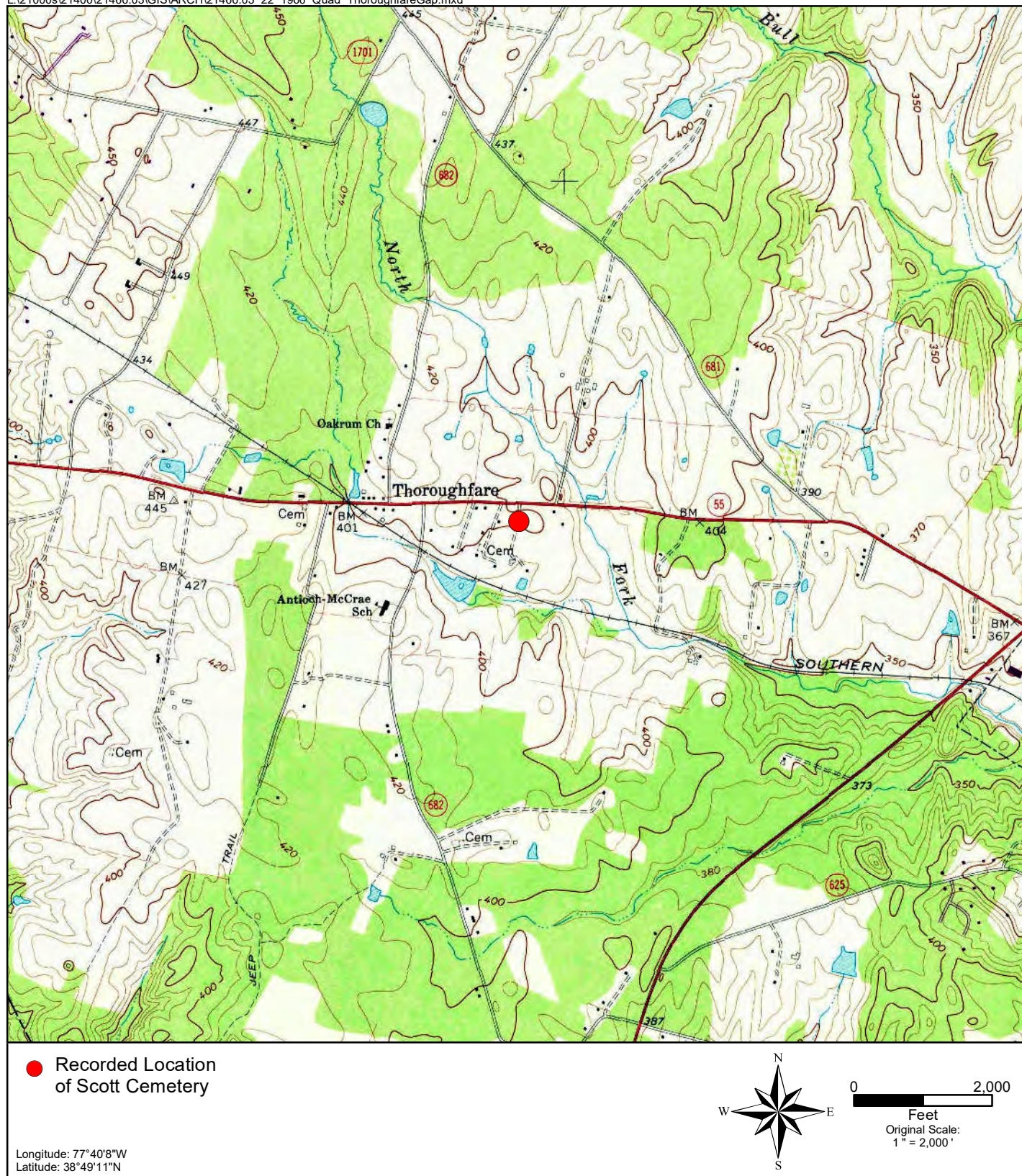


Figure 9: 1966 USGS Quadrangle, Thoroughfare Gap, VA

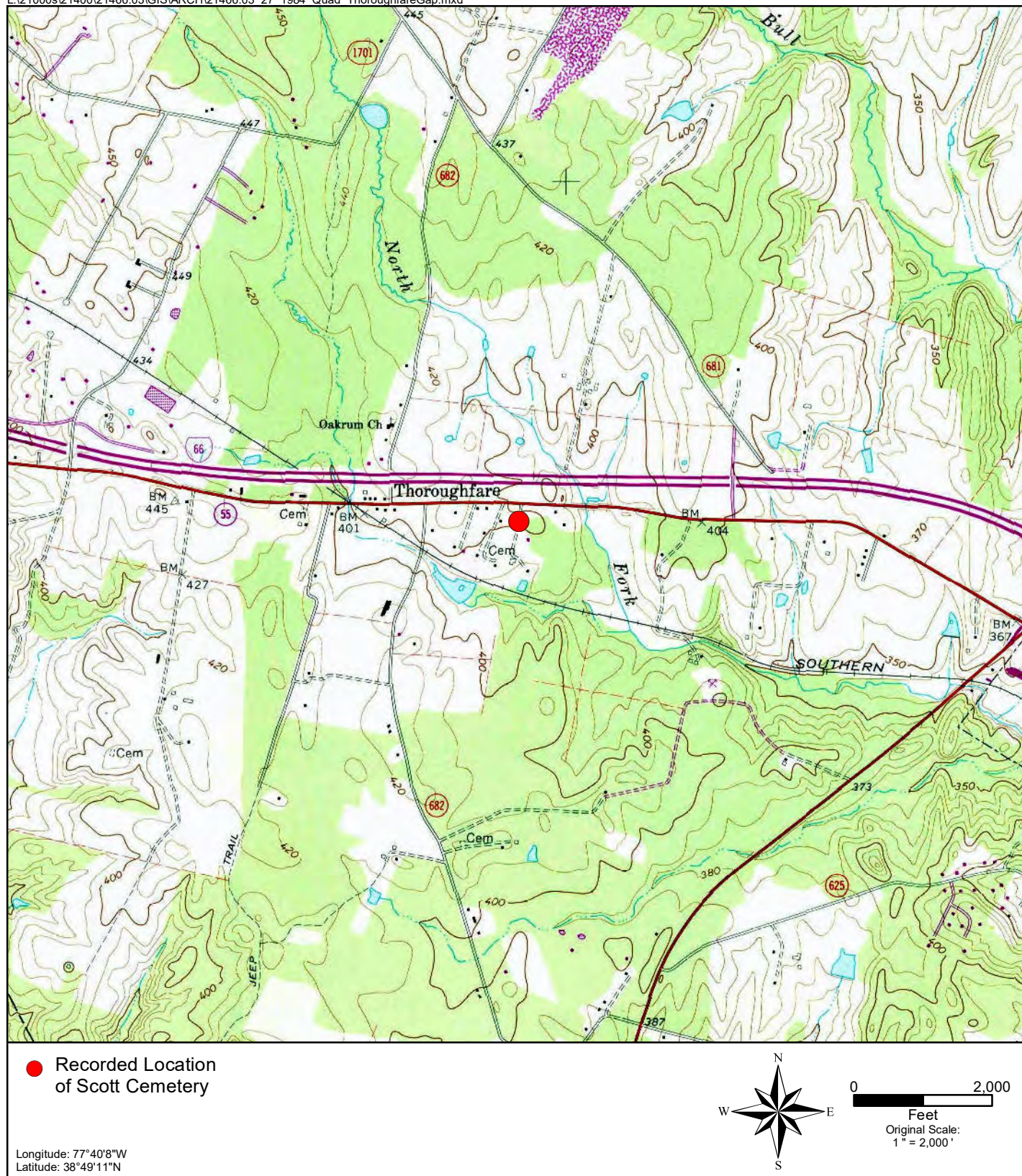


Figure 10: 1984 USGS Quadrangle, Thoroughfare Gap, VA



Figure 11: Spring 1994 Color Infrared Imagery



Figure 12: Fall 2002 Natural Color Imagery



Figure 13: March 2013 Natural County Imagery

The Battle of Buckland Mills, also known as The Buckland Races or Chestnut Hill, was fought on October 19, 1863, between Union and Confederate forces in the American Civil War. Confederate cavalry commander Maj. Gen. J.E.B. Stuart, with Maj. Gen. Wade Hampton's cavalry division, were covering Gen. Robert E. Lee's retirement from his defeat at Bristoe to the Rappahannock River. Confederate cavalry ambushed pursuing Union cavalry led by Brig. Gen. Judson Kilpatrick. Kilpatrick was routed and pursued by Confederate cavalry to Haymarket and Gainesville. As a result, Confederate troops referred to the affair as "the Buckland Races."

The Battle of Thoroughfare Gap, also known as Chapman's Mill, occurred on August 28, 1862, as part of the Northern Virginia Campaign of the American Civil War. The battlefield is centered on Chapman's Mill, or Beverley's Mill (076-0002), a five-story stone structure dated to circa 1759, that is still extant as a ruin at the eastern opening of Thoroughfare Gap in Prince William County, Virginia. The mill was listed on the National Register of Historic Places in 1972.

The Manassas Station Operations (076-5036) took place on August 26-27, 1862, between Union and Confederate forces in the American Civil War. Confederate Maj. Gen. Thomas Jonathan "Stonewall" Jackson, after a rapid flanking march from the Rappahannock through Thoroughfare Gap around Union General Pope's army, endeavored to cut off Pope's supply line by attacking the Orange and Alexandria Railroad at Bristoe and Manassas Junction. Jackson's attack was successful, resulting in the capture or destruction of a vast amount of Union army supplies at Manassas Station. As Union troops were sent from Alexandria to investigate and Pope began the march from his positions along the Rappahannock in hope of trapping and crushing Jackson's force, Jackson withdrew to a position near the old battleground of First Manassas to await reunion with Lee and Longstreet who were rapidly approaching from the west. The Battles of Thoroughfare Gap and Second Manassas followed immediately upon the heels of the Manassas Station Operations.

Two additional cemeteries have been identified by Ronald Turner of Historic Prince William near the study area (Figure 14) The Allen Homeplace Cemetery is located 0.1 mile southwest of 16117 James Madison Highway (Route 55). According to the 1996 survey, the private family cemetery included at least twelve burials, several with tombstone or fieldstone markers and others unmarked. Dates recorded on the tombstones denote the earliest known burial as 1956 and the latest burial date as 1986. The Allen/Fletcher Cemetery is located near 16151 James Madison Highway and is well-maintained. At least 15 formal headstones and fieldstone markers identify individuals from the Allen and Fletcher families, with burials from the early 20th century (ca. 1913) through at least 1999.

Finally, 29 additional architectural resources and 49 archeological sites have been identified within a one-mile radius of the project area (Tables 1 and 2).

**Table 1: Previously Recorded Architectural Resources
within a One-Mile Radius of the Project Area**

DHR ID NUMBER	RESOURCE NAME	NRHP ELIGIBILITY
030-5152	Buckland Mills Battlefield	DHR Staff: Eligible
030-5610	Battle of Thoroughfare Gap	DHR Staff: Potentially Eligible
076-0151*	Antique Shop, Route 55 (Current), Carter's Switch (Historic), Repass Train Depot (Historic), Southern Railway Depot (Historic)	DHR Staff: Eligible
076-0467	Brent House, 6715 James Madison Highway (Historic/Location)	
076-0498	House, 15609 John Marshall Highway (Route 55)	DHR Staff: Not Eligible
076-0499	House, 15509 John Marshall Highway (Route 55)	DHR Staff: Not Eligible
076-0546	House, Route 55	
076-0547	House, Route 55	
076-0548*	House, 16316 John Marshall Highway	
076-0549*	Chapman's Store (Historic), 16316 John Marshall Highway	
076-0550*	6500 Beverley Road, Johnson House	
076-0551	Store at Thoroughfare	
076-0552*	16317 John Marshall Highway, Lawler House	
076-0553*	16311 John Marshall Highway, Repass House	
076-0554*	House, 16309 John Marshall Highway	
076-0555	House, Route 55	
076-0585	House and graveyard, 16201 Route 682	DHR Staff: Not Eligible
076-0586	House, 6225 Thoroughfare Road, Route 682	
076-0594	House, 16123 John Marshall Highway, Route 55	
076-0595	House, 16305 Thoroughfare Road, Route 682	
076-5036	Bristoe Station Battlefield (Historic), Bull Run Bridge (Historic), Kettle Run Battlefield (Historic), Manassas Station Operations Battlefield (Historic), Union Mills (Historic)	DHR Staff: Potentially Eligible
076-5111	South Market Structure B5	
076-5112	South Market House, Route 55	
076-5113	Antioch-McCrae School (Historic), South Market School Building, Route 682	
076-5114	South Market Ruins (Historic), South Market Site 22 Structural Complex	
076-5115	Barbour Grave/Cemetery (Historic)	
076-5116	South Market Shed	
076-5139*	Primas House	
076-5140*	Primas Cemetery	
076-5150	Thoroughfare Historic District	DHR Staff: Eligible
076-5180	House, 16800 Beverley Mill Drive	
076-5668	House, 15805 John Marshall Hwy (Rt 55)	
076-5717	Farm, 6115 Antioch Road	DHR Staff: Not Eligible

Bold Denotes Resource within Study Area

* Contributing Resource to the Thoroughfare Historic District

**Table 2: Previously Recorded Archeological Sites
within a One-Mile Radius of the Project Area**

DHR SITE NUMBER	SITE TYPE	TEMPORAL AFFILIATION	NRHP ELIGIBILITY
44PW0681	Farmstead, Other	19th Century: 2nd half (1850 - 1899), 20th Century: 1st half (1900 - 1949)	DHR Staff: Not Eligible
44PW0682	Camp, temporary, Lithic workshop	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	DHR Staff: Not Eligible
44PW0683	Camp, temporary, Lithic workshop	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1463	Dwelling, single	19th Century: 4th quarter (1875 - 1899), 20th Century (1900 - 1999)	Not Evaluated
44PW1464	Lithic scatter	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1465	Trash scatter	20th Century: 2nd/3rd quarter (1925 - 1974)	Not Evaluated
44PW1466	Trash scatter	19th Century (1800 - 1899), 20th Century (1900 - 1999)	Not Evaluated
44PW1467	Farmstead	19th Century: 2nd half (1850 - 1899), 20th Century (1900 - 1999)	Not Evaluated
44PW1468	Lithic scatter, Trash scatter	Historic/Unknown, Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1469	Trash scatter		Not Evaluated
44PW1470	Lithic scatter	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1471	Trash scatter	19th Century (1800 - 1899), 20th Century (1900 - 1999)	Not Evaluated
44PW1472	Camp, temporary, Farmstead	Early Woodland (1200 B.C. - 299 A.D.), 20th Century: 1st half (1900 - 1949)	Not Evaluated
44PW1473	Camp, temporary	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1474	Cemetery	Historic/Unknown	Not Evaluated
44PW1475	Lithic scatter	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1476	Camp, temporary, Dwelling, single	Early Archaic (8500 - 6501 B.C.), Middle Archaic (6500 - 3001 B.C.), 18th Century: 2nd half (1750 - 1799)	Not Evaluated
44PW1477	Dwelling, single, Lithic scatter	Prehistoric/Unknown (15000 B.C. - 1606 A.D.), 19th Century: 2nd half (1850 - 1899), 20th Century (1900 - 1999)	Not Evaluated
44PW1478	Farmstead	20th Century (1900 - 1999)	Not Evaluated
44PW1479	Cemetery	20th Century (1900 - 1999)	Not Evaluated
44PW1480	Trash scatter	19th Century (1800 - 1899), 20th Century (1900 - 1999)	Not Evaluated
44PW1481	Lithic scatter	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1482	Lithic scatter	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1483	Camp, temporary	Middle Archaic (6500 - 3001 B.C.)	Not Evaluated
44PW1484	Farmstead	20th Century (1900 - 1999)	Not Evaluated
44PW1485	Trash scatter	19th Century (1800 - 1899), 20th Century (1900 - 1999)	Not Evaluated
44PW1486	Lithic scatter, Trash scatter	Prehistoric/Unknown (15000 B.C. - 1606 A.D.), 19th Century (1800 - 1899)	Not Evaluated
44PW1487	Camp, temporary	Middle Archaic (6500 - 3001 B.C.), Early Woodland (1200 B.C. - 299 A.D.)	Not Evaluated

Table 2: Recorded Archeological Sites (continued)

DHR SITE NUMBER	SITE TYPE	TEMPORAL AFFILIATION	NRHP ELIGIBILITY
44PW1488	Lithic scatter	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1489	Trash scatter	20th Century (1900 - 1999)	Not Evaluated
44PW1490	Dwelling, single	20th Century: 2nd quarter (1925 - 1949)	Not Evaluated
44PW1491	Dwelling, single	20th Century (1900 - 1999)	Not Evaluated
44PW1492	Cemetery	20th Century (1900 - 1999)	Not Evaluated
44PW1493	Dwelling, single	19th Century: 2nd half (1850 - 1899), 20th Century: 1st half (1900 - 1949)	Not Evaluated
44PW1494	Cemetery	Historic/Unknown	Not Evaluated
44PW1495	Trash scatter	19th Century: 2nd half (1850 - 1899), 20th Century: 1st half (1900 - 1949)	Not Evaluated
44PW1497	Lithic scatter	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1500	Outbuilding	Historic/Unknown	Not Evaluated
44PW1501	Cistern	Historic/Unknown	Not Evaluated
44PW1711	Dwelling, single	20th Century: 1st half (1900 - 1949)	Not Evaluated
44PW1794	Dwelling, single, Farmstead, Lawn	20th Century (1900 - 1999)	Not Evaluated
44PW1799	Dwelling, single	20th Century: 1st half (1900 - 1949), 20th Century: 2nd half (1950 - 1999)	Not Evaluated
44PW1839	Artifact scatter, Dwelling, single, Farmstead	Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991), Post Cold War (1992 - Present)	DHR Staff: Not Eligible
44PW1948	Farmstead	Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991), Post Cold War (1992 - Present)	DHR Staff: Not Eligible
44PW1949	Lithic scatter	Pre-Contact	DHR Staff: Not Eligible
44PW1950	Dwelling, single	Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991), Post Cold War (1992 - Present)	DHR Staff: Not Eligible
44PW1951	Farmstead, Lithic scatter	Middle Archaic Period (6500 - 3001 B.C.E), Early National Period (1790 - 1829), Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991), Post Cold War (1992 - Present)	DHR Staff: Not Eligible
44PW1988	Artifact scatter	Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945)	Not Evaluated
44PW2018	Dwelling, single	World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	Not Evaluated

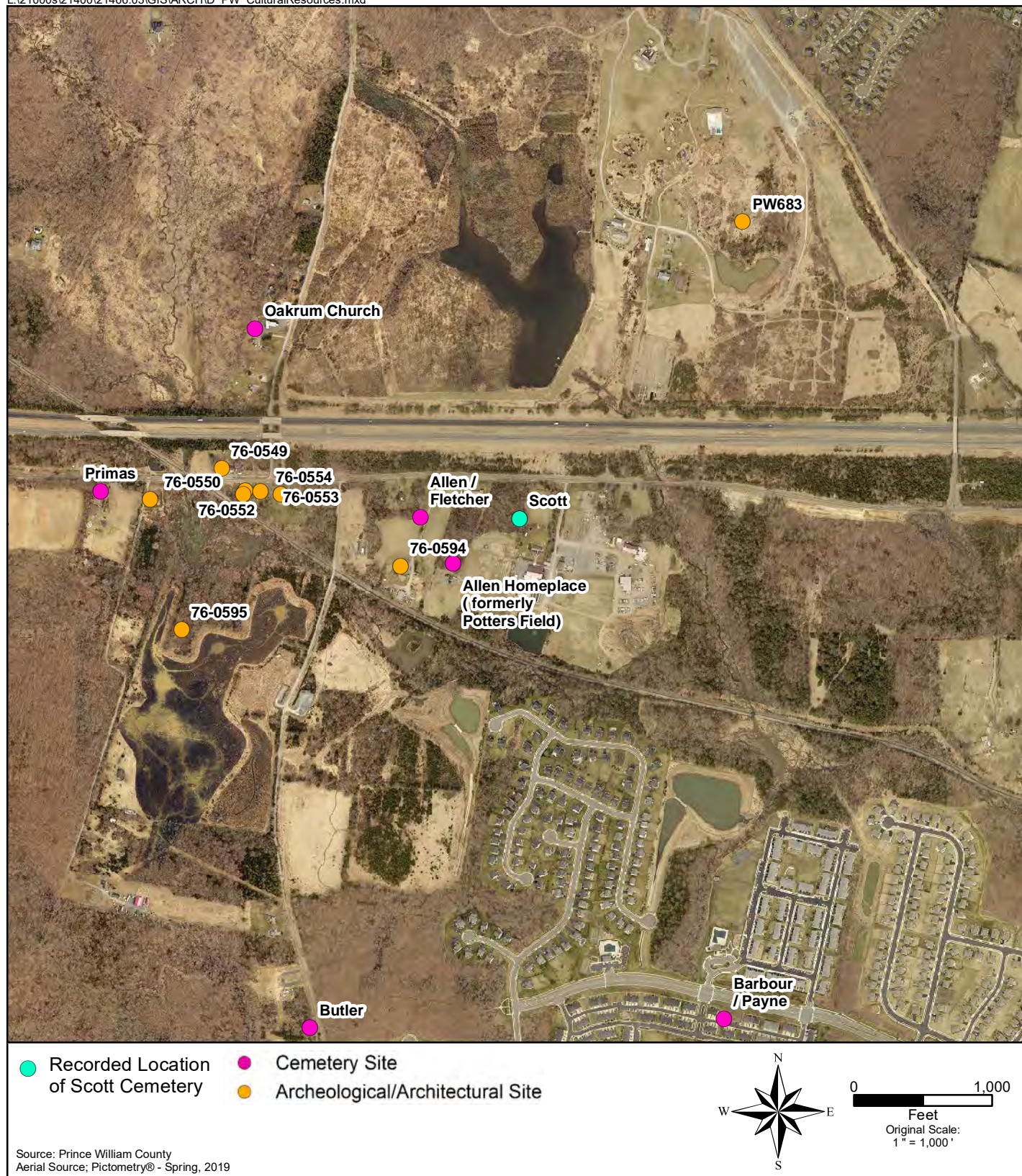


Figure 14: Cultural Resources Map, Prince William County, VA

METHODOLOGY

Ground Penetrating Radar (GPR) Survey

The GPR cemetery survey was conducted by a GeoModel licensed Professional Geologist with over 20 years of experience using a GSSI radar digital computer control unit and a 400-megahertz (MHz) transducer (Figure 15). The maximum depth of investigation of the 400-MHz transducer is about 9 feet in sand and less in clay soils. The system was hand towed across the survey area in parallel transects perpendicular to the anticipated east to west grave orientation at 2-foot interval spacing. The study GPR transects were guided by the survey stakes placed at the northern and southern perimeters. Any GPR data that represented possible graves were recorded and saved to the GPR computer hard drive.



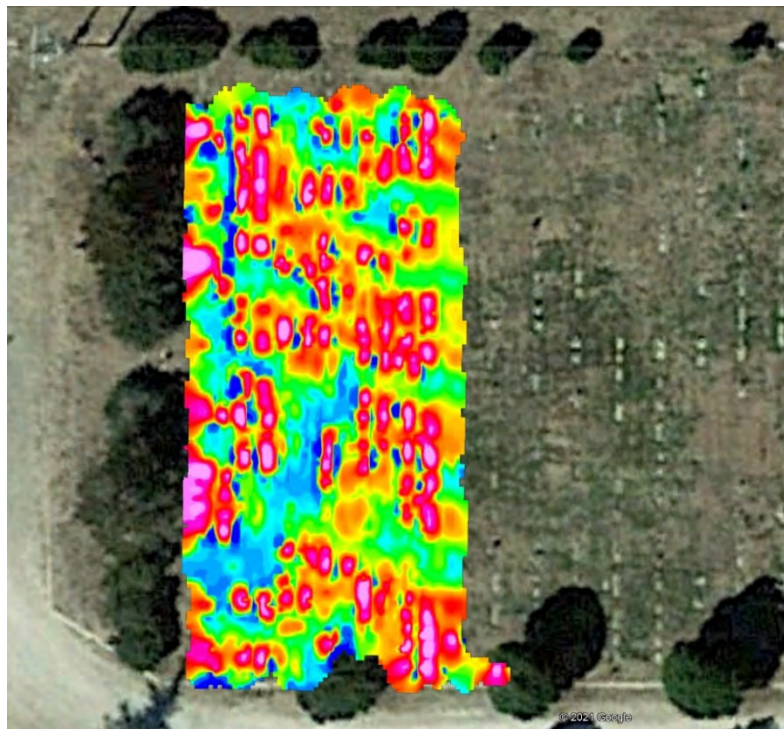
**Figure 15: GSSI Radar Digital Computer Control Unit With 400-MHz Transducer
View to South**

Electromagnetic (EM) Survey

The EM survey was conducted with a Geonics EM61-MK2, a high sensitivity, high resolution, time-domain electromagnetic conductivity meter and metal detector that is used to detect high soil conductivity areas and metallic objects (Figure 16). The EM61-MK2 consists of a powerful transmitter that generates a pulsed primary magnetic field, which induces eddy currents into nearby metal objects. The decay of these currents was measured by two receiver coils mounted on the coil assembly. The responses were recorded and displayed by an integrated computer based digital data logger. The data logger was subsequently downloaded to the main computer back in the GeoModel, Inc. main office and a computer contour map was generated from the data (Figure 17). As with the GPR survey, the EM transects were made in parallel directions perpendicular to the grave orientation at appropriate interval spacing across the survey area.



Figure 16: Geonics EM61-MK2
Image courtesy of GeoModel Inc.



**Figure 17: Example of Electromagnetic Conductivity Map of Cemetery
 Hobbs, New Mexico** *Image courtesy of GeoModel Inc.*

RESULTS OF FIELD INVESTIGATIONS

The study area was originally forested (see Figures 3 and 4) but was cleared of vegetation prior to the non-invasive GPR and EM investigations (Figures 19 and 20).



Figure 18: Existing Conditions (May 2021)



Figure 19: Existing Conditions (June 2021) from Southwest Corner of Study Area Looking Northeast

Ground Penetrating Radar (GPR) Survey

The data from the ground penetrating radar survey was examined and interpreted in real time by a GeoModel, Inc. professional geologist in the field. The geophysical data was examined for anomalies that represent possible graves. The generally clay soils at the site permitted fair to good GPR penetration. At the time of the investigation, the survey area was level ground and cleared of all trees and vegetation.

A total of eleven anomalies were located within the study area (Figures 20-22; Appendix III); the graphic readout of each anomaly is presented as Appendix II. Each feature was painted on the ground by GeoModel staff and WSSI staff survey-located the anomalies (see Figure 21). The anomalies appear to be in four rows and may represent human interments, although large gaps exist between the individual anomalies and the rows themselves. It is possible that these anomalies may represent other underground features such as large tree roots or buried debris.



Figure 20: GPR Anomalies (Features 1 and 2) Looking North

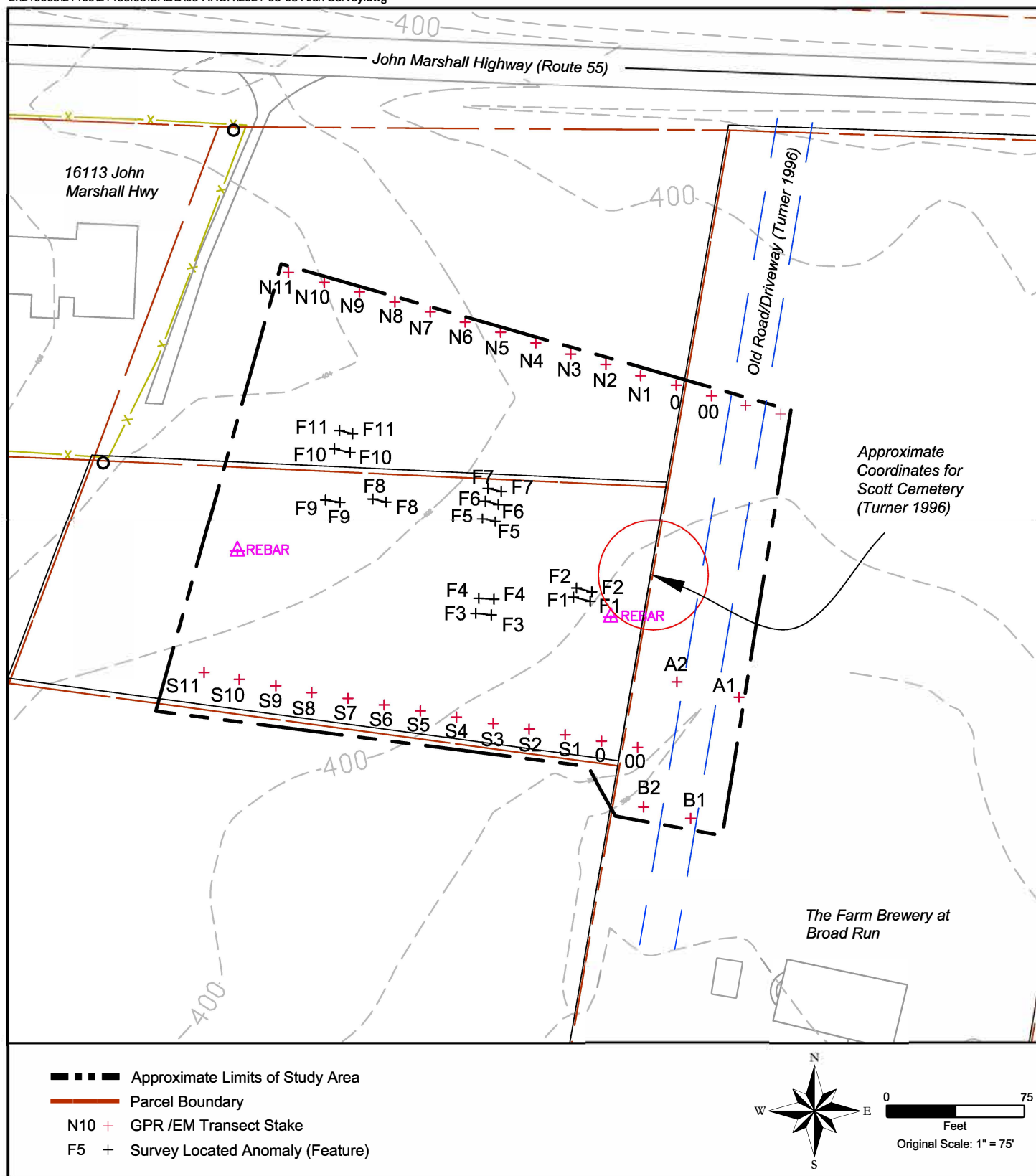


Figure 21: Survey Located GPR Anomalies (Features)



Figure 22: GPR Anomalies (Features 5, 6 and 7) Looking South

Features 1 and 2 were located along the eastern edge of the survey area in the approximate location of the GPS coordinates provided by Turner in 1996. Five anomalies were located 50 feet to the west in the next “row”, although roughly 40 feet separated Features 3 and 4 from Features 5, 6 and 7. Feature 8 was identified just over 50 feet west of Feature 5. The last three anomalies (Features 9, 10 and 11) were located approximately 17 feet west of the third “row”. Except for Features 8 and 9, the distance between each anomaly was approximately 6 to 10 feet.

Limitations: The identification and delineation of historic period burials via a GPR survey is subject to several limitations. The survey area reportedly contained large amounts of dumped trash and debris, which may have been pushed under the surface as the woods were cleared of vegetation and the ground surface was leveled. This interference could have resulted in undocumented anomalies in some locations. Additionally, the graves in the survey area likely date to the late 19th or early 20th century. Any coffins or remains are likely very deteriorated and less visible to the GPR; however, grave shaft features would likely be visible. Finally, the GPR data is interpreted by the operator and survey quality can be affected by human error.

Electromagnetic Conductivity (EM) Survey

The data from the Electromagnetic Conductivity survey was examined was downloaded to the GeoModel Inc computer. Using GeoMar RTM61MK2 and Oasis montaj processing software, a color contour map showing buried metal and conductive anomalies was generated (Figure 23).

The locations of the GPR anomalies are also depicted. According to GeoModel's interpretation the GPR anomalies show no correlation with the EM data; possibly the large amount of surface and subsurface metal debris may have caused interference.

Limitations: Large metal objects and copious amounts of metal debris or trash can interfere with the identification of areas with highly conductive soils, and with metallic objects that may be associated with potential burials.

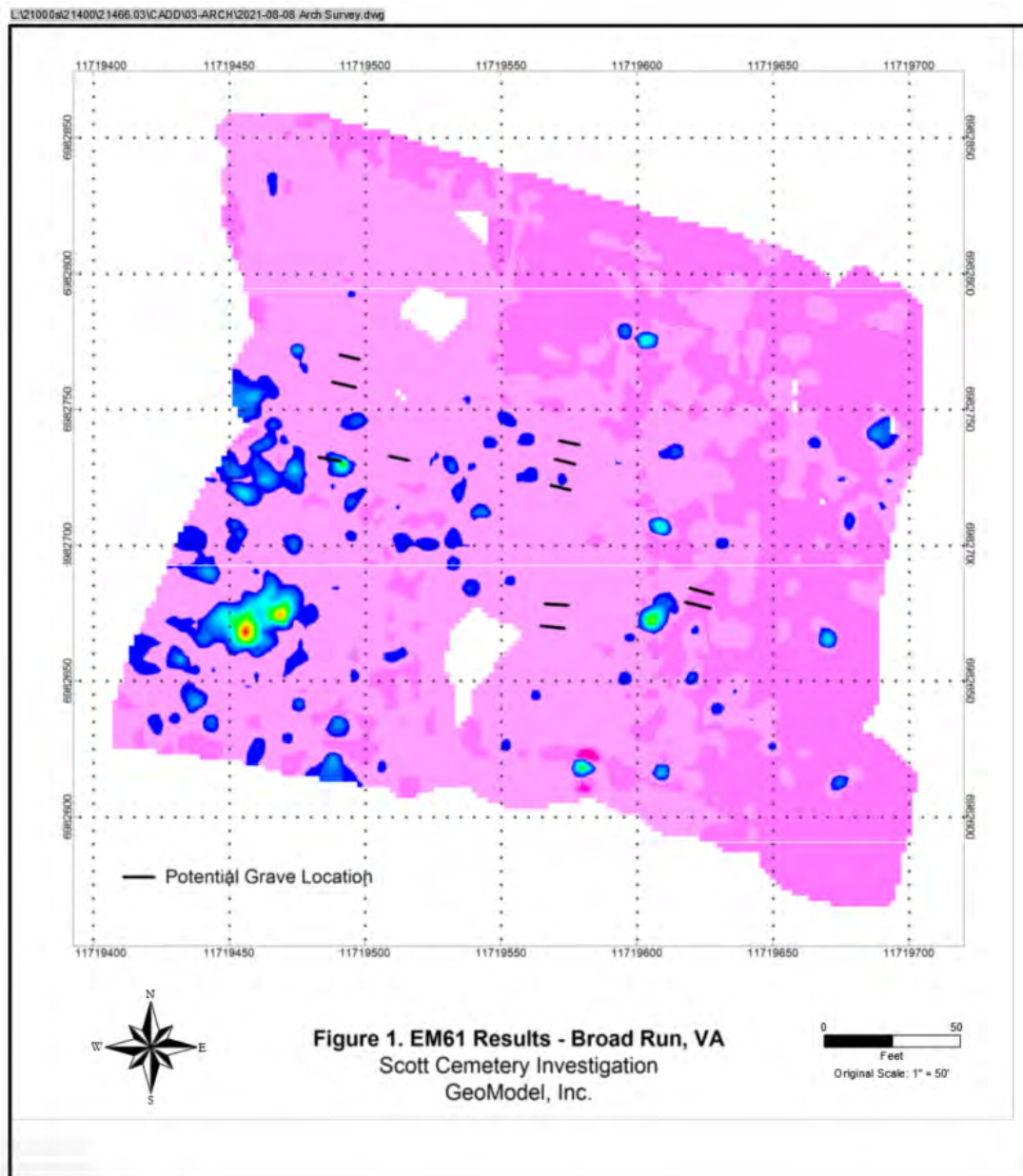


Figure 23: Results of EM Survey

SUMMARY AND RECOMMENDATIONS

GeoModel, Inc and Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc. (WSSI), conducted a non-invasive ground-penetrating radar (GPR) archeological investigation of a ±1-acre study area within the vicinity of the location of the Scott Cemetery on the south side of Route, approximately 280 feet south of James Madison Highway (Route 55) in Prince William County, Virginia.

The GPR investigations, conducted by GeoModel staff, resulted in the identification of eleven anomalies (Features 1-11) that may be human burials based on the arrangement and position of the features. The EM survey did not identify any potential cemetery features, nor did it show any correlation with the GPR anomalies. According to GeoModel, the large amount of surface and subsurface metal debris may have caused interference.

Due to the limitations of the GPR survey, we recommend the soil anomalies identified as possible grave features during the GPR survey should be verified or “ground-truthed” through archeological excavation to confirm if they represent grave shafts. This is necessary due to the possibly of false positives and false negatives generated during the remote sensing surveys. We also recommend that at a minimum, public meetings should be conducted prior to any ground disturbing archeological work to review results of the GPR and EM investigations, and again, to present the results of the archeological investigations and receive public comments.

REFERENCES CITED

Adovasio, J.M., J. Donahue, and R. Stuckenrath

1990 The Meadowcroft Rockshelter Radiocarbon Chronology 1975-1990. *American Antiquity* (55):348-54.

Adovasio, J.M., D. Pedler, J. Donahue, and R. Stuckenrath

1998 Two Decades of Debate on Meadowcroft Rockshelter. *North American Archaeologist* (19):317-41.

Bailey, C.M.

1999 "Physiographic Map of Virginia," *The Geology of Virginia*. Chad Roberts and C.M. Bailey, College of William and Mary Department of Geology.
<http://www.wm.edu/geology/virginia/phys_regions.html (29 October 2004)

Barse, William P.

1978 Preliminary Notes on the West Shore Site, 18AN219. *Archeological Society of Maryland Newsletter*, January 1978.

1990 A Trial Formulation of Vessel Shapes for the Early and Middle Woodland Ceramic Assemblages. Paper presented at the 21st Middle Atlantic Archeological Conference, Ocean City, Maryland.

1991 *Phase III Data Recovery Excavations at 28GL209, Gloucester County, New Jersey*. Report prepared for Transcontinental Gas Pipeline Corporation by Louis Berger & Associates.

1994 *Phase III Data Recovery Excavations at the Clifton Site (18CH358), Maryland Route 228 Wetland Mitigation, Charles County, Maryland*. Maryland State Highway Administration, Project Planning Division, Archeological Report Number 86.

2002 *An Archeological Survey, Inventory and Evaluation Study, and Data Recovery for the Fletchers Boathouse Site (51NW13) C&O Canal National Historical Park, Washington, D.C.* Report submitted to the National Capital Region, National Park Service.

Bergman, Christopher A., John F. Doershuk and Joseph Schuldenrein

1994 A Young Archaeologist's Summary Guide to the Deeply Stratified Sandts Eddy Site, Northampton County, Pennsylvania. In Recent Research into the Prehistory of the Delaware Valley, edited by Christopher A. Bergman and John F. Doershuk, *Journal of Middle Atlantic Archeology*, Volume 10.

Boatner, Mark M.

1991 *The Civil War Dictionary*. Vintage Books, New York, New York.

Bowman, John S. [editor]

1985 *The Civil War Almanac*. World Almanac Publications, New York, New York.

Bradshaw, Herbert Clarence

1955 *History of Prince Edward County, Virginia, From its Earliest Settlements through its Establishment in 1754 to its Bicentennial Year*. The Dietz Press, Richmond, Virginia.

Brown, Lois

1979 Fluted Points in Maryland. Unpublished, on file at the Maryland Geological Survey, Division of Archeology.

Broyles, Bettye J.

1971 *Second Preliminary Report: The St. Albans Site, Kanawha County, West Virginia*. West Virginia Geological Survey, Report of Investigations 3.

Carbone, Victor A.

1976 Environment and Prehistory in the Shenandoah Valley. Unpublished Ph.D. Dissertation, Catholic University of America, Washington, D.C.

Chapman, Jefferson

1975 *The Rose Island Site and the Bifurcate Point Tradition*. Knoxville, University of Tennessee, Department of Anthropology.

Church, Randolph W. and George H. Reese

1965 *A Hornbook of Virginia History*. The Virginia State Library. Richmond, Virginia.

Cissna, Paul B.

1986 *Piscataway Indians of Southern Maryland: An Ethnohistory from Pre-European Contact to the Present*. Ph.D. Dissertation, American University, Washington, D.C.

Coe, Joffre L.

1964 The Formative Cultures of the Carolina Piedmont. *Transactions of the American Philosophical Society* 54 (5), Philadelphia.

Commonwealth of Virginia

1850 *Acts of the General Assembly of Virginia, Passed at the Extra and Regular Sessions in 1849 & 1850, and in the Seventy-Third and Seventy-Fourth Years of the Commonwealth*. William F. Ritchie, Richmond, Virginia.

1851 *Acts of the General Assembly of Virginia, Passed at the Session of 1850-51, In The Seventy-Fifth Year of the Commonwealth*. William F. Ritchie, Richmond, Virginia.

1884 *Acts and Joint Resolutions Passed by the General Assembly of the State of Virginia During the Session of 1883-84*. R. U. Derr, Richmond, Virginia.

1888 *Acts and Joint Resolutions Passed by the General Assembly of the State of Virginia, During the Session of 1887-88*. J. H. O'Bannon, Richmond, Virginia.

Cross, Dorothy

1956 *Archeology of New Jersey, Volume 2: The Abbot Farm*. Trenton: Archeological Society of New Jersey and the New Jersey State Museum.

Curry, Dennis and Maureen Kavanagh

1994 A New Radiocarbon Date for Popes Creek Ware. *Maryland Archeology* 30(1):29-32.

Curtis, Donald E.

1988 *The Curtis Collection. A Personal View of Prince William County History*. Prince William County Historical Commission, Prince William, Virginia.

Darmody, R.G. and J.E. Foss

1978 *Tidal Marsh Soils of Maryland*. Maryland Agricultural Experimental Station Publication 930:1-69.

Dent, Richard J.

1991 Deep Time in the Potomac Valley – Thoughts on Paleoindian lifeways and revisionist archeology. *Archeology of Eastern North America* 19:23-41.

1995 *Chesapeake Prehistory: Old Traditions, New Directions*. Plenum Press, New York.

Department of Historic Resources (DHR)

2017 *Guidelines for Conducting Historic Resources Survey in Virginia*. Virginia State Department of Historic Resources, Richmond, Virginia.

Department of the Navy Bureau of Yards and Docks

1937 *Federal Owned Real Estate Under the Control of the Navy Department*. U. S. Government Printing Office, Washington, D. C.

Dincauze, Dena

1976 *The Neville Site: 8,000 Years at Amoskeag, Manchester, New Hampshire*. Peabody Museum Monographs Number 4, Cambridge, Massachusetts.

Ebright, Carol A.

1992 *Early Native American Prehistory on the Maryland Western Shore: Archeological Investigations at the Higgins Site*. Maryland State Highway Administration Archeological Report Number 1. Report prepared for the Maryland State Railroad Administration.

Egloff, Keith and Deborah Woodward

1992 *First People. The Early Indians of Virginia*. University of Virginia Press, Charlottesville, Virginia.

Evans, D'Anne

- 1989 *Prince William County. A Pictorial History*. The Donning Company, Norfolk/Virginia Beach, Virginia.

Fenneman, Nevin M.

- 1938 *Physiography of Eastern United States*. McGraw-Hill Book Company, Inc. New York and London.

Fiedel, Stuart J.

- 1999 Connecting Late Prehistoric Ceramic Lineages with Early Historic Ethnic-Linguistic Groups: Prospects and Problems. Paper presented at the Middle Atlantic Archeological Conference, Harrisburg, Pennsylvania.

Gallagher, Gary W. [editor]

- 1989 *Fighting for the Confederacy. The Personal Recollections of General Edward Porter Alexander*. The University Of North Carolina Press, Chapel Hill, North Carolina.

Gallivan, Martin

- 2010 "The Archaeology of Native Societies in the Chesapeake: New Investigations and Interpretations." Springer Science+Business Media.
<http://www.springerlink.com/content/54k17240122u2k5k/>.

Gardner, William M.

- 1974 *The Flint Run Paleo Indian Complex: Report on the 1971-1973 Seasons*. Occasional Publication 1, Department of Anthropology, Catholic University of America, Washington, D.C.
- 1976 *Excavations at 18PR141, 18PR142 and 18PR143 Near Piscataway, Maryland*. Report submitted to the Washington Suburban Sanitary Commission.
- 1980 The Archaic. Paper presented at the 11th Middle Atlantic Archeological Conference, Rehoboth Beach, Delaware.
- 1982 Early and Middle Woodland in the Middle Atlantic: An Overview. In *Practicing Environmental Archeology: Methods and Interpretations*, pp. 53-86, Roger W. Moeller, editor. Occasional Paper Number 3, American Indian Archeological Institute, Washington, Connecticut.
- 1985 Prehistoric Site Distribution in the Greater Washington, D.C. Area. Paper presented at the Annual Meeting of the American Anthropological Society, Washington, D.C.
- 1987 Comparison of Ridge and Valley, Blue Ridge, Piedmont, and Coastal Plain Archaic Period Site Distribution: An Idealized Transect. In *Journal of Middle Atlantic Archeology*, Vol. 3, pp. 49-80, Roger W. Moeller, editor. Archeological Services, Bethlehem, Connecticut.
- 1989 An Examination of Cultural Change in the Late Pleistocene and Early Holocene (circa 9200-6800 B.C.) In *Paleoindian Research in Virginia: A Synthesis*, pp. 5-51,

- J. Mark Wittkofski and T.R. Rhinehart, editors. Archeological Society of Virginia Special Publication No. 19. The Dietz Press, Richmond.
- 1991 Notes for the Territory Presentation. Presented at the 1991 Middle Atlantic Archeological Conference.
- Gardner, William M. and Charles W. McNett, Jr.
- 1971 Early Pottery in the Potomac. *Proceedings of the Second Middle Atlantic Archeological Conference*. Washington, D.C.
- Gardner, William M. and Lauralee Rappleye
- 1979 *A Cultural Resources Reconnaissance and Impact Area Assessment of the Great Dismal Swamp Wildlife Refuge, Chesapeake and Nansemond Counties, Virginia*. Report prepared for the U.S. Department of the Interior, Interagency Archeological Services, Atlanta, Georgia.
- Gardner, William M. and Joan M. Walker
- 1993 *A Phase I Cultural Resources Reconnaissance of the Proposed Mitchell Substation and Mitchell Transmission Line in Culpeper County, Virginia*. Report prepared for Rappahannock Electric Cooperative, Fredericksburg, by the Thunderbird Archeological Associates, Inc., Woodstock, Virginia.
- Goodyear, A.C
- 2005 "Evidence of Pre-Clovis Sites in the Eastern United States." *Paleoamerican Origins: Beyond Clovis*. R. Bonnicksen, B. Lepper, D. Stanford, M. Waters (eds.) pp. 103-112. Texas A&M University Press, College Station, Texas.
- Greene, Evarts B.
- 1932 *American Population Before the Federal Census of 1790*. Columbia University Press, New York, New York.
- Gutheim, Frederick
- 1986 *The Potomac*. John Hopkins University Press, Baltimore, Maryland and London, England.
- Hall, Wilmer L. [editor]
- 1945 *Executive Journals Of The Council of Colonial Virginia Volume V. (November 1, 1739-May 17, 1754)*. The Virginia State Library, Richmond, Virginia.
- Hanson, Joseph Mills
- 1951 *Bull Run Remembers...The History, Traditions, and Landmarks of the Manassas (Bull Run) Campaigns Before Washington 1861-1861*. Reprinted in 1991 by the Prince William County Historical Commission, Prince William, Virginia.

Hantman, Jeffrey L. and Michael J. Klein

- 1992 Middle and Late Woodland Archeology in Piedmont Virginia. In *Middle and Late Woodland Research in Virginia: A Synthesis*, pp. 137-164, Theodore R. Reinhart and Mary Ellen N. Hodges, editors. Archeological Society of Virginia Special Publication No. 29. The Dietz Press, Richmond, Virginia.

Harrison, Fairfax

- 1987 *Landmarks of Old Prince William: A Study of Origins in Northern Virginia*. Volumes I & II. 2nd Reprint Edition. Reprint of 1924 edition. Gateway Press, Baltimore, Maryland.

Haynes, Gary

- 2002 *The Early Settlement of North America: the Clovis Era*. Cambridge University Press, New York, New York.

Hening, William Waller

- 1819 *The Statutes at Large; Being a Collection of All the Laws of Virginia, From the First Session of the Legislature, In the Year 1619. Volume V*. Franklin Press, Richmond, Virginia.
- 1820 *The Statutes at Large; Being a Collection of All the Laws of Virginia, From the First Session of the Legislature, In the Year 1619. Volume IV*. Franklin Press, Richmond, Virginia.
- 1820 *The Statutes at Large; Being a Collection of All the Laws of Virginia, From The First Session Of The Legislature, In The Year 1619. Volume VII*. Franklin Press, Richmond, Virginia.
- 1822 *The Statutes at Large; Being a Collection of All the Laws of Virginia, From the First Session of the Legislature, In the Year 1619. Volume X*. George Cochran, Richmond, Virginia.
- 1823 *The Statutes at Large; Being a Collection of All the Laws of Virginia, From the First Session of the Legislature, In the Year 1619. Volume I*. R. & W. & G. Bartow, New York, New York.
- 1823 *The Statutes at Large; Being a Collection of All the Laws of Virginia, From the First Session of the Legislature, In the Year 1619. Volume II*. R. & W. G. Bartow, New York, New York.
- 1823 *The Statutes at Large; Being a Collection of All the Laws of Virginia, From the First Session of the Legislature, In the Year 1619. Volume XII*. George Cochran, Richmond, Virginia.

Hidden, Martha W.

- 1980 *How Justice Grew: Virginia Counties: An Abstract of Their Formation*. The University Press of Virginia, Charlottesville, Virginia.

Humphrey, Robert L. and Mary E. Chambers

- 1977 *Ancient Washington; American Indian Cultures of the Potomac Valley*. George Washington Studies No. 6. George Washington University, Washington, D.C.
1985 *Ancient Washington; American Indian Cultures of the Potomac Valley*. George Washington Studies No. 6. [Second Edition]. George Washington University, Washington, DC.

Huntington Library

- 1762 *A True List of the Land holders in Prince William in 1762*. Prince William County Regional Library, Bull Run Branch, microfilm Va 975.527, Manassas, Virginia.

Hurst, Gwen J.

- 1990 *U.S. Bottle Chronology*. B.P. Bishop Museum, Honolulu, Hawaii.

Jackson, Donald and Dorothy Twohig [editors]

- 1976 *The Diaries of George Washington. Volume II, 1766-70*. University Press of Virginia, Charlottesville, Virginia.

Jirikowic, Christine

- 1999 Keyser Ware Ceramics at the Hughs Site and in the Potomac Basin. Paper presented at the Middle Atlantic Archeological Conference, Harrisburg, Pennsylvania.

Johnson, Michael

- 1983 The Evolution of the Bifurcate Hunting System in the Interior Piedmont of Fairfax County, Virginia. In *Piedmont Archeology*, pp. 55-73, J. Mark Wittkofski and Lyle E. Browning, editors. Archeological Society of Virginia Special Publication No. 10. Richmond, Virginia.
1986 *Fairfax County Archeological Overview*. Heritage Resources Branch, Fairfax, Virginia.
1997 Additional Research at Cactus Hill: Preliminary Description of Northern Virginia Chapter—ASV's 1993 and 1995 Excavations. In *Archaeological Investigations of Site 44SX202, Cactus Hill, Sussex County, Virginia*, edited by J.M. McAvoy and L.D. McAvoy, Appendix G. Virginia Department of Historic Resources, Research Report Series No. 8, Richmond, Virginia.

Kavanagh, Maureen

- 1982 Archaeological Resources of the Monocacy River Region. Maryland Geological Survey, Division of Archaeology, File Report #164.
1983 Prehistoric Occupation of the Monocacy River Region, Maryland. In *Piedmont Archeology*, pp. 40-54, J. Mark Wittkofski and Lyle E. Browning, editors. Archeological Society of Virginia Special Publication No. 10. Richmond, Virginia.

Kelso, William M.

- 1995 *Jamestown Rediscovery I: Search for 1607 James Fort*. Association for the

Preservation Of Virginia Antiquities, Jamestown, Virginia.

Kilmer, Kenton and Donald Sweig

1975 *The Fairfax Family in Fairfax County*. Fairfax County Office of Comprehensive Planning, Fairfax, Virginia.

Kinsey, W.F. III

1972 *Archeology in the Upper Delaware Valley*. Harrisburg, Pennsylvania Museum and Historical Commission, Anthropological Series 2.

Luckenbach, Al, Jessie Grow, Shawn Sharpe

2010 Archaic Period Triangular Points From Pig Point, Anne Arundel County, Maryland. In *Journal of Middle Atlantic Archeology*, Volume 26, pp. 1-15, Roger W. Moeller, editor. Archeological Services, Bethlehem, Connecticut.

Lutz, Francis Earle

1954 *Chesterfield: An Old Virginia County*. William Byrd Press, Richmond, Virginia.

Magid, Barbara H., editor

1990 *Alexandria Archaeology Artifact Code Books*. Alexandria Archaeology Publications Number 11. Alexandria Archaeology Office of Historic Alexandria, City of Alexandria, Virginia.

Manson, Carl

1948 Marcey Creek Site: An Early Manifestation in the Potomac Valley. *American Antiquity* 12(3):223-227.

Martin, Joseph

1836 *A New and Comprehensive Gazetteer of Virginia, and the District of Columbia: Containing a Copious Collection of Biographical, Statistical, Political, Commercial, Religious, Moral, and Miscellaneous Information, Collected and Compiled from the Most Respectable, and Chiefly from Original Sources*. Moseley & Tompkins, Charlottesville, Virginia.

Mayre, William B.

1935 Piscataway. *Maryland Historical Magazine* 30(3):183-240.

McAvoy, J.M.

1997 Addendum: Excavation of the Cactus Hill Site, 44SX202, Areas A-B, Spring 1996: Summary Report of Activities and Findings. In *Archaeological Investigations of Site 44SX202, Cactus Hill, Sussex County, Virginia*, edited by J.M. McAvoy and L.D. McAvoy, Appendix G. Virginia Department of Historic Resources, Research Report Series No. 8, Richmond, Virginia.

2000 *Radiocarbon age range and stratigraphic context of artifact clusters in pre-fluted point levels at Cactus Hill site, Sussex County, Virginia*. Paper presented at the 65th

Annual Meeting of the Society of American Archaeology, Philadelphia, Pennsylvania.

McAvoy, J.M. and L.D. McAvoy (editors)

1997 *Archaeological Investigations of Site 44SX202, Cactus Hill, Sussex County, Virginia*. Virginia Department of Historic Resources, Research Report Series No. 8, Richmond, Virginia.

McCarty, Clara S.

1974 *The Foot Hills of the Blue Ridge in Fauquier County, Virginia*. Fauquier Democrat, Warrenton, Virginia.

McClearen, Douglas C.

1991 *Phase III Archeological Investigations of the "522 Bridge Site" (44WR329) Warren County, Virginia*. Virginia Commonwealth University, Archeological Research Center, Richmond, Virginia.

McDonald, J.N.

2000 *An Outline of the Pre-Clovis Archaeology of SV-2, Saltville, Virginia, with Special Attention to a Bone Tool Dated 14,510 yr BP*. Virginia Museum of Natural History, Martinsville, Virginia.

McDonald, J.N. and M. Kay

1999 Pre-Clovis Archaeology at SV-2, Saltville, Virginia. In *Abstracts of the Society for American Archaeology 64th Annual Meeting*, p. 196. Society for American Archaeology, Washington, DC.

McIlwaine, H. R., editor

1930 *Executive Journals of the Council of Colonial Virginia. Volume IV. (October 25, 1721-October 28, 1739)*. Virginia State Library, Richmond, Virginia.

McNett, Charles W., and William M. Gardner

1975 *Archeology in the Lower and Middle Potomac Valley*. Unpublished manuscript in possession of the author.

Miller, George

1992 *Refinement of South's Types and Median Dates*. Manuscript at University of Delaware Center for Archeological Research, Newark.

Miller, Glenda F. and Joan M. Walker

n.d. Competing Agendas: The Fur Trade and Native Americans.

Mouer, Daniel, Robin L. Ryder and Elizabeth G. Johnson

1981 The Elk Island Tradition: An Early Woodland Society in the Virginia Piedmont. *Quarterly Bulletin of the Archeological Society of Virginia* 36:49-76.

Mounier, Alan and Jack Cresson

1988 A Case of Lachrymose Archeology in Southern New Jersey. *Archeological Society of New Jersey Newsletter* 146:5-8.

Neitzey, Captain William

1991 "Fishing the Potomac. The Neitzey Family Fisheries at Ferry Landing and Stony Point" in *Yearbook: The Historical Society of Fairfax County, Virginia. Volume 23:45-59.*

Netherton, Nan, Donald Sweig, Janice Artemel, Patricia Hickin and Patrick Reed

1992 *Fairfax County, Virginia: A History.* Fairfax County Board of Supervisors, Fairfax, Virginia.

Nugent, Nell Marion

1983 *Cavaliers and Pioneers: Abstracts of Virginia Land Patents and Grants 1623-1666.* Virginia Book Company, Berryville, Virginia.

O'Dell, Jeffrey M.

1983 *Chesterfield County: Early Architecture and Historic Sites.* Chesterfield County, Virginia.

Palmer, William P. [editor]

1881 *Calendar of Virginia State Papers and Other Manuscripts, From April 1, 1781, to December 31, 1781. Preserved in the Capitol at Richmond.* Sherwin McRae, Richmond, Virginia.

Potter, Stephen R.

1982 An Analysis of Chicacoan Settlement Patterns. Dissertation on file, Department of Anthropology, University of North Carolina, Chapel Hill.

1993 *Commoners, Tribute and Chiefs: The Development of Algonquian Culture in the Potomac Valley.* University Press of Virginia, Charlottesville.

Potter, Elisabeth Walton and Beth M. Boland

1992 *National Register Bulletin 41: Guidelines for Evaluating and Registering Cemeteries and Burial Places.* United States Department of the Interior, National Park Service, Washington, D.C.

Rountree, Helen C.

1989 *The Powhatan Indians of Virginia: Their Traditional Culture.* University of Oklahoma Press, Norman.

Salmon, John S.

1996 *Board of Public Works Inventory. Records in the Library of Virginia.* The Library of Virginia, Richmond, Virginia.

Official Records of the Union and Confederate Armies (OR)

- 1881 *The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies. Series I, Volume X.* Government Printing Office, Washington, D C.
- 1888 *The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies. Series I, Volume XXL.*

Shepherd, Samuel

- 1970 *The Statutes at Large of Virginia, From October Session 1792, To December Session 1806, Inclusive, In Three Volumes, (New Series,) Being a Continuation of Hening. Volume I.* Ams Press, Inc., New York, New York.

Slattery, Richard G.

- 1946 A Prehistoric Indian Site on Selden Island, Montgomery County, Maryland. *Journal of the Washington Academy of Sciences* 36 (8):262-266.

Smith, Page

- 1980 *A New Age Now Begins. The Shaping of America. Volume Three.* McGraw-Hill Book Company, New York, New York.

South, Stanley

- 1977 *Method and Theory in Historical Archeology.* University of Illinois Press, Urbana.

Stephenson, Robert L., Alice L. Ferguson and Henry G. Ferguson

- 1963 *The Accokeek Site: A Middle Atlantic Seaboard Culture Sequence.* Anthropological Papers (20) Museum of Anthropology, University of Michigan, Ann Arbor.

Stevens, J. Sanderson

- 1989 Environmental Site Predictors and Prehistoric Settlement Patterns in the Central Piedmont of Virginia. Paper presented at the Middle Atlantic Archeological Conference, Rehoboth Beach, Delaware.

Stewart, R. Michael

- 1998 *Archaic Triangles at the Abbott Farm National Landmark: Typological Implications for Prehistoric Studies in the Middle Atlantic Region.* Paper accompanying Exhibit at the Middle Atlantic Archaeological Conference, Cape May, New Jersey.

Thurman, Melburn D.

- 1985 A Cultural Synthesis of the Middle Atlantic Coastal Plain, Part I: Culture Area and Regional Sequence. *Journal of Middle Atlantic Archeology* 1:7-32.

Turner, E. Randolph III

- 2000 *Archaeological investigation at the Cactus Hill site, Sussex County, Virginia*. Paper presented at the 65th Annual Meeting of the Society of American Archaeology, Philadelphia, Pennsylvania.

United States Department of Interior (DOI)

- 1983 Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines. *Federal Register* 48 (190):44716-44742.

Walker, Joan M.

- 1981 *A Preliminary Report on the Prehistory of Prince William County, Virginia*. Report prepared for the County of Prince William by the Thunderbird Research Corporation, Woodstock, Virginia.

Walker, Joan M. and William M. Gardner

- 1989 *Phase I Archeological Survey, Telegraph Woods Sanitary Sewer Line, Fort Belvoir, Virginia*. Report prepared by Thunderbird Archeological Associates, Inc. for Paciulli, Simmons and Associates, Ltd., Fairfax, Virginia.

Waselkov, Gregory A.

- 1982 Shellfish Gathering and Shell Midden Archeology. Ph.D. Dissertation, Department of Anthropology, University of North Carolina, Chapel Hill.

Weiss-Bromberg, Francine

- 1987 Site Distribution in the Coastal Plain and Fall Zone of the Potomac Valley from ca. 6500 B.C. to A.D. 1400. Master's Thesis, Department of Anthropology, The Catholic University of America, Washington, D.C.

Wharton, James

- 1957 *The Bounty of the Chesapeake: Fishing in Colonial Virginia*. The Virginia 350th Anniversary Celebration Corporation, Williamsburg, Virginia.

Wills, Mary Alice

- 1978 *Confederate Batteries Along The Potomac*. Prince William County Historical Commission, Dumfries, Virginia.

Woods, Edgar

- 1901 *Albemarle County In Virginia*. The Michie Company Printers, Charlottesville, Virginia.

WPA (Work Projects Administration)

1941 *Prince William: The Story of Its People and Its Places*. Originally compiled in 1941 by Workers of the Writers Program of the Work Projects Administration, revised edition sponsored by the Bethlehem Good Housekeeping Club, Manassas, Virginia. Whittet & Shepperson, Richmond, Virginia.

APPENDIX I
Scott Cemetery Cultural Resource Form

CEMETERY REGISTER FORM

Cemetery Name: Scott

Tax Map # N38° 49.190 W077° 40.143

Location: about 100 yards east of 16111 John Marshall Highway and about 165 feet south of John Marshall Highway.

Property Owner:

Address:

Classification: _____Municipal _____Religious Family Civil War _____Private

Status: Abandoned _____Maintained, not in use Currently used Moved

Condition: _____Excellent Good _____Fair Poor

Approximate size: _____ 75 ft. x 35 ft.

Approximate Number of Burials: _____ about 75 - 100

Markers: _____Tombstone _____Fieldstone _____Unmarked _____Other

Earliest Known Burial Date: _____ **Latest Burial Date:**

Surnames Listed on Markers: _____

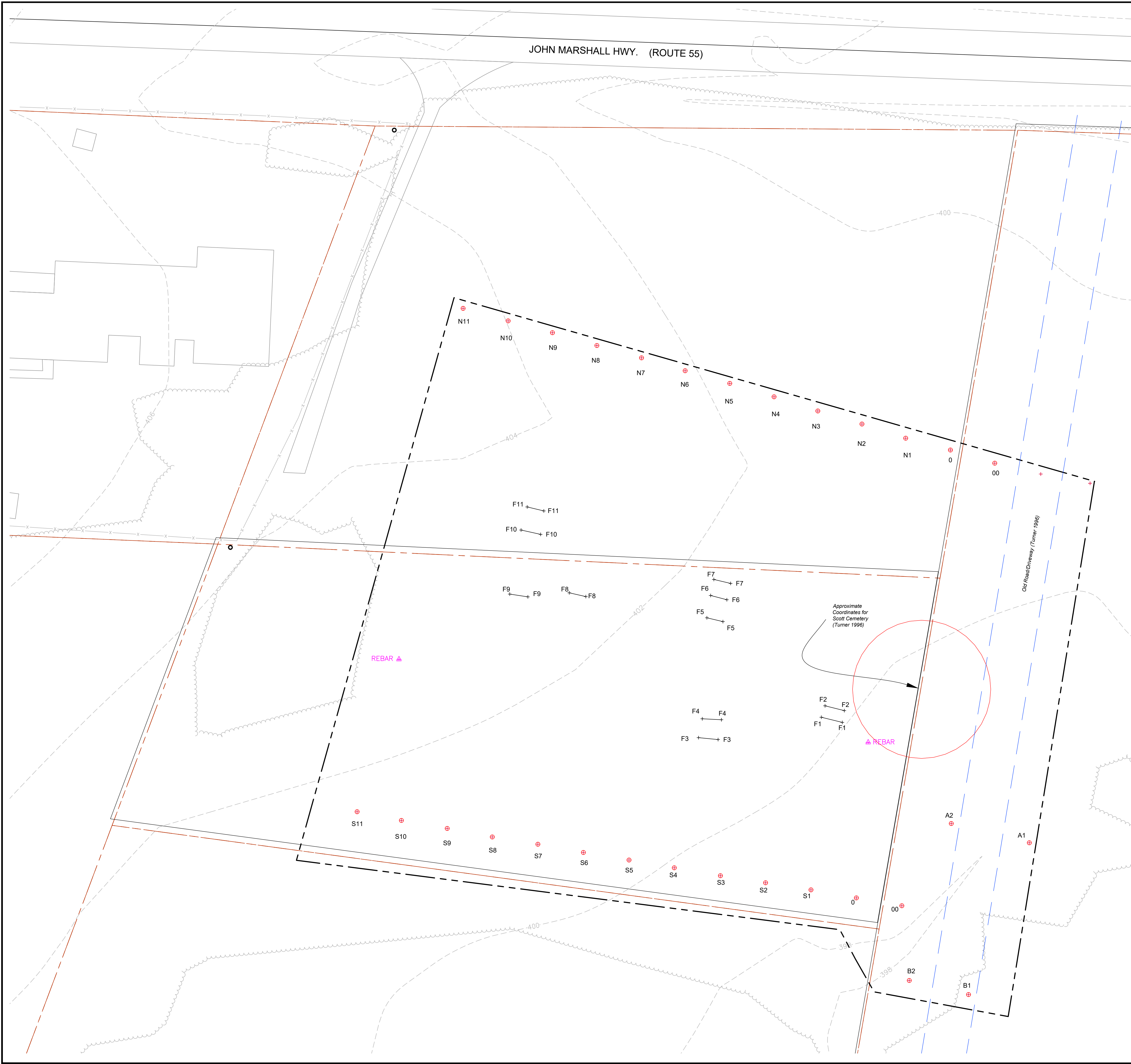
Comments: This cemetery is locally known as Scott but nobody could remember any burials in the last 30-40 years.

Surveyed by: Ron Turner

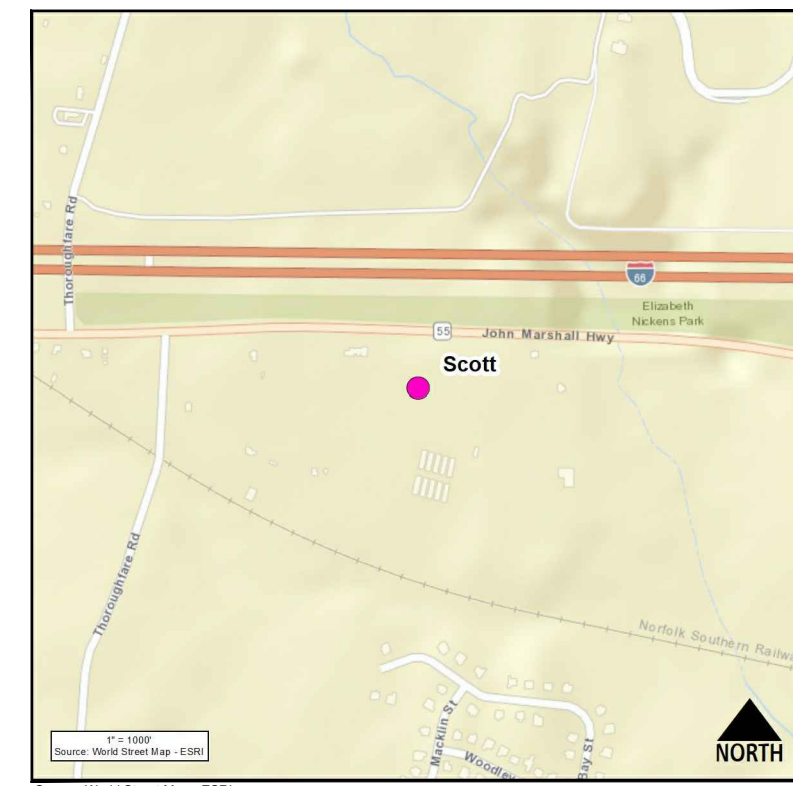
Date: 1996, 2001

Source: <http://www.pwcvirginia.com/Cemeteries1.htm>

APPENDIX II
Results of Scott Cemetery Investigation (Oversized Map)



VCS 1983 NORTH ZONE



VICINITY MAP
SCALE 1" = 1000'

LEGEND

F6 +

GPR ANOMALY LOCATION

N2 ⊕

GPR/EM TRANSECT STAKE LOCATION

○

IRON PIPE FOUND

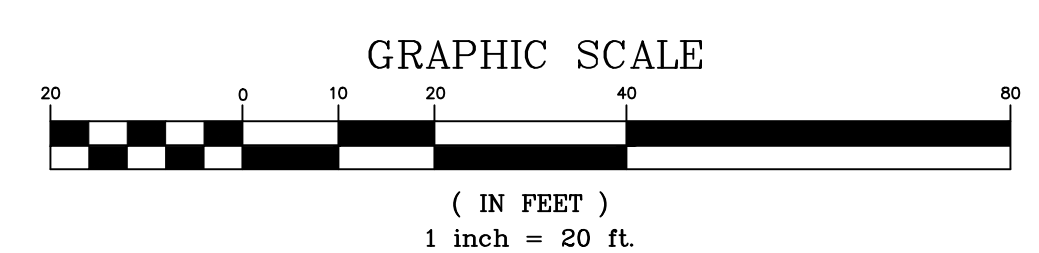
△

FLY POINT (WSSI REBAR & CAP)

SURVEY NOTES:

1. This map has been oriented to The Virginia Coordinate System of 1983, North Zone, NAD83(NA2011) Epoch 2010.00, using a Real Time Network (RTN) GPS. Archeological features and the monumentation shown were located in the field using RTN GPS and conventional survey methods. Field locations were completed on July 2, 2021.

2. The boundary line information shown hereon is for information purposes only and does not constitute a boundary survey by Wetland Studies and Solutions, Inc. (WSSI). Monumentation, including traverse stations and fly points, shown on this drawing should be used to orient archeological feature locations to any future boundary, topographic, or location survey.



Wetland

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Non-Invasive Archeological Investigation:
Ground Penetrating Radar (GPR) Survey

Prepared For: Community Landscape Services

Scott Cemetery

Prince William County, Virginia

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REVISIONS				App. By	Rev. By	Description	No.	Date	DATE: July 27, 2021	SCALE: 1" = 20'	C.I.: 2'

Horizontal Datum: VCS NAD 83

Vertical Datum: NAVD 88

Boundary and Topo Source:
Prince William County Digital Data
Prince William County Digital Data

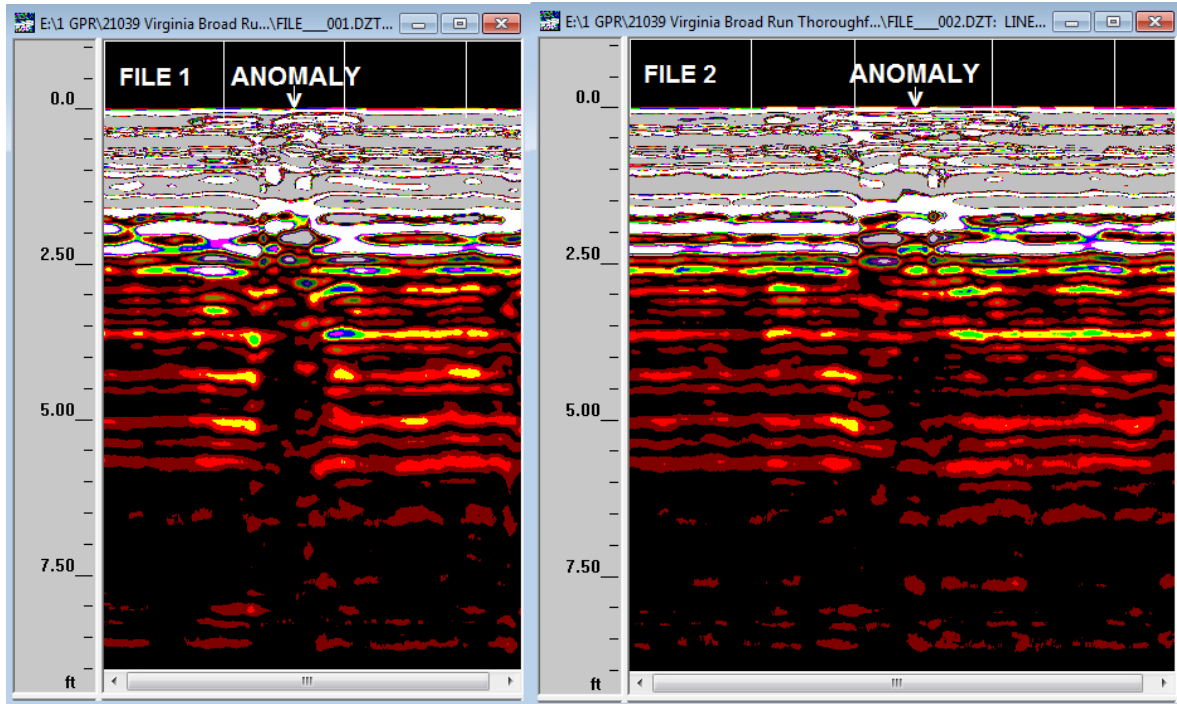
Design	Draft	Approved
EJC	EJC	CJL

Sheet #
1 of 1

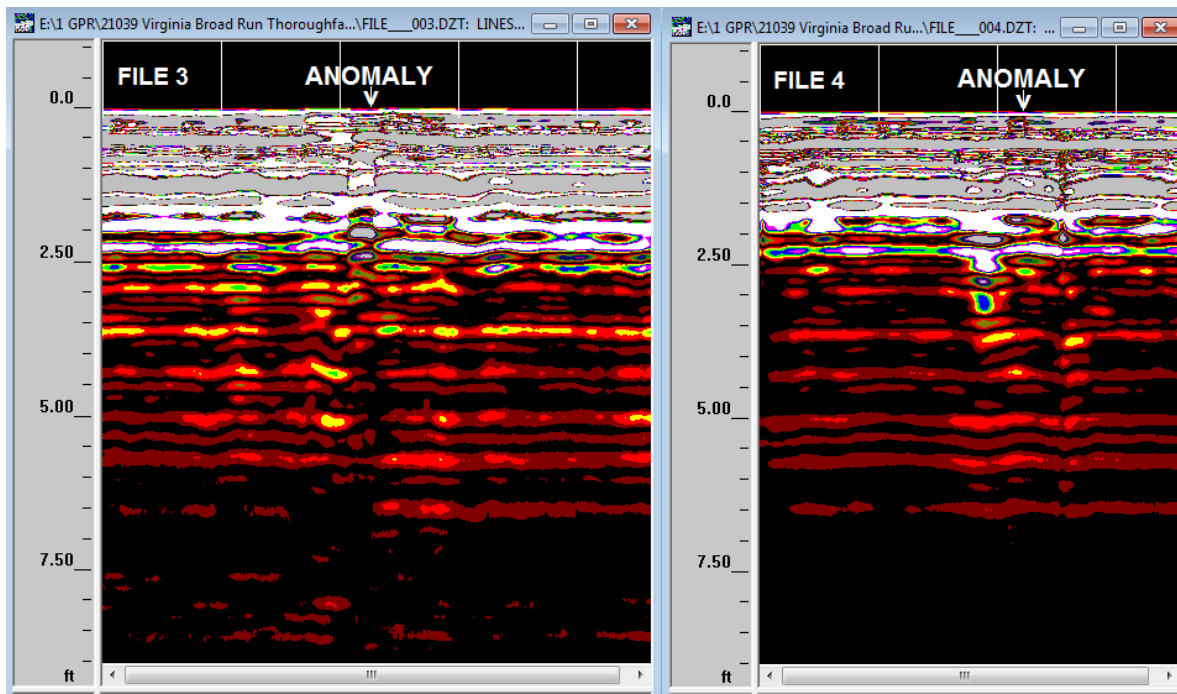
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2021-08-09_Arch Survey.dwg

APPENDIX III GPR Data Images

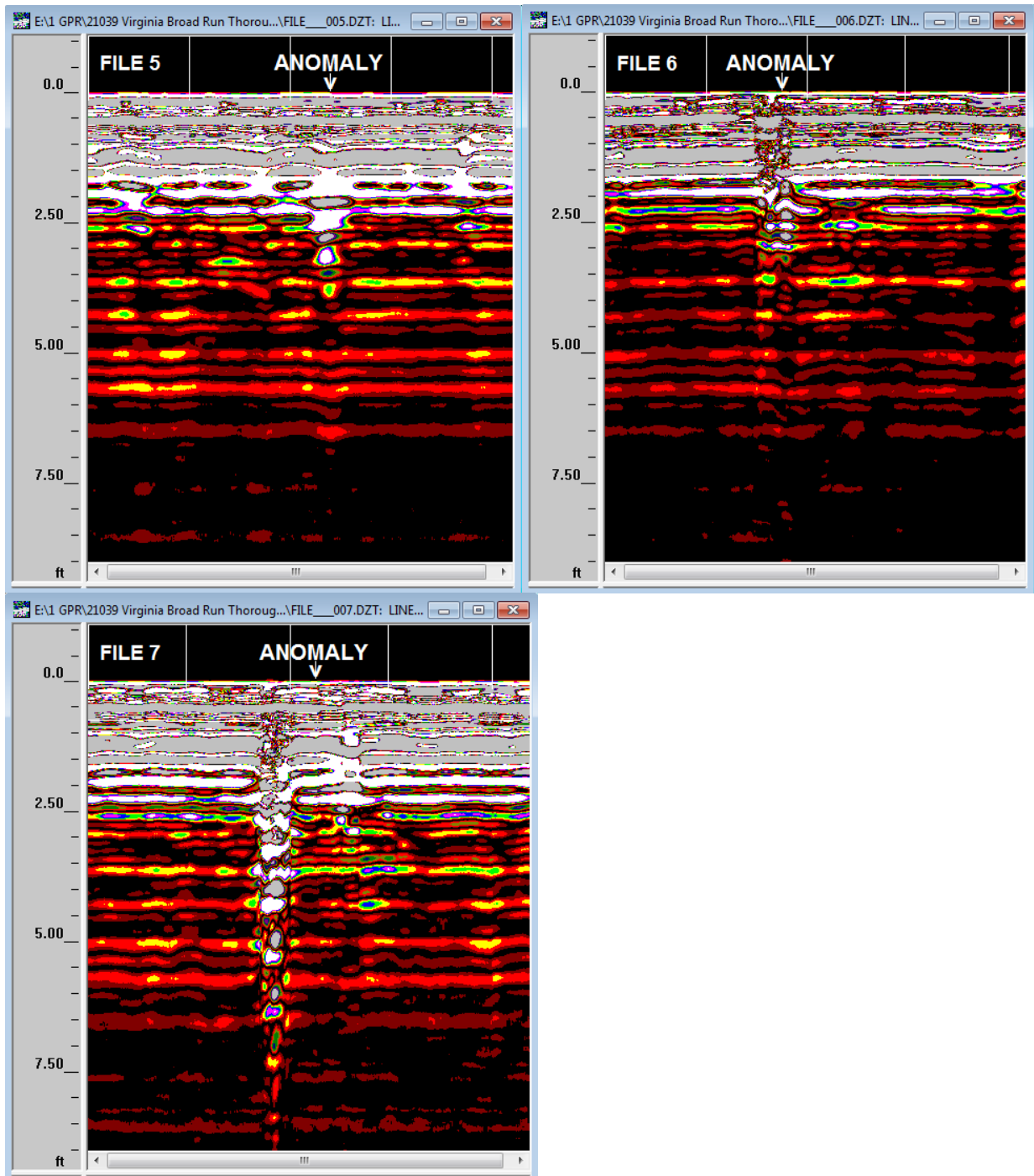
Features 1 and 2



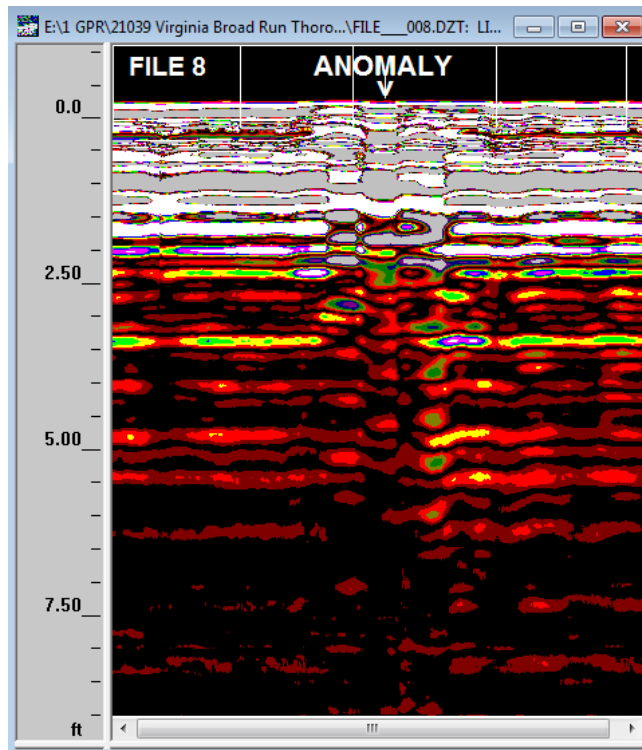
Features 3 and 4



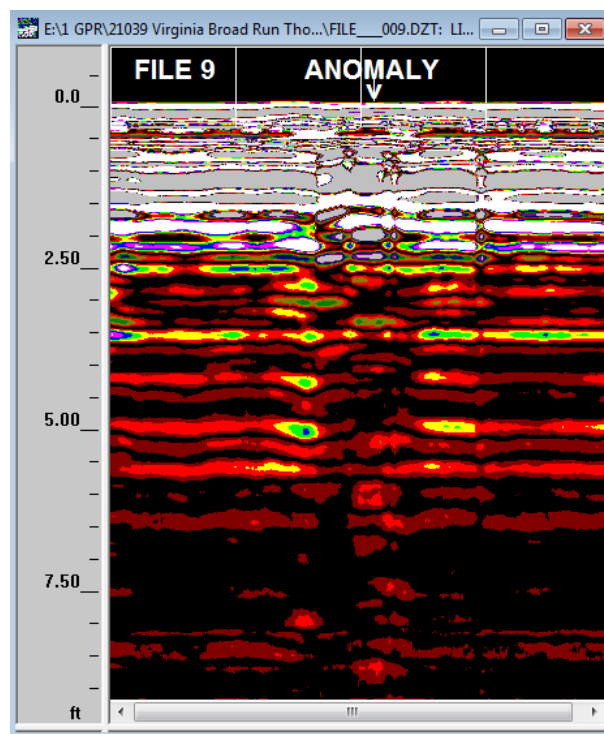
Features 5, 6 and 7



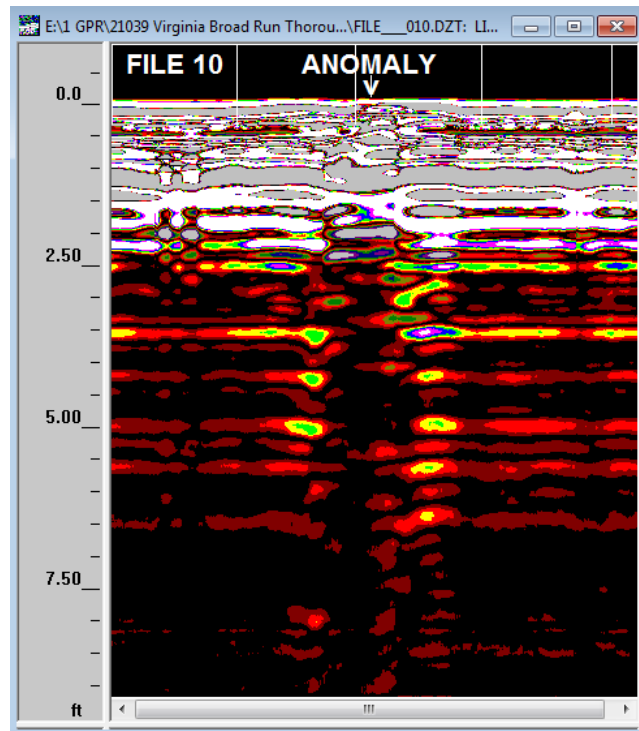
Feature 8



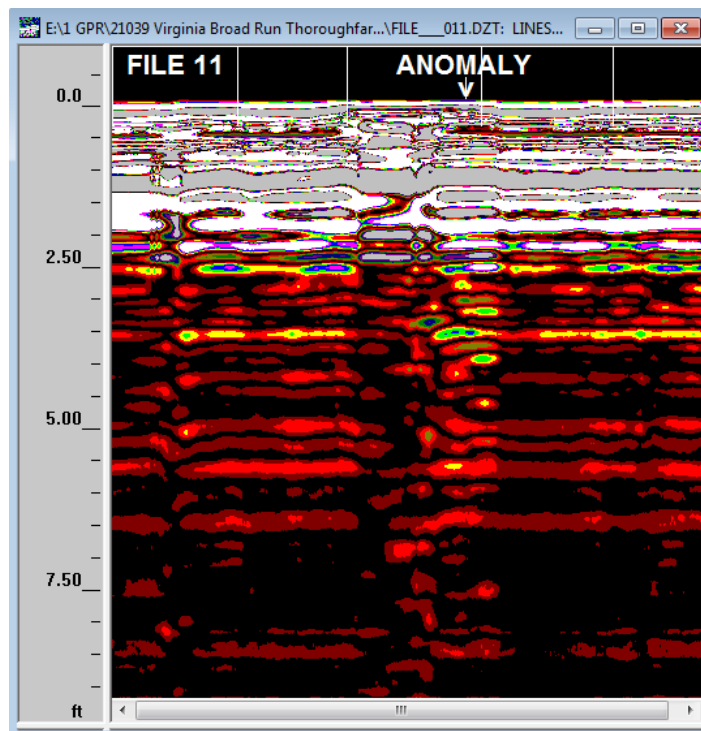
Feature 9



Feature 10



Feature 11



APPENDIX IV

List of Qualifications

Firm Association
Wetland Studies and Solutions, Inc. (WSSI)

Project Assignment
Principal Archeologist

Years of Experience
With this firm: 16
With other firms: 15

Education
MA/Anthropology/The Catholic University of America

BA/Anthropology/University of Massachusetts, Amherst

Registrations & Certifications
2021/Registered Professional Archeologist/16262

2021/8-Hour HAZWOPER Hazardous Materials Technician Review

2009/HAZWOPER 40-hour Hazardous Materials Technician /OSHA/2009060514

Awards:
2016 Brenman Award for Outstanding Professional Archaeologist (City of Alexandria)

Associations:
Council of Virginia Archaeologists

Society for American Archaeology

Mr. Mullen's relevant experience includes:

Archeological Cemetery Services – Prince William County 12th High School Site - Prince William County, Virginia

Mr. Mullen served as Principal Investigator for this project, which included archeological cemetery delineation, archival research, preparation and processing an application with the DHR, the archeological removal of human remains from the cemetery under said permit, analysis and data recovery reporting, and coordination with agency staff, media, and descendant families, and arrangement for reinterment of remains at another location on the site. A total of eleven burials were recovered from the site. Based on the archeological evidence, the burials located within the cemetery date to the period post-1850 to post-1880. Archival records do not clearly mention the cemetery, its occupants, or its exact location, and the individuals at site 44PW1947 may never be positively identified. However, based on the available evidence, at least some of the individuals were possibly associated with the family of William and Cordelia Lynn, who owned the land containing the cemetery during this time period.

Cemetery Delineation of Site 44PW1234 at the Bristoe Station Battlefield Heritage Park - Prince William County, Virginia

Mr. Mullen served as Principal Investigator for an archeological investigation of a suspected Civil War-era cemetery (Site 44PW1234). Pedestrian inspection, probing, hand trenching and shovel test pit excavation in the original study area and the additional testing corridor found no conclusive evidence of human burials. Very few soil anomalies were identified within the study area and the few that were identified were irregularly shaped and spaced. Based on their shape and orientation, the anomalies encountered during the investigation were interpreted as evidence of earlier tree falls or rodent disturbances. The work was conducted for the Historic Preservation Division of the Prince William County Department of Public Works, under a Certified Local Government grant. The Bristoe Station Battlefield Heritage Park is under an historic preservation and open-space easement recorded October 20, 2009 in the Circuit Court of Prince William County and the easement is held by the Virginia Board of Historic Resources (DHR). All archeological work performed within the boundaries of this property was subject to the terms of the easement. Permission to conduct the archeological work was granted by DHR.

Robinson Landing (Robinson South Terminal) – City of Alexandria, Virginia

Mr. Mullen served as Principal Investigator for the Documentary Study and Archeological Investigations of this city waterfront block, Site 44AX0235. Excavations revealed late 18th to early 19th century residential and commercial buildings foundations, numerous privies with well preserved "night soil", a flagstone and cobblestone portion of the ca. 1780 alley known as the Strand, a brick sidewalk with stone curbs, the foundations and intact wood floorboards of the ca. 1783 Hooe's Warehouse and the foundations from the ca. 1851 Pioneer Mill, which was the largest building in Alexandria at that time and a well-known landmark. Additionally, evidence of 18th and 19th century wharves and other structures by which land was created within the original course of the Potomac were extant beneath the foundations. The remains of three vessels were integrated into the network of bulkhead and crib wharves; the ships appear to date to late 18th century.

PROFESSIONAL PROFILE: MATTHEW S. TURNER, P.G.

ADDRESS AND TELEPHONE:

GeoModel, Inc.
PO Box 1320
Leesburg, VA 20177
(703) 777 9788 Phone
(703) 777 3814 Fax

SUMMARY OF PROFESSIONAL EXPERIENCE:

Mr. Turner is a professional geologist and geophysicist and has managed a diverse range of geophysical projects worldwide. Mr. Turner has over twenty years of professional geological, geophysical, and archeological experience with commercial and governmental clients, and is an expert in ground penetrating radar, geophysical, and archeology surveys. Mr. Turner has conducted numerous ground penetrating radar (GPR), electromagnetic conductivity (EM) and geophysical surveys in the United States, Hawaii, Alaska, Japan, Africa, the Middle East, Jamaica and Mexico.

PROFESSIONAL HISTORY:

1991 - Present	GeoModel, Inc. Senior Scientist and Project Manager for a geophysical consulting and geological firm. Mr. Turner has conducted numerous ground penetrating radar (GPR) and other geophysical and archeological surveys worldwide.
1987 - 1991	Earth Resources Corporation Senior Project Manager for a company specializing in earth management services. Supervised and conducted numerous geophysical surveys including EM and GPR surveys.
1983 - 1987	Technos, Inc. Project Manager for a geophysical consulting firm. Conducted numerous EM and GPR geophysical investigations.
1980 - 1983	Fort Hays State University Teaching assistant for mineralogy, petrology, and field methods at a major Kansas university geology department.
1977 - 1980	Western Technologies, Inc. Engineering Geologist for a geotechnical consulting firm in the Las Vegas, Nevada area.

PROFESSIONAL HISTORY (Continued):

- 1975 - 1976 **Holosonics, Inc.**
Geophysicist operating downhole geophysical logging equipment along the Alaska Pipeline.
- 1973 - 1975 **Fugro, Inc.**
Geologist - conducted numerous geologic investigations. Conducted geologic mapping of numerous sites.

CREDENTIALS:

Master of Science (M.S.), Fort Hays State University, Kansas, 1983, Major in Geology.
Bachelor of Science (B.S.), Northern Arizona University, 1973, Major in Geology, Minor in Anthropology.

40-Hour Hazardous Waste Site Workers Training Course for Hazardous Waste Operations and Emergency Response, as required by OSHA 1910.120.

PROFESSIONAL AFFILIATIONS:

Certified Professional Geologist, Virginia, No. 343
Registered Professional Geologist, Georgia, No. 1198
Registered Professional Geologist, Florida, No. 517
Certified Professional Geologist, Alaska, No. 81

KEY PROJECTS:

Ground Penetrating Radar (GPR) survey, Brownstown, Pennsylvania. Conducted field survey for an archeological study to locate foundations and historic remnants on the 0.5 acre Hellburg Archeological site in Brownstown, PA. Numerous foundations, possible buried structures, buried debris, and a mill race were located and mapped.

Ground Penetrating Radar (GPR) survey, Leesburg, Virginia. GPR data processing and interpretation for an archeological study at the North Springs Behavioral Hospital, to locate possible old walls, structures, foundations, and gravesites.

Ground Penetrating Radar (GPR) survey, Palmetto, Florida. Analyzed GPR data for an archeological study to locate old walls and foundations at the historic Gamble Sugar Cane Mill just off State Highway 683 (near 1903 Ellenton-Gillette Road) in Palmetto, Florida.

Ground Penetrating Radar Survey, Menorah Gardens, Florida. Conducted 3-D modeling of ground penetrating radar data to locate and map hundreds of gravesites at cemeteries in Palm Beach Gardens and Fort Lauderdale.

KEY PROJECTS - CONTINUED:

Port Royal, Jamaica. Conducted ground penetrating radar survey for archeological survey in Jamaica. Coordinated with the Jamaica National Trust during project. Participated in News Conference to discuss results.

Warri, Nigeria, Africa. Conducted geophysical and ground penetrating radar (GPR) surveys for Mosunmolu Ltd. at the Shell Petroleum Development Company of Nigeria Limited, Warri to locate contaminated soil. Presented findings to Royal Dutch Shell personnel at project meeting.

Abu Dhabi, United Arab Emirates (U.A.E.). Conducted a groundwater study for Nasa International Group at the Abu Dhabi Golf Course, including a ground penetrating radar survey to map groundwater under site.

PROFESSIONAL REPORTS AND PUBLICATIONS:

"Ground Penetrating Radar and Visualization" GeoInformatics Magazine, August/ September 2004 (online) Issue.

"Ground Radar" RF Innovations Magazine, Issue 15, May/June 2002.

"The Importance of a Complete Understanding of the Geology at Contaminated Sites," The Professional Geologist, Volume 32, Number 10, September 1995.

"A Systematic Approach for Assessing Groundwater Contamination Sites," presented at the 17th Environmental Symposium, American Defense Preparedness Association, Atlanta, Georgia, April 1990.

"Assessing Contamination at and Treatment for a Low-pH Leachate Plume," Hazardous Materials Control, May-June 1989.

"Contaminant Assessment and Remedial Action for a Low pH Leachate Plume in a Surficial Aquifer," Second National Outdoor Conference and Exposition, NWWA, Las Vegas, Nevada, May 1988.

"Characterization of Groundwater Contamination by Direct Sampling Through Hollow Stem Augers," Second National Outdoor Conference and Exposition, NWWA, Las Vegas, Nevada, May 1988.

"The Use of Surface and Downhole Geophysical Techniques to Characterize Groundwater Flow in a Fractured Bedrock Aquifer System," Second National Outdoor Conference and Exposition, NWWA, Las Vegas, Nevada, May 1988.

"Auditing Existing Monitor Wells," FOCUS Conference on Southeastern Groundwater Issues, Tampa, Florida, October 1986.

PROFESSIONAL REPORTS AND PUBLICATIONS - CONTINUED:

"In-Situ, Time-Series Measurements for Long-Term Groundwater Monitoring," ASTM Symposium on Field Methods for Groundwater Contamination Studies and Their Standardization, Cocoa Beach, Florida, February 1986.

"Correlation Between Field Geophysical Measurements and Laboratory Water Sample Analysis," Fifth National Symposium and Exposition on Aquifer Restoration and Groundwater Monitoring, Columbus, Ohio, May 1985.

"Quantitative Geomorphology of the North Fork Big Creek Drainage Basin," Ellis County, Kansas, 115th Annual Meeting, Kansas Academy of Science, Atchison, Kansas, March 1983 (Masters' Thesis).

NEWS MEDIA

Fox News- 2005 TV Interview, Mr. Turner was interviewed by Greta Van Susteren of FOX NEWS on July 28, 2005 concerning Ground Penetrating Radar and its use in Aruba.

Court TV- 2005 TV Interview, Mr. Turner was interviewed by Catherine Crier of Court TV on July 28, 2005 concerning Ground Penetrating Radar in Aruba.

WTKR- 2005 TV Interview, Mr. Turner was interviewed by WTKR on February 12, 2005 in Chesapeake, Virginia concerning the use of GPR to locate a landfill under some homes.

Newspaper Article- August 27, 2004 article in the Georgetown Times, Georgetown, South Carolina. Article discusses Mr. Turner's August 25th 2004 court appearance as an expert witness on Ground Penetrating Radar in the lawsuit of Pate vs. Belle W. Baruch Foundation.

2004 TV Interview, "Search for Lost Drainage Well" in Polk County, Florida. Mr. Turner was interviewed by Bay News Channel 9 -TV on May 24, 2004 to discuss locating a lost drainage well using geophysical methods.

2004 TV Interview, Mr. Turner was interviewed by WFTV Channel 9, Orlando on March 26, 2004, concerning location of gravesite using GPR on Ormond Beach, Florida.

Newspaper Article- December 4, 2002 article in Loudoun Times-Mirror, Leesburg, Virginia. Matthew Turner discusses Ground Penetrating Radar and the interview with CNN.

CNN- 2002 TV Interview with David Ensor of CNN. Mr. Turner discussed Ground Penetrating Radar and its use in Iraq to locate WMD's. TV Interview was aired on November 11, 2002 on CNN's "Wolf Blitzer Reports" program.

1999 News Conference, Jamaica, Mr. Turner participated in a news conference in Port Royal Jamaica discussing the results of a Ground Penetrating Radar survey to locate the ruins of Old Port Royal City, Jamaica. News conference reported in January 22, 1999 issue of Weekend Observer Newspaper.

EXPERT WITNESS AND COURT TESTIMONY

Pate vs. Belle W. Baruch Foundation- Mr. Turner was called to testify in court as a ground penetrating radar (GPR) expert witness in a case involving a buried inlet in South Carolina. Mr. Turner also gave a deposition for the ground penetrating radar work conducted by GeoModel, Inc. at the inlet site.

Conrail vs. American Premier Underwriters- Mr. Turner signed an affidavit for ground penetrating radar work conducted by GeoModel, Inc. for Blank, Rome, Cominsky, McCauley LLP, Attorneys at Law. GPR work was used to delineate areas of buried debris at a rail yard in Hollidaysburg, PA.

Menorah Gardens Cemetery, Florida- Mr. Turner obtained ground penetrating radar information on gravesites for Hunton & Williams Attorneys at law for a court case involving SCI Corporation and the Menorah Gardens Cemetery in Florida.

Cemetery Dispute, Maryland- Conducted ground penetrating radar survey to assist Ayres, Jenkins, Gordy & Almand, P.A. in a court case involving a former cemetery in Maryland.