

III. Research Design

A. Research Objectives

The research goals and objectives for the Archaeological Identification Survey were to identify all archaeological resources within the APE and, if any resources were identified, to evaluate whether the resources are eligible for listing in the National Register of Historic Places. All archaeological resources, even those that are not eligible for listing in the National Register of Historic Places, should be identified, as the recordation of all sites contributes to our knowledge of settlement patterns throughout prehistoric and historic periods.

The background research identified the specific locations of previously recorded sites within and in the near vicinity of the APE (see previous section). The potential for locating prehistoric sites within the APE was evaluated using information on site locations provided in *A Management Plan for Delaware's Prehistoric Cultural Resources* (Custer 1986) and from background research undertaken for the project.

Known sites dating to the Paleoindian period in northern Delaware are most heavily concentrated near primary sources of high quality cryptocrystalline lithic material (e.g. the Delaware Chalcedony Complex) located to the west of the project area. The APE is subsumed under "Paleo-Study Unit II," which is hypothesized to contain non-quarry sites related to the Delaware Chalcedony Complex (Custer 1986: Figure 8). As discussed in Section 2. B. 2, large-scale field surveys in Delaware over the two decades since Custer's writing have identified few fluted point or notched point sites. Those that have been found in CRM surveys have been located in close proximity to the Delaware Chalcedony Complex (Thomas Paleoindian site, Stanzeski and Hoffman 2006), the High Coastal Plain (Snapp site, Custer and Silber 1994), and the Low Coastal Plain (Two Guys site, LeeDecker et al. 1996, Beech Ridge site, Barse and Marston 2007). No new fluted point sites have been identified in Paleo-Study Unit II, therefore Custer's (1989) characterization of site locations within this study unit remains the most useful predictor of site locations. Due to its distance from these lithic sources and areas of high resource potential, base camp settlements are not predicted for the APE. Hunting or other resource procurement sites are more likely within the APE, particularly if the undisturbed wetland areas within the APE were in place during the Late Glacial/Early Holocene transition.

For the Archaic period, the project APE falls within the "Archaic Study Unit I, Piedmont Uplands" (Custer 1986: Figure 14). Resource procurement sites are predicted in proximity to the swampy floodplains of low order streams during this period, while micro-and-macro band camps appear to be associated with terrace positions near high-order streams or extensive swamps. The former setting more closely approximates the APE for this project due to the presence of a low order stream and the lack of high order streams; therefore the probability of locating an Archaic period camp during the survey would be considered moderate to high. It is important to note, however, that functional site types for Archaic period are based on surface collections. The Two Guys site (LeeDecker et al. 1996) has yielded the most robust excavation data for an Archaic period procurement or micro-band camp. Its location adjacent to extensive seasonally-flooded wetlands in the Mid-Peninsular Drainage Divide of the Lower Coastal Plain was predicted by Custer's characterization of Archaic site locations.

For both the Woodland I and Woodland II periods, the APE is located within Custer's "Piedmont Uplands" study unit (1986: Figures 26 and 31). Within this physiographic zone, Custer notes that the largest sites (formerly "macro-band base camps", see Custer 1994) for both cultural periods are usually located on well-drained terraces in proximity to higher order streams and at stream confluences near sinkholes and/or springs in limestone lowlands (Custer 1986: Tables 12 and 15). Procurement sites are most likely located on upland slopes adjacent to ephemeral or low order streams, swampy floodplains, and lithic sources. The APE lacks floodplains associated with high order streams, as a result, it exhibits a relatively low probability for containing Woodland I and/or Woodland II base camps. Conversely, the APE does contain several well-drained uplands near ephemeral drainages; therefore the probability for locating Woodland I and/or Woodland II procurement sites within the APE should be considered high. The previously identified 7NC-B-54 is located north of the project APE on a similar topographic setting. Based on site location predictions contained in Custer's *A Management Plan for Delaware's Prehistoric Cultural Resources* (1986), small resource procurement sites from all prehistoric periods are likely to be present on these types of settings within the APE, with higher potential for more functionally diverse site types during the Woodland I and II periods.

The potential for locating historic archaeological sites within the APE was evaluated using information provided in *A Management Plan for Delaware's Historical Archaeological Resources* (De Cunzo and Catts: 1990) and from the background research undertaken for the project.

During the early part of the Exploration and Frontier Settlement Period (1630 to 1730), the majority of settlements in Delaware consisted of Dutch and Swedish trading stations concentrated near the Delaware River. As the population of European settlers increased, small commercial centers, such as Newport and Christiana, grew as shipping centers for moving goods to Philadelphia. Throughout this period, waterways provided the primary mode of transportation. As a result, settlement patterns consisted of scattered family farmsteads along major drainages. At this time, the APE was largely unpopulated, therefore the potential for locating additional undiscovered historic sites dating to the Exploration and Frontier Settlement Period was considered low due.

During the Intensified and Durable Occupation Period (1730 to 1770), New Castle County witnessed a population increase as the number of farm-related inland settlements multiplied. As the network of roads improved transportation, hamlets began to emerge at transportation junctures. For example, Land surveys from 1745 demarcate the "Road to Brandywine Ferry;" this early road followed the approximate alignment of present day Concord Pike (Wholey et al. 2000: 15). Although this area's population was increasing and transportation networks were improving, the area containing the APE was still mostly undeveloped or was used as farmland during the third quarter of the eighteenth century; therefore discovering additional archaeological sites dating to the Intensified and Durable Occupation Period was considered low.

Northern New Castle County retained its agricultural character through the Early Industrial Period (1770 to 1830), although the extensive farming undertaken during the previous period drastically cut agricultural productivity due to the eroded and exhausted fields. Due to the hard times, many farmers were forced west to clear new areas or went to work in the emerging

industrial economy in and around Wilmington. Population stagnated in New Castle County, and the area containing the project APE remained largely undeveloped. Notably, the Wilmington and Great Valley Turnpike, which follows the same general alignment of modern S.R.202, was finished during this period in 1811. New businesses emerged in association with this new roadway during the Early Industrial Period. Due to the modern land altering disturbances within the project area, the probability of finding additional sites dating to the Early Industrial Period within the APE was considered low.

The Industrial and Capitalization Period (1830 to 1880) ushered in a new era of growth in northern Delaware. Factors such as improvements in transportation networks, a large immigrant labor pool, and an abundance of raw materials led to the growth of industry and shifts in agricultural practices. In the vicinity of the Brandywine, industrial enclaves evolved into company towns. The farm economy restructured itself around a diversified and locally consumed product base. Progressive farming practices, such as the use of modern machinery and improvements in fertilization and drainage, increased productivity while relying less on human labor. During this agricultural revolution, roughly half of the farms in New Castle County were worked by tenant labor families.

The 1849 Rea and Historic maps from this period depict the presence of two properties within the APE (Figures 1849 map, 1868 map). One of these appears to be occupied by “J. McKee” (Rea & Price 1849). The Stidham and Miller families owned the properties to the north and east. The Elliott family owned the properties along the west side of the Concord Turnpike (U.S. 202). No historical records regarding the McKee family in Brandywine Hundred, New Castle County were found.

Deed records suggest that the earliest known owner of the Stidham property may have been Irvine W. Pierce (Deed Book A 11, Page 495). Members of the Pierce family were recorded as taxable inhabitants of Brandywine Hundred as early 1778, and including millwright Joseph Pierce. Around 1841 Sarah Coleman received the property from the estate of her father William Long. According to deed records, the property was owned by William Husband, Isaac S. Elder, and other prior to the ownership of William Long. Husband, Elder, and others apparently acquired the property from lands owned by Irvine W. Pierce.

During the mid nineteenth century the property appears to have come under the ownership of Clement B. Smyth, although deed research does not confirm this. On the 1849 Rea and Price atlas, the property was owned by “J. McKee” (*Figure 4*), while the Beers’ 1868 *Atlas of the State of Delaware* indicates that “C.B. Smyth” resided at the site, which would have been located in the northeastern quadrant of the APE (*Figure 5*). Clement B. Smyth was active in the manufacturing and insurance industries of Wilmington and the surrounding vicinity during the mid to late nineteenth century. In 1887 Smyth was selected as the president of the Diamond State Iron Company, a leading iron manufacturer located in Wilmington, Delaware. Previously, Smyth had served a secretary and treasurer of the company. Smyth was also a manager of the New Castle County Mutual Insurance Company (Delaware State Directory 1874). Smyth appears to have owned the property during the 1860s and 1870s, although deed research did not confirm this.

The Sweeny family owned the property between 1878 and 1918, according to tax records. Annie Sweeny had acquired the property on October 16, 1901 from Mary Ann Sweeny, widow (Deed Book 18V, Page 21). John Sweeny, the husband of Mary Ann Sweeny, received the property from Sarah Coleman, of Wilmington, on January 9, 1878 (Deed Book A 11, Page 495).

In 1881 E.T. Warner occupied the site, which included 35 acres (*Figure 6*). Susan Stidham owned the property to the north. The Elliott family owned farm properties along the west side of the Concord Turnpike which appeared to contain two structures within the APE (one of these structures is also visible on the 1868 map). The Concord Turnpike toll house was located further south, at the border with the City of Wilmington. Deed research does not indicate that Warner owned the property. T. Warner resided at the property in 1892, according to the Baist map. In 1892 Warner lived on the property, which included 35 acres, farmhouse, two outbuildings, and an orchard to the east of the farmhouse (*Figure 7*). The property may have been retained by the Sweeny family, who leased or rented its use as a farm property to the Warner family.

Alfred I. DuPont acquired the property on July 24, 1918 from Annie C. Sweeny (Deed Book 28S, Page 233). On December 29, 1936 the Brandywine Hundred Realty Company, a Florida based corporation, sold the property to Almour's Securities Inc., also a Florida based corporation. The Brandywine Hundred Realty Company was created by Alfred DuPont. Edward Ball, financial manager for Alfred DuPont's interests, served as vice president of Almour's Securities Inc. Almour's Securities Inc. controlled real estate holdings on behalf of Alfred DuPont, which became part of the St. Joe Paper Company following the death of Alfred DuPont in 1935. On October 31, 1938 the Almour's Securities Inc. sold the property to the Florida National Building Corporation, both controlled by the DuPont Trust. Almour's Securities Inc. dissolved officially in 1938 at the request of stockholders, with the property holdings going to the DuPont Trust

The St. Joe Paper Company originated as a conglomeration of several companies established by the estate of Alfred I. DuPont. Alfred DuPont was a member of the prominent DuPont family and founder of the E. I. duPont de Nemours Company. DuPont family was noted for its involvement with the commercial development of gunpowder, chemical, plastics, synthetic fibers, and paint. The St. Joe Paper Company supported the Nemours Foundation, which supports the rehabilitation and care of disabled children. St. Joe Paper Company was founded by Edward Ball on behalf of the Alfred I du Pont Testamentary Trust, following the death of Alfred du Pont, in 1936. Edward Ball was the brother-in-law of Alfred du Pont and had served as his primary financial manager. Alfred and Jessie DuPont relocated to Florida in 1926 following conflicts with other members of the DuPont family. The company was most active in Florida, where it operated a paper mill beginning in 1938. The company eventually focused on banking, railroads, and commercial and community development.

With the advent of the Urbanization and Early Suburbanization (1880 to 1940), agriculture ceased to be the predominant occupation in the state for the first time in its history, although agriculture continued to play an important role in the regional economy. The trend towards non-staple crops, perishables, and truck farming initiated in the second quarter of the nineteenth century continued in much of New Castle County, as new transportation routes connected the region to emerging urban areas throughout the northeast. Wilmington's continued growth insured continued demand for dairy products from the Piedmont, allowing this form of

agriculture to thrive well into the twentieth century. Historic maps and aerial photographs dating to this period reveal sparse development within the APE. Two properties depicted on historic documents include the property in the northeastern quadrant of the APE, labeled “T. Warner” in 1892 (*Figure 7*), and also appearing in 1904 and 1937 (*Figures 8 and 9*), and the Concord Station, which is depicted on all three figures. The Concord Station was associated with the railroad in the southwestern quadrant. Archaeological testing was undertaken for all undisturbed areas in which the “T. Warner” property and the Concord Station could have been located.

The US 202 corridor experienced increased commercial and residential development throughout the twentieth century. The area to the northwest of the APE was developed as part of the Rock Manor suburban neighborhood beginning during the early twentieth century. The area immediately northeast of the site was developed as the Rock Manor Golf Club during the early 1920s. The property appears to have been owned as part of the holdings of Alfred I. DuPont. The golf course has continued in operation throughout the twentieth century and continues to serve as a public course. The National Register of Historic Places eligible Porter Reservoir (N-14003) is adjacent to the Rock Manor Golf Course and is located approximately 1000 feet north of the APE. The Porter Reservoir is a complex of industrial structures set on a 40+ acre parcel. The reservoir was constructed ca. 1907 and is part of the water treatment and supply system for the Wilmington area. The property in the northeastern quadrant of the APE was acquired as part of the Interstate 95 interchange with US 202 during the mid 1960s from the St. Joe Paper Company (Deed Book B-41, Page 538). A 1954 aerial photograph depicts the agricultural nature of the majority of the archaeological APE (*Figure 12*). The 1965 engineering plan of the proposed I-95 ramp depicts the location of a “stone dwelling” and “stone tower” and its associated driveways (*Figure 13*). The stone tower and the northwest corner of the stone dwelling fell within the right of way of the project, which resulted in the demolition of the features. The Elliott family farm properties along the west side of the Concord Turnpike also appeared to contain two structures within the APE, although these resources would have also fallen within the I-95/US 202 construction right of way. As a consequence, the likelihood of encountering archaeological resources associated with these properties was considered low to moderate.

B. Archaeological Field Testing Methodology

The archaeological APE included relatively large areas that were disturbed or exhibited low potential, therefore a pedestrian reconnaissance of the APE was undertaken by McCormick Taylor archaeologists prior to the initiation of the Archaeological Identification testing. This survey delineated areas exhibiting archaeological potential. These included the portions of the APE that were not previously disturbed by construction and exhibited slopes with a grade of less than 15%. A total of 72 STPs were excavated during the Archaeological Identification survey (*Figure 14*).

The portions of the APE where archaeological testing was determined to be necessary were tested with shovel test pits (STPs) measuring 0.57 meter in diameter placed at 15 meter (49.2 foot) intervals. Radial STPs were excavated around isolated prehistoric finds in the four cardinal directions (where applicable) at five meter (16.4 foot) intervals to define the horizontal boundaries of artifact concentrations. The STPs were dug by natural strata and the excavated



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Figure 12
Archaeological Area of Potential Effects in 1954
I-95/US 202 Interchange Project

Brandywine Hundred and City of Wilmington
New Castle County, Delaware

(Source: Delaware DataMIL)



0 500 1,000 Feet

0 60 120 180 240 300 Meters

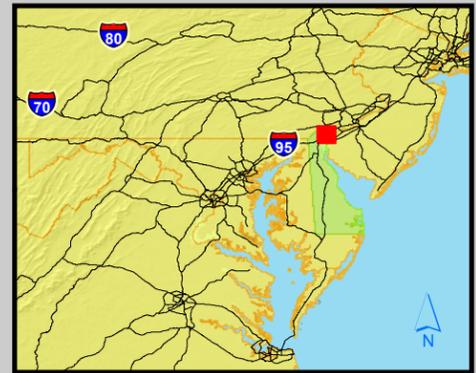
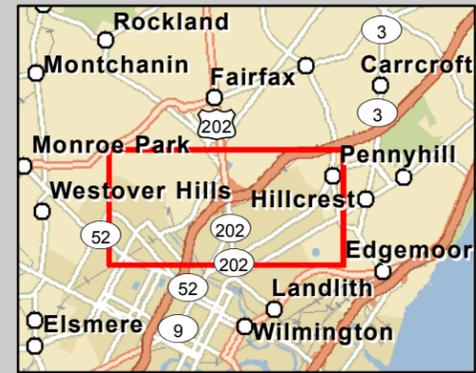
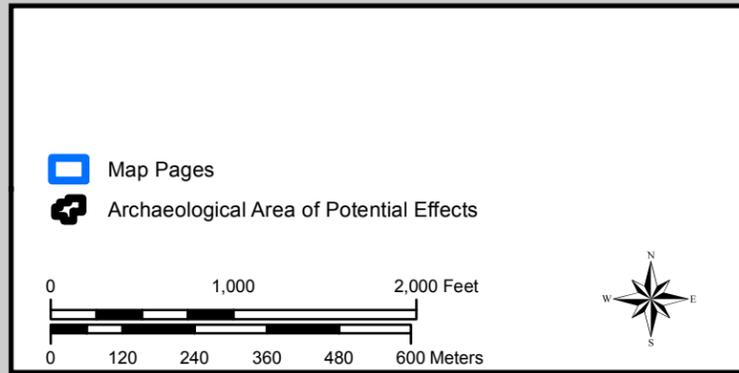
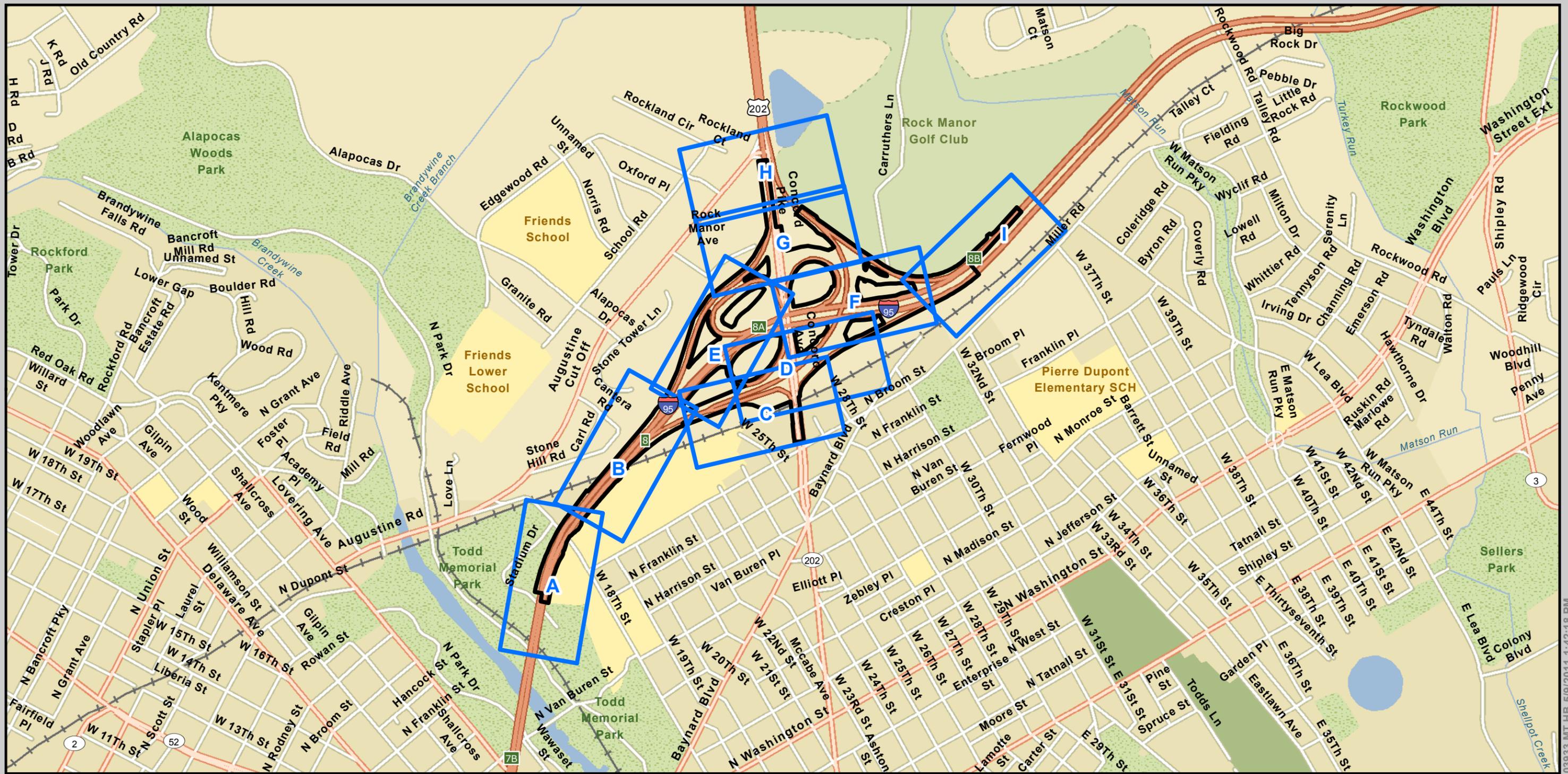
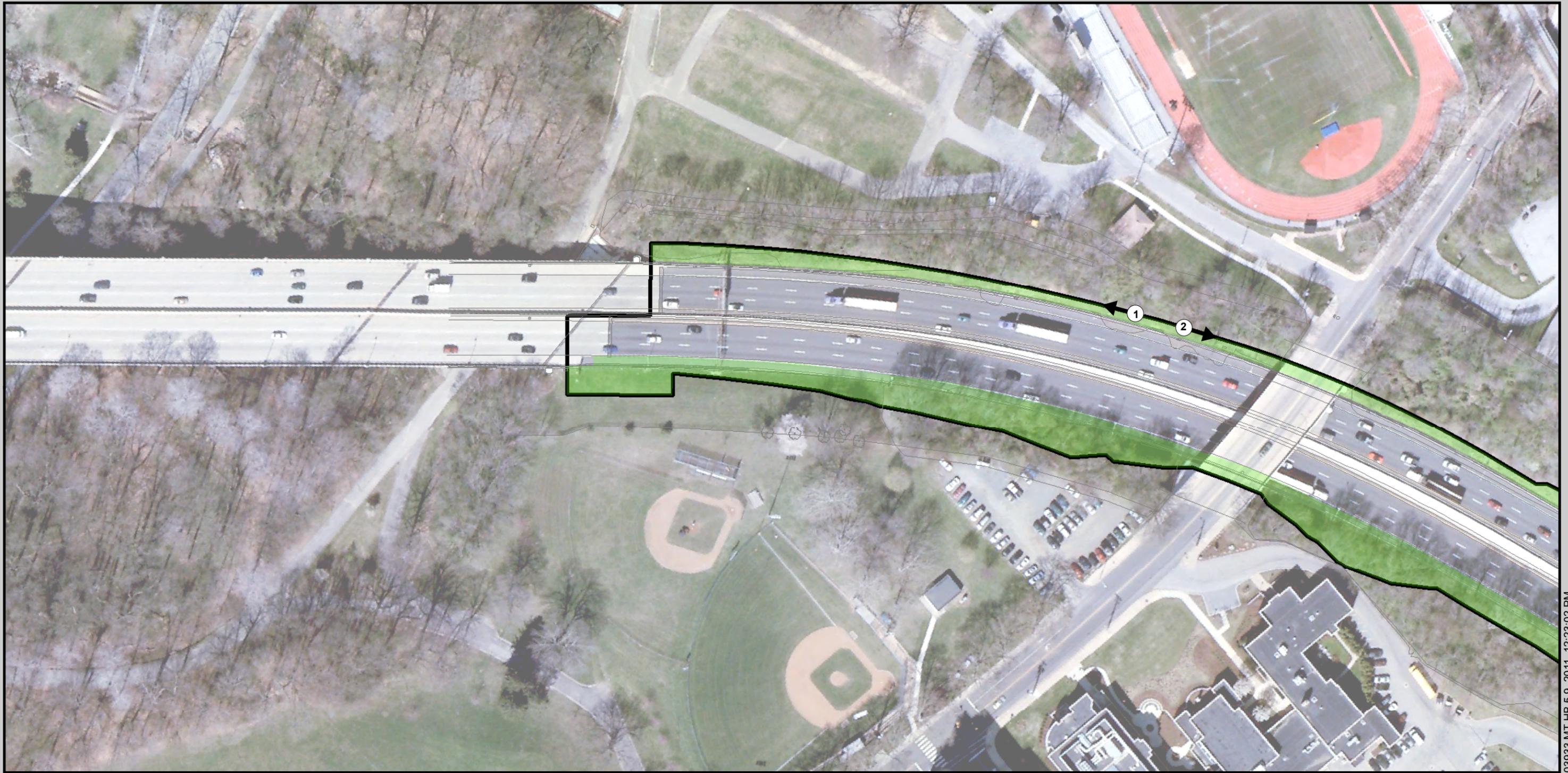


Figure 14
Index Sheet

I-95/US 202 Interchange Project

Brandywine Hundred and City of Wilmington
New Castle County, Delaware

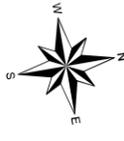


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-  Archaeological Area of Potential Effects
-  STP Containing Artifacts
-  STP Not Containing Artifacts
-  Photograph Locations
-  Area Not Tested Due to Low Archaeological Potential or Slope Greater than 15%
-  7NC-B-67, Elliot Site
-  7NC-B-68, Smyth Site

0 100 200 Feet

0 12 24 36 48 60 Meters



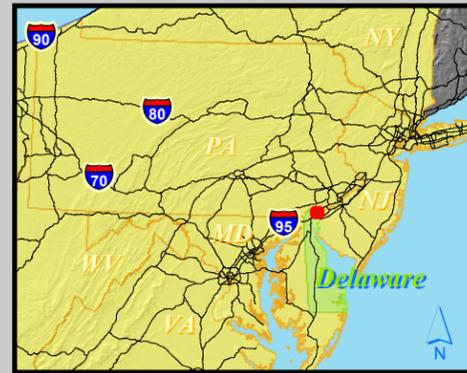


Figure 14A

I-95/US 202 Interchange Project

Brandywine Hundred and City of Wilmington
New Castle County, Delaware



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-  Archaeological Area of Potential Effects
-  STP Containing Artifacts
-  STP Not Containing Artifacts
-  Photograph Locations
-  Area Not Tested Due to Low Archaeological Potential or Slope Greater than 15%
-  7NC-B-67, Elliot Site
-  7NC-B-68, Smyth Site

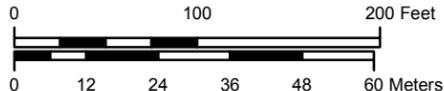
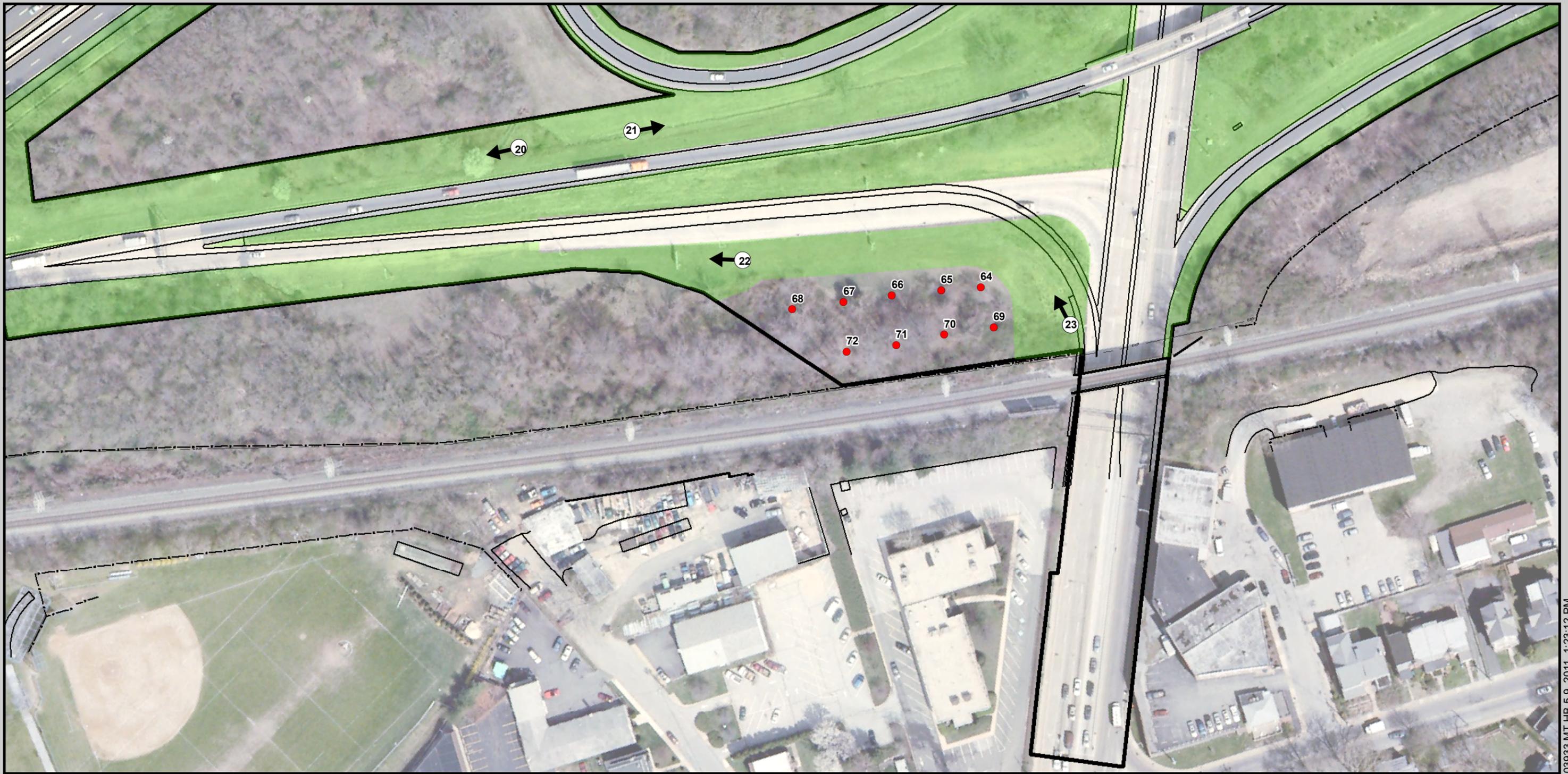






Figure 14B
I-95/US 202 Interchange Project
Brandywine Hundred and City of Wilmington
New Castle County, Delaware



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0 100 200 Feet
 0 12 24 36 48 60 Meters

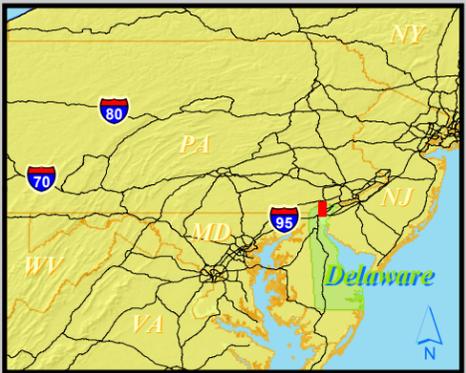
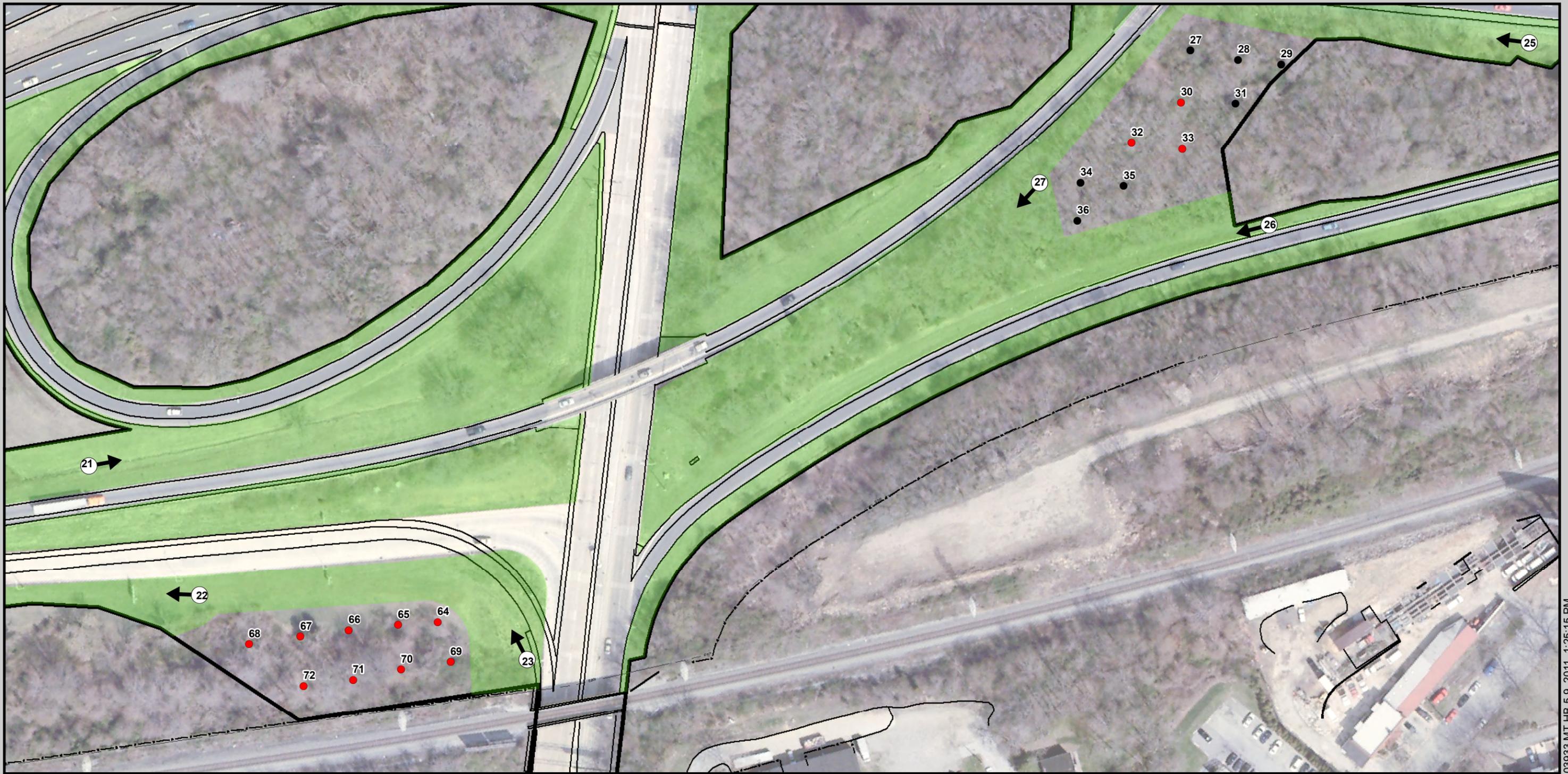


Figure 14C
I-95/US 202 Interchange Project
Brandywine Hundred and City of Wilmington
New Castle County, Delaware



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- Archaeological Area of Potential Effects
- STP Containing Artifacts
- STP Not Containing Artifacts
- Photograph Locations
- Area Not Tested Due to Low Archaeological Potential or Slope Greater than 15%
- 7NC-B-67, Elliot Site
- 7NC-B-68, Smyth Site

0 100 200 Feet

0 12 24 36 48 60 Meters

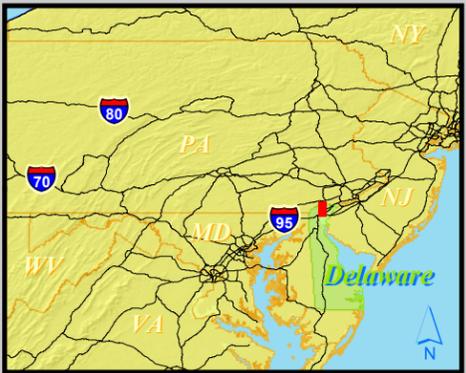
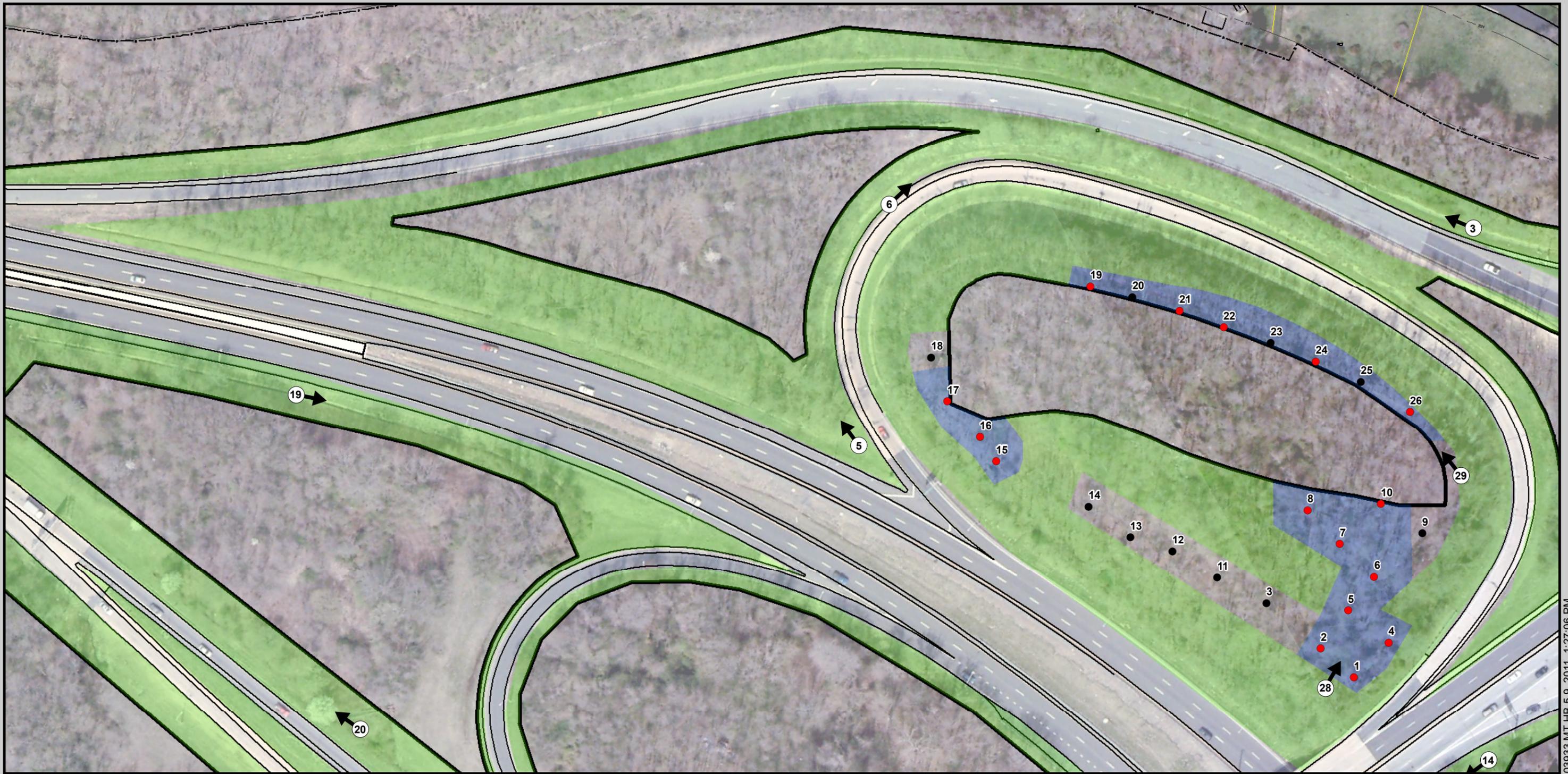


Figure 14D

I-95/US 202 Interchange Project

Brandywine Hundred and City of Wilmington
New Castle County, Delaware



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- Archaeological Area of Potential Effects
- STP Containing Artifacts
- STP Not Containing Artifacts
- Photograph Locations
- Area Not Tested Due to Low Archaeological Potential or Slope Greater than 15%
- 7NC-B-67, Eliot Site
- 7NC-B-68, Smyth Site

0 100 200 Feet
0 12 24 36 48 60 Meters

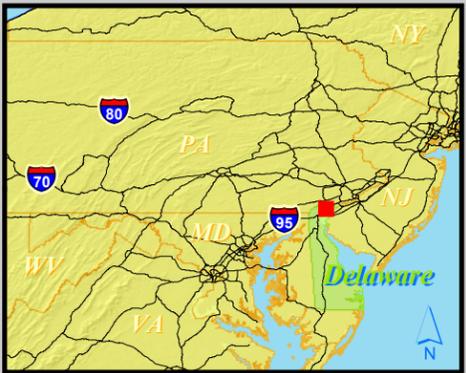
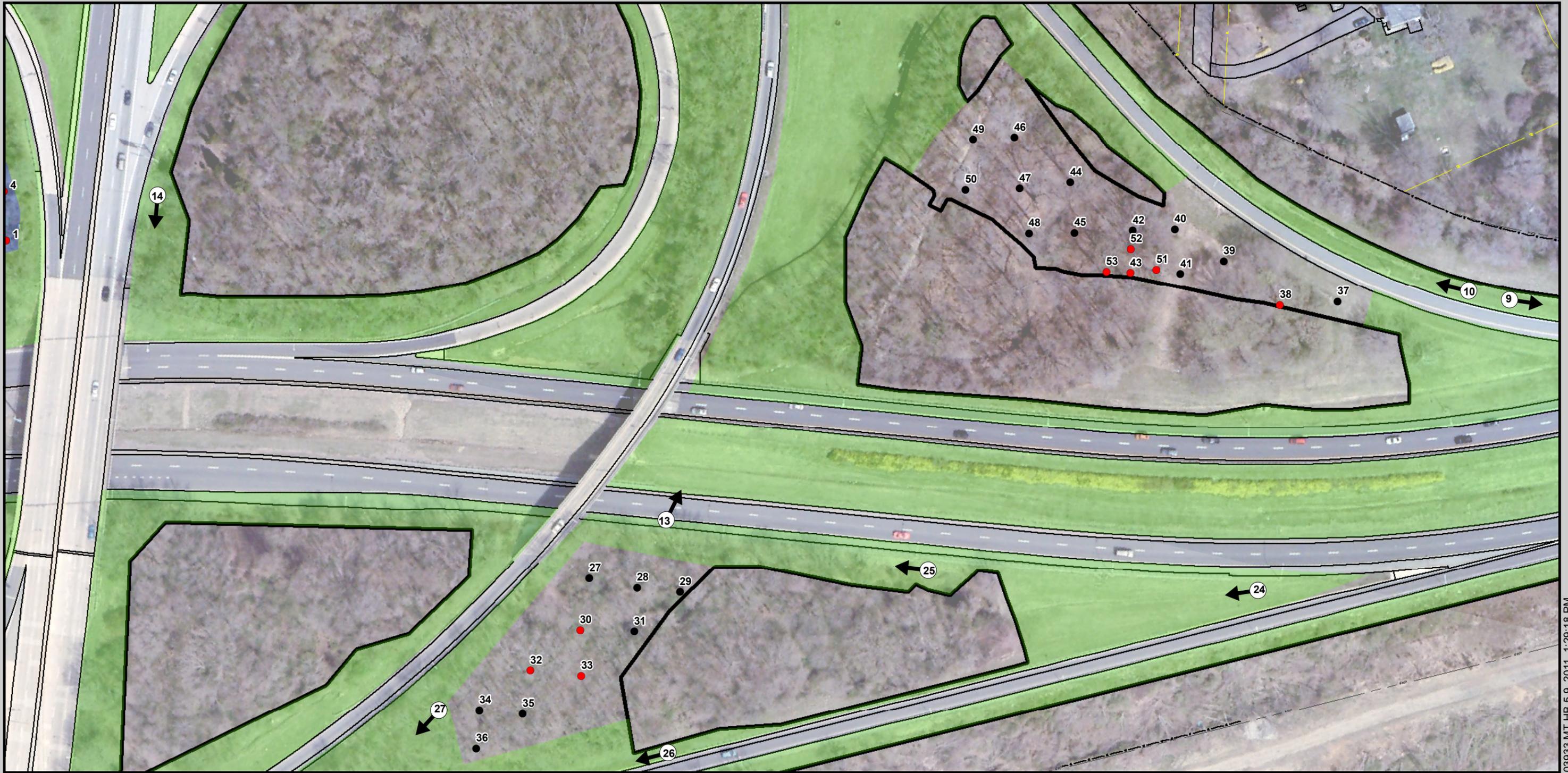


Figure 14E
I-95/US 202 Interchange Project
Brandywine Hundred and City of Wilmington
New Castle County, Delaware



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- Archaeological Area of Potential Effects
- STP Containing Artifacts
- STP Not Containing Artifacts
- Photograph Locations
- Area Not Tested Due to Low Archaeological Potential or Slope Greater than 15%
- 7NC-B-67, Elliot Site
- 7NC-B-68, Smyth Site

0 100 200 Feet

0 12 24 36 48 60 Meters

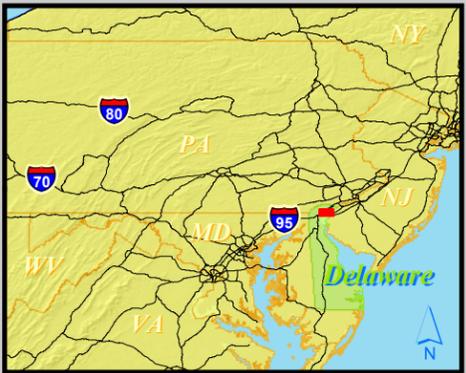


Figure 14F

I-95/US 202 Interchange Project

Brandywine Hundred and City of Wilmington
New Castle County, Delaware



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- Archaeological Area of Potential Effects
- STP Containing Artifacts
- STP Not Containing Artifacts
- Photograph Locations
- Area Not Tested Due to Low Archaeological Potential or Slope Greater than 15%
- 7NC-B-67, Elliot Site
- 7NC-B-68, Smyth Site

0 100 200 Feet

0 12 24 36 48 60 Meters

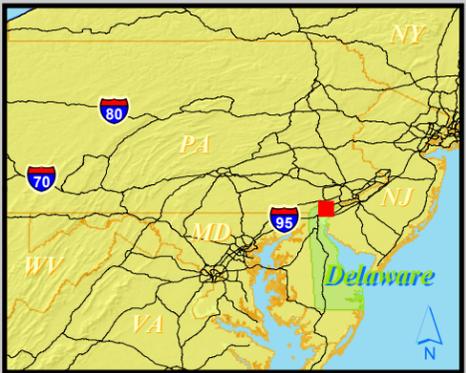


Figure 14G

I-95/US 202 Interchange Project

Brandywine Hundred and City of Wilmington
New Castle County, Delaware



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- Archaeological Area of Potential Effects
- STP Containing Artifacts
- STP Not Containing Artifacts
- Photograph Locations
- Area Not Tested Due to Low Archaeological Potential or Slope Greater than 15%
- 7NC-B-67, Elliot Site
- 7NC-B-68, Smyth Site

0 100 200 Feet

0 12 24 36 48 60 Meters

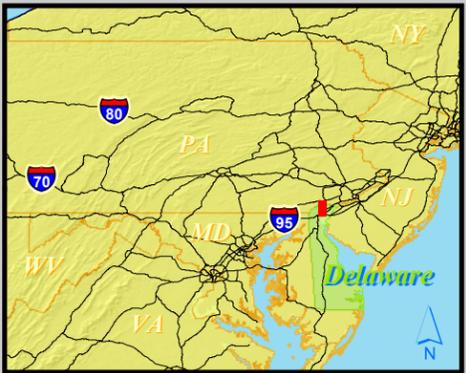


Figure 14H
I-95/US 202 Interchange Project
Brandywine Hundred and City of Wilmington
New Castle County, Delaware



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- Archaeological Area of Potential Effects
- STP Containing Artifacts
- STP Not Containing Artifacts
- Photograph Locations
- Area Not Tested Due to Low Archaeological Potential or Slope Greater than 15%
- 7NC-B-67, Elliot Site
- 7NC-B-68, Smyth Site

0 100 200 Feet

0 12 24 36 48 60 Meters

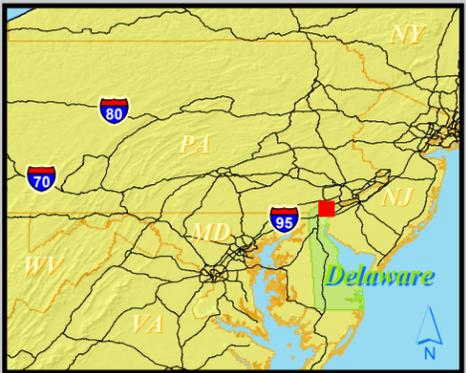


Figure 14I

I-95/US 202 Interchange Project

Brandywine Hundred and City of Wilmington
New Castle County, Delaware

soils were screened through ¼ inch mesh hardware cloth. Profile maps of each STP were recorded in the field on standardized forms.

The archaeological APE for the project is approximately ~54.38 acres (~22.01 hectares). The area which was not tested due to prior disturbance or steep slopes was ~48.29 acres (~19.54 hectares). The area in which archaeological testing was conducted is ~6.09 acres (~2.46 hectares).

C. Artifact Analysis

Artifacts were processed in the lab at McCormick Taylor, Inc-Harrisburg according to the current *Guidelines and Standards for the Curation of Archaeological Collections* published by the Delaware Division of Historical and Cultural Affairs. Artifact inventory was performed in MS Access 2003, and identification and dating was aided by published references including “A Dating Key for Post-Eighteenth Century Glass Bottles” (Newman 1970), *The Illustrated Guide to Collecting Bottles* (Munsey 1970), *Historic Glass Bottle Identification & Information Website* (Lindsey 2010), “Historic Ceramic Typology” (Brown 1982), *American Pottery & Porcelain* (Ketchum 2000), *Redware* (McConnell 1999), and “Telling Time for Archaeologists” (Miller 2000). Since a specific manufacturing period has not been determined for transitional whiteware, this artifact type was assigned an end production date coinciding with the end production date of pearlware and approaching the beginning production date of ironstone. Terminus Post Quem (TPQ) dates were calculated for proveniences containing datable artifacts. The artifact inventory is contained in **Appendix B** of this report.

The artifacts and associated field records, forms, photographs, and maps are currently stored at McCormick Taylor’s Archaeology Laboratory located at 5 Capital Drive, Harrisburg, Pennsylvania. Once the report has been concurred upon by all parties, the artifacts will be transferred to the Delaware State Museums for permanent curation.