

6.1 Relevant Previous Research

Baublitz et al. (2006) provide a detailed review of previous research relevant to the development of the archaeological predictive model they present. In summary, Custer et al. (1984) proposed a predictive model for the US 13 Relief Route Corridor Project. For precontact archaeological sites, the model identified specific topographic/geophysical settings for each precontact period where sites would be expected to occur. Identification of these high probability settings was, in turn, based on analysis of settlement/subsistence behavior. High probability areas for historic period archaeological sites were derived from historic maps and the locations of extant historic structures.

Lothrop et al. (1987) performed an evaluation of archaeological sensitivity in advance of Phase I and II investigations of the Route 896 corridor. Because the project APE was believed to have been relatively uniform environmentally, they proposed using distance to water as the sole predictor of precontact sensitivity, and identified 200 m as the critical attribute distinguishing high from low probability areas. For historic period resources, Lothrop et al. (1987) identified transportation features as the best predictors, including specifically Route 896 itself and Glasgow.

Kellogg (1992) developed an archaeological predictive model for the U. S. Route 301 corridor in New Castle County. Like Custer et al. (1984), Kellogg assumed a correlation between specific environmental niches and site types associated with specific precontact periods. For early (pre-1770) historic archaeological sites, he assumed that navigable waterways and early roads would be the best predictors, and for later sites, the location of extant or previous historic structures.

Building on these previous efforts, Baublitz et al. (2006) developed an archaeological predictive model for a study area that encompassed a variety of design alternatives for the US Route 301 Project Development. Based on previous research and expectations regarding the settlement preferences of precontact peoples, they selected six variables as likely predictors of site occurrence probability, including distance to streams, distance to springs, distance to confluences, distance to swamps/wetlands, percent slope, and soil permeability. Using Geographic Information Systems technology, they then analyzed the distribution of previously recorded sites within the study area to identify clustering in the data vis-à-vis the variables of interest. Initially, they used statistical goodness of fit measures to identify natural breaks in the data, to be used as the variable values distinguishing high, moderate, and low probability zones. After fine tuning the goodness of fit analysis, they then applied Kvamme's Gain statistic to evaluate the efficiency of the model. The model derived used cost distance to water sources as the key variable in predicting precontact archaeological sensitivity, with different types of water sources weighted somewhat differently in terms of the strength of their "contribution" to the prediction. Final refinements were made by adding microdrainage divides as additional high/moderate probability locations, and previously disturbed areas as having no probability for intact precontact sites. Based on the model, Baublitz et al. (2006) produced a map delineating the distributions of high, moderate, low, and nil probability zones throughout the project area.

Baublitz et al. (2006) also reviewed previous literature regarding attempts to predict historic period sites. They note that in this regard, predicting the locations of very early sites is especially problematic, since documentary evidence is not sufficiently complete or accurate for the purpose. Following others, they concluded that distance to water sources was an unreliable predictor of site locations, but that proximity to early historic roads would be more effective. Consequently, they focused on the road network depicted on Faden's 1778 map of New Jersey (then including Delaware). They identified existing roads that appeared to be on approximately the same location as those shown on Faden's map, and defined moderate probability zones for early historic sites as extending 500' to either side of this subset of extant roads.

Again following others, Baublitz et al. (2006) used nineteenth century atlas and similar maps, as well as early twentieth century USGS 15' quadrangle maps. The locations of buildings on these maps, as well as extant buildings built before 1940, were identified as high probability locations for historic archaeological sites. For mainly heuristic purposes, they chose a radius of 140' around the location of an extant building or building location on an historic map as the size of the high probability area. Again, a map showing the distributions of high and moderate probability zones for historic sites within the overall study area was produced.

With the modifications discussed below (see Section 8.0), A&HC used the Baublitz et al. (2006) model to delineate zones of varying archaeological sensitivity within the APE of Purple Section 1 of the project's preferred alternative.

6.2 Previously Recorded Archaeological Sites

Site files at the Division of Historical and Cultural Affairs were reviewed to identify previously recorded archaeological sites within or near the project's APE. A band extending 1000' to either side of the centerline of the proposed alignment was delineated as an arbitrary project area for site file research, since any resources with the potential to alter probability designations would likely occur within a zone of that size.

Only two sites in the files fell within the zone of interest as so defined (Table 1). Near the northern end of the project, CRS N12770/7NC-G-112 was a large historic period site called the G. W. Townsend Farm Site (Doms et al. 1995). It is attributed to J. Townsend and G. W. Townsend on historic maps. The site form describes the site as heavily disturbed. A&HC's walkover survey indicated that the Purple Section 1 APE in the vicinity of the G.W. Townsend Farm site was entirely disturbed by earthmoving activities associated with construction of SR 1 (see Appendix 1, Sheet 6).

A second site within the 2000' wide band was CRS N14176/7NC-F-085, situated within or near the project's APE on the northwestern side of Scott Run (see Appendix 1, Sheet 5). The site was discovered during archaeological investigations for the Southern New Castle Sewer Project (Heite 2004), and is described as having produced bricks, black glazed redware ceramics, fire-cracked rock, and a post mold. Referred to as the Scott's Run Pump Station Site, it was found during Phase I excavations within a plow zone context. The site form assigns both precontact and historic components to the site; however, neither fire-cracked rock nor post molds are

Table 1. Previously Recorded Archaeological Sites

CRS No.	Site Type	Period	Location
N03797/7NC-F-025	Lithic Scatter	Precontact	Outside APE
N03798/7NC-F-020	Lithic Scatter	Precontact	Outside APE
N12769/7NC-G-111	Lithic Scatter/Historic Mill	Precontact/1770-1850	Outside APE
N12770/7NC-G-112	Farmstead	Historic	Near Segments 30 and 31/Destroyed
N12786/7NC-G-113	Lithic Scatter	Precontact	Outside APE
N12787/7NC-G-114	Lithic Scatter	Precontact	Outside APE
N12788/7NC-G-115	Lithic Scatter	Precontact	Outside APE
N14176/7NC-F-085	Historic Building	Historic	Segment 24

precontact diagnostics, and the report interprets the site as representing a demolished historic building. No structures appear at this location on historic maps, although an ADM historic high probability area is adjacent to it to the north. The high probability area appears to have been intended to correspond to a structure location on the 1849 Rea and Price map, which, however, is clearly shown on the historic map as on the northern side of Hyetts Corner Road, well outside the APE, while the Scott's Run Pump Station Site is clearly on the southern side of and several hundred meters from Hyetts Corner Road.

Phase Ia walkover survey, described below, revealed the presence of a breached earth dam on Scott Run within the project's APE. It is possible that the Scott's Run Pump Station Site is in some way functionally related to this dam. If it is within the project's APE, the site lies within a high probability zone for precontact sites (A&HC APE Segment 24, see below, Section 8.0). Based on its presence, this zone was designated as having a high probability for historic sites as well. A&HC will attempt to relocate and further evaluate this site during Phase Ib survey.

Six additional previously recorded sites were located close to but outside the 2000' wide zone defined for site file research (Table 1). Two were small precontact lithic scatters (CRS N3797/7NC-F-025 and N3798/7NC-F-026) in the headwaters of a small tributary stream that now flows into the Chesapeake and Delaware Canal, and three others (CRS N12786/7NC-G-113, N12787/7NC-G-114 and N12788/7NC-G-115) were small precontact lithic scatters along Scott Run to the northwest of the project area. The sixth site (the National Register Bennett-Thomas Mill Site, CRS N12769/7NC-G-111) was also along Scott Run to the northwest of the project, and contained an historic mill complex and a small precontact lithic scatter. The mill was in operation from about 1770 to 1850, and was the location of a small industrial complex containing saw, fulling, and grist mills (Baublitz et al. 2006). The five lithic scatters were within precontact high probability areas as defined by ADM's model, and thus did not affect probability zones within the project's APE. The mill complex was clearly outside the project's APE. See Appendix 1, Sheet 5 for the locations of the three sites that were within the area of map coverage.

6.3 Historic Maps

Historic Maps: To develop expectations about the distribution of historic period archaeological sites and to find information on ADM's historic high probability localities, A&HC examined selected historic maps from the late seventeenth century to the early twentieth century. Seventeenth, eighteenth, and early nineteenth century maps (Figures 2-7) did not show sufficient detail to reveal features that might have been within or near the Purple Section 1 APE. With the exception of the predecessor of SR 1/US13 at its northeastern end, roads shown on the early maps did not cross or abut the APE, and none of the towns or other settlements depicted were near it.

The earliest map found that does show identifiable features within the Purple Section 1 APE was a road map of New Castle County dated 1820 (Heald 1820; Figure 8). This map indicates that predecessors of two of the three roadways that currently cross the Purple Section 1 alignment were extant by that date, Boyds Corner Road (Mount Pleasant Road on the 1820 map) and

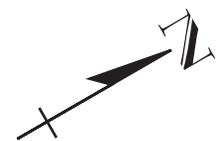
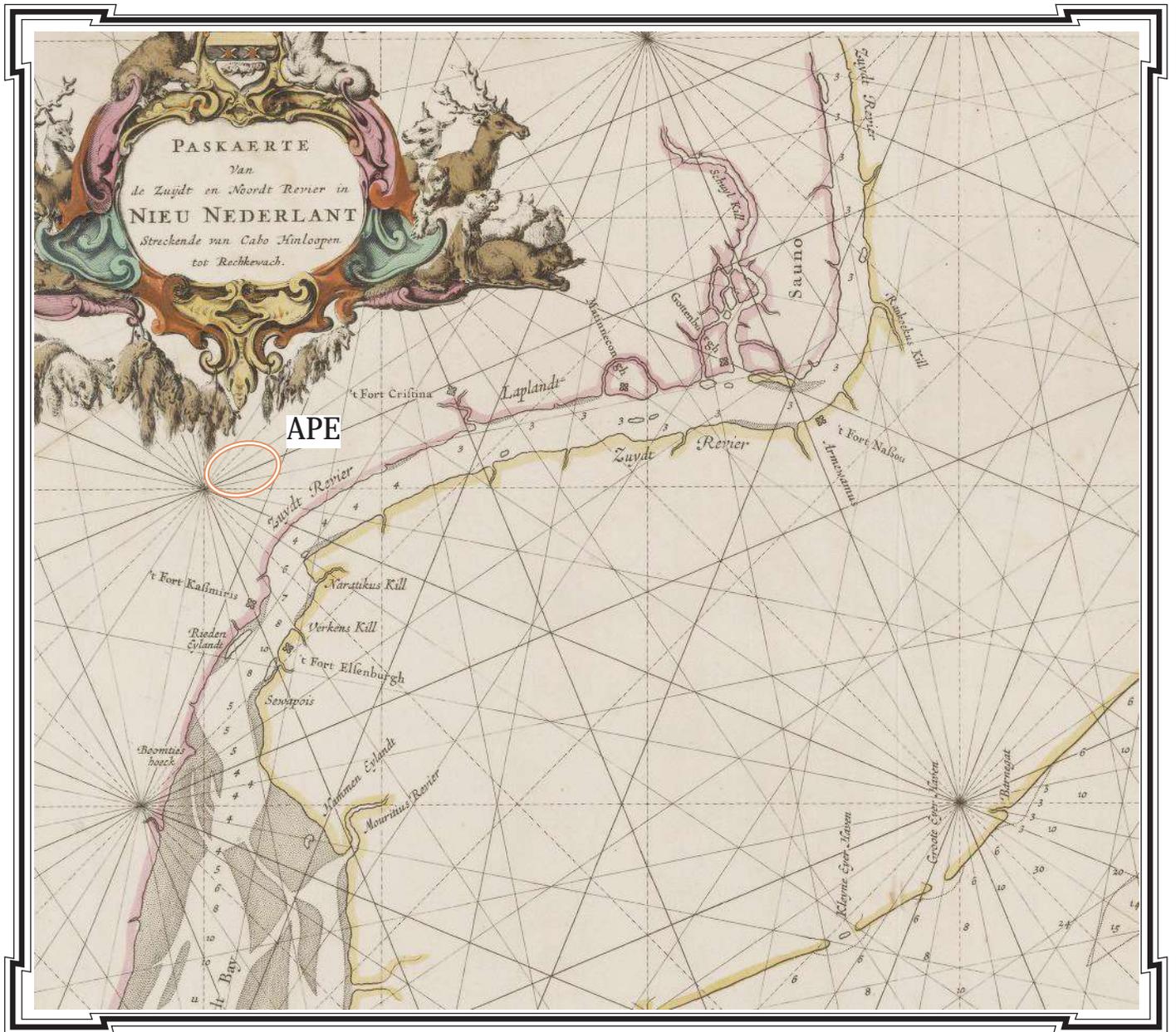


Figure 2 Study Area in 1666 (Anonymous, 1666)

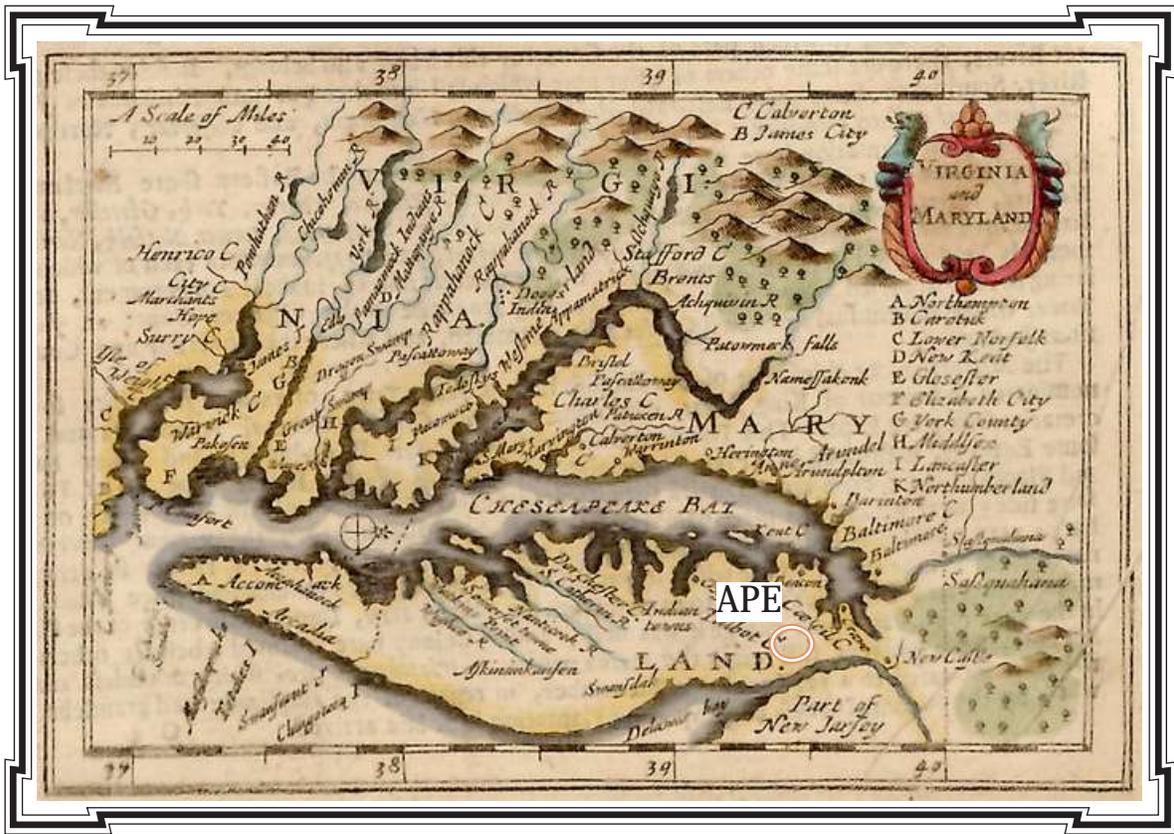


Figure 3 Study Area in 1673 (Source: Hermann 1673)

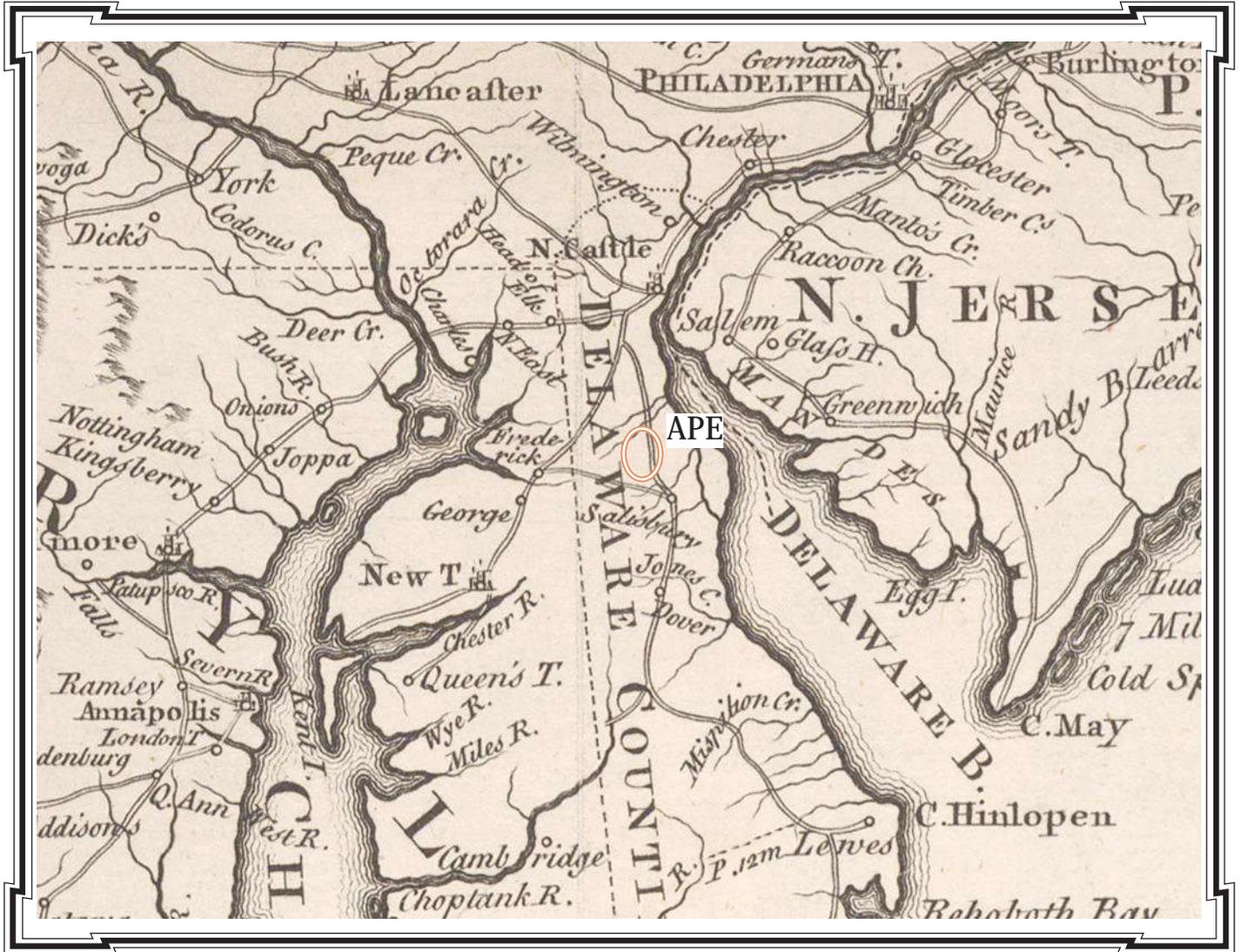


Figure 4 Study Area in 1757 (Source: Kitchin 1757)

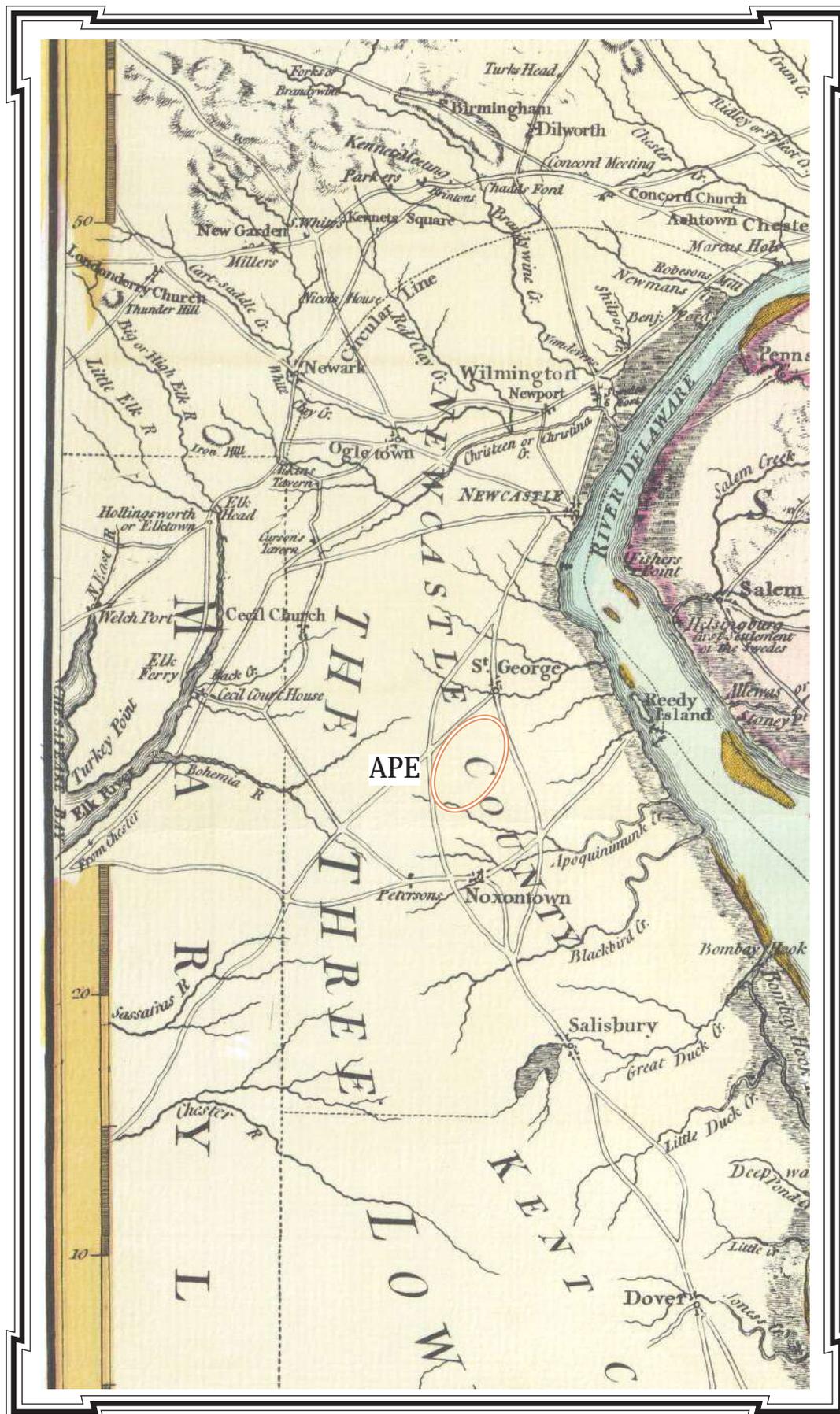


Figure 5 Study Area in 1778 (Source: Faden 1778)

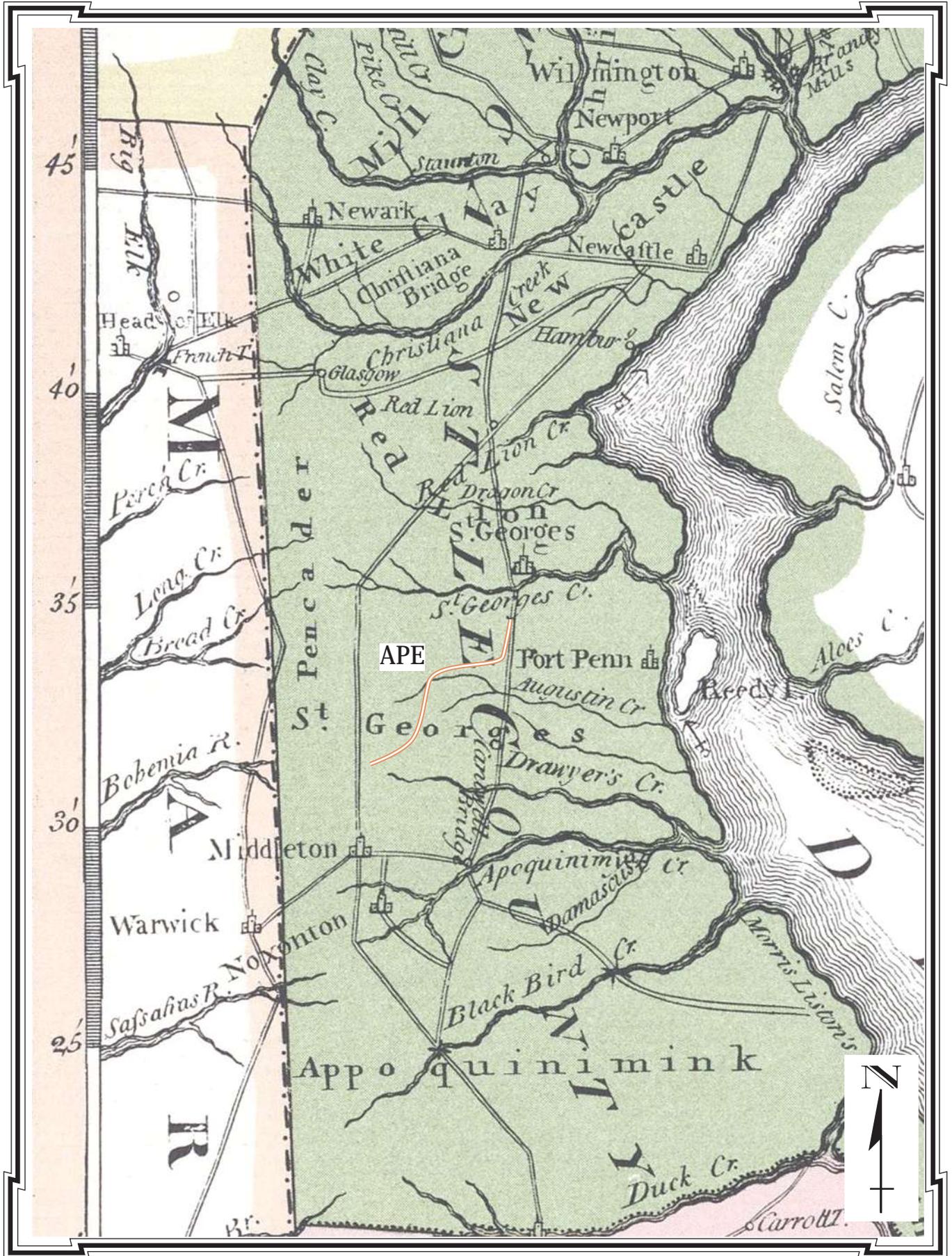


Figure 6 Study Area in 1796 (Source: Anonymous 1796)

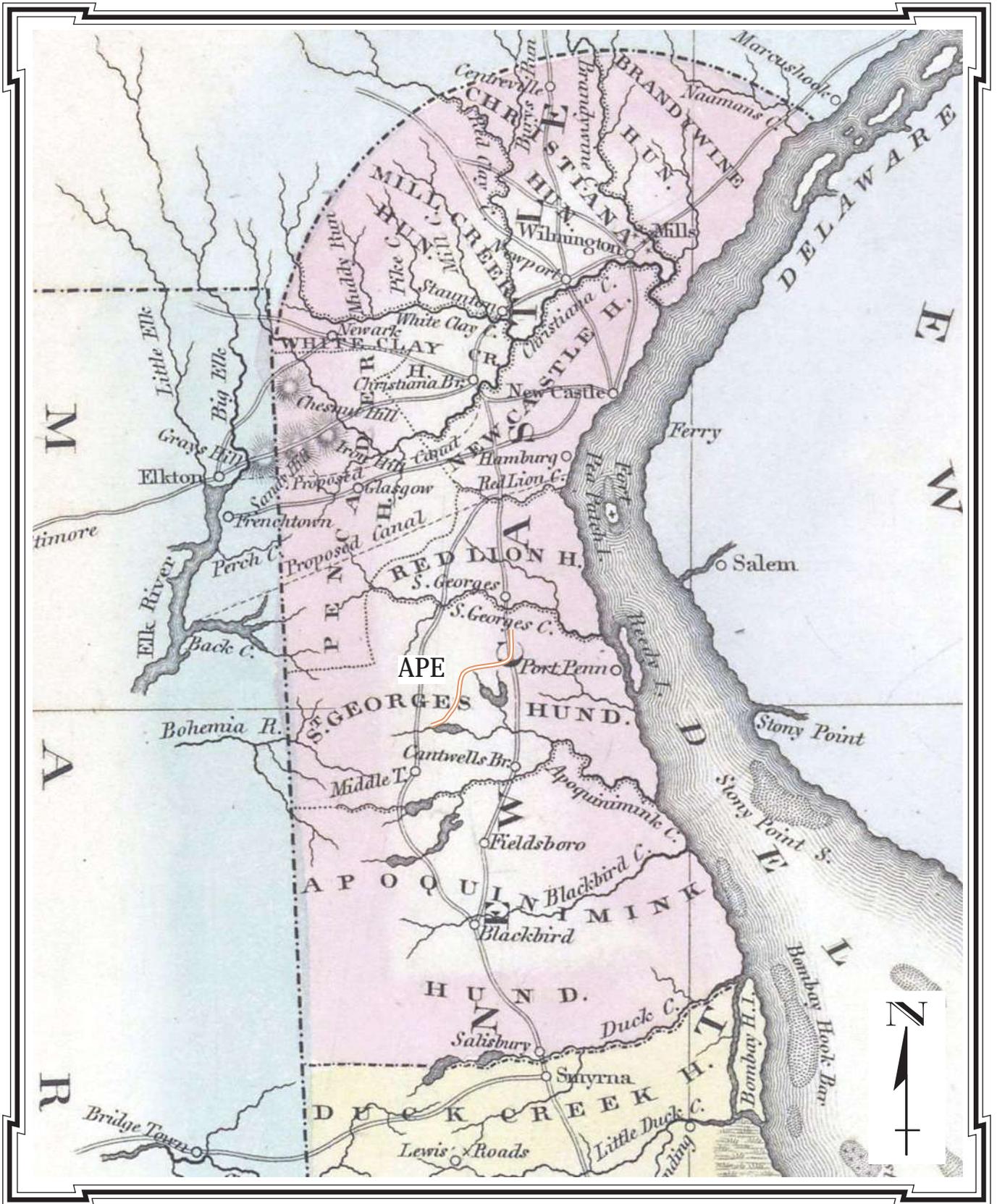


Figure 7 Study Area in 1816 (Source: Lucas 1816)

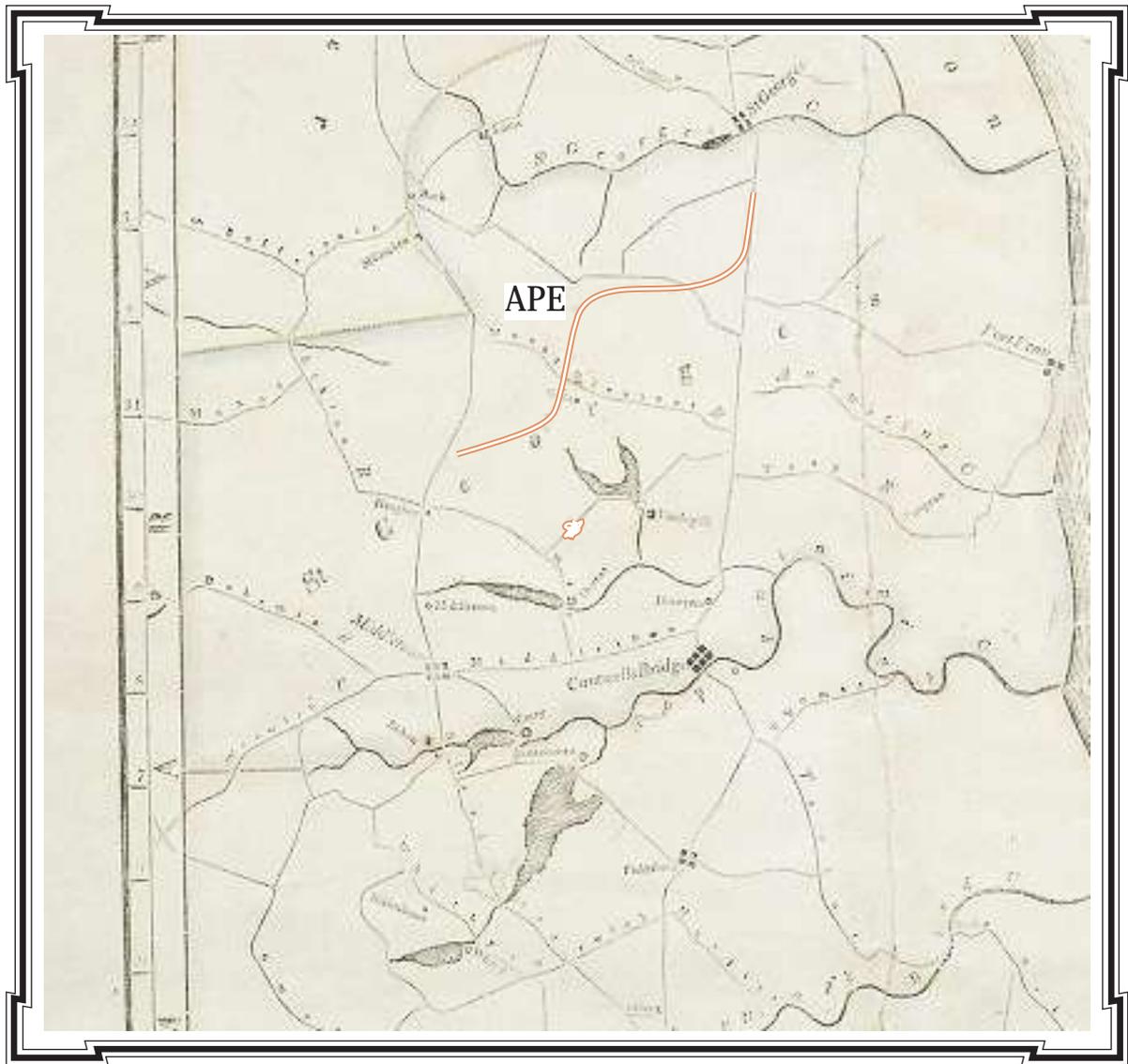


Figure 8 Study Area in 1820 (Source: Heald 1820)

Hyetts Corner Road (unnamed on the 1820 map). Jamison Corner Road, the third road that currently crosses the alignment, is not shown on the map, and may not have been built by 1820. The Heald map is also the earliest map found that depicts the locations of selected individual buildings, such as taverns, schools, manufacturers, etc., although it does not, in general, show the locations of individual residences. One building that is depicted is shown in the vicinity of the Purple Section 1 alignment. To the south of Mt. Pleasant Road and to the east of the alignment is a dot with the word “union,” suggesting that this was the location of a school. Although a “best guess” placement of the project alignment in this area would suggest that the school was outside the Purple Section 1 APE (see Figure 8), the accuracy of the map is questionable and the placement of the Purple Section 1 alignment is not exact. It is notable, however, that on later nineteenth century historic maps, a school house is consistently shown at the same approximate location along Mt. Pleasant Road, and on those maps, the school house in question was to the east of and well outside the project’s APE. It seems highly probable that the school on the Heald map was the same as, or at least at the same location as, the school house shown on later maps, and thus was outside the Purple Section 1 APE.

Rea and Price’s 1849 map of New Castle County (Figure 9) is the earliest map that systematically depicts the locations of individual residential buildings, as well as schools, churches, stores, etc. On it are four residences that appear to be on or in the immediate vicinity of the Purple Section 1 alignment. Towards its southwestern end, a building occupied by J. Houston is located near where the alignment crosses what is now Boyds Corner Road, on the southern side of the road. Continuing to the northeast, a building attributed to J. Read is shown approximately 2000’ to the west of the point where the alignment crosses Jamison Corner Road. Then, approximately 2000’ east of Jamison Corner Road is a building occupied by P. Bowman. Finally, a building occupied by J. Townsend is shown near the alignment’s interchange with SR 1. This building corresponds to the G. W. Townsend Farm archaeological site.

An 1868 map (Beers 1868; Figure 10) shows a building at approximately the same location as the 1849 J. Houston building, now attributed to J. LeCompt. In addition, a second building, also attributed to J. LeCompt, is shown nearby on the north side of Boyds Corner Road just to the west of the first J. LeCompt building. This building is not depicted on the 1849 map. About 1000’ to the north of the two J. LeCompt buildings on Boyds Corner Road is another building that is not shown on the 1849 map. No name is attributed to this building, but it may also have belonged to J. LeCompt. Continuing north, the J. Read building is shown on the 1868 map, now attributed to A. S. Read. To the northeast of the A. S. Read building, a building is shown at the intersection of Jamison Corner Road and Hyetts Corner Road that is not on the 1849 map; no name is associated with it, but it may be part of the Bowman property, with the building of that name just to the east. The latter residence is shown at about the same location as on the 1849 map, but is now attributed to “Mrs. Bowman”. Perhaps the unnamed building was a tenant farmer’s residence. Near the location of the J. Townsend building on the 1849 map is a cluster of three buildings attributed to J. Townsend and G. W. Townsend.

The next map found that depicts the locations of buildings within or near the APE dates to 1881 (Hopkins 1881; Figure 11). On it, the two J. LeCompt buildings along Boyds Corner Road are shown at approximately the same location as on the 1868 map, and both are attributed to him.



Figure 9 Study Area in 1849 (Source: Rea and Price 1849)

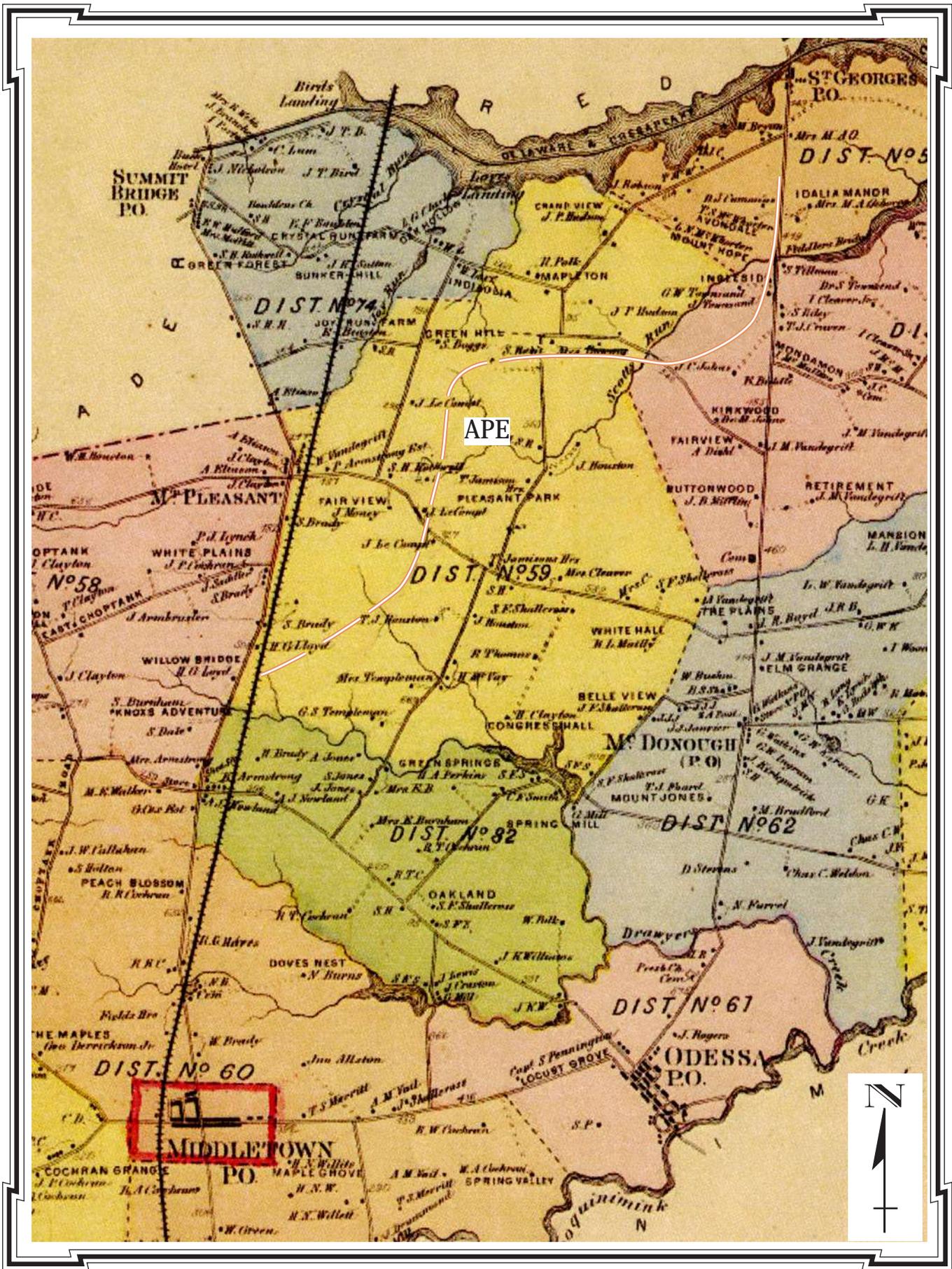


Figure 10 Study Area in 1868 (Source: Beers 1868)

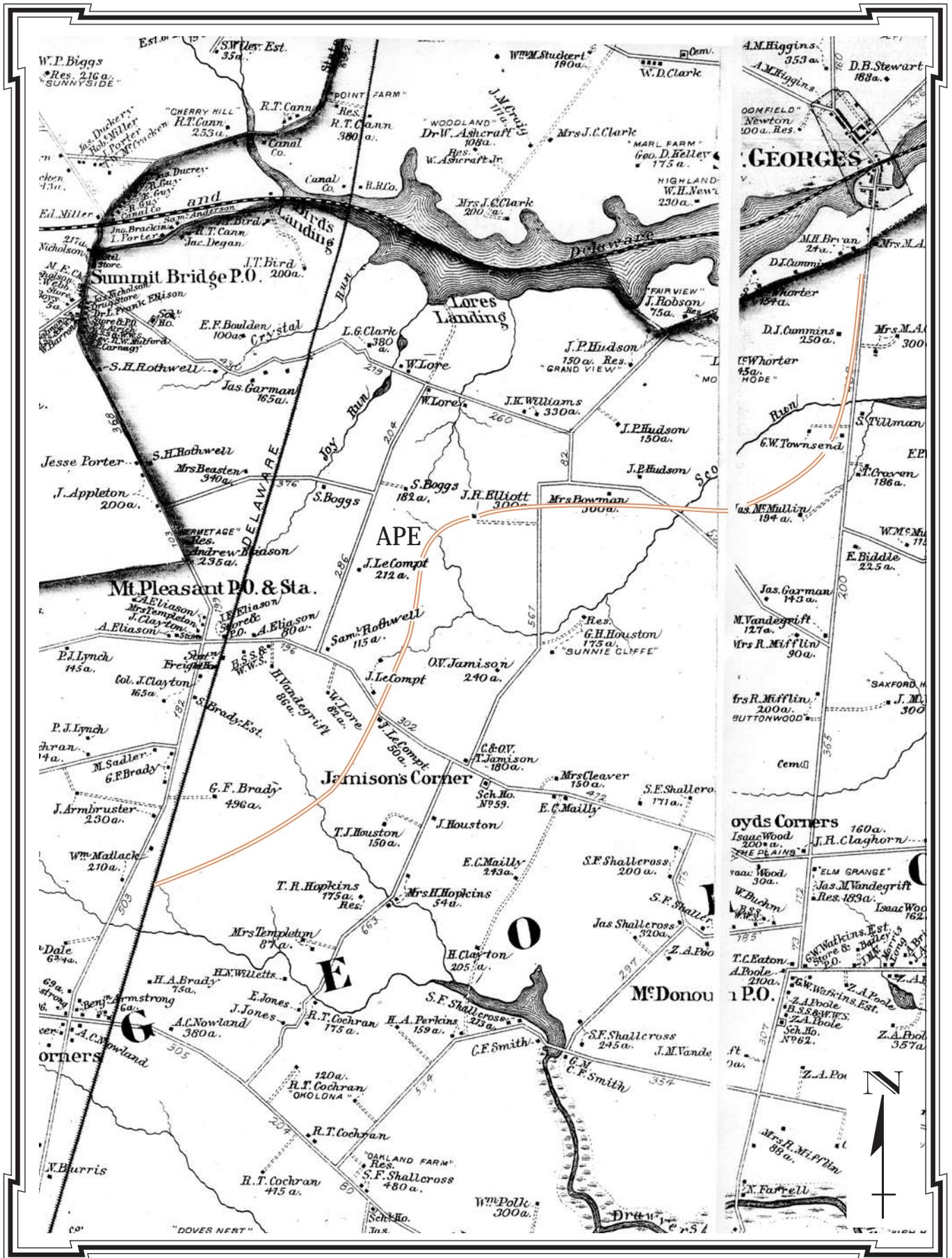


Figure 11 Study Area in 1881 (Source: Hopkins 1881)

The unnamed building to the north is also shown, and the name J. LeCompt is about midway between it and the two other LeCompt buildings, suggesting that LeCompt was the owner of all three. Continuing to the north, the A. S. Read building is now attributed to J. R. Elliott. The unnamed building at the Jamison Corner Road/Hyetts Corner Road intersection is not shown, and Mrs. Bowman is still shown at the same location as in 1868. At the northeastern end of the alignment, there are two buildings at the G.W. Townsend Farm Site, both attributed to G. W. Townsend.

The last nineteenth century map that was found dates to 1893 (Baist 1893; Figure 12). It shows all three of the J. LeCompt buildings near Boyds Corner Road, and clearly attributes all of them to him. The J. R. Elliot building on the 1881 map is still attributed to him. Mrs. Bowman is still shown at the same location, and G. W. Townsend still owned two buildings at the northeastern end of the alignment.

The Wilmington 1906 15' quadrangle (Figure 13) depicts a structure at the location of the J. LeCompt building on the north side of Boyds Corner Road, but does not show the other LeCompt buildings. Structures are shown at the locations of the Read/Elliott building, the P./Mrs. Bowman building, and three structures are shown at the G. W. Townsend Site. The quadrangle does not show names associated with buildings.

Aerial photographs dating to 1937 (Delaware Data MIL) show some further attrition of structures along the Purple Section 1 alignment. Of the three LeCompt buildings there was by then no trace. However, extant farmsteads still existed at the locations of the Read/Elliott building, the P./Mrs. Bowman building, and the G.W. Townsend Farm Site. By 1993, none of the historic farms along the Purple Section 1 alignment were extant (USGS 1993a, 1993b).

On the basis of map research, seven locations within or near the Purple Section 1 APE were identified as having been the sites of former buildings dating to the nineteenth century or earlier. Beginning in the southwest, these locations were identified as high probability areas for historic sites, and were termed the Houston/Lecompt Historic High Probability Area, J. Lecompt Historic High Probability Areas 1 and 2, the Read/Elliott Historic High Probability Area, the Bowman Tennant Historic High Probability Area, the P./Mrs. Bowman Historic High Probability Area, and the G. W. Townsend Farm Site. As indicated above, potentially intact deposits associated with the G. W. Townsend Farm Site did not extend into the Purple Section 1 APE. The remaining six areas were carried forward as historic high probability areas in A&HC's refined predictive model (see Section 8.0).

6.4 Archival Research

Archival research was performed for the twelve tax parcels that are crossed by the Purple Section 1 alignment (Figure 14). Research was performed on-line and at the New Castle County Recorder of Deeds and Register of Wills and involved a review of chains of title and censuses, and correlating these data with information shown on historic maps. A&HC attempted to trace all chains of title back to warrants, but was in some cases unsuccessful due to complex or obscure property transactions. Additional chain of title research will need to be performed after

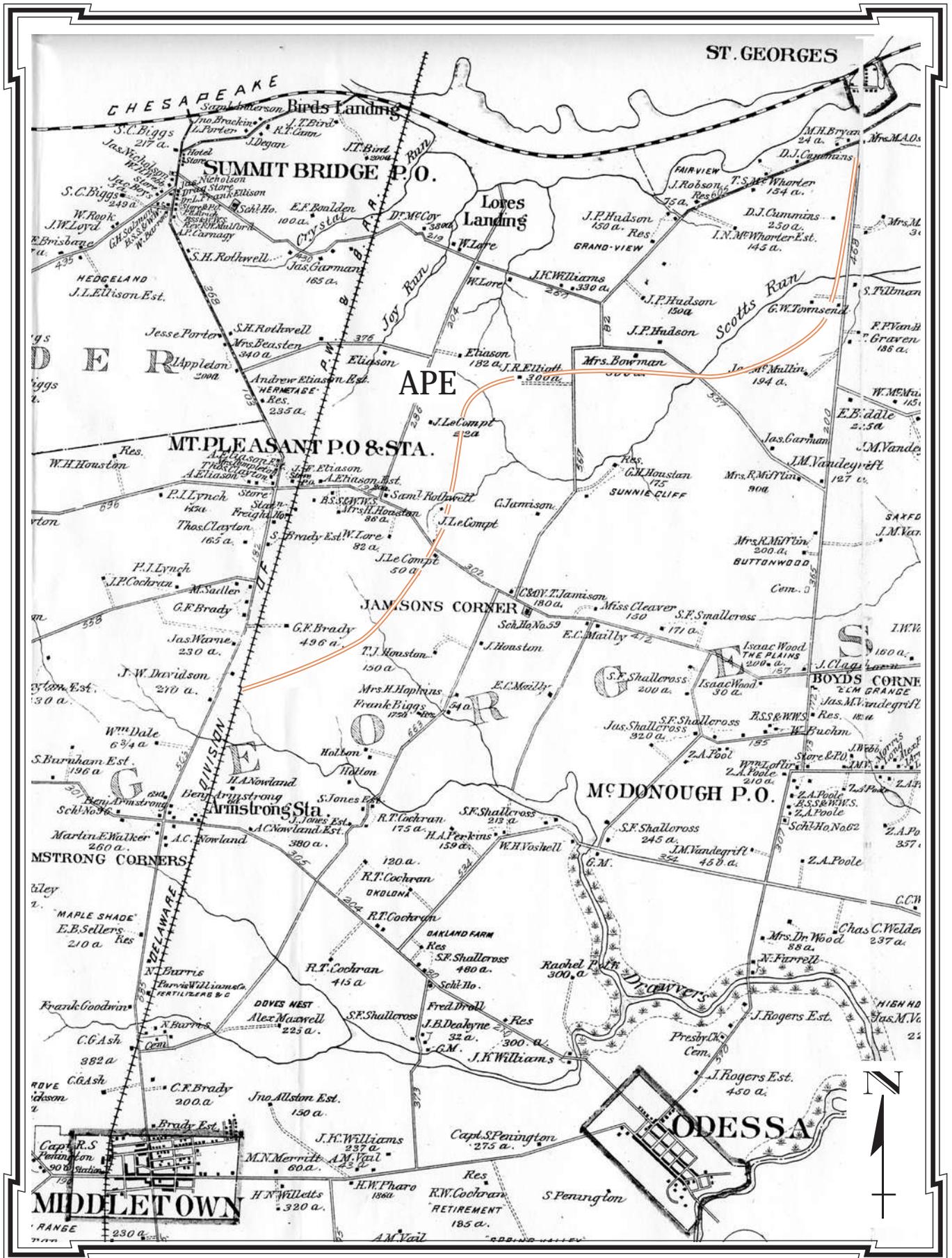


Figure 12 Study Area in 1893 (Source: Baist 1893)

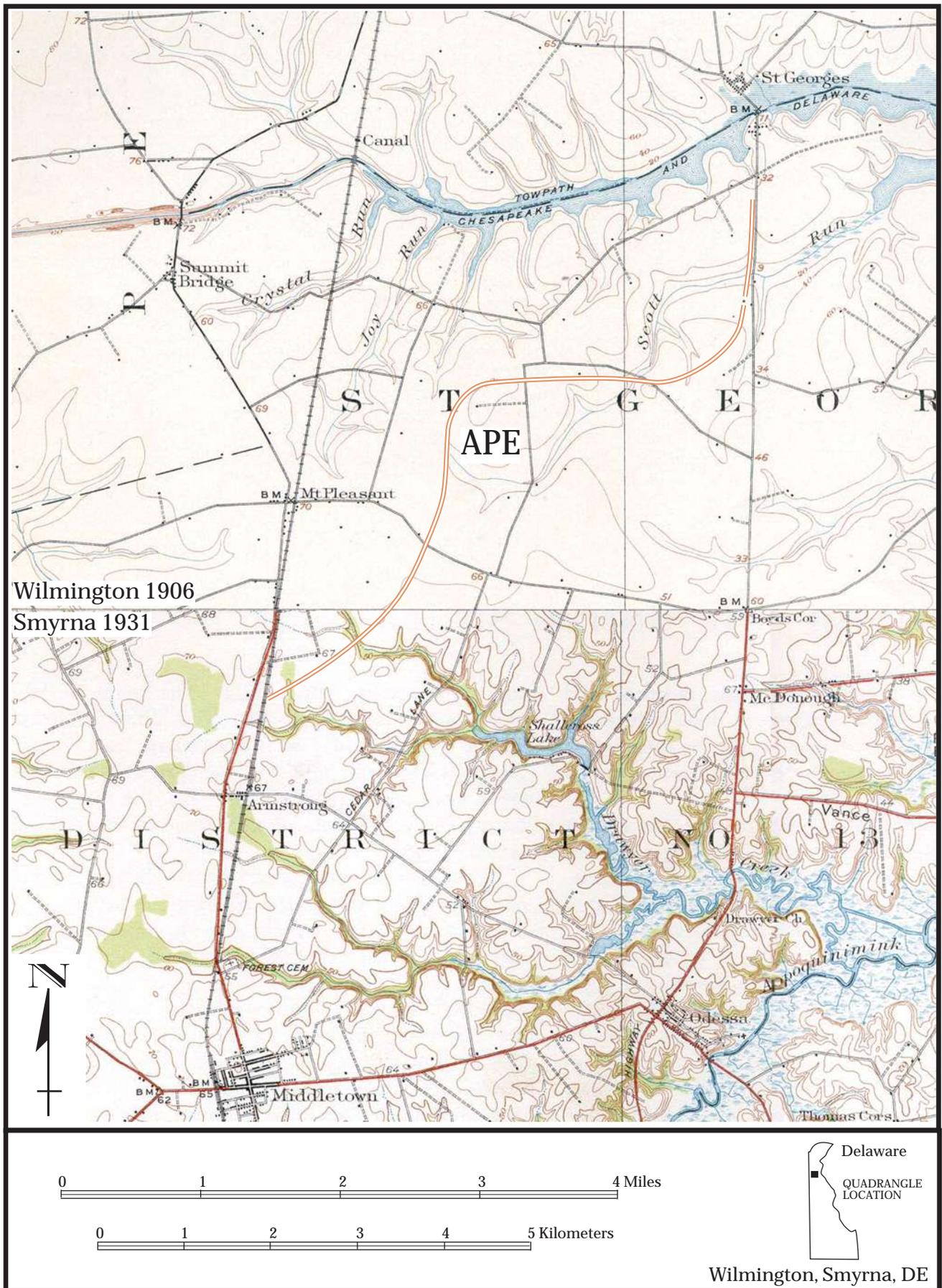


Figure 13 General Vicinity of Project Area in 1906 / 1931 (Source: USGS 1906, 1931)

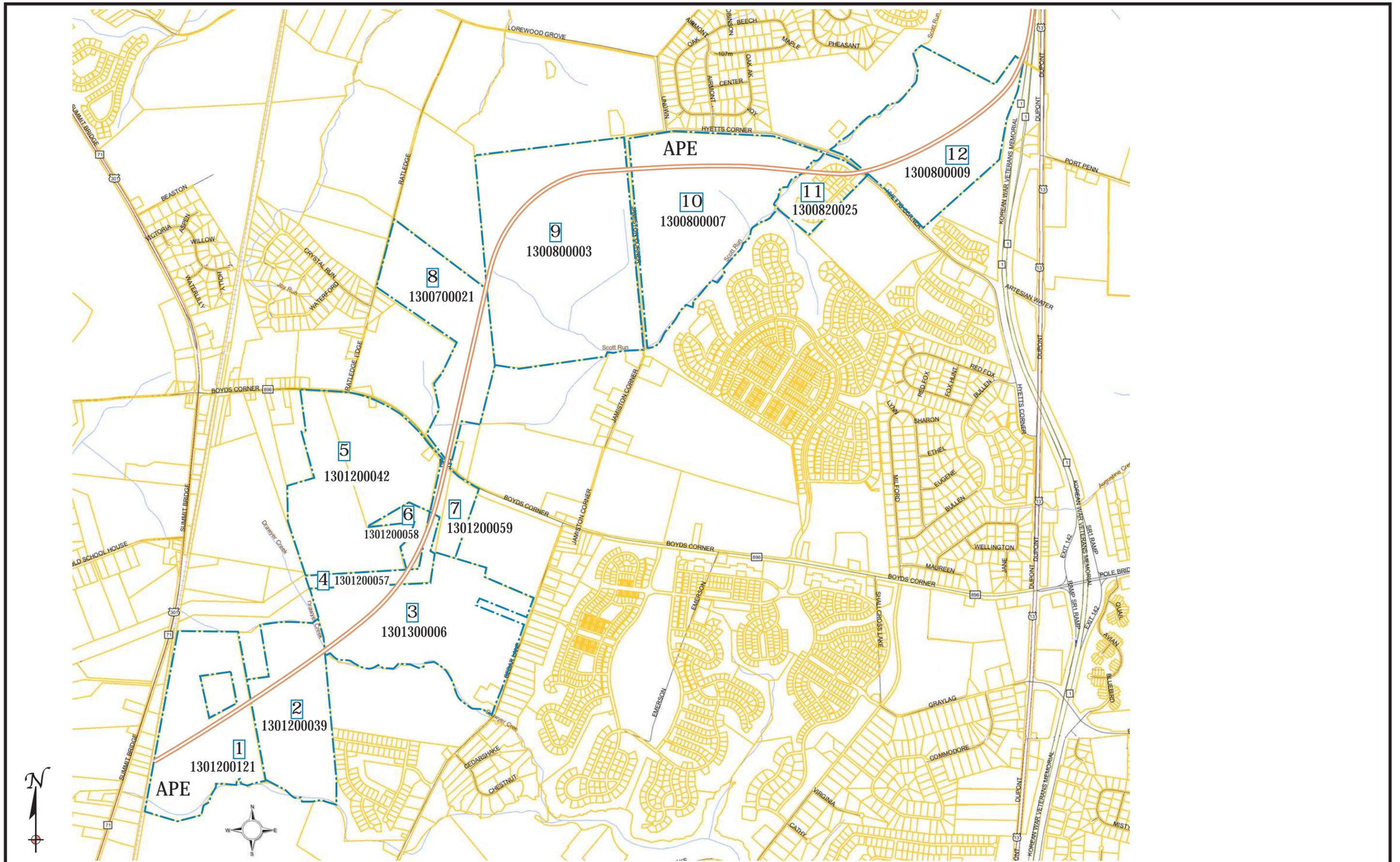


Figure 14 Tax Parcels Crossed by the Purple Section 1 Alignment

Phase Ib survey if historic archaeological sites are found on a property for which such information is currently incomplete. Because tax parcel property identification numbers (PIN) are cumbersome and because some properties that existed historically are now encompassed by several tax parcels, A&HC assigned its own numbers to the twelve tax parcels, AHC 1 to AHC 12, proceeding from southwest to northeast. The six historic high probability areas defined from historic maps fell on four current tax parcels (AHC 7, AHC 8, AHC 9, and AHC 10).

The following narrative is a summary of the results of the archival research, focusing on information most pertinent to the current study. Comprehensive documentation of the findings for the twelve tax parcels investigated is presented in tabular format in Appendix 2, along with their actual PINs.

Tax Parcels AHC 1 and AHC 2 (Haughy/Brady Farm): This large farm of nearly 500 acres was owned and occupied by James Haughy in 1800. Records prior to that date could not be found. The farm came into the Brady family in 1847, and the 1849 Rea and Price map attributes a building that appears to be on tax parcel AHC 2 to S. Brady. This building is well to the south of the APE. No evidence of other buildings or facilities that might have been within the APE was found.

Tax Parcels AHC 3, AHC 4, and AHC 6 (Houston Home Farm): What was historically a single 150 acre farm now comprises portions of these three tax parcels. The earliest documentation of the farm found is on the 1849 Rea and Price map, on which a building along Cedar Run Lane to the east of the APE is attributed to the surname Houston. Although the 1850 census does not list an owner or occupant for this property, the 1860 census indicates that it was “Thom J. Houston.” Houston acquired or inherited three farms during his life, and this one appears to have been his principal place of residence. The dwelling on the farm was clearly outside the APE.

Tax Parcels AHC 3, AHC 4, AHC 5, and AHC 6 (Bird/Houston Farm): A 126 acre farm that was adjacent and to the northwest of the Houston “home farm” comprised portions of these current tax parcels. It was traceable to 1783, when an agreement was reached transferring the parcel to William Bird. The farm remained intact from that date until 1934. In 1860, it was acquired by Thomas Houston, becoming one of the three farms that he owned at the time of his death in 1888. Later, it passed to the Eliason family, who owned it until 1934. The owners are consistently listed in census records of St. Georges Hundred as occupants of the property. In 1790, the farm is described as a “tract of land and plantation,” implying the existence at that date of a dwelling and other improvements, and in 1860 as “messuage & plantation.” Despite the evidence of censuses, wills, and deeds, none of the historic maps shows a dwelling on this farm, and consequently, no historic high probability area could be delineated there based on the maps. However, the Purple Section 1 alignment clearly transects this farm, and the house that presumably existed somewhere within it could therefore conceivably have been within the APE. Because its actual location could not be found, A&HC assigned the entirety of the APE within the limits of this farm a moderate probability for historic resources.

Tax Parcel AHC 7 (Houston/LeCompt Farm and High Probability Area): This 47 acre farm first appears in documents on the 1849 Rea and Price map, with a building attributed to J. Houston (possible relationship to Thomas Houston unknown). After several intervening property owners,

the farm was acquired in 1865 by James LeCompt who retained ownership until his death in 1884. Like Thomas Houston, LeCompt was a substantial land owner in the area, with three farms totaling over 200 acres. The dwelling house on this farm is depicted on all nineteenth century maps on the south side of what is now Boyds Corner Road within or in the immediate vicinity of the APE.

Tax Parcel AHC 8 (J. LeCompt South and North Farms/High Probability Areas 1 and 2): The southernmost of these two farms encompassed 52 acres, located across Boyds Corner Road from the Houston/J. LeCompt Farm (AHC7). It belonged to James Houston until his death at an unknown date prior to 1851. The farm passed from him via inheritance to close relatives, who then sold it to James LeCompt in 1852. Between that date and 1868, LeCompt presumably built two dwelling houses on the property, which first appear on the 1868 Beers map within or near the project's APE. These two buildings correspond to LeCompt Historic High Probability Areas 1 and 2. This farm remained in the LeCompt family for the remainder of the nineteenth century, and the two buildings appear on all later nineteenth century maps.

The northernmost of James LeCompt's farms comprised 120 acres, and was acquired by him in 1845. The building on this farm is depicted on all nineteenth century maps, and is situated along what is now Ratlidge Road, well to the west of the APE.

Tax Parcel AHC 9 (Read/Elliott Farm/Historic High Probability Area): Located to the northeast of and adjacent to James LeCompt's north farm was a 300 acre farm that is traceable to a 500 acre warrant of Thomas Lawes dated 1683. In the early eighteenth century 300 acres of the 500 acre warrant passed to the Hyatt family and ultimately, to the Rev. Thomas Read (1773). Read family heirs included members of the Elliott family, who gained possession in the late nineteenth century. An historical reference indicates that the property was occupied at least as early as 1820 (Scharf 1888), and a building consistently appears there on all nineteenth century maps, within or near the project's APE. An 1890 deed mentions the farm, dwelling house, barn, stables, wagon shed, and other outbuildings. The Read/Elliott farmstead was still extant as late as 1937.

Tax Parcel AHC 10 (P./Mrs Bowman Farm/Historic High Probability Area and the Bowman Tenant Historic High Probability Area): This 200 acre farm may derive from the remaining 200 acres of Thomas Lawes's 500 acre warrant, from which the adjacent 300 acre Read/Elliott Farm came. However, its chain of title prior to 1788 could not be traced. In that year, the 200 acre farm passed to Alexander Stewart, M.D. by public sale, at which time it was described as a "plantation tract with frame messuage & other improvements." In 1794, Peter Bowman Sr. bought the farm, and added an additional 95 acre tract to create a nearly 300 acre farm. This farm remained in the Bowman family until 1943. In the nineteenth century, it passed from Peter Bowman, Sr. to his heirs, one of whom, son Peter Bowman, Jr., acquired full possession in 1829. On Peter Bowman, Jr.'s death in 1864, the farm passed to his widow Mary, who continued to own the property during the remainder of the nineteenth century.

Nineteenth century maps consistently show the primary residence on the farm located within or near the project's APE, and owned/occupied by P. Bowman (1849) and then Mrs. Bowman (1868, 1881, 1893). On the 1868 map, a second building appears to the west of the primary dwelling, also within or close to the APE. This latter building does not appear on any other

nineteenth century maps, and no mention of a second residence, tenant farmer, or renter is made in the deeds, wills, or censuses. The Bowman farmstead was still extant in 1937, perhaps still at that time occupied by members of the Bowman family.

Tax Parcel AHC 11(Johns/Garman Farm): In 1844, Kensey Johns owned a 350 acre tract situated to the north and south of Hyetts Corner Road. The land passed to son Henry Van Dyke Johns on his death, and when Henry Johns in turn died in 1859, the land was subdivided into two tracts, on the north and south sides of Hyetts Corner Road, with the exception that the southern tract included a one acre lot to the north of the road, including a brick tenant house. This latter tract was inherited by Henry's son Montgomery Johns, but was rented to Francis Gray, a farmer. In 1868, James Garman bought the property, and in the 1870 and 1880 censuses, it is shown as occupied by an unknown renter. In 1890, the property passed via public sale to the Othoson family, who occupied and farmed the tract.

The dwelling on the one acre lot to the north of Hyetts Corner Road is consistently shown on nineteenth century maps, attributed to "John" in 1849, to Dr. M. Johns in 1868, and to Jas Garman in 1881 and 1893. It is to the southeast of and outside the APE.

Tax Parcel AHC 12 (Johns/McMullin Farm): This 195 acre farm was inherited in 1859 by Henry Van Dyke Johns' other son, James Carroll Johns. This farm was also at the time rented by a farmer, James Gray. In 1867, it was bought by James McMullin, who owned and occupied the farm for the remainder of the nineteenth century. The 1849, 1868, 1881, and 1893 maps all show a dwelling on this parcel, with a driveway accessing the farm from what is now SR 1/US 13. The house is to the southeast of and outside the APE.