CULTURAL RESOURCES SURVEY

MOUNT ROSE SEGMENT (CARTER ROAD TO CLEVELAND ROAD) OF THE LAWRENCE HOPEWELL TRAIL

Hopewell Township, Mercer County, New Jersey
NJHPO Project No. 21-0476

PREPARED FOR:

Greenman-Pedersen, Inc.
100 Corporate Drive, Suite 301
Lebanon, New Jersey 08833

May 2021

RICHARD
GRUBB &
ASSOCIATES

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May 24, 2021

EXECUTIVE SUMMARY

Hopewell Township proposes the construction of the Mount Rose (Carter Road to Cleveland Road) segment of the Lawrence Hopewell Trail in Hopewell Township, Mercer County, New Jersey. The project will receive federal funding through the Transportation Alternatives Program, administered by the New Jersey Department of Transportation. Because the project is using federal funding, Richard Grubb & Associates, Inc. (RGA) completed a Cultural Resources Survey for the Area of Potential Effects (APE) in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and the National Environmental Policy Act. The Cultural Resources Survey included a Phase I archaeological survey and an Intensive-level historic architectural survey.

The Phase I archaeological survey included background research, a visual reconnaissance of the APE for Archaeology (APE-Archaeology), an archaeological sensitivity assessment, subsurface testing, artifact analysis, and report preparation. The entire APE-Archaeology was assessed with high sensitivity for pre-Contact-period Native American archaeological resources due its proximity to wetlands. Portions of the APE-Archaeology were assessed as high for historic-period archaeological resources based on the presence of map-documented nineteenth-century structures very close to the APE-Archaeology. The portions of the APE-Archaeology outside of the areas of high historic sensitivity were assessed with low sensitivity for historic archaeological resources. Fieldwork consisted of the excavation of 97 shovel test pits (STPs) within relatively undisturbed areas across the APE-Archaeology. Subsurface testing yielded four historic artifacts, ranging in date of manufacture from the early nineteenth century to the late twentieth century. The recovered historic artifacts were isolated in two spatially-distant STPs and represent a low density of domestic items associated with nineteenth-century map-documented buildings. Based on the low density and spatial distance, the recovered artifacts do not represent a significant archaeological site. No further archaeological survey within the APE-Archaeology is recommended.

The Intensive-level historic architectural survey identified all buildings, structures, sites, and objects listed in or eligible for the National Register of Historic Places (NRHP) in the APE for Historic Architecture (APE-Architecture) and assessed project effects on any NRHP-listed or eligible properties. The survey concluded that there are no previously documented historic properties listed in or determined eligible for listing in the NRHP within the APE-Architecture. Two resources of more than 50 years of age were identified within the APE-Architecture: a mid-twentieth-century commercial complex and a mid-twentieth-century residence. As a result of the Intensive-level historic architectural survey, neither of the surveyed resources were recommended eligible for listing in the NRHP due to a lack of the requisite historical and architectural significance and integrity. No further historic architectural survey is recommended.

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1.0 INTRODUCTION

This report presents the results of a Cultural Resources Survey comprised of a Phase I archaeological survey and an Intensive-level historic architectural survey for the proposed construction of the Mount Rose (Carter Road to Cleveland Road) segment of the Lawrence Hopewell Trail in Hopewell Township, Mercer County, New Jersey (Figures 1.1 and 1.2) (Appendix A). The Cultural Resources Survey was completed as part of the Preliminary Engineering (PE) for the project. Richard Grubb & Associates, Inc. (RGA) prepared this report on behalf of Greenman-Pedersen, Inc. (GPI), which is engaged by Hopewell Township. Hopewell Township is receiving funding administered by New Jersey Department of Transportation-Bureau of Environmental Program Resources (NJDOT-BEPR).

Matthew Craig, M.A., was the Principal Investigator for archaeology and Lauren Dunkle, M.A., was the Principal Investigator for historic architecture (Appendix B). Ms. Dunkle and Mr. Craig co-authored the report with assistance from Alison Eberhardt and Chelsea Troppauer. Ms. Dunkle completed the historic architectural survey forms. Allison Gall conducted background research and Patricia McEachen and David Strohmeier produced the report graphics. Lynn Alpert, Michael J. Gall, and Richard Grubb edited the report and Natalie Maher served as technical editor. Copies of this report are on file at RGA headquarters in Cranbury, New Jersey. Recovered artifacts will be provided to Hopewell Township and/or the NJDOT-BEPR following review of this report by the New Jersey Historic Preservation Office (NJHPO).

1.1 Regulatory Context

Hopewell Township is receiving federal funding for the project provided by the Federal Highway Administration through the Transportation Alternatives Program (TAP), administered by the NJDOT. Because the proposed project is federally funded, this Cultural Resources Survey was completed in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended; the Protection of Historic Properties, as revised in 2004 (36 Code of Federal Regulations (CFR) Part 800 [36 CFR 800]); Procedures for Determining Site Eligibility for the National Register of Historic Places (NRHP) (36 CFR 60 and 63); Executive Order 11593, Protection and Enhancement of the Cultural Environment; the Archaeological and Historic Preservation Act of 1974; the National Environmental Policy Act of 1969; and the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716).

Under the requirements of the above-referenced federal laws, regulations, and guidelines, archaeological and historical resources eligible for or listed in the NRHP must be identified in order to determine if the project will affect such resources. The lead federal agency for this project is the Federal Highway Administration (FHWA), and the report will be reviewed by the NJDOT-BEPR and the NJHPO. This Cultural Resources Survey complies with the NJHPO's guidelines for archaeological and architectural surveys and survey reports (NJHPO 1994, 1996, 2003; Splain 1999).

The NJDOT-BEPR initiated Section 106 consultation with the NJHPO. In an email to the NJDOT dated March 5, 2021, the NJHPO concurred with the Area of Potential Effects for Archaeology (APE-Archaeology) and the Area of Potential Effects for Architecture (APE-Architecture) (see Appendix A). Following NJHPO approval of the APE-Archaeology, the trail length was slightly shortened and improvements at the west side of Carter Road will consist of regrading an existing landing that ties the existing section of trail into Carter Road.

1.2 Project Description

Hopewell Township proposes the construction of the Mount Rose segment of the Lawrence Hopewell Trail in Hopewell Township, Mercer County. The path will measure a minimum of 10 feet wide and approximately 5,200 feet long. Much of the trail will be installed in an

existing PSE&G/AT&T utility easement and access road east of Carter Road. Portions of the trail will extend through wetlands and will utilize an existing access road. Upland portions of the trail will be constructed using porous asphalt pavement. The portion of the trail within the wetlands and wetlands buffer area will be constructed using a coarse aggregate and porous asphalt pavement. Drainage swales and basins are not proposed (Figure 1.3).

1.3 Area of Potential Effects

The APE is defined in 36 CFR 800.16(d) as "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects cause[d] by the undertaking." The APE includes locations that potentially may be impacted by construction, or that may experience effects once construction is completed. It also includes the area in which the project may directly or indirectly cause changes in the character or use of above-ground properties listed on or eligible for the NRHP.

Two APEs were delineated for this project: an APE-Archaeology and an APE-Architecture. Both APEs were defined in a consultation letter dated November 19, 2020, and revised February 1, 2021. The APEs and preliminary field report were approved by the NJHPO on March 5, 2021 (see Appendix A).

APE-Archaeology
The APE-Archaeology begins at an existing trail at Carter Road and continues east through a wooded area before connecting with an existing utility easement and access road east of Carter Road. The APE-Archaeology continues southeast through the utility easement until it reaches an open field. It then extends south through the field until it reaches Cleveland Road. Portions of the APE-Archaeology extend through wetlands (Figure 1.4).

APE-Architecture
The APE-Architecture includes the area in which the project may directly or indirectly cause changes in the character or use of historic properties. This includes all properties within or adjacent to the area of planned construction impacts. To account for potential visual effects, the APE-Architecture extends beyond the actual construction limits (APE-Archaeology) to include those properties that may be impacted by visual changes, changes in patterns of use, or may experience a change in historic character associated with the proposed project. The APE-Architecture encompasses all of the APE-Archaeology and includes the properties adjacent to and within the viewshed of the project location (see Figure 1.4).

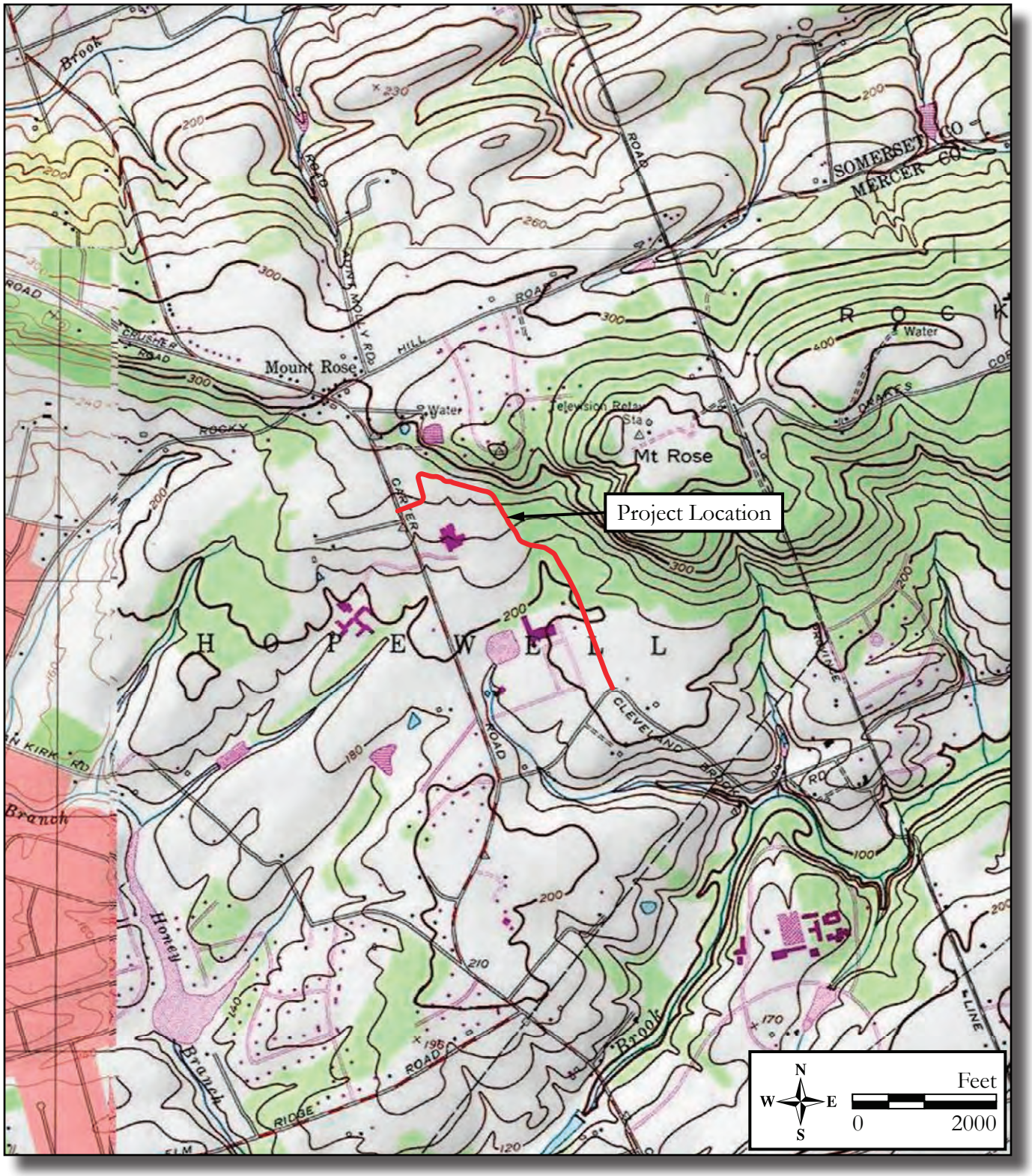

Figure 1.1: U.S.G.S. map
(1995 U.S.G.S. 7.5' Quadrangle: Princeton, NJ).

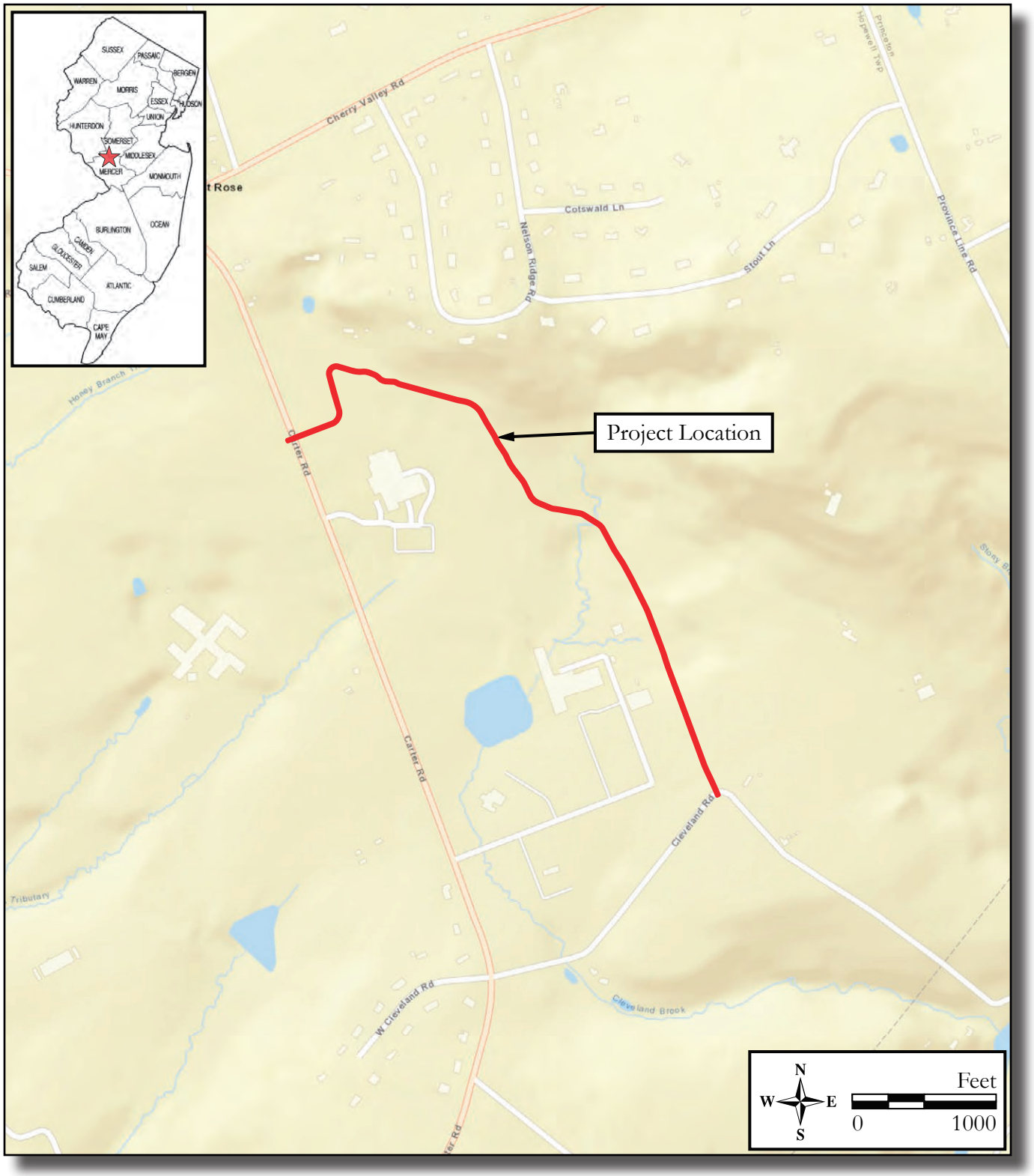

Figure 1.2: Road map
(World Street Map, ESRI 2019).

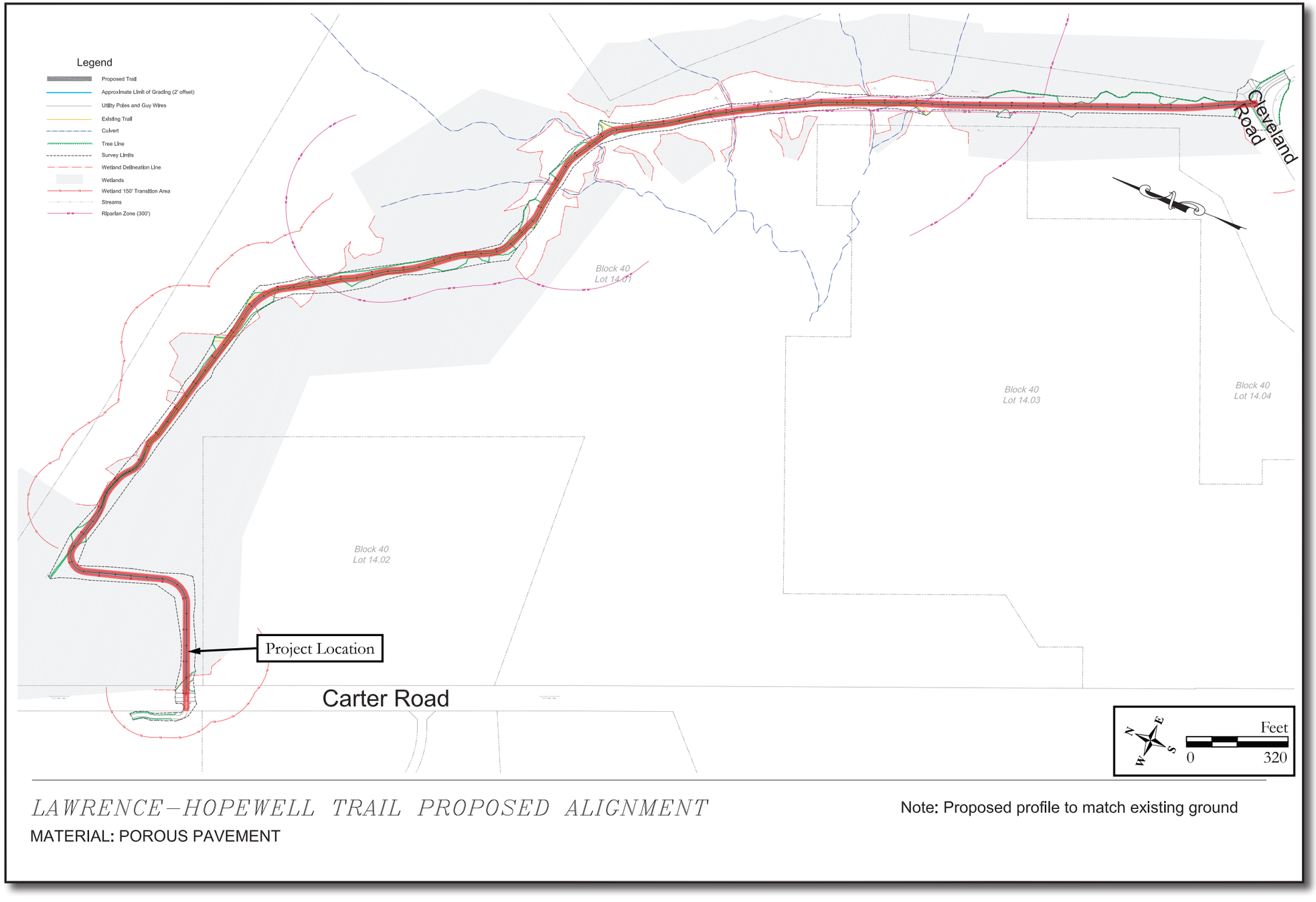

Figure 1.3: Existing conditions
(from Hill International; Gannett Fleming).

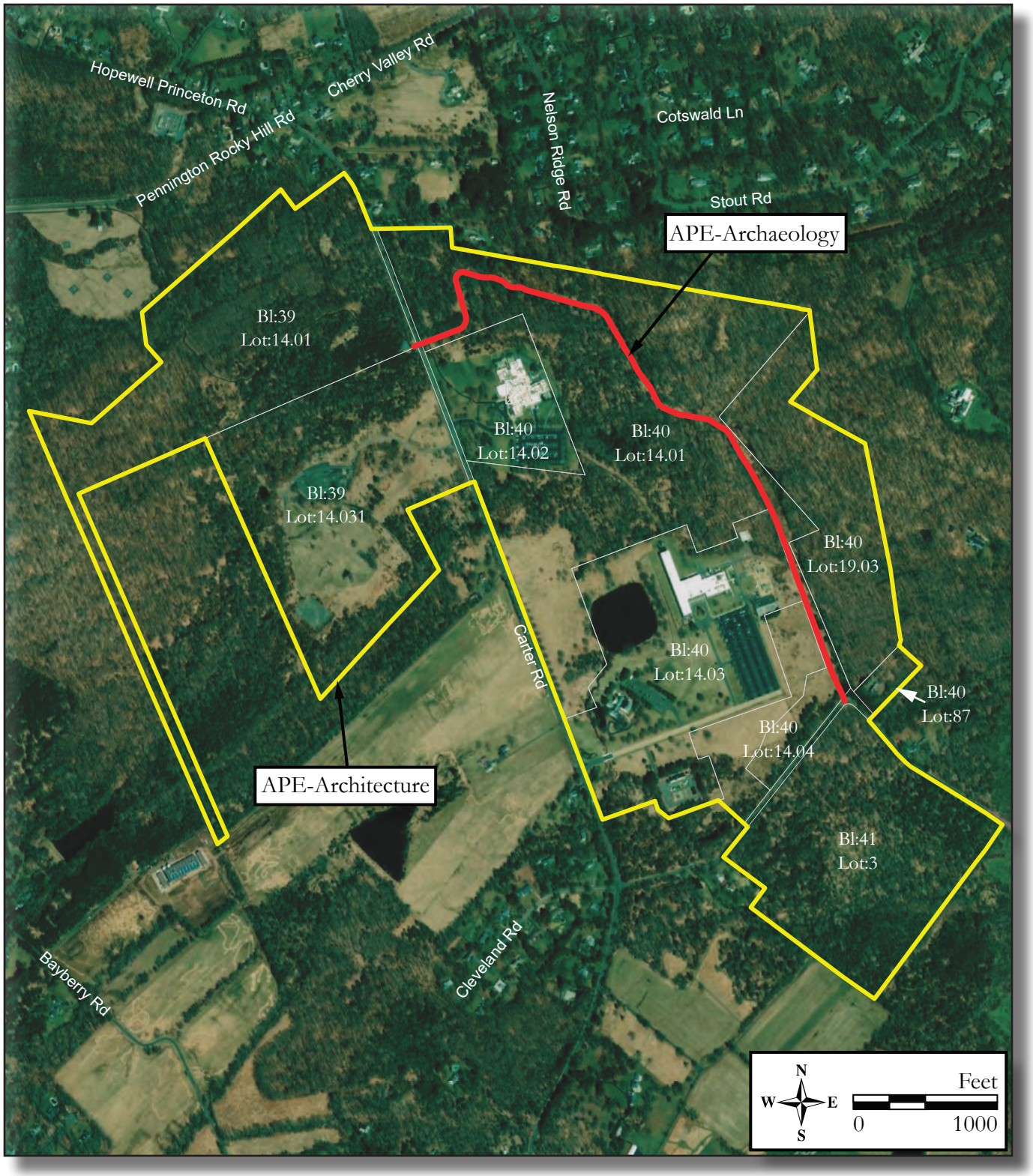

Figure 1.4: Aerial map showing the APE-Archaeology and the APE-Architecture (NJGIS Digital Orthographic Imagery, 2015).

2.0 PROJECT APPROACH

The purpose of this report is to present the results of a Cultural Resources Survey which includes a Phase I archaeological survey and an Intensive-level historic architectural survey performed in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. The document was designed to comply with the guidelines established by the NJHPO for archaeological and architectural reporting and surveys (NJHPO 1994, 1996, 2003; Splain 1999) and as set forth in N.J.A.C. 7:4-8.4 through 8.5 (Requirements for Archaeological Reports - Standards for Report Sufficiency). The goals and methodological components of the background research, the archaeological survey, and the historic architectural survey are provided below.

2.1 Research Methods

Research was conducted to determine if there are any previously identified historic properties within the APE-Architecture and APE-Archaeology, to assess the potential for additional archaeological sites and un-surveyed resources over 50 years of age, and to develop appropriate prehistoric and historic contexts for the interpretation and evaluation of historic properties that may be affected by the proposed project. Determinations of significance are based on the NRHP Criteria of Eligibility (Appendix C).

Due to COVID-19 pandemic restrictions, survey files at the NJHPO in Trenton were not available for review. However, RGA made a good faith effort to review survey data on file at its headquarters and the LUCY NJ CRGIS Online Viewer to determine if previously identified historic properties or historic and archaeological resources listed in the New Jersey Register of Historic Places (NJR) and NRHP or eligible for listing in the NRHP are present in or near the project location. Files at the New Jersey State Museum (NJSM) were checked on behalf of RGA by NJSM Curator Dr. Gregory Lattanzi to determine the presence of registered archaeological sites within or near the APE-Archaeology utilizing a one-mile search radius. Additional background research consisted of a review of pertinent secondary sources, including historic maps, atlases, and local and county histories.

2.2 Archaeology

The goals of the Phase I archaeological survey were to determine if documented pre-Contact Native American and historic archaeological resources exist within the APE-Archaeology, to assess the potential for the APE-Archaeology to contain previously undocumented, archaeological resources, and to determine if potentially significant archaeological resources are present. Survey methods included background research as described in Section 2.1, a review of the environmental setting of the APE-Archaeology, reconstruction of the land-use history for the APE-Archaeology and vicinity, a site reconnaissance (pedestrian survey) to examine existing conditions, an assessment of prehistoric and historic archaeological sensitivity, and Phase I archaeological testing.

Areas assessed with high archaeological sensitivity were investigated with shovel test pits (STPs) plotted at roughly 50-foot intervals according to the dimensions of the APE-Archaeology, existing obstacles, and identified disturbances. A total of 102 STPs was plotted within the APE-Archaeology, based on conditions observed prior to fieldwork. A utility mark-out was completed prior to subsurface testing. Of these, 13 STPs were not excavated due to existing buried utilities and standing water. Eight close interval STPs were dug near locations of STPs that contained potential nineteenth-century artifacts. In total, 97 STPs were dug. Shovel test pit locations were plotted using construction plans, existing conditions, compasses, measuring tapes, and Global Positioning System (GPS)-plotted locations based on relative distances to surveyed landmarks.

Archaeological testing was performed in areas of archaeological sensitivity to determine the presence or absence of archaeological resources. Results of subsurface testing are presented in Appendix D, and the catalog of recovered artifacts (n=4) is presented in Appendix E.

Shovel test pits measured approximately 1.5 feet in diameter and were excavated with round nosed shovels, reaching an average depth of 1.7 feet below the ground surface due to either gravel or large rocks from modern fill within the existing utility corridor or a high water table. Whenever possible, attempts were made to excavate STPs into the C-horizon unless stopped by rock or water impasses. All soil characteristics were recorded on standardized field forms, including soil color, texture, and inclusions. Depths below ground surface were measured in decimalized feet. Individual soil horizons were hand excavated separately and screened through one-quarter-inch wire mesh to facilitate artifact recovery. Upon completion, all STPs were backfilled, the ground surface was restored to its original grade, and sod caps were replaced. All STP profile information is presented in Appendix D.

Recovered material was separated by stratum and context and placed in re-sealable polyethylene bags with a tag containing the appropriate provenience information. Recovered cultural material was processed and cataloged at an off-site laboratory. Artifacts are listed in a catalog presented as Appendix E. Recovered artifacts will be provided to the NJDOT and/or Hopewell Township following the NJHPO review of this report.

2.3 Historic Architecture

The goals of the Intensive-level historic architectural survey included the following: to identify all historic architectural properties listed in the NJR and NRHP or previously determined eligible for the NRHP within the APE-Architecture; to determine the presence of previously unidentified above-ground resources over 50 years of age within the APE-Architecture; to evaluate the NRHP eligibility of newly identified resources according to the NRHP Criteria; and to assess project impacts on any NRHP-listed or eligible properties according to the Criteria of Adverse Effects (see Appendix C). Fieldwork included a pedestrian survey of the APE-Architecture to allow for the identification and assessment of all above-ground historic resources over 50 years of age. Previously unidentified resources within the APE-Architecture were surveyed at the intensive level and recorded on NJHPO survey forms in accordance with the NJHPO Guidelines for Architectural Survey (Splain 1999; Appendix F).

2.4 Public Consultation

The NJDOT-BEPR will distribute the Cultural Resources Survey report to consulting parties and individuals identified as interested parties for review and comment. The list of consulting and interested parties is included in Appendix G.

3.0 BACKGROUND RESEARCH

Background research was conducted to identify any previously documented archaeological or architectural resources in the vicinity of the APE-Archaeology and APE-Architecture. This information was used to assess the potential for previously unidentified cultural resources and to evaluate such resources in an appropriate historical context. The results of this research are presented below and include information on the environmental setting of the project location, its pre-Contact/historic context, documented resources in the vicinity, and cultural resources surveys conducted nearby.

3.1 Environmental Setting

The APE-Archaeology is located within New Jersey's Piedmont Physiographic Province, which is characterized by lowlands and broad valleys with some igneous ridges, sloping southwestward from the foot of the Highlands towards the Coastal Plain (Figure 3.1; Wolfe 1977). The bedrock geology underlying the APE-Archaeology is both Lower Jurassic to Upper Triassic Passaic Formation and Passaic Formation Gray bed (NJDEP 2021; Drake et al. 1996). Surficial geology within the APE-Archaeology is defined as Pleistocene age Weathered Shale, Mudstone, and Sandstone deposits. These deposits consist of silty sand to silty clay with shale mudstone or sandstone fragments. In addition, the APE-Archaeology surficial geology includes Pleistocene age Diabase Colluvium deposits of clayey sand silt at the base of weathered diabase, and Holocene and late Pleistocene Alluvium deposits of sand, gravel, and silt on modern floodplains (NJDEP 2021; Stone et al. 2002).

The APE-Archaeology is situated within wetlands of the Cleveland Brook, which runs through the APE-Archaeology. The Cleveland Brook drains into Stony Brook, which flows into the Millstone River. The Millstone River flows into the Raritan River, which drains into the Raritan Bay before emptying into the Atlantic Ocean. The elevation of the APE-Archaeology ranges from 221 to 288 feet above mean sea level.

Seven soil types are mapped within the APE-Archaeology and largely consist of a variety of well-drained Lawrenceville and Mount Lucas silt loams, with 2 to 6 percent slopes (LDXB), 2 to 6 percent slopes, eroded (LDXB2), or 6 to 12 percent slopes, eroded (LDXC2). Small sections of the APE-Archaeology contain poorly-drained Doylestown and Reaville variant silt loams, 0 to 2 percent slopes (DOZA) and Watchung silt loam, 0 to 2 percent slopes (WasA). Other soil types mapped in the APE-Archaeology include Readington and Abbottstown silt loams, 2 to 6 percent slopes (REFB), and Reaville silt loam, 0 to 2 percent slopes (RehA) (Table 3.1; Figure 3.2; NRCS 2021).

Vegetation within the APE-Archaeology includes broad open fields, underbrush, and trees. The southern portion of the APE-Archaeology is mostly composed of an open field with low ground vegetation and underbrush. The vegetation around the existing utility corridor consists of moderate underbrush. The portion of the APE-Archaeology closest to Carter Road is a new-growth forested area.

3.2 Pre-Contact and Contact Period Context

Archaeologists organize chronological and cultural information about the Native American occupants of New Jersey and the Middle Atlantic prior to European colonization into three broad time periods: Paleoindian, Archaic, and Woodland (Chesler 1982; Custer 1996; Grossman-Bailey 2001; Kraft 1986, 2001; Mounier 2003; Stewart 2018; Wholey and Nash 2018). The Archaic and Woodland periods are subsequently subdivided into Early, Middle, and Late sub-periods. A section on the Pre-Clovis period has been included for additional context.

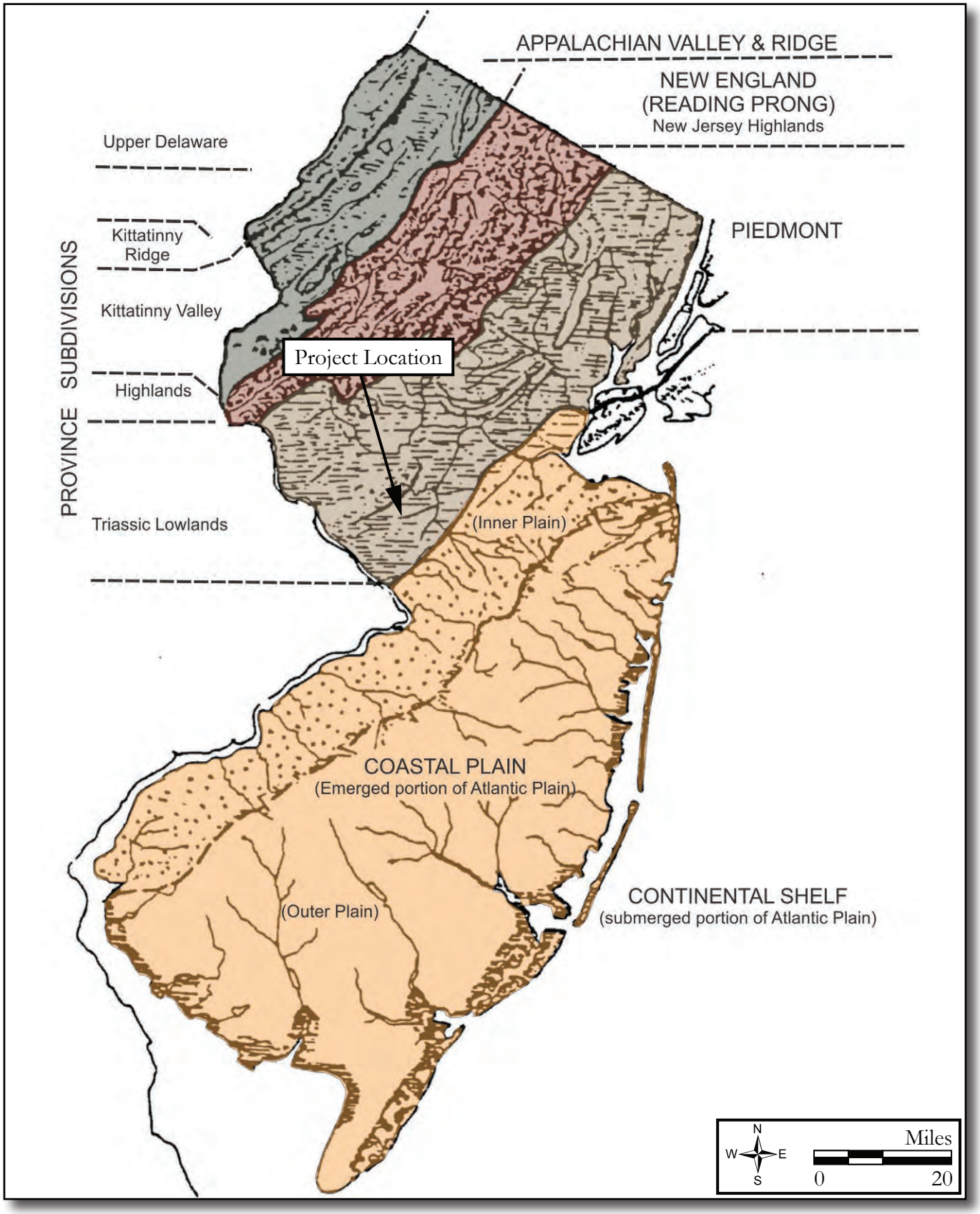

Figure 3.1: Physiographic provinces map
(adapted from Wolfe 1977).

Table 3.1: Soils in the APE-Archaeology (NRCS 2021).

Name	Soil Horizon Depth in Inches	Texture, Inclusions	Slope	Drainage	Landform
Doylestown and Reaville variant silt loams, 0 to 2 percent slopes (DOZA)	A: 0-7 E: 7-11 Btg: 11-28 BCg: 28-39 C1: 39-47 C2: 47-60	Silt loam Silt loam Silt loam Silt loam Silt loam Silt loam	0-2%	Poorly drained	Flats, depressions
Lawrenceville and Mount Lucas silt loams, 2 to 6 percent slopes (LDXB)	Ap: 0-8 BA: 8-13 Bt1: 13-23 Bt2: 23-30 Bx1: 30-45 Bx2: 45-60	Silt loam Silt loam Silt loam Silt loam Silt loam Silt loam	2-6%	Well-drained	Flats
Lawrenceville and Mount Lucas silt loams, 2 to 6 percent slopes, eroded (LDXB2)	Ap: 0-6 BA: 6-13 Bt1: 13-23 Bt2: 23-30 Bx1: 30-39 Bx2: 39-60	Silt loam Silt loam Silt loam Silt loam Silt loam Silt loam	2-6%	Well-drained	Flats
Lawrenceville and Mount Lucas silt loams, 6 to 12 percent slopes, eroded (LDXC2)	Ap: 0-6 BA: 6-13 Bt1: 13-23 Bt2: 23-30 Bx1: 30-39 Bx2: 39-60	Silt loam Silt loam Silt loam Silt loam Silt loam Silt loam	6-12%	Well-drained	Flats
Readington and Abbottstown silt loams, 2 to 6 percent slopes (REFB)	Ap: 0-7 BA: 7-15 Bt: 15-24 C: 24-40 2C: 28-40 2R: 40-80	Silt loam Silt loam Silt loam Silt loam Very channery silt loam Weathered bedrock	2-6%	Moderately well-drained	Hillsides
Reaville silt loam, 0 to 2 percent slopes (RehA)	A: 0-10 BA: 10-15 Bt: 15-22 C: 22-28 R: 28-80	Silt loam Channery silt loam Channery silt loam Very channery silt loam Weathered bedrock	0-2%	Somewhat poorly drained	Interfluves
Watchung silt loam, 0 to 2 percent slopes (WasA)	A: 0-9 BA: 9-13 Btg1: 13-25 Btg2: 25-36 C: 36-60	Silt loam Silt loam Silty clay loam Silty clay loam Gravelly loam	0-2%	Poorly drained	Depressions

These periods act as a general framework in order to study the approximately 13,000 years of human occupation in the area. It should be noted that studies of prehistoric material culture and radiocarbon dates have increasingly determined that the above dates are approximations and do not represent definite or distinct chronological boundaries between material cultures associated with each prehistoric period. Instead, temporal overlap between material culture styles suggest fluid rather than abrupt technological transitions over time, and demonstrate that more radiometric dates are needed in order to better understand prehistoric chronologies (Stewart 2018). A brief summary of New Jersey prehistory is presented below. For each temporal period, environmental conditions, diagnostic artifacts, and cultural characteristics are briefly summarized.

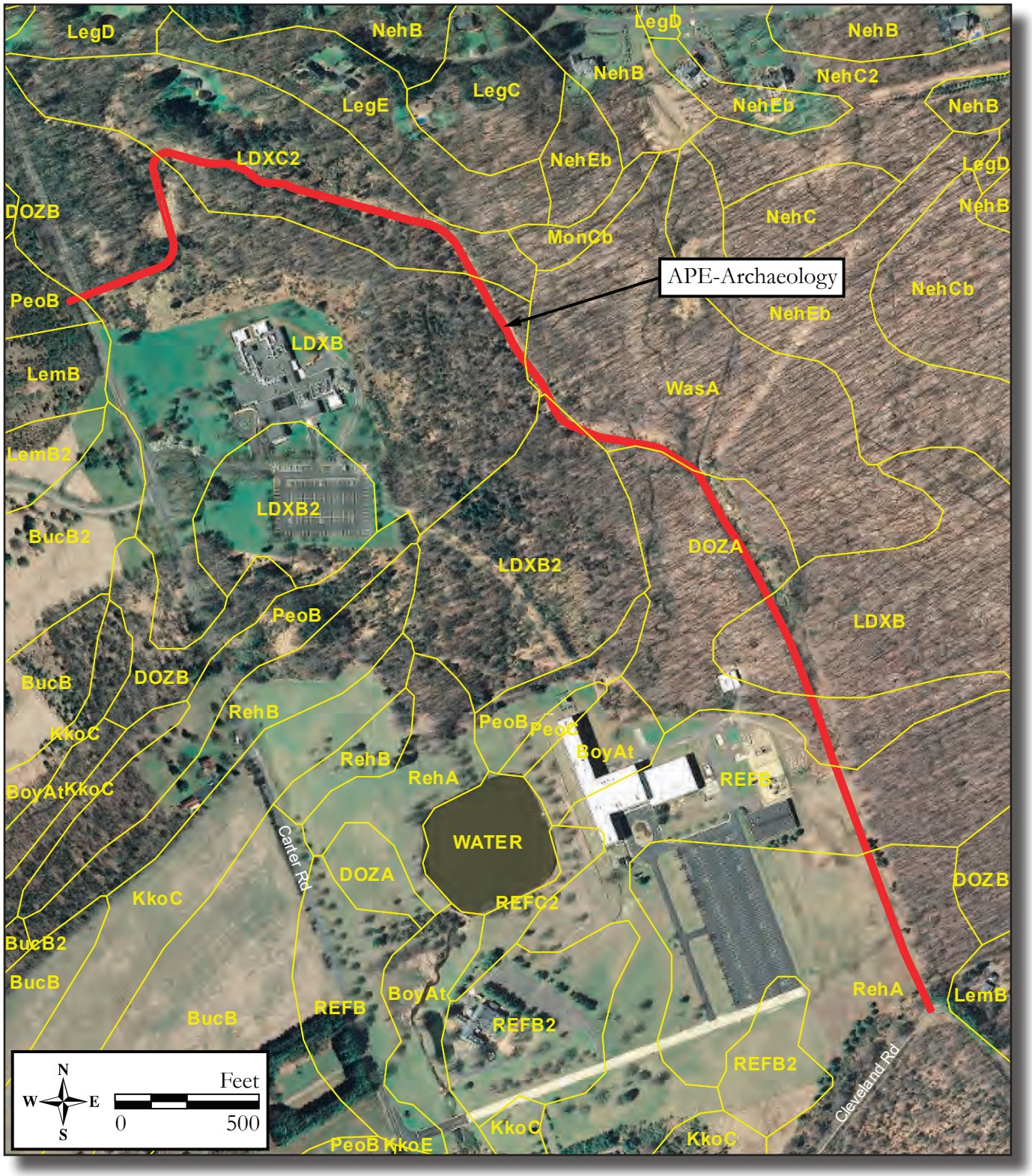

Figure 3.2: Soils map
(2020 Soil Survey Staff, Natural Resource Conservation Service, United States Department of Agriculture. Soil Survey Geographic [SSURGO]).

Pre-Clovis Period (circa 14,500 B.C. [16, 500 B.P.] to ±11,500 B.C. [±13,500 B.P])
There is increasing evidence for earlier (Pre-Clovis) occupations in the Americas (Carr 2018; Miller and Gingerich 2013) including Monte Verde in Chile (Dillehay 2000), Meadowcroft Rockshelter in Pennsylvania (Adovasio et al. 1990), Miles Point in Maryland (Carr 2018), Cactus Hill in Virginia (McAvoy and McAvoy 1997, McPhail and McAvoy 2008; Wagner and McAvoy 2004) and Topper in South Carolina (Goodyear 2005). Pre-Clovis sites include a technology consisting of flake tools, small bifacial projectile points, blade-like or elongated flakes, and use of retouched or utilized flakes (Carr 2018). No pre-Clovis sites have been identified in New Jersey.

Paleoindian Period (±11,500 B.C. [±13,500 B.P.] to 8000 B.C. [10,000 B.P.])
The Paleoindian period is the earliest documented period of human occupation in New Jersey and is typified by large fluted projectile points made of high-quality lithic materials (i.e., Clovis points). During the Paleoindian period in New Jersey, local environmental conditions were affected by the retreating Wisconsin glacier (Carr and Adovasio 2002; Gingerich 2007, 2013; Marshall 1982). During the Paleoindian period sea levels were significantly lower during this period and the New Jersey coastline was some 60 to 80 miles (96.6 to 128.7 kilometers) east of its present-day location (Kraft 1977, 1985; Kraft 1986, 2001). The lower sea levels that resulted from glacial expansion exposed a broad, flat continental shelf of marshes and meadows cut by deep river channels and branching streams (Kraft 1986; Grossman-Bailey 2001; Mounier 2003). The climate was cooler and drier than now, and the landscape likely included a mosaic of environments and coniferous forest vegetation slowly succeeded by a migration of deciduous forest into former tundra and glaciated areas (Carr and Adovasio 2002). During the Younger Dryas, a cold period between 11,000 and 10,000 B.P., vegetation patterns may have been affected as well. Human populations during the Paleoindian period were most likely organized as small hunter-gatherer bands characterized by low population density and high mobility that occupied caves and rockshelters as well as short-term open-air camps (Gingerich 2007).

The Paleoindian inhabitants of New Jersey likely hunted large game animals such as mammoths, mastodon, and caribou, as well as smaller animal species while relying on a variety of other foods (e.g., Custer and Stewart 1990; Carr and Adovasio 2002). Fluted points (Clovis, Folsom, Crowfield, Barnes, and Plano) and certain tools are diagnostic of this period (Kraft 2001). Clovis point components at the well dated Shawnee Minisink site (36-Mr-43) in the Upper Delaware Valley in Pennsylvania provided a range of dates from an approximately 11,000 to 9,300 B.P. (Gingerich 2007, 2013; Miller and Gingerich 2013; Stewart 2018) and a range of fluted point dates from approximately 11,000 to 10,000 B.P. have been documented regionally (Carr and Adovasio 2002: 14). Crowfield points have been dated from approximately 10,500 to 9,940 B.P. at the Nesquehoning Creek site (36-Cr-142) also in the upper Delaware Valley (Stewart 2018). A wide variety of lithic material types derived from cobble resources and outcrops was utilized during the Paleoindian period but high quality crypto-crystalline materials were favored (Carr and Adovasio 2002). Sites of this period typically consist of isolated fluted points or low-density chipped stone artifact scatters. Based on the distribution of over 200 fluted projectile points recovered throughout New Jersey, primarily Eastern Clovis points and Dalton points, Paleoindian groups may have preferred riverine settings (Carr and Adovasio 2002). In a study of the distribution of Paleoindian projectile point finds, nine such finds were located in Morris and Somerset counties (Marshall 1982: 20, 32).

Paleoindian sites are relatively rare and few sites have been documented or excavated in New Jersey. Early sites are relatively rare for several reasons: low populations, the highly mobile lifestyles of Paleoindian people, rising sea levels and changing coastlines with concomitant changes in land forms, and lack of preserved sites. Areas with high probability for Paleoindian sites include ancient shorelines of the Delaware River, the shores of the glacial lakes Passaic and Hackensack, periglacial features in the Coastal Plain, upland bluff terraces, low-lying river terraces, the tops of cuestas, and the continental shelf (Grumet 1990; Kraft 1986). Gardner (1978, in Custer 1984, 1989) has suggested that Paleoindian settlement patterning is closely linked to the availability of high-quality lithic raw materials. The patterning of point finds in the state indicates early inhabitants' preference for riverine environments, particularly in areas overlooking river valleys, although this may be an artifact of collecting habits and development (Marshall 1982; Grumet 1990). A large number of Paleoindian artifacts were located

in the Plenge site on the Musconetcong River, the Snyder site in the Upper Delaware, and the Port Mobil and Charleston Beach sites on the southern tip of Staten Island (Cantwell and Wall 2001: 40-41; Gingerich 2013; Marshall 1982: 32; Kraft 2001; Rankin 2016). These sites, along with the site at Sam's Club in Ocean County, the A.C. site outside Atlantic City, the Shawnee-Minisink site north of the Delaware Water Gap, and the Zierdt site in Sussex County, are some of the most important Paleoindian sites in the region (Custer and Stewart 1990; Dent 1991; Gingerich 2007; Kinsey 1972; Kraft 1986, 2001; Marshall 1982).

By the end of the Paleoindian period, many Pleistocene animal species, like mammoth and mastodon, were extinct. As a result, subsistence strategies became more generalized mixed hunting and gathering with reliance on deer, small prey animals, fishing, and gathering of wild plants such as blackberries, hackberries, grapes, amaranth and nuts (Custer and Stewart 1990; Dent 1991). The end of the Paleoindian period is marked by a change in point styles to unfluted lanceolate points known as Agate Basin or Plano, and smaller notched points called Dalton-Hardaway (Kraft 2001).

Early Archaic Period (8,000 B.C. [10,000 B.P.] to 6,500 B.C. [8,500 B.P.])
The Early Archaic period may have been very similar to the preceding period in terms of mobile lifestyle and generalized hunting/gathering lifestyle; the main differences are reflected in a change to small-stemmed and notched projectile point styles such as Kirk and Palmer types, which may signify a change in hunting technology (e.g., Gardner 1989). This period is associated with a continuing expansion of forest habitats. The in-migration of various nut-bearing oak and chestnut species may have provided a catalyst for a subsistence shift to broad spectrum foraging that favored plant gathering and processing strategies. Floodplains and river islands were attractive locations for hunter-gatherer camps as upland areas continued to be predominated by boreal forest (Raber et al. 1998). However, during this period, limited use of upland lakes and bogs is evidenced by a small number of archaeological sites adjacent to these locales. Sinkhole complexes may have supported clusters of natural ponds throughout the Late Pleistocene and Early Holocene that would have been attractive locations for migratory wildlife and the human populations that exploited them. Such freshwater wetlands added to the diversity of resources available in the periods immediately following the last glaciation and made broad-spectrum foraging a successful subsistence strategy for human populations (Custer 1996; Meltzer and Smith 1986; Cavallo and Mounier 1982; Pagoulatos 1991).

Early Archaic diagnostic artifacts include stemmed and notched points, chipped stone choppers, and hammerstones. New tool forms representing adaptations to new lithic technologies, such as grinding slabs, milling stones, and pitted cobbles, have been found in Early Archaic contexts (Custer 1996). Early Archaic diagnostic notched and stemmed projectile point forms consist of Amos, Palmer, Charleston, Lost Lake, Decatur, Fort/Nottoway/Thebes, and Kirk types (Stewart 2018; Kraft 2001). Radiocarbon dates are documented for limited Kirk point types in the Upper Delaware Valley and range between 9,000 and 8,000 B.P. including at the Harry's Farm and Rockelein sites in the Upper Delaware Valley (Stewart 2018). New tool forms suggesting changing subsistence strategies and new lithic technologies, such as grinding slabs, milling stones, and pitted cobbles, have been found in Early Archaic contexts (Custer 1996).

A variety of site types have been found dating to this time period near major drainages. Riverine sites within northern New Jersey include large villages or macro-base camps, small hunting and fishing camps, and processing stations (Kraft and Mounier 1982a: 73). A three-tier settlement system is considered to have emerged during the Archaic period in New Jersey's Piedmont Lowlands Physiographic Province. This consisted of macro-band base camps, micro-band base camps, and ephemeral camps designated as either "procurement sites" or "transient camps." Bands, likely extended family groups, moved between these different levels of sites on a seasonal basis, dividing up to utilize resources in many different environments - both up- and downstream of major drainages - and coming together in larger groups to conduct trade and marriages (Custer 1984: 67, 1989: 131, 278; Fitting 1979; Grossman-Bailey 2001; Kraft and Mounier 1982a; Mounier and Martin 1992). Early Archaic cremated human remains have been found along the Atlantic Coast of New Jersey (Stanzeski 1996).

Although Early Archaic components are fairly rare, Early Archaic components are found at a number of sites in northern New Jersey and nearby areas including Shawnee Minisink, Harry's Farm, Rockelein, Treichler's Bridge, Sandts Eddy (36-Nm-12), and site 28-Hu-18 in the Upper Delaware Valley, Apshawa Rockshelter along the Passaic River, and Ward's Point on Staten Island (Bergman et al. 1998; Carr and Moeller 2015; Kraft 2001; Lenik 2012; Richard Grubb & Associates, Inc. 2013; Stewart 2018). An Early Archaic component at the Shawnee Minisink yielded varied tools in layers below the Paleoindian levels including scrapers, drills, axes, and other tools and possibly functioned as a base camp (Carr and Moeller 2015: 93). Ward's Point on Staten Island contains a stratified Early-Middle Archaic site with a range of diagnostic stemmed points, tools, and features (Cantwell and Wall 2001).

Middle Archaic Period (6,500 B.C. [8,500 B.P.] to 3,000 B.C. [5,000 B.P.])
Middle Archaic lifeways are poorly understood in New Jersey and the Middle Atlantic Region (Custer 1996). By the Middle Archaic, the increase in deciduous forest including nut-bearing oak, hickory, and chestnut species provided an increase in food resources. Based on the increase in the numbers of sites in upland areas, this may have led to a much higher population and larger size groups or bands (Carr and Moeller 2015: 87). Middle Archaic social groups may have included nuclear or extended families.

The Middle Archaic period is seen as a departure from the mobile Paleoindian/Early Archaic life ways. A decrease in settlement mobility during the Middle Archaic is suggested by changes in lithic utilization patterns and tool technologies. The Middle Archaic (bifurcate) deposits at the Sandts Eddy Site (36-Nm-12) suggest that activities focused around nutmeat processing (Bergman et al. 1998). Bundle burials associated with an argillite artifact found at Abbott Farm were determined to pre-date the Late Archaic period (Stewart 1995). Some of the important sites in and around New Jersey pertaining to the Early and Middle Archaic period include Rockelein, Twombly Landing, West Creek, Harry's Farm, Logan, Turkey Swamp, and Shawnee-Minisink (Cavallo 1981; Cross 1941; Kraft 2001; Kraft and Mounier 1982a: 66-67; Mounier 1975; Stanzeski 1996).

Diagnostic artifacts of the Middle Archaic include bifurcate and stemmed points and groundstone tools such as axes, adzes, and ulus or semi-lunar knives (Kraft 2001). Bifurcate base points are seen by some as the hallmark of the Middle Archaic period (Carr and Moeller 2015: 79; Bergman et al. 1998; Custer 1996) although others see it as a continuation of the Middle Archaic (see Stewart 2018 for discussion). Middle Archaic diagnostic bifurcate projectile points are classified as MacCorkle, St. Albans, and LeCroy. Certain Kirk forms date to the Middle Archaic period. Other distinctively Middle Archaic diagnostic types include Neville and Stanly projectile points with shallow basal notching (Custer 2001:45). Certain projectile point forms such as triangular shaped projectile points, stemmed projectile points, and notched projectile points that were not traditionally associated with the Middle Archaic period have been dated to this time period (Custer 2001; Miller et al. 2007). Analysis of stemmed and notched projectile points from stratified and/or dated contexts in the Middle Atlantic Region suggests that biface types referred to as Bare Island, Brewerton, Lackawaxen, Lamoka, Morrow Mountain, Rossville, Pequea, Piney Island, Piscataway, and Poplar Island date from the late Middle Archaic period to the end of the Middle Woodland period (Custer 1996:139-145, 2001:92-108). These points are found in contexts that yielded a wide range of dates (Stewart 2018).

Late Archaic Period (3,000 B.C. [5,000 B.P.] to 1,000 B.C. [3,000 B.P.])
During the Late Archaic period, the effects of sea level rise stabilized and tidal conditions along major rivers and streams formed. The late middle Holocene warm, dry Sub-Boreal period roughly coincides with the beginning of the Late Archaic period (Carr and Moeller 2015; Stewart 2018). The general trends of the Late Archaic period, possibly initiated by the development of a warmer, dryer climate, consisted of the rise and expansion of trade networks, an increase in population, and a greater degree of sedentism (Carr and Moeller 2015; Custer 1996; Grossman-Bailey 2001; Mikolic and Albright 2012). The archaeological record of the Late Archaic suggests population growth as well as a more intensive and repeated use of sites in preferred ecological settings, such as riverine settings, swamps, marshes, and wetlands margins. Furthermore, the use of productively marginal resource areas appears to increase during the Late Archaic, likely as a result of the shift to a warmer and dyer climate, which would have significantly enhanced the productivity of some habitats, such as coastal marshes and

mixed interior forests, while diminishing the output of traditional resource rich areas (Carbone 1982; Custer 1996; Pagoulatos 1991). The far-reaching distribution of high-quality lithics may suggest the development of regional exchange networks as some groups' mobility patterns brought them into closer contact with other regional communities (Carbone 1982; Custer 1996; Pagoulatos 1991).

Economic and technological changes reflect the selection of a broader range of habitats for settlements, with larger encampments located near major rivers and small sites near coastal areas, estuaries, freshwater springs, lakes and drainage basin divides to take advantage of resource bases created by the formation of estuarine marshes and the development of oak-hickory forests. Late Archaic site types include large camps, cemeteries, procurement stations, small transient camps, and isolated activity areas. The largest Late Archaic sites are logistically positioned in productive settings such as along major rivers, which may have been occupied by extended family groups. These larger sites often present a more complex set of features, such large FCR clusters or hearths and storage pits, while smaller sites are more variable and are likely associated with the exploitation of a wide variety of foods, including shellfish (Carr and Moeller 2015: 87). Cemetery sites (i.e., Savich Farm) are also identified for this time period, evidence of increased mortuary ceremonialism throughout the Eastern Woodlands during the Late Archaic (Regensburg 1970).

The Late Archaic toolkit was more diverse than the Middle Archaic toolkit, reflecting the greater variety of exploitable resources available to Late Archaic peoples. Ground stone tools for plant processing (mortars and pestles), heavy woodworking tools (grooved axes, adzes, celts) and tools for fishing (net sinkers and fish hooks) appear in greater frequencies (Custer 1996; Kraft 2001). Late Archaic lithic utilization patterns document extensive use of argillite (Stewart 1989, 2018). Locally available materials, such as cryptocrystalline cobbles, were utilized. Jasper, argillite, rhyolite, ironstone, steatite, marine shell, and copper were traded throughout the Middle Atlantic Region during the Late Archaic (Stewart 1989, 2018). Generalized notched and stemmed projectile points (i.e. Bare Island, Brewerton, Lackawaxen, Lamoka, Macpherson, Normanskill, Pequea, Piney Island, and Poplar Island) were traditionally associated only with the Late Archaic period; however, as discussed in the overview of the Middle Archaic period, generalized notched and stemmed projectile points have been documented for a broad time range extending from the late Middle Archaic period to the end of the Middle Woodland period (Custer 2001; Stewart 2018). Dates for narrow stemmed points in the Upper Delaware Valley illustrate this, ranging from approximately 4,800 to 700 B.P (Stewart 2018: 71, Table 8).

The end of the Late Archaic period, approximately 1,500 B.C. (3,500 B.P.) to 1200/1000 B.C. (3,200/3,000 B.P.) is sometimes called the Terminal or Transitional Late Archaic period. Associated diagnostic artifacts include broadspear projectile points (e.g., Susquehanna, Savannah River, Snook Kill, Lehigh/Koens-Crispin, and Perkiomen), fishtail projectile points, steatite (also known as soapstone) bowls and other steatite artifacts, and flat-bottomed and steatite tempered and other early ceramic vessels (Bedard 2011; Blondino 2008; Miller et al. 2007; Kraft 1970, 2001; Kraft and Mounier 1982a; Marcopul 2007; Stewart 2011; Wholey 2011). The Transitional Late Archaic is considered a separate period by Carr and Moeller (2015: 107-140), which includes an early Broadspear phase followed by a phase characterized by narrow bladed fishtail points along with other diagnostic artifacts. The use of stone vessels, the beginnings of experimentation with ceramics, and evidence for more permanent housing indicated by circular patterns of posts (e.g., Kraft 2001: 132) may indicate a more sedentary lifestyle (Griffin 1978: 231; Kraft 2001; Tuck 1978: 38). The earliest dates for ceramics in New Jersey began in the Late Archaic and include steatite tempered ceramics from the Miller Field (28-Wa-16) and South Broadway (28-Ca-168) sites with dates approximately 3,200 to 3,100 B.P. (Kraft 1970; RGA, Inc. 2017; Stewart 1998a, 2003, 2011, 2018). Dates for steatite in the Delaware Valley range from approximately 3600 to 2200 B.P. (Stewart 2018: 166, Table 23).

Early Woodland Period (1,000 B.C. [3,000 B.P.] to 500 B.C. [2,500 B.P.])

The Early Woodland period marks the shift to modern climatological and environmental regimes in the Eastern United States. Vast deciduous forests dominate the landscape and temperature and rainfall patterns take on marked seasonal fluctuations. Estuarine and tidal habitats continued to develop during the Early Woodland period. Defining a clear chronological boundary between the Late Archaic period

and the Early Woodland period is considered somewhat problematic given the increasing numbers of earlier dates for diagnostic artifacts such as early ceramics, steatite vessels, and fishtail points (Carr and Moeller 2015:107; Stewart 2003:5, 2011, 2018; RGA, Inc. 2017).

Culturally, the environmental changes of the Early Woodland favored the continued development of trends initiated during the Late Archaic. Intensification in the use of plant foods as well as a trend toward increasing degrees of sedentism mark the transition from the Archaic to Woodland eras. During the Early Woodland period, there was a growing reliance on the seasonal exploitation of resources through cyclical movements between riverine-oriented semi-sedentary base camps and sporadically occupied interior-oriented procurement camps. One trend of the Early Woodland period is an increasing exploitation of productive plant foods including a suite of seed-based plants known as the Eastern Agricultural Complex that includes such plant taxa as sunflower, squash, little barley, knotweed, and chenopodium (Carr and Moeller 2015; Messner 2011: 30-31). In addition, the possible use of maize, while traditionally associated with the Late Woodland period in the Middle Atlantic, has been identified in dated contexts associated with the Early Woodland period at the Shohola Flats (36-Pi-169) and South Broadway (28-Ca-168) sites as well as other sites in the Delaware Valley (Stewart 2018: 205, Table 27; CHRS 2008; RGA, Inc. 2017).

Floodplains and their surroundings continued to attract base camp settlement in an even more focused manner than the previous period. Exchange networks and mortuary ceremonialism, became further elaborated throughout the Early and Middle Woodland (Carbone 1982; Custer 1984, 1996; Kraft 2001). The presence of numerous cultural complexes, such as Meadowood and Middlesex, signified by differing artifact styles and burial ceremonialism, suggests the influx of people or interaction between contemporaneous groups in the northeast and the Ohio Valley (Bello et al. 1997; Lowery 2012; Mounier 1981; Stewart 1989, 1995, 2003). The relationship between these intrusive cultural manifestations and probable indigenous Early Woodland populations has yet to be determined.

Early Woodland diagnostics consist of Meadowood/Hellgrammite projectile points, teardrop projectile points, early ceramics, and Adena-related material, including the use of copper, tubular pipes, and certain ceramic types (Carr and Moeller 2015; Custer 1996, 2001; Stewart 2003, 2018). Steatite tempered, flat-bottomed Marcey Creek-like ceramics and other ceramics including Vinette I are traditionally associated with the Early Woodland (Stewart 1998a; 2018). Fishtail points, a hallmark of the Terminal Late Archaic period, are found in association with early ceramics as well (Stewart 2018). Generalized side-notched and stemmed projectile points known from earlier periods continue to be used through the Middle Woodland period (Custer 2001).

Middle Woodland Period (500 B.C. [2,500 B.P.] to A.D. 800/900 [1,100/1,200 B.P.])

Estuarine and tidal habitats continued to develop and expand during the Middle Woodland period and a slow rate of sea level rise continued (Grossman-Bailey 2001). Several themes important during the Middle Woodland period include the emergence of sedentary populations at base camps, experimentation with horticulture, and the development of innovations in ceramic technology (Custer 1996:217; Hart 2008; Messner 2011; Stewart 2003). Exchange networks and mortuary ceremonialism continue, reflecting interaction with regions outside of the Middle Atlantic Region (Kraft 2001; Lowery 2012). These Middle Woodland trends vary across space and time in the Middle Atlantic Region. The period is represented by settlement patterns focused on the seasonal fission/fusion of hunter-gatherer social groups between large and small camps. The use of ceramic vessels became widespread and increased in size and quality of manufacture during the ensuing periods. Tools made of Ohio Valley and New York raw materials became more popular, as did the use of native copper possibly from the Lake Superior area (Kraft 1986: 103-104).

Diagnostic artifacts from the Middle Woodland consist of Fox Creek projectile points, Jack's Reef projectile points, and criss-cross cord marked pottery, and interior marked pottery (Custer 1996; Harris 2007; Stewart 1998a, 2003; Walker 2013; Carr and Moeller 2015). Pottery with net-marked surface treatment (Mockley, Ford Net-Marked, Brodhead Net-Marked, etc.) became commonplace during the later portion of Middle Woodland period (Stewart 1998a). By 700/500 B.C., coil constructed,

conoidal vessels became the norm (Stewart 1998a:171). Generalized notched and stemmed projectile points lacking diagnostic morphologies, some of which are historically referred to as Rossville and Lagoon projectile points could also date to the Middle Woodland period (Custer 1996:227-231). Burial ceremonialism intensified during the Middle Woodland period in the region. Adena-Middlesex mortuary sites in the Upper Delaware Valley, such as the Rosenkrans Ferry Site, and in coastal portions of New Jersey contain a distinctive suite of exotic grave goods from the Midwest (Mounier 2003; Lowery 2012; Stewart 2003).

Intensification of coastal resource exploitation is demonstrated in the large-scale exploitation of seasonal resources including shellfish at large coastal sites occupied on a semi-permanent basis. Large shell middens are reported along the estuaries and bays of the Inner Coastal Plain, located on promontories overlooking tidal marshes (Grossman-Bailey 2001: 294; Marcopul 2007; Mounier 2003; Wall et al. 1996; Cantwell and Wall 2001).

Settlement systems include large base camps, fishing stations, shellfish middens, hunting/gathering camps, and mortuary sites. Regional models for settlement systems suggest that seasonal fission/fusion of social groups occurred as people occupied different types of sites throughout the year. Large base camps where smaller extended family groups came together are often found in rich environments at mid- to upper tributary stream confluences. Smaller procurement camps and specialized work camps are found in many settings at shorelines, headwaters, and marshes (e.g., Custer 1996; Grossman-Bailey 2001; Mounier 1978; Stewart et al. 1986).

Settlement models proposed for the Lower Delaware River watershed, as a result of extensive investigations at the Abbott Farm National Landmark sites, provide a context for interpretation of data from small upland sites and sites elsewhere in the state (see Marcopul 2007; Wall et al. 1996). The Abbott Farm National Historic Landmark includes sites in the City of Trenton and Hamilton Township, Mercer County and in Bordentown Township, Burlington County. Known as the Trenton Complex, these sites represent a series of upland bluff edge and floodplain sites within the Delaware River drainage occupied from the Middle to Late Archaic to the Late Woodland periods. Sites of the Trenton Complex contained numerous features, intact subsoils, and yielded a wide variety of diagnostic materials as well as organic remains used for radiocarbon dating. Based on the results of work at the Trenton Complex and in central New Jersey, Wall et al. (1996) postulated a regional settlement model consisting of four main site types: macro-social unit camps, transient camps (or procurement and processing camps), stations, and specialized camps. Macro-social unit camps are large sites found at high terraces along streams or floodplains at inland locations. Transient camps are sites located on streams or marshes that were used for a short period of time for the manufacture and maintenance of tools and for food production. Stations are sites used by specialized task groups for very short-term hunting activities. Wall et al. (1996: 110) propose that: "...populations exploited relatively large territories through seasonal aggregation and dispersal, depending on the distribution and abundance of resources." Macro-social unit camps were located at high terrace bluffs and along floodplains from early spring to late summer near the Delaware River, and from fall to winter, settlements were moved inland possibly to the Piedmont region. Transient camps and non-sedentary site types supplied the base camp with necessary resources, such as game animals, lithic materials, fish, and other materials. The model is based on seasonal migration and social groups that divide and reunite to better exploit the environment while maintaining social and cultural ties.

Late Woodland Period (A.D. 800/900 [1,100/1,200 B.P.] to circa A.D. 1600 [circa 4000 B.P.])

Sea level rise continued to affect the location of settlements during the Late Woodland period, which shifted away from estuarine settings in favor of more exclusively floodplain and riverine locations (Rankin 2013). Settlement patterns are characterized by unfortified hamlets, camps, and long houses with a decrease in band territory size as seasonal economic strategies included hunting and foraging in upland areas as well as shellfishing and maize horticulture in riverine settings. A settlement model focused on seasonal fission/fusion of social groups along river drainages developed in the Inner Coastal Plain, and included specialized procurement and work camps (Kraft 1986:101; Mounier and Martin 1992.

The Late Woodland period is distinguished from earlier periods by the increase of semi-sedentary occupations, smaller territory size, and the change to horticulture in some portions of the Middle Atlantic Region (Carr and Moeller 2015; Custer 1996; Lawrence and Albright 2012; Messner 2011; Stewart 1995, 1998b, 2018). One of the main themes of the Late Woodland period is the inception of maize horticulture, which originated in Central America and began to be practiced in the Middle Atlantic circa A.D. 900 and perhaps earlier. A suite of domesticated plants known as the three sisters (maize, beans, squash) was cultivated to varying degrees in the region (Messner 2011; Stewart 2018). Horticultural activities were supplemented by hunting and gathering of food staples, such as large game, freshwater mussels and berries. Maize horticulture occurred earlier and with more frequency farther inland and in northern New Jersey, while maize horticulture does not appear to have been as large of a contribution to the subsistence patterns of Late Woodland groups within the coastal margins or in southern New Jersey (Mounier 2003). This period also marks the occupation of long houses, consisting of 18- to 60-foot structures, in small unfortified hamlets by extended family groups (Kraft and Mounier 1982b).

Late Woodland diagnostic artifacts consist of triangular-shaped projectile points and pottery styles exhibiting a greater refinement of paste, fineness of temper, and in some cases surface decoration (Stewart 1998a, 1998b). Triangular projectile points, however, have been found to date to earlier periods as well as the Late Woodland (Stewart 1998c). One apparent technological change during this period is a decreasing emphasis on formal staged bifacial reduction, except for projectile points. Other changes are the production of expedient flakes using bipolar techniques and a focus on local lithic sources such as cobbles (Stewart 1987). Tools include various implements, such as bone awls, scrapers, celts and ceramic pipes, some with effigies. Distinctive collarless, cord-impressed ceramics are characteristic of the early Late Woodland, while collared vessels become commonplace by around A.D. 1350.

The Unami Delaware who occupied central and southern New Jersey may have interacted with other coastal groups who occupied the Delmarva Peninsula, as well as the Munsee Delaware in northern New Jersey, based on the distribution of ceramics and other artifacts (Kraft 2001; Stewart 1998b). Based on seventeenth-century ethnohistoric accounts, these linguistically related groups may have had organized polities that controlled, among other things, oystering and hunting territories during the Late Woodland and proto-historic periods (Goddard 1978:215). Shellfish gathering occurred in the spring and summer months from smaller camps and the meats were dried for later use (Goddard 1978:216-7).

Around approximately A.D. 1200/1300 during the Late Woodland period, dramatic changes in social organization, material culture, site structure and settlement patterns have been documented in various portions of the Middle Atlantic Region (Custer 1996). The restricted distribution of pottery styles and the focus on the utilization of local lithic sources along with ethnohistorical data suggest a greater degree of territoriality in the Late Woodland period than in the preceding time periods (Custer 1996; Kraft 2001). The prehistoric era ends at the arbitrary date of A.D. 1550 to 1600, about the time of first contact between Native groups and European populations, and the subsequent period of extensive colonization by the Dutch, English, and French.

Contact Period (circa A.D. 1600 [circa 400 B.P.] to A.D. 1750 [250 B.P.])

During the seventeenth century and early eighteenth century, settlement pressure from increasing numbers of European settlers may have pushed Native Americans further from the coast (Grossman-Bailey 2001). Many scholars agree that the people of New Jersey's southern and coastal areas who encountered European traders and settlers spoke a common language (Unami) and were foragers loosely organized into matrilineal bands with clan relationships to the Lenape elsewhere in New Jersey and eastern Pennsylvania (Goddard 1978; Kraft 1986, 2001).

The Native American presence in Salem and Cumberland counties and along the coast during the time of initial European contact and initial colonization circa A.D. 1550/1600 is known to have been extensive but the record is incomplete. Few archaeological sites with Contact period components have been excavated or studied in the Outer Coastal Plain. Contact period site components have been noted

at the Fralinger site (28-Cu-8) on the Maurice River south of the APE-Archaeology where a pewter button and other historic items were recovered in association with Native American artifacts, the Bead Wreck (28-At-16), a ship wreck in the Mullica River in Atlantic County containing numbers of trade beads; and the Steel (28-Cm-42), and Heislerville sites in northern Cape May County (Grossman-Bailey n.d., 2001; Mounier 1974:34).

3.3 Historic Context

Note that the APE is referred to as the "project location" to account for the imprecision in locating the APE on historic maps of various scales.

Modern-day Hopewell Township approximates the boundaries of the 31,000-acre Hopewell Tract first surveyed by Dr. Daniel Coxe of England in 1688. Established originally within Burlington County, the township became part of Hunterdon County in 1714 (Snyder 1969: 162). Settlement began in the first few decades of the eighteenth century, and by 1730, the township included a number of farmsteads (Hayden 1992: 9, 52). In 1731, a land dispute forced Coxe to eject fifty property owners from Hopewell, which suggests the extent to which the area was developed. A period of instability ensued. In the 1750s, order was restored with many property owners re-purchasing their farms from the Coxe family heirs.

During the eighteenth century, the area surrounding the project location was sparsely developed; the communities of Pennington, approximately four miles southwest of the project location, and Maidenhead (present-day Lawrenceville), approximately seven miles southeast, were the closest population centers (Figure 3.3; Hills 1781). Several roads were in place in the vicinity of the project location by the late eighteenth century (Hills 1781). Nearby roads included a road leading from Pennington to Ringoes through Smith Mountains, located west of the project location (Hills 1781). The present-day Carter Road, which merges with Hopewell-Princeton Road to the north, was depicted by the late eighteenth century and runs adjacent to the project location (Faden 1777). No other roads were depicted within the project location during the eighteenth century (Faden 1777; Hills 1781).

No Revolutionary War activity is known to have taken place within or near the project location. The village of Pennington was occupied by British and Hessian troops in late 1776 (Bill 1964). Pennington was used as a rest stop for British troops in pursuit of the Continental Army as the latter retreated from New York across New Jersey. A ridge to the north of Pennington is known as Hessian Hill, approximately three miles from the project location, and was reputed to have been the location of a Hessian encampment during the occupation of the village (Hunter and Porter 1990; John Milner Associates, Inc 2009). A skirmish between the Continental Army and Hessian soldiers took place west of Pennington on December 17, 1776 (Munn 1976). The exact distance of the skirmish to the project location is unknown. Hessian soldiers overran Pennington during this period and commandeered the Presbyterian Church as their barracks, approximately two miles southwest of the project location (John Milner Associates, Inc 2009; Mulnn1976).

Residential and commercial development in the township continued following the Revolutionary War and was most heavily concentrated in the village of Pennington (Woodman and Hageman 1883). By 1833, no structures appear to have been built within or in the vicinity of the project location (Figure 3.4; Gordon 1833). The nearest building appears to have been a mill located approximately 5,000 feet north of the project location at the intersection of the present-day Hopewell Princeton Road and Beden Brook (Gordon 1833). The township became part of Mercer County in 1839 (Snyder 1969: 162).

By the mid-nineteenth century, the small cross-roads community of Mount Rose, located 1,000 feet north of the project location, had been built up along the cross roads of present-day Cherry Valley Road, Carter Road, Pennington Rocky Hill Road, and Hopewell Princeton Road (Figure 3.5; Otley and Keily 1849). One residence appears within the vicinity on Otley and Keily's 1849 map labeled "R.

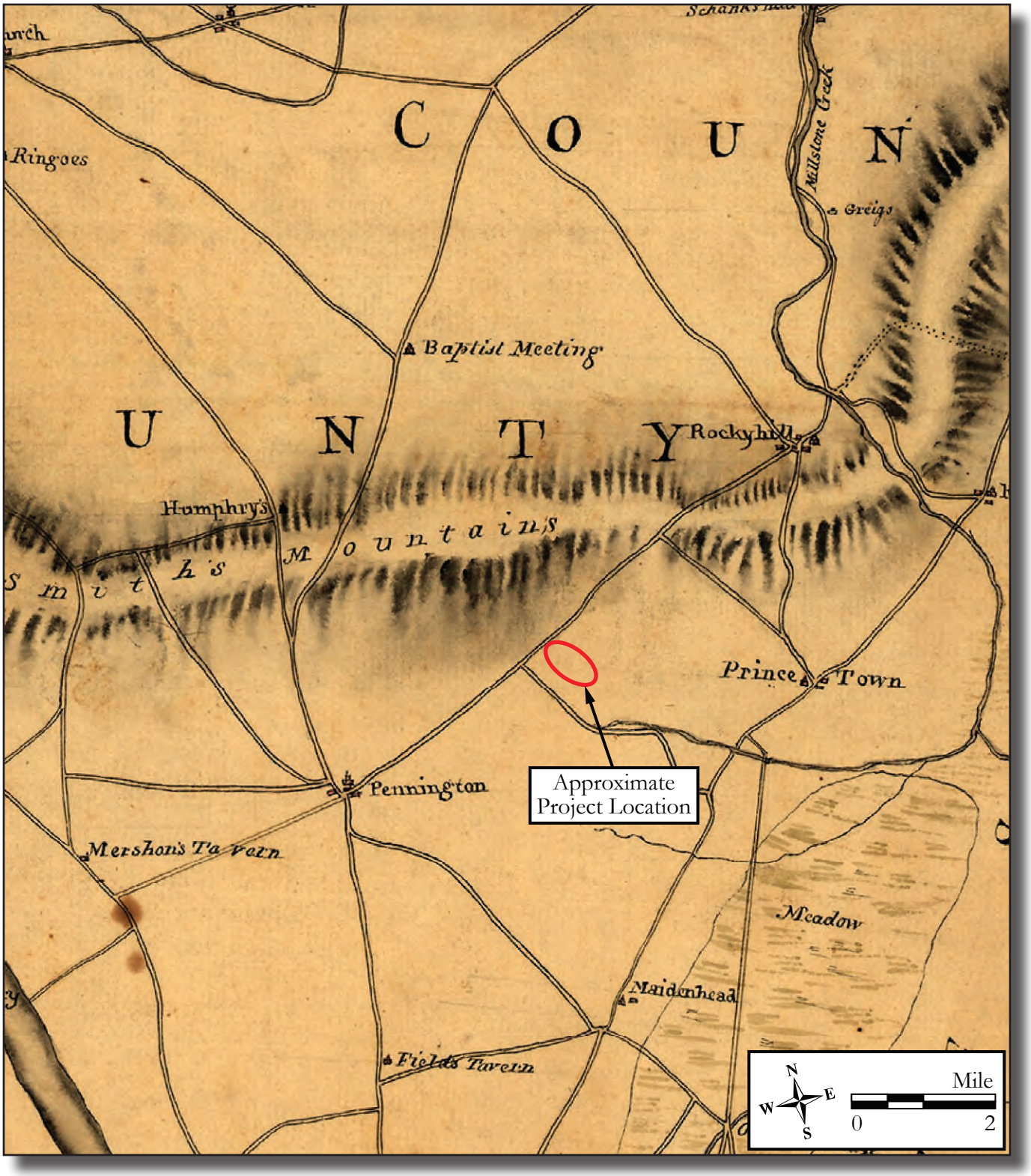

Figure 3.3: 1781 J. Hills, *A Sketch of the Northern Parts of New Jersey.*

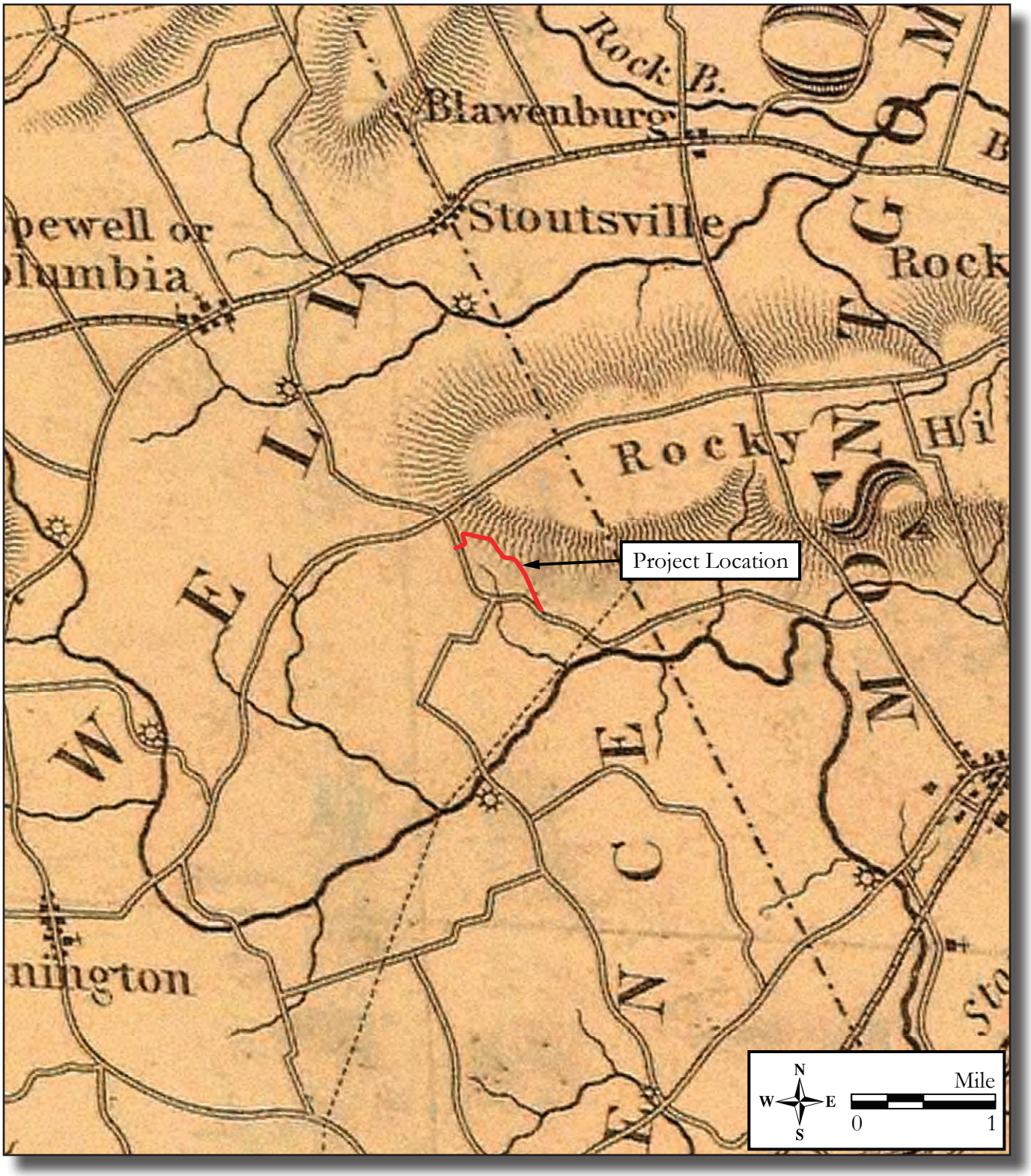

Figure 3.4: 1833 T. Gordon, *A Map of the State of New Jersey with Part of Adjoining States.*

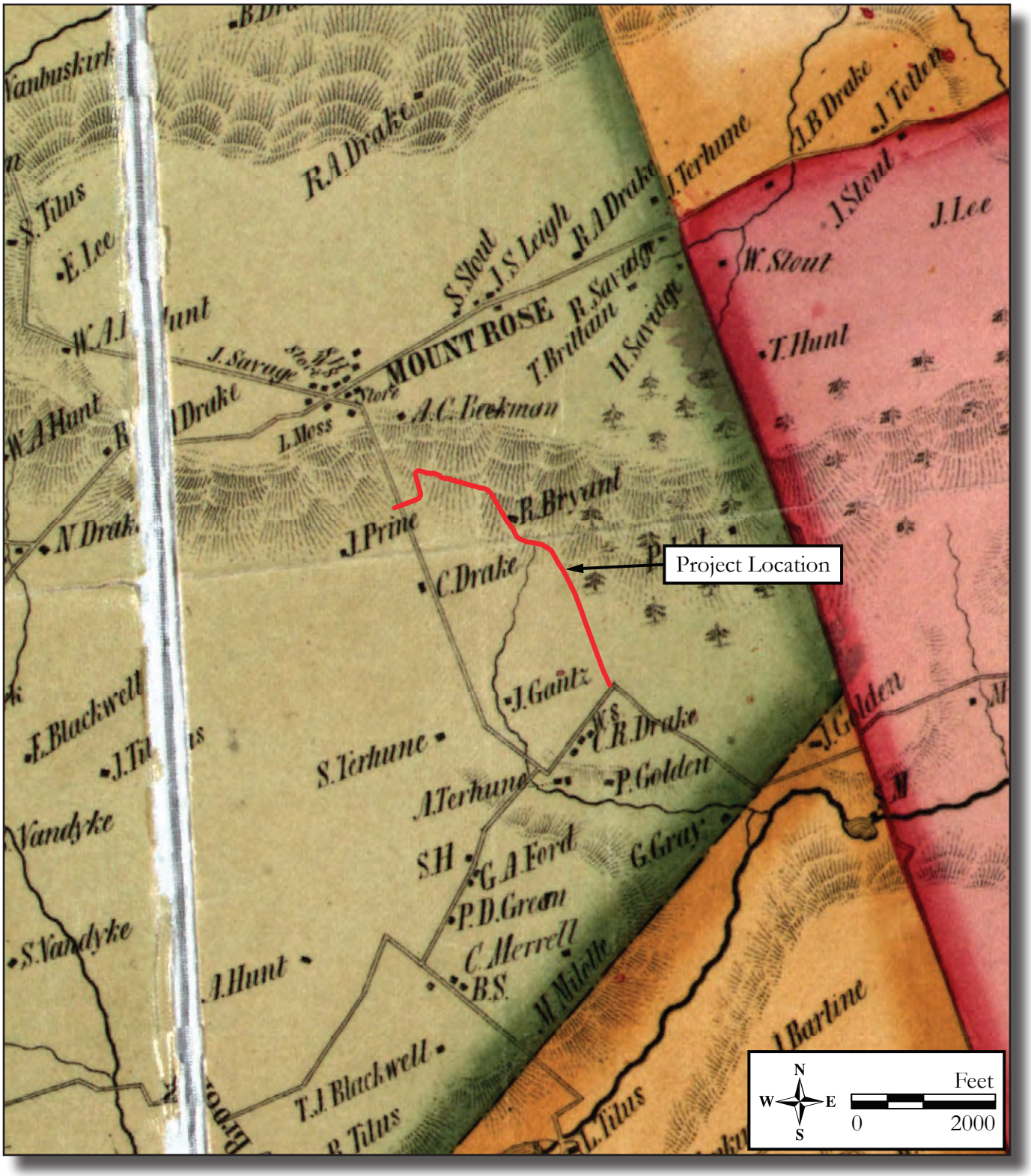

Figure 3.5: 1849 J.W. Otley & J. Keily, *Map of Mercer County, New Jersey*.

Bryant" with several buildings located adjacent to the project location; "J. Gantz," to the southwest of the project location to the east of present-day Carter Road; "C. Drake," to the west across from present-day Carter Road; "J. Prine," located to the northwest of "C. Drake"; "P.Lot," located to the southeast; "C. R. Drake" located to the south; and "A. Terhune," located to the south and southwest of "C. R. Drake" (Otley and Keily 1849).

Between 1849 and 1875, the community of Mount Rose grew (see Figure 3.3; Figure 3.6; Otley and Keily 1849; Everts and Stewart 1875). The 1875 map depicts one new building very close to the project location: "E. Watton, 30," to the north of "Jno. Gantz." Two new residences are located adjacent to the project location; "D. Maple," located to the south of E. "Watton" and to the east of the project location; and "F. Fisher - Col.," located to the east of "D. Maple" (Everts and Stewart 1875). The ownership and presence of some of the older buildings near the project location also changed. The property previously attributed to "J. Gantz" in 1849 is labeled "Jno. Gantz," and the dwelling once belonging to an "R. Bryant" appears to have been demolished (Otley and Keily 1849; Everts and Stewart 1875). Several other properties appear adjacent to the project location as well, including a school building to the north; however, the area generally remained sparsely developed.

The arrival of the railroads during the early 1870s prompted further growth in the township. The two closest railroad lines to the project location were the Delaware & Bound Brook Railroad (D&BBRR), situated one-and-one-half miles west of the project location, and the Mercer & Somerset Branch of the Pennsylvania Railroad (PRR), located approximately two miles west of the project location (see Figure 3.4; Everts and Stewart 1875). A dispute broke out near the present-day Borough of Hopewell, two miles northeast of the project location, between the D&BBRR and the PRR. This dispute, known as the Hopewell Frog War, received national attention when the D&BBRR attempted to build a crossover connection, known as a frog, over the Mercer & Somerset Branch tracks. Construction was stopped by workers from the PRR. The confrontation between workers from the rail companies became violent and the New Jersey militia was called in to prevent the dispute from escalating (Cunningham 1997; Treese 2006). Ultimately, the D&BBRR was victorious and was able to continue building the crossover connection to join the east and west halves of their new rail line. This confrontation effectively ended the longstanding rail transportation monopoly, which had been held by the Camden & Amboy Railroad (later the PRR), along the present-day Northeast Corridor, which connects Philadelphia and New York City (Lynn Drobbin and Associates 2005). In the aftermath of the Hopewell Frog War, the Mercer & Somerset Branch became redundant, and the rail line was removed by 1880 (Geismar 2005). The introduction of the two rail lines did not cause significant growth near the project location or in the nearby community of Mount Rose.

In the beginning of the twentieth century, the project location and surrounding area looked very similar to what was depicted on the 1875 map, as the area remained sparsely developed. The adjacent school and a property labeled "J. Gantz" adjacent to the project location are among the similarities between maps spaced 45 years apart (Figure 3.7; Mueller 1918). Three buildings mentioned previously, "E. Watton," "F. Fisher-Col.," and "D. Maple," were demolished between 1875 and 1918 (Everts and Stewart 1875; Mueller 1918). One building was constructed adjacent to the northeast of the project location during that time period and is labeled "M. I. Stout, Jr." on the 1919 map (Everts and Stewart 1875; Mueller 1918). Despite these changes, the project location and surrounding area in Hopewell Township remained relatively undeveloped and surrounded by wooded areas and fields. Historic aerial photographs support this pattern of development in the early twentieth century.

Of the multiple buildings and structures currently present in the vicinity of the project location, only one extant building was present on the site in 1931, the building belonging to the Gantz family, which first appeared in this location by 1849 (Otley and Keily 1849; NETR 1931). During the late 1950s, the Western Electric Company (Western Electric) purchased a number of properties along Carter Road in Hopewell Township, with plans to develop a corporate campus (The Central New Jersey Home News [TCNJHN], 10 August 1969:48). Originally operating out of the Gantz farmhouse, Western Electric went on to develop the property to include multiple structures during the 1960s (Hopewell Fire Department 1961; NETR 1963, 1969). By 1969, the campus included three main

Figure 3.6: 1875 Everts and Stewart, Hopewell Township, Atlas of Mercer County, New Jersey.

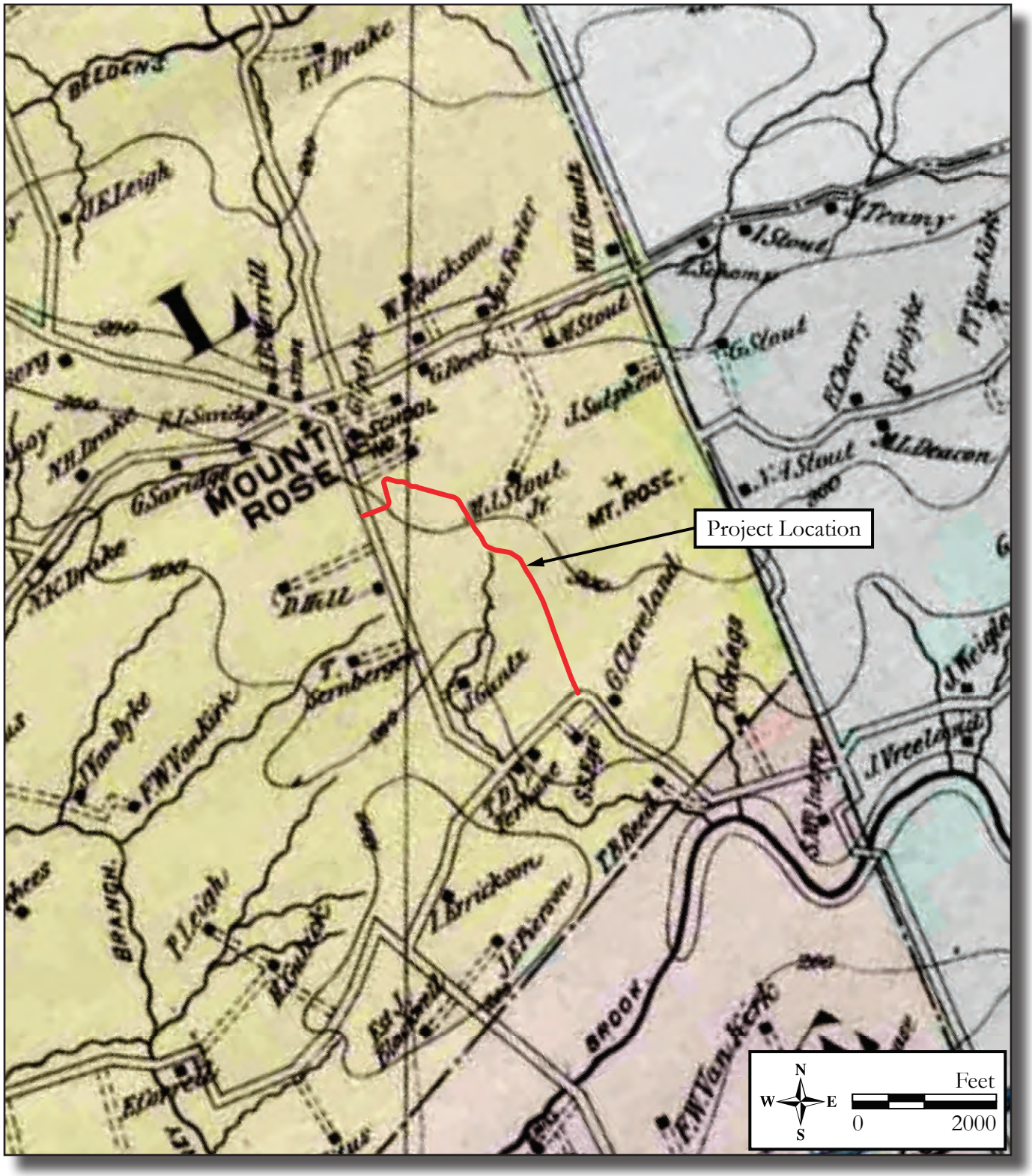

Figure 3.7: 1918 A.H. Mueller, *Mueller's Automobile Driving & Trolley Map of Mercer County, New Jersey.*

facilities: an Engineering and Research Center (present-day 330 Carter Road), Corporate Education Building (present-day 350 Carter Road), and a Residence Hall (demolished circa 2016) across the street from the education building (TCNJHN, 10 August 1969:48). In addition to the farmhouse and main campus buildings, several ancillary structures were also built by Western Electric to create a self-sustaining facility. Situated within the current boundaries of 330 Carter Road, they consisted of a substation, water treatment facility, maintenance building, and some smaller outbuildings that are no longer extant (NETR 1969). An increase in residential development during the 1960s is also apparent in historic aerials. Situated near the project location, a single-family residence (124 Cleveland Road) was constructed on the northeast side of Cleveland Road by 1969 (NETR 1969). A larger residential development was also built just north of the project location along Cherry Valley Road (NETR 1969).

The immediate surroundings of the project location is defined by twentieth-century residential development, open farm fields and clusters of farm buildings interspersed with wooded areas. These wooded areas, which the project location passes through, were preserved in 2015 as part of the Mount Rose Preserve, a 400-acre tract characterized by its forests and meadows. The Mount Rose Preserve is owned and managed by New Jersey Conservation Foundation, Friends of Hopewell Valley Open Space, Hopewell Township, and Mercer County (Friends of Hopewell Valley Open Space [FoHVOS] 2020).

3.4 Summary of Previous Archaeological Research

Registered Archaeological Sites

An examination of standard references (Cross 1941; Skinner and Schrabisch 1913, Spier 1915) and site files at the NJSM and NJHPO indicated that one registered archaeological site is located within one mile of the APE-Archaeology. The Mount Rose Distillery (28-Me-259) site is located approximately 3,200 feet northwest of the APE-Archaeology. The site is a nineteenth-century distillery complex with glass, ceramic, wood, and metal artifacts having been recovered from surface collection. An extant brick structure is located in the western end of the site, with nine other surface features representing former structures. The site was determined to be eligible for the NRHP. The APE-Archaeology is not within an archaeological site grid.

Previous Cultural Resources Surveys

A good faith effort to review nearby survey data on file at the RGA headquarters and LUCY indicated that three previous archaeological surveys have been completed within, adjacent to, or within one-half mile of the APE-Archaeology.

In 2008, Richard Grubb & Associates, Inc. performed a Phase I archaeological survey and visual assessment survey for a proposed wireless communication tower, north of the current APE-Archaeology along Pennington-Rocky Hill Road. The APE-Direct Effects was assessed with low potential for historic resources but a moderate to high potential for prehistoric resources. A total of 20 STPs was excavated during the Phase IB archaeological testing and no potentially significant cultural resources were identified. Further archaeological work was not recommended. One resource within a one-half-mile radius was included within the APE-Visual Effects for the project, and it was determined that the characteristics of the property would not be adversely affected by the construction of the lattice tower (Richard Grubb & Associates, Inc. 2008).

Richard Grubb & Associates, Inc. performed a Phase IA historical and archaeological survey for the proposed construction of a 4.5-mile water main extension, north of the current APE-Archaeology, along Pennington-Rocky Hill Road, Cherry Valley Road, Province Line Road, Frederic Court, and Drakes Corner Road in 2011. The project passed through the Mount Rose Historic District and lies adjacent to multiple historic properties and the Mount Rose Distillery Site (28-Me-259). Due to existing disturbances, no further survey was recommended (Richard Grubb & Associates, Inc. 2011).

In 2011, a broad-based cultural resources survey entitled *Crossroads of the American Revolution, National Heritage Area Management Plan*, detailed the Crossroads of the American Revolution's policies, guidelines, actions, and plans for cultural heritage programs to develop a better understanding of the American Revolution in New Jersey (Crossroads of the American Revolution National Heritage Area 2011).

National Register Files
No archaeological historic properties listed in the NJR or NRHP or eligible for listing in the NRHP are located within, adjacent to, or within one-half mile of the APE-Archaeology.

3.5 Summary of Previous Historic Architectural Research

Known Historic Properties
Background research conducted at the NJHPO and using LUCY did not identify any historic properties listed in the NJR and/or NRHP or previously determined historic properties eligible for listing in the NRHP within the APE-Architecture. Two properties adjacent to the southern portion of the APE-Architecture are individually eligible for listing in the NRHP: Hens Foot Corner/Terhune House at 105 Cleveland Road (SHPO Opinion: 6/23/1982) and Old Cleveland Farm at 130 Cleveland Road (SHPO Opinion: 6/23/1982).

Planning Surveys
A historic sites inventory compiled in 1984 for Hopewell Township surveyed one property within the APE-Architecture, the Gantz Farmstead (Heritage Studies 1984). A second property, the Bryant/Kinney/Walton Farmstead, is adjacent to the APE-Architecture.

The Gantz Farmstead at 330 Carter Road is located within the southwest portion of the APE-Architecture (Block 40, Lot 14.02) (Heritage Studies 1984). The property contains an early nineteenth-century farmhouse that was highly altered in the mid-twentieth century when the property was converted for use as a research facility by Western Electric. The authors of the survey did not recommend the Gantz Farmstead eligible for listing in the NRHP based on a lack of integrity (Heritage Studies 1984: Inventory # 1106-40-14). The resource is discussed in further detail in Section 5.1.

The Bryant/Kinney/Walton Farmstead at 370 Carter Road (Block 40, Lot 3) is adjacent to the north end of the APE-Architecture (Heritage Studies 1984). The farmstead dates from the first half of the nineteenth century and contains a house, a chicken coop/shed constructed circa 1940, and a one-story frame garage constructed circa 1960. The authors of the survey did not recommend the Bryant/Kinney/Walton Farmstead eligible for listing in the NRHP due to its alterations and lack of architectural or historical interest (Heritage Studies 1984: Inventory # 1106-40-3). As the property is not located within the APE-Architecture, it was not studied in further detail as a part of this survey.

Regulatory Surveys
A review of LUCY and files available at the RGA home office identified two regulatory surveys with historic architectural components previously conducted within or proximate to the APE-Architecture (Richard Grubb & Associates, Inc. 2008; Richard Grubb & Associates, Inc. 2011). Neither of the surveys identified historic architectural resources within the APE-Architecture for the current project.

Historic Preservation Element of Master Plan
Hopewell Township's Master Plan does include a Historic Preservation Element that emphasizes the preservation, rehabilitation, and adaptive reuse of historic buildings and structures while preserving the building's, and therefore the township's, historic character (Hopewell Township Planning Board 2002). While the master plan does not identify any specific historic resources, Hopewell Township does have a separate document of guidelines for preserving historic buildings and landscapes in the township (Hawkins and O'Donnell, 2005).

The 2005 *Design Guidelines*, prepared for the Historic Commission of Hopewell Township, identifies prominent architectural styles extant in the township and buildings that exemplify those styles (Hawkins and O'Donnell, 2005). Hopewell Township's historic settings are also considered in the design guidelines, specifically mentioning the farm complexes and crossroads villages, such as Mount Rose to the north of the APE-Architecture (Hawkins and O'Donnell, 2005). In addition to identifying characteristics of local resources, the guidelines also provide recommendations for additions to existing buildings, new construction in keeping with the historic setting, building relocation, and the construction and demolition of secondary structures. The guidelines do not identify any individual buildings within the APE-Architecture.

New Jersey Historic Bridge Survey

The New Jersey Historic Bridge Survey did not identify any historic bridges within the APE-Architecture (A.G. Lichtenstein & Associates, Inc. 1994).

New Jersey Historic Roadway Study

The New Jersey Historic Roadway Study did not identify any historic roadways within the APE-Architecture (KSK Architects Planners Historians, Inc. 2011).

4.0 PHASE I ARCHAEOLOGICAL SURVEY

4.1 Pedestrian Reconnaissance

A pedestrian survey of the APE-Archaeology was conducted on March 9, 2021, by Matthew Craig. General overview photographs of the APE-Archaeology can be viewed in Plates 4.1-4.10 and are plotted on Figures 4.1a-4.1d. Visual inspection of the APE-Archaeology identified no historic or prehistoric artifacts on the ground surface.

The northwest terminus of the APE-Archaeology begins at the east side of Carter Road. Gas utilities, disturbances from the road construction, moderate undergrowth, and a paved walkway mark the intersection of the APE-Archaeology with Carter Road (see Plate 4.1). The APE-Archaeology continues east of Carter Road through a thick new-growth forest before the APE-Archaeology changes direction to the north into an area of wetlands (see Plates 4.2 and 4.3). The wetlands are within a mostly open area with low underbrush on the ground surface and standing water before the APE-Archaeology continues north outside of the wetlands where the vegetation becomes thicker (see Plate 4.3). The APE-Archaeology then runs parallel to the existing utility corridor in a general southeast direction (see Plate 4.4-4.9). The APE-Archaeology is relatively flat throughout the utility easement and the vegetation along the utility easement is typically thick with undergrowth, such as brambles (see Plates 4.4-4.6). As the APE-Archaeology continues in a southeast direction, the APE-Archaeology encounters Cleveland Brook, its tributaries, and associated wetlands. The existing utility corridor and access road were previously built up a few feet above Cleveland Brook, its tributaries, and wetlands (see Plates 4.7-4.9). As the APE-Archaeology follows a southern direction, the APE-Archaeology continues away from the utility corridor and access road. The APE-Archaeology runs through an open field of wetlands before reaching Cleveland Road at its southern terminus (see Plate 4.10).

4.2 Assessment of Archaeological Sensitivity

Archaeological sensitivity refers to the potential of the APE-Archaeology to contain undocumented historic and prehistoric archaeological resources. In general, prehistoric site sensitivity takes into account landscape characteristics within or near the APE-Archaeology that are associated with documented prehistoric sites in the region and locally. These variables can include topography, proximity to water and resource catchment areas over time, soil characteristics, proximity to documented Native American trails or other avenues of local and regional communication and exchange (navigable waterways), presence of natural landscape features associated with ceremonial practices (prominent ridges or hilltops), and proximity to lithic or clay source areas. Historic site sensitivity, in general, accounts for the relationship of the APE-Archaeology to local community development over time; historic transportation routes (roads, railroads, canals, rivers, etc.); the documentary record of residential, commercial, and institutional buildings; and proximity to target historic resource areas (i.e., fall lines on rivers and streams where mills were established, quarry locations, etc.). Sensitivity is ranked as high, moderate, or low based on the correlation of a location with these favorable environmental characteristics and settlement pattern factors.

Prehistoric Archaeological Sensitivity

Archaeological studies of prehistoric settlement patterns in New Jersey indicate that well-drained soils near perennial water sources and wetlands are particularly sensitive for prehistoric archaeological sites (Cavallo and Mounier 1982; Chesler 1982; Grossman-Bailey 2001:136; Kinsey 1972; Kraft 1986, 2001; Ranere and Hansell 1985, 1987; Walwer and Pagoulatos 1990). Sites are also found on drainage divides and upland areas located further from water bodies, though less frequently than in areas nearer water (Mounier 1998). Other variables influencing prehistoric site location include soil properties, level topography, historically-documented trails, and exploitable subsistence or technological resources (Cavallo and Mounier 1982; Hasenstab 1991; Pagoulatos and Walwer 1991).

The APE-Archaeology is situated on generally flat terrain transected by Cleveland Brook and associated wetlands. Soils within the APE-Archaeology are characterized by well-drained Lawrenceville and Mount Lucas sit loams (LDXB, LDXB2, and LDXC2) covering the majority of the APE-Archaeology, moderately well-drained Readington and Abbottstown silt loams (REFB), and poorly-drained Doylestown and Reaville variant silt loams (DOZA), Reaville silt loam (RehA), and Watchung silt loam (WasA) (see Figure 3.2).

No prehistoric sites have been recorded within a one-mile radius of the APE-Archaeology. Given that the nearest water source is within the APE-Archaeology, the APE-Archaeology is assessed with high prehistoric archaeological sensitivity.

Historic Archaeological Sensitivity

Historic archaeological sensitivity, which is based on models of Colonial, Federal, and Early Industrial period land uses, is ranked as high near documented historic occupation and within 300 feet of early transportation routes and as low in areas with little record of historic land development. The presence of standing historic structures indicates a high probability for associated historic archaeological sites. Information obtained from cartographic evidence also contributes to assessments of historic archaeological sensitivity. While early historic maps do not depict historic structures with accuracy, nineteenth-century maps often record details of settlement pattern, ownership and occupation. From an environmental perspective, the factors contributing to prehistoric archaeological sensitivity often apply to early historic archaeological sensitivity as well. The likelihood for historic archaeological resources to exist within an APE-Archaeology is high in areas that will be directly impacted by ground disturbance and are in proximity to historic houses and outbuildings or in areas near early roads.

A review of early nineteenth- through twentieth-century historic-period maps and atlases indicated that Carter Road was established by 1833 (see Figure 3.3). By 1849, a structure owned by R. Bryant was mapped within the APE-Archaeology in the northern portion of the proposed trail (see Figure 3.5; Otley and Keily 1849). The structure owned by R. Bryant does not appear in the 1875 map of the area. A second structure was mapped within the APE-Archaeology by 1875 and was owned by E. Watton (see Figure 3.6; Everts and Stewart 1875). The E. Walton structure does not appear within the APE-Archaeology by 1918 (see Figure 3.7; Mueller 1918). Aerial imagery from the twentieth century indicated that the APE-Archaeology was within farmland and forested areas until a utility easement was constructed in the mid- to late twentieth century (NETR 1931, 1953, 1963, 1970, 1979). Based on the background research, a review of historic maps and documentary resources, and the proximity of map-documented mid-nineteenth-century structures, portions of the APE-Archaeology within 300 feet from the documented structures are assessed with high sensitivity for historic archaeological resources. All other portions of the APE-Archaeology are assessed with low sensitivity for historic archaeological resources.

4.3 Archaeological Testing

Fieldwork for the Phase I archaeological survey was completed on March 9 and 10, 2021, and included subsurface testing through the excavation of 97 STPs within the APE-Archaeology (see Figures 4.1a-4.1d). A total of four historic-period artifacts was recovered. No prehistoric artifacts were recovered. No cultural features were encountered.

Subsurface Testing

A total of 102 STPs was plotted within the APE-Archaeology on a 50-foot linear grid, along the alignment of the proposed trail. Thirteen of the originally plotted STPs were not excavated due to the presence of underground utilities or falling within wetlands. Eight additional bracket STPs were excavated at 5-foot linear intervals to augment the subsurface survey near STPs that contained retained historic artifacts. Therefore, a total of 97 STPs were excavated within the APE-Archaeology (see Figures 4.1a-4.1d; see Appendix D). The four historic-period artifacts were recovered from two STPs.

In the northwest of the APE-Archaeology, where the APE-Archaeology meets with Carter Road and goes through an area of woods and wetlands before connecting to the existing utility easement, a total of 15 STPs were plotted within this area (see Figure 4.1a). Five of the STPs in this portion of the APE-Archaeology were not excavated due to wetlands and one STP was not excavated due to a gas utility line that runs along the eastern side of Carter Road. A representative STP soil profile from this area, STP 5, consists of a 0.9-foot dark grayish brown (10YR 4/2) silt loam Ap-horizon (plowzone) with roots and 20 percent rocks capping a yellowish brown (10YR 5/4) silty clay loam subsoil (B-horizon) with iron oxide staining, roots, and 10 percent rocks (see Appendix D). The B-horizon continued for 0.4 feet below ground surface before the STP was stopped due to water.

The southeast-oriented section of the APE-Archaeology extends through a utility corridor. Sixty-eight STPs were plotted in the utility corridor, of which STPs 22 and 51 yielded historic artifacts. In this area, the vast majority of STPs contained natural stratigraphy. From STP 16 to STP 52, only two STPs encountered modern fill horizons. A representative soil profile for this area, in STP 26, included a 0.8-foot thick dark yellowish brown (10YR 4/4) silt loam Ap-horizon with roots and 30 percent rocks., followed by a 1.2-foot thick B-horizon consisting of a yellowish brown (10YR 5/6) silt loam with 40 percent rocks. This STP was excavated to 2.0 feet below ground surface before encountering bedrock and water (see Appendix D).

Southeast of STP 52, the APE-Archaeology continues to run along the existing utility line and crosses several wetlands associated with Cleveland Brook. In this portion of the APE-Archaeology, STPs 53 to 82 encountered modern fill layers with dense, large rocks that could not be penetrated. Many of the STPs encountered only one modern fill level before being stopped due to rocks or water. Shovel Test Pit 56 had a 1.0-foot fill horizon that was described as a light olive brown (2.5Y 5/6) mottled with a brownish yellow (10YR 6/6) silty clay loam with 10 percent rocks. A soil described as a buried plow-zone (Apb-horizon) was found beneath the first fill stratum and was described as a reddish brown (5YR 5/4) silty clay loam with 40 percent rocks. The STP was terminated due to a large rock impasse (see Appendix D). This string of tests (STPs 53-82) correlates with recent prior disturbance for berm construction associated with an access road through the wetlands.

The final portion of the APE-Archaeology falls within an open field that has pockets of wetlands. A total of 19 STPs (STPs 84-102) was excavated in this portion of the APE-Archaeology. Six STPs were not excavated due to falling within areas of wetlands (see Figure 4.1d). A typical soil profile for this area of the APE-Archaeology included a 1.0-foot Ap-horizon described as a yellowish brown (10YR 5/4) silty clay loam with 10 percent rocks overlying very pale brown (10YR 7/3) mottled with yellowish brown (10YR 5/6) B-horizon. The excavation within the STPs was stopped once it became inundated with water (see Appendix D). In some cases, the subsoil soil was separated into two distinct strata, designated as the B1- and B2-horizons, consisting of a light brownish gray (10YR 6/2) mottled with yellowish brown (10YR 5.6) clay loam, overlying a brown (7.5YR 4/3) clay loam. Beneath these two B-horizons, an olive brown (2.5Y 4/3) sandy clay loam with decaying bedrock, BC-horizon was encountered at 1.8 feet below ground surface (see Appendix D).

4.4 Discussion of Findings

A total of four artifacts that span circa 1820 to the present was recovered from two STPs (see Appendix E). Post-mid-twentieth-century artifacts found were noted and discarded and represent a mix of modern bottle glass and plastic. Additional STPs placed at 5-foot intervals around select positive STPs (STPs 22 and 51) did not yield additional historic artifacts. A sherd of yellowware was recovered from the Ap-horizon in STP 22 (see Appendices D and E). According to an 1875 historic map, STP 22 was located near a structure owned by E. Watton (Everts and Stewart 1875). Similarly, the sherds of whiteware found in STP 51 were recovered near a former structure owned by R. Bryant as indicated by the 1849 historic map (Otley and Keily 1849). With none of the judgmental STPs around the positive STPs, the artifacts found do not represent an archaeological site and are not considered to represent significant archaeological resources.

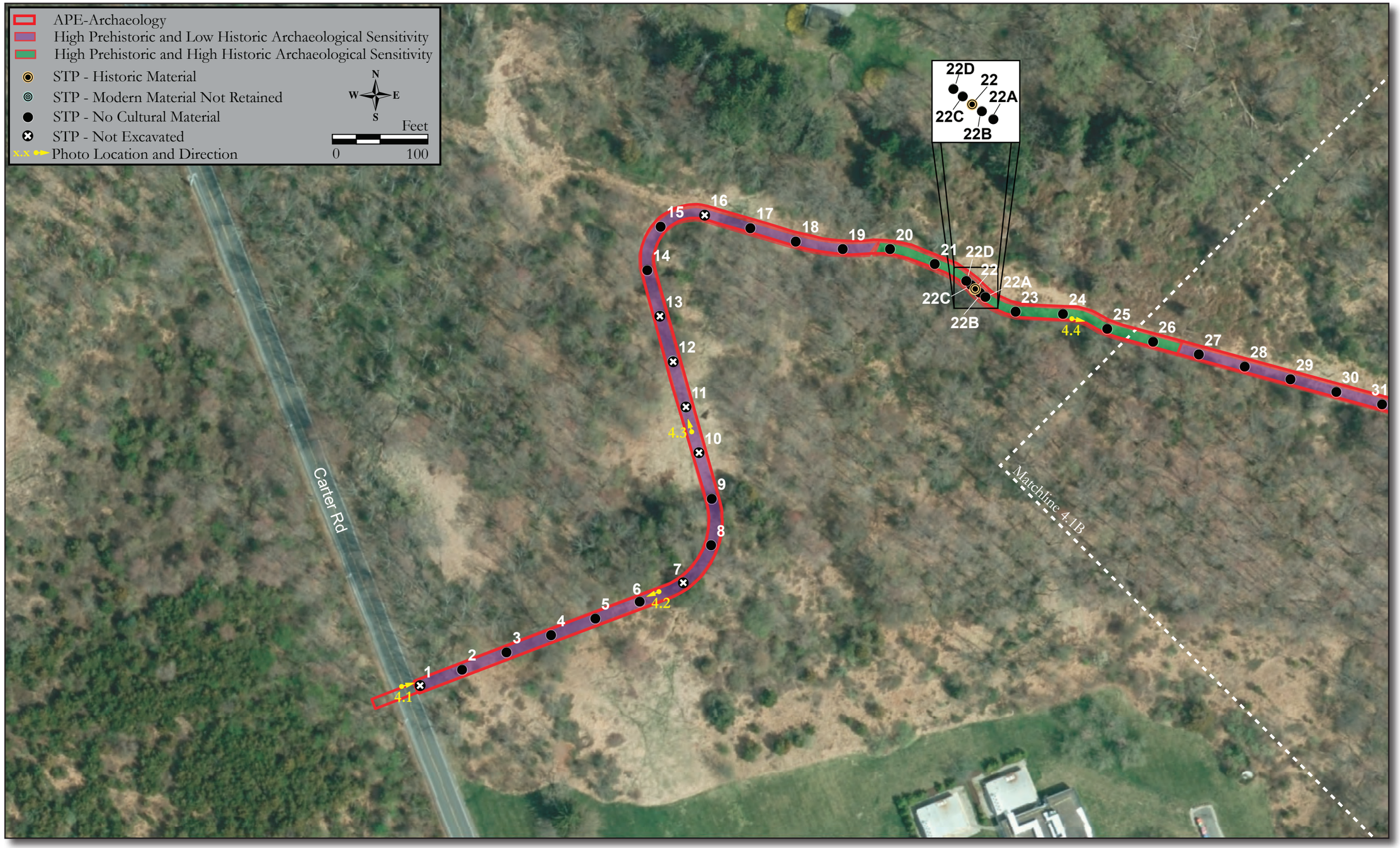

Figure 4.1a: Aerial photograph showing the APE-Archaeology, areas of archaeological sensitivity, STP locations and results, and photograph locations and directions (NJGIS Digital Orthographic Imagery 2015).

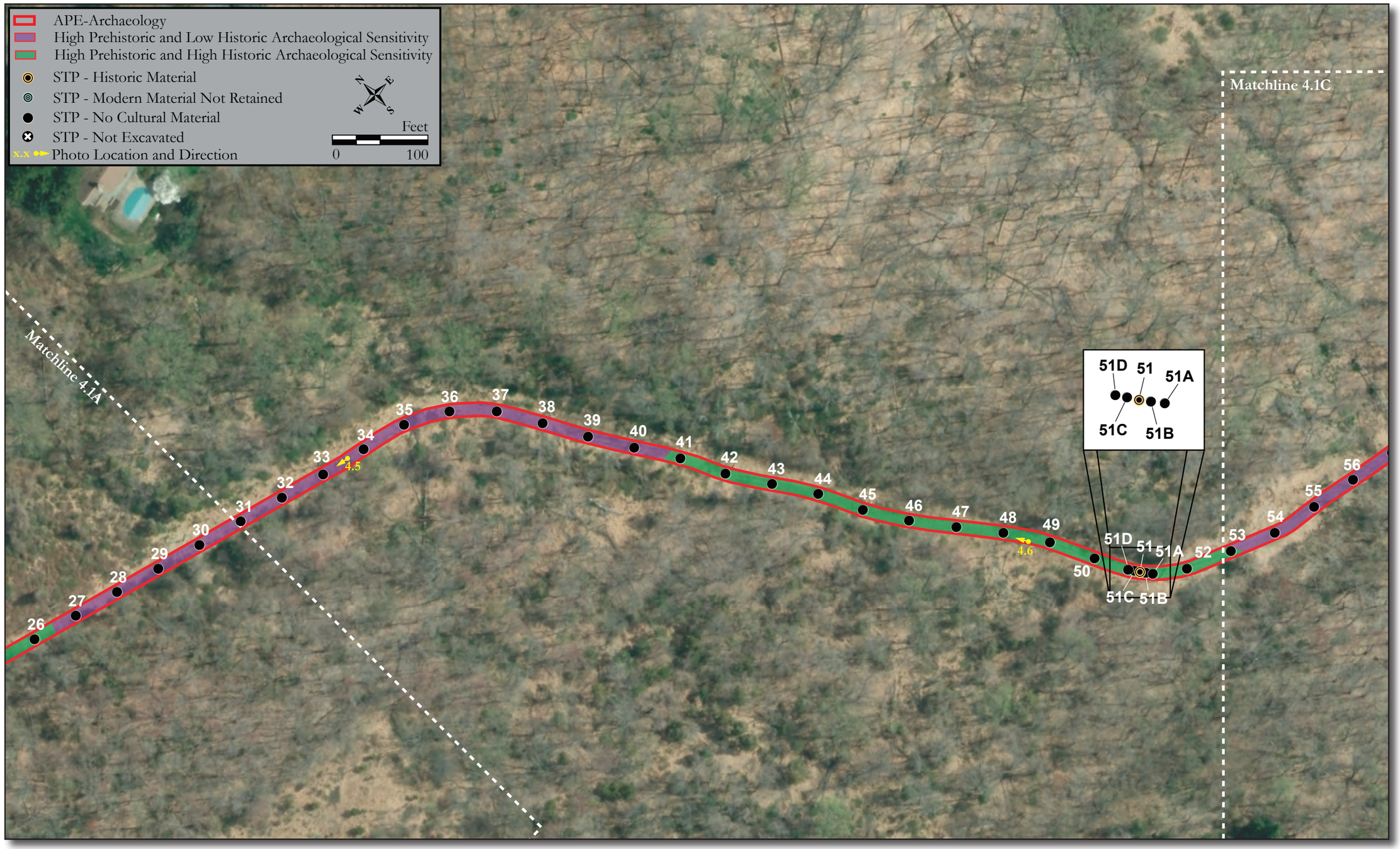

Figure 4.1b: Aerial photograph showing the APE-Archaeology, areas of archaeological sensitivity, STP locations and results, and photograph locations and directions (NJGIS Digital Orthographic Imagery 2015).

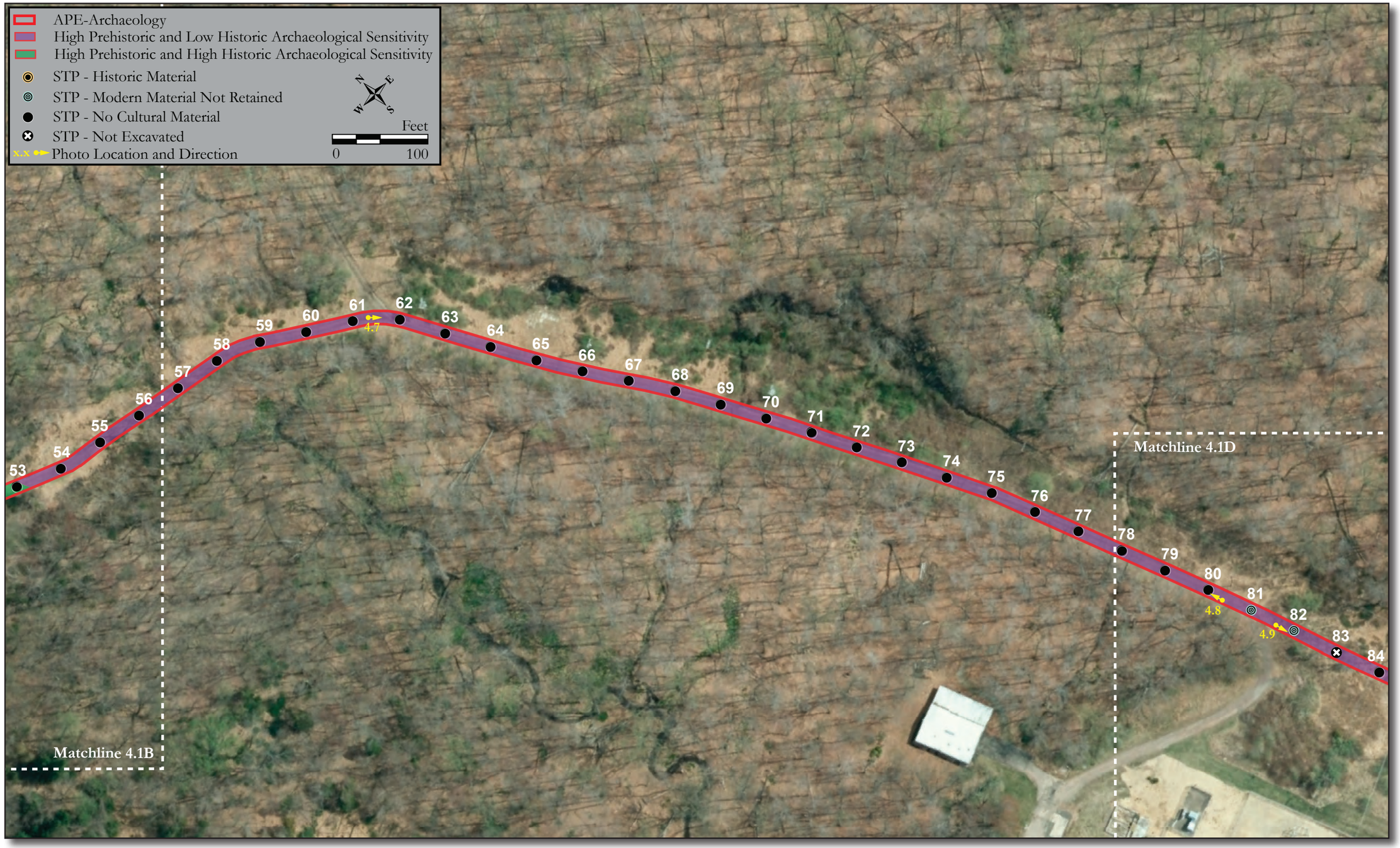

Figure 4.1c: Aerial photograph showing the APE-Archaeology, areas of archaeological sensitivity, STP locations and results, and photograph locations and directions (NJGIS Digital Orthographic Imagery 2015).

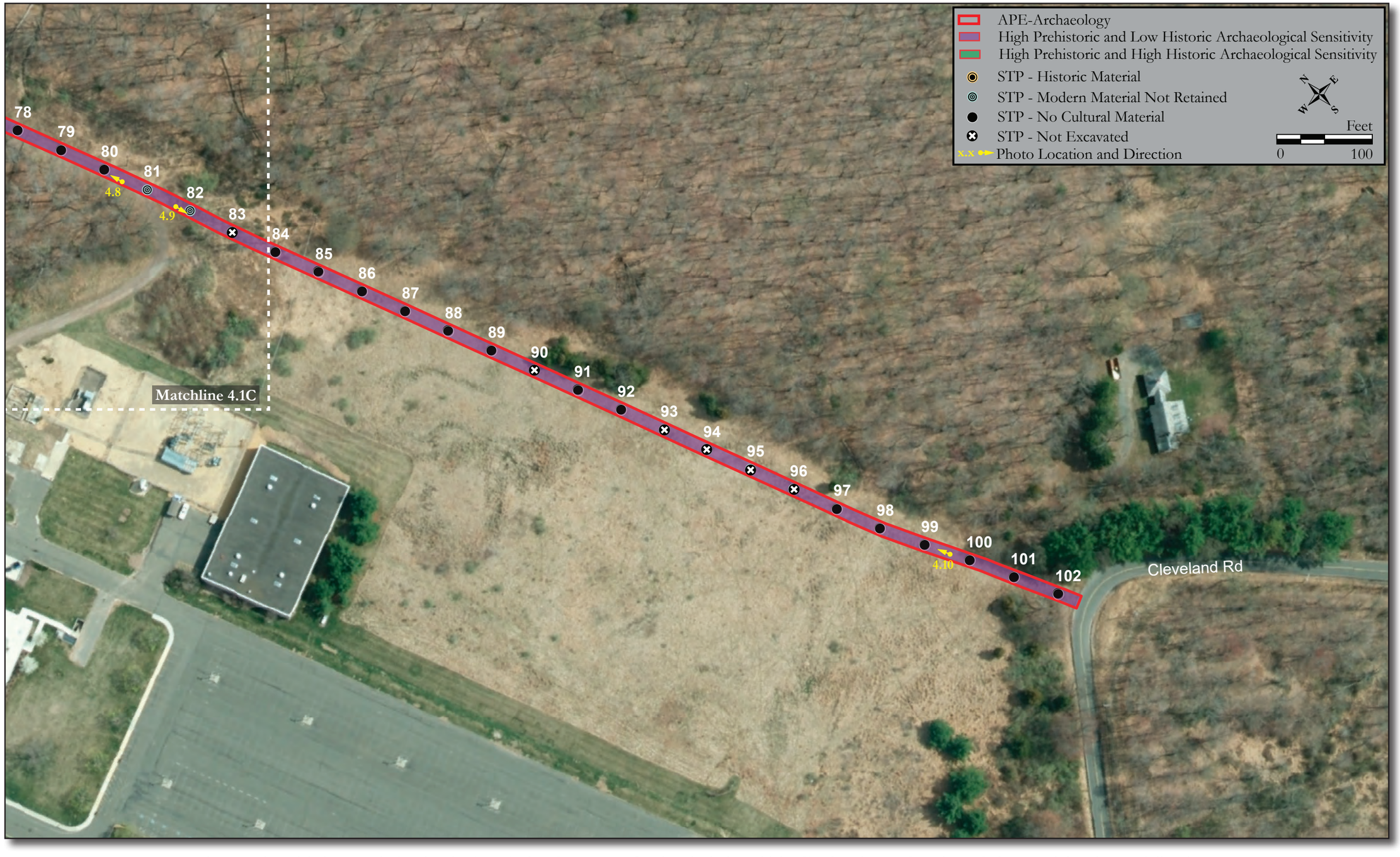

Figure 4.1d: Aerial photograph showing the APE-Archaeology, areas of archaeological sensitivity, STP locations and results, and photograph locations and directions (NJGIS Digital Orthographic Imagery 2015).

Plate 4.1: Overview of the APE-Archaeology near Carter Road.

Photo view: East

Photographer: Matthew Craig

Date: March 9, 2021

Plate 4.2: Overview of a wooded area in the APE-Archaeology.

Photo view: West

Photographer: Matthew Craig

Date: March 9, 2021

Plate 4.3: Overview of wetlands in the northern portion of the APE-Archaeology.

Photo view: North

Photographer: Matthew Craig

Date: March 9, 2021

Plate 4.4: Overview of the section of the APE-Archaeology running parallel to an existing utility corridor.

Photo view: Southeast

Photographer: Matthew Craig

Date: March 9, 2021

Plate 4.5: Overview of thick bramble bushes within the APE-Archaeology.

Photo view: Northwest

Photographer: Matthew Craig

Date: March 9, 2021

Plate 4.6: Overview of the APE-Archaeology along an existing utility corridor.

Photo view: North

Photographer: Matthew Craig

Date: March 9, 2021

Plate 4.7: Overview of the APE-Archaeology and an access road.

Photo view: South

Photographer: Matthew Craig

Date: March 9, 2021

Plate 4.8: Overview of the APE-Archaeology along a built-up access road and utility corridor adjacent to wetlands.

Photo view: North

Photographer: Matthew Craig

Date: March 9, 2021

Plate 4.9: Overview of a wetlands area and the end of the utility corridor within the APE-Archaeology.

Photo view: South

Photographer: Matthew Craig

Date: March 9, 2021

Plate 4.10: Overview of an open field within the APE-Archaeology close to Cleveland Road.

Photo view: North

Photographer: Matthew Craig

Date: March 9, 2021

5.0 INTENSIVE-LEVEL HISTORIC ARCHITECTURAL SURVEY

5.1 Survey of Historic Architectural Resources

Fieldwork for the Intensive-level historic architectural survey was conducted on January 29, 2021, and consisted of an examination of historic resources more than 50 years of age within the APE-Architecture. Two resources were identified within the APE-Architecture: two mid-twentieth-century industrial complexes along Carter Road and a mid-twentieth-century residence at 124 Cleveland Road (Figure 5.1; Plates 5.1-5.8). Intensive-level historic architectural survey forms were completed for the two resources and are located in Appendix F. The resources are discussed in greater detail below.

330-350 Carter Road (RGA 1)
The former Western Electric Research and Education Complex at 330 and 350 Carter Road is one of many industrial complexes constructed in Mercer County during the early 1960s. Originally a farmstead owned by the Gantz family, the farmhouse became a research facility for Western Electric in the late 1950s. Built after the devastation of multiple wars, Western Electric set out to build a self-sustaining complex that could serve as a safehouse during any future national conflicts. After operating out of the farmhouse for the first few years, Western Electric began to construct various other buildings and structures on the property including two research buildings, a substation, a maintenance building, a water treatment facility, and a larger driveway carried by a concrete slab bridge. Together these buildings comprised the Western Electric Engineering Research Center, the first research laboratory in the world devoted entirely to manufacturing technology. In 1969, Western Electric expanded the campus with the opening of a Corporate Education Center to the north of the research center along Carter Road. The education center included the Education Building, located at present-day 350 Carter Road, and the Residence Hall, located on the opposite side of Carter Road and no longer extant. The campus was used by Western Electric to educate their workers while developing various innovations in manufacturing technology.

The former Western Electric Research and Education Complex is recommended not eligible for listing in the NRHP. Architecturally, the complex is a highly altered example of a mid-twentieth-century industrial complex. Extensive renovations to the exterior of both research buildings, including the infill of the first-story cantilever and replacement of all cladding materials, windows, and doors, has altered the buildings beyond recognition. Together with extensive interior alterations to the Education Building and the demolition of the Residence Hall, the complex has diminished integrity of materials, design, workmanship, feeling, and association. Although the Engineering Research Center is significant as the first of its kind in the world and for its associations with Western Electric, the complex does not retain sufficient integrity to convey its significance. Research did not uncover associations with significant individuals. For these reasons, the Western Electric Research and Education Complex is recommended not eligible for listing in the NRHP under Criteria A, B, or C.

The former Gantz Farmhouse at 330 Carter Road is also recommended not eligible for listing in the NRHP. The early nineteenth-century farmhouse has been highly altered over time, primarily due to its conversion to a laboratory and education building in the mid-twentieth century. The replacement of windows and cladding materials, along with the numerous large additions constructed onto the farmhouse, have diminished the building's integrity of design, materials, and workmanship. Research did not uncover associations with significant persons or events. As such, the Gantz Farmhouse is recommended not eligible for listing in the NRHP under Criteria A, B, or C.

124 Cleveland Road (RGA 2)
The dwelling at 124 Cleveland Road is a well-preserved example of a mid-twentieth-century Colonial Revival residence in Mercer County. Built for the Clark family by Dean Mathey, the subject building has a porch addition that was designed by the locally recognized architect

Rolf Bauhan. Bauhan is known to have designed over 70 buildings in the area, many of which are still standing, including the better-known Manor House situated on the campus of the Princeton Academy of the Sacred Heart and the Terrace Club at Princeton University. Research could not confirm whether Bauhan was the architect for the overall house design, though it is clear he designed the porch addition. Since its construction, the dwelling appears to have undergone minimal exterior alterations.

The dwelling at 124 Cleveland Road is recommended not eligible for listing in the NRHP. Architecturally, the dwelling appears to retain its integrity of design, materials, and workmanship; however, it is a common example of a mid-twentieth century Colonial Revival dwelling, and evidence could not be found to confirm the building as the work of a master. Further, there are better-preserved and more prominent examples of Bauhan's work found throughout the Princeton area that have a confirmed association with the architect. Research did not uncover that the subject residence is associated with significant historic events or individuals. For these reasons, the dwelling at 124 Cleveland Road is recommended not eligible for listing in the NRHP under Criteria A, B, or C.

5.2 Assessment of Effects

The proposed project involves the construction of the Mount Rose segment of the Lawrence Hopewell Trail in Hopewell Township. Primarily following an existing PSE&G/AT&T utility easement and access road, the path will measure a minimum of 10 feet wide and extend approximately 5,200 feet long. The Intensive-level historic architectural survey found that there are no properties listed in the NJR and/or NRHP or eligible for listing in the NRHP within the APE-Architecture. Therefore, the proposed project will have no effect on historic properties.

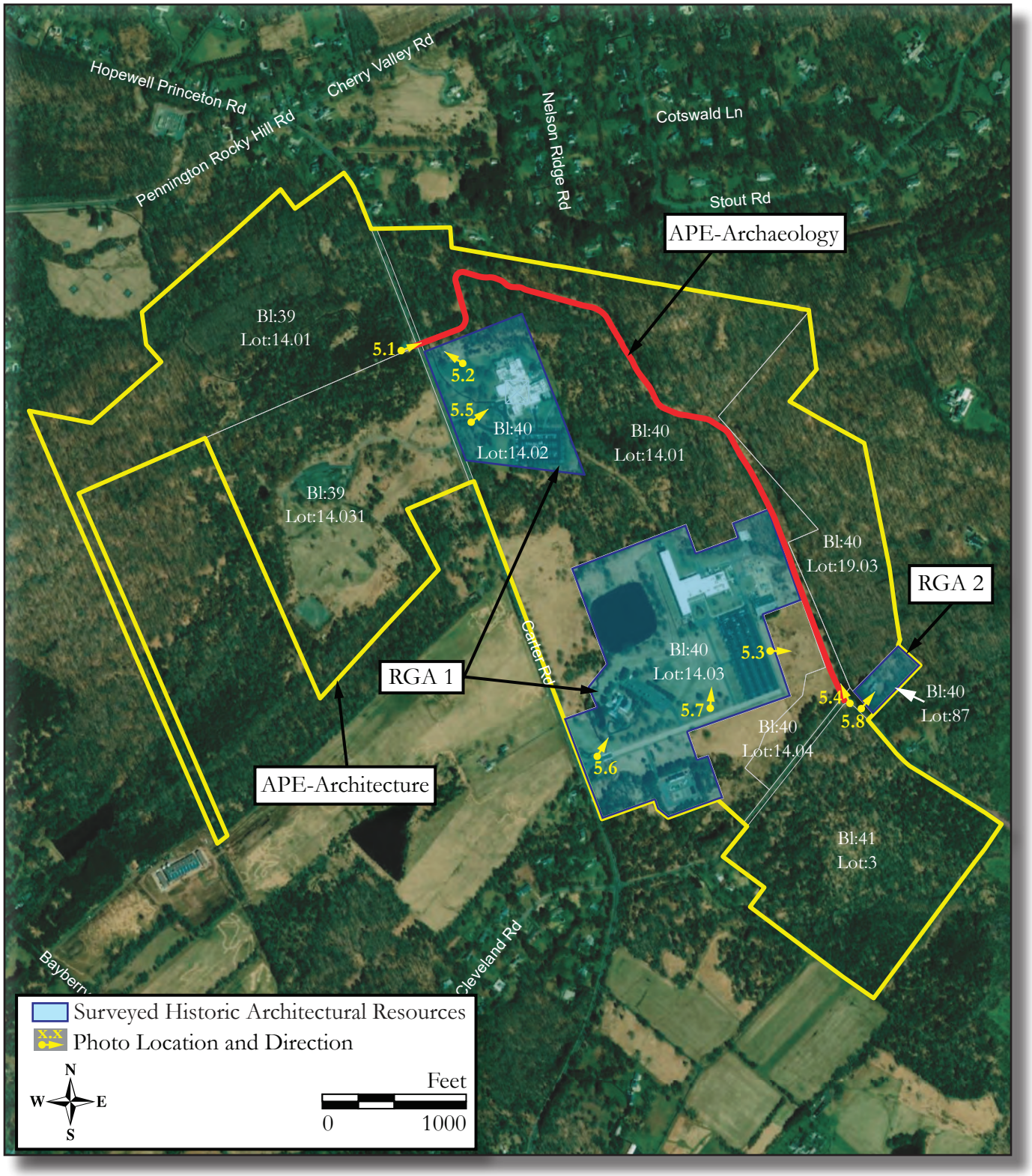

Figure 5.1: Aerial photograph showing the APE-Architecture, surveyed historic architectural resources and photograph locations and directions
(NJGIS Digital Orthographic Imagery 2015).

Plate 5.1: View showing the northwest terminus of the proposed Lawrence Hopewell Trail.

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2020

Plate 5.2: View from 350 Carter Road (RGA 1) looking towards the route of the proposed Lawrence Hopewell Trail.

Photo view: Northwest

Photographer: Lauren Dunkle

Date: January 28, 2020

Plate 5.3: View from 330 Carter Road (RGA 1) looking towards the route of the proposed Lawrence Hopewell Trail.

Photo view: East

Photographer: Lauren Dunkle

Date: January 28, 2020

Plate 5.4: View showing the southeast terminus of the proposed Lawrence Hopewell Trail, as viewed from Cleveland Road.

Photo view: Northwest

Photographer: Lauren Dunkle

Date: January 28, 2020

Plate 5.5: View of the building at 350 Carter Road (RGA 1) from Carter Road.

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2020

Plate 5.6: View of the complex at 330 Carter Road (RGA 1) from Carter Road.

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2020

Plate 5.7: View of 330 Carter Road (RGA 1) from the complex's driveway.

Photo view: North

Photographer: Lauren Dunkle

Date: January 28, 2020

Plate 5.8: View of 124 Cleveland Road (RGA 2) from Cleveland Road.

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2020

6.0 CONCLUSIONS AND RECOMMENDATIONS

Richard Grubb & Associates, Inc. (RGA) completed a Cultural Resources Survey on behalf of Greenman-Pedersen, Inc. (GPI) for the New Jersey Department of Transportation, Bureau of Environmental Program Resources (NJDOT-BEPR) for the construction of the Mount Rose (Carter Road to Cleveland Road) segment of the Lawrence Hopewell Trail in Hopewell Township, Mercer County, New Jersey. The Cultural Resources Survey included a Phase I archaeological survey and an Intensive-level historic architectural survey.

No previously recorded archaeological sites are present in the Area of Potential Effects for Archaeology (APE-Archaeology). Subsurface testing consisted of the excavation of 97 shovel test pits (STPs). Two STPs collectively yielded four domestic artifacts ranging in manufacture date from the early nineteenth century through the twentieth century. The artifacts found are isolated historic refuse likely associated with the nineteenth-century households that formerly stood nearby and were recovered in extremely low density. The artifacts found are not considered to be indicative of a significant archaeological resource due to their isolated and low-density nature. No prehistoric artifacts or cultural features were found. No further archaeological survey is recommended.

The Intensive-level historic architectural survey concluded that there are no previously documented historic properties listed in the New Jersey Register (NJR) and the National Register of Historic Places (NRHP) or determined eligible for listing in the NRHP within the APE for Historic Architecture (APE-Architecture). Two resources of more than 50 years of age were identified within the APE-Architecture: a mid-twentieth-century industrial complex and a mid-twentieth-century dwelling. As a result of the Intensive-level historic architectural survey, neither of the surveyed resources were recommended eligible for listing in the NRHP due to a lack of the requisite historical and architectural significance and integrity. No further historic architectural survey is recommended.

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APPENDIX A: PROJECT DOCUMENTS

Lynn Alpert

From: Lynn Alpert
Sent: Friday, March 5, 2021 1:06 PM
To: Lynn Alpert
Subject: FW: HPO Project #21-0476: Mount Rose Segment of Lawrence/Hopewell Trail, Hopewell Twp, Mercer County

From: Marcopul, Kate <Kate.Marcopul@dep.nj.gov>
Sent: Friday, March 5, 2021 12:04 PM
To: Rappleye, Lauralee <Lauralee.Rappleye@dot.nj.gov>
Cc: Baratta, Meghan <Meghan.Baratta@dep.nj.gov>; Thivierge, Lindsay <Lindsay.Thivierge@dep.nj.gov>
Subject: HPO Project #21-0476: Mount Rose Segment of Lawrence/Hopewell Trail, Hopewell Twp, Mercer County

This e-mail serves as the official correspondence of the New Jersey Historic Preservation Office as we switch to a temporary remote work environment in response to the ongoing novel coronavirus (COVID-19) outbreak

HPO Project #21-0476-1
HPO-C2021-027

Lauralee Rappleye
Acting Manager
New Jersey Department of Transportation
Bureau of Environmental Program Resources
PO Box 600
Trenton, NJ 08625

Dear Ms. Rappleye,

As Deputy State Historic Preservation Officer for New Jersey, in accordance with 36 CFR Part 800: Protection of Historic Properties, as published in the Federal Register on December 12, 2000 (65 FR 77725-77739) and amended on July 6, 2004 (69 FR 40553-40555), I am providing consultation comments on the following proposed undertaking:

Mercer County, Hopewell Township
Proposed Mt. Rose Segment of Lawrence Hopewell Trail along Carter Road
U.S. Department of Transportation - Federal Highway Administration
New Jersey Department of Transportation (NJDOT)

Thank you for providing the Historic Preservation Office (HPO) with the opportunity to comment on the potential for the above-referenced undertaking to affect historic properties. The comments below are in response to your letter and supporting documentation received by the HPO on February 3, 2021.

800.3 Initiation of the Section 106 Process

The proposed undertaking involves the reconstruction of approximately 200 feet of an existing trail and the construction of a new trail extension along Carter Road between Cleveland Road and Pennington Rocky Hill

Road/Cherry Valley Road in Hopewell Township. The new path will measure a minimum of 10 feet wide and will be approximately 5,200 feet in length. Much of the trail will be constructed in an existing utility easement and access road east of Carter Road. Portions of the trail will extend through wetlands and will utilize an existing access road. Upland portions of the trail will be constructed using porous asphalt pavement. The portion of the trail within the wetlands and wetlands buffer area will be constructed as a boardwalk (Figures 1 and 2). Drainage swales and basins are not proposed. Any stream crossing will be conducted by installing the trail over existing reinforced concrete pipe culverts. Should the existing pipe(s) need to be replaced, they will be replaced in- kind.

According to your letter, no previously identified historic resources presently listed in the New Jersey Register (NJR) and/or the National Register of Historic Places (NRHP) or eligible for the NRHP are located within the proposed APE-Architecture. There are three resources over 50 years of age located within the proposed APE-Architecture warranting architectural survey and evaluation according to NRHP guidelines. The resources include two mid-twentieth-century industrial complexes and a mid-twentieth-century residence. NJDOT proposes to survey these properties and determine potential impacts to archaeology.

The HPO concurs with the public involvement plan and the proposed delineation of the area of potential effects for architecture and archaeology as outlined in your February 2, 2021 letter.

Additional Comments:

Thank you again for the opportunity to review and comment on the proposed undertaking, we look forward to continuing consultation. Please reference the HPO project number **21-0476** in any future calls, emails, or written correspondence to help expedite your review and response. If you have any questions, please feel free to contact Lindsay Thivierge via email at lindsay.thivierge@dep.nj.gov.

Sincerely,

Katherine J. Marcopul, Ph.D., CPM
Administrator and
Deputy State Historic Preservation Officer
Historic Preservation Office
NJ Department of Environmental Protection
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KM/MMB/LT/VM

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APPENDIX B: QUALIFICATIONS OF THE PRINCIPAL INVESTIGATORS

CULTURAL RESOURCE CONSULTANTS

LAUREN A. DUNKLE
ARCHITECTURAL HISTORIAN (36 CFR 61)

YEARS OF EXPERIENCE:
With this firm:
2019-Present
With other firms: 1

EDUCATION:
MA 2019
Savannah College of Art and Design
Preservation Design

BS 2018
Philadelphia University
Architectural Studies

Professional Experience Summary:

Lauren A. Dunkle's experience includes historical research and writing, architectural surveys and analysis, and National Register nominations. Ms. Dunkle has worked on cultural resources surveys completed in accordance with Section 106 of the National Historic Preservation Act and other municipal and state cultural resource regulations. She has experience using the computer-aided mapping programs including ArcGIS and AutoCAD. Ms. Dunkle's educational and professional experience meet the qualifications set forth in the Secretary of Interior's Standards for an Architectural Historian [36 CFR 61].

Representative Project Experience:

Middlesex County River Road Improvements, Piscataway Township, Middlesex County, NJ (Sponsor: Middlesex County) Architectural Historian for various mitigation measures performed in connection with the proposed improvements of River Road, a contributing resource to the Road Up Raritan Historic District. Project tasks included historical research, composition of a written history, design consultation, and preparation of an interpretive sign. Research included visiting local repositories to review archival documents such as historic maps and photographs.

Burlington County Historic Smithville Pedestrian and Bicycle Mobility Enhancements and Traffic Calming Improvements Project, Dunham Lane to Powell Road, Southampton and Eastampton Townships, Burlington County, NJ (Sponsor: Burlington County) As Assistant Architectural Historian, researched and composed a site development history and historic context for multiple subject parcels located within Smithville as part of a Phase II archaeological survey performed in connection with Burlington County's Historic Smithville Pedestrian and Bicycle Mobility Enhancements and Traffic Calming Improvements Project at Dunham Lane to Powell Road. Primary document research included the review of deeds, wills, and probate record to reconstruct the ownership history and land use of the subject parcels from the early eighteenth century through the twenty-first century.

Clifton Broad North, LLC Arch Culvert, Former Hepburn Road over the Third River, City of Clifton, Passaic County, NJ (Sponsor: Clifton Broad North, LLC) Architectural Historian for the Historic American Engineering Record (HAER) recordation of the late-nineteenth century Hepburn Road Culvert (CBN LLL Arch Culvert) spanning Third River in the City of Clifton. The work was undertaken to comply with the conditions of a New Jersey Freshwater Wetlands Permit and as a mitigation measure in advance of its proposed replacement.

Wireless Collocation at 300 Broadway, City of Newark, Essex County, NJ (Sponsor: U.S. Cellular) Architectural Historian for a visual effects assessment for a proposed wireless collocation project proposed to be located on a mid-1920s commercial building at 300 Broadway in the City of Newark. Delineated the Area of Potential Effects for Visual Effects and assessed the potential National Register eligibility for the condominium building. Determined that no historic properties would be adversely affected by the undertaking.

CULTURAL RESOURCE CONSULTANTS

MATTHEW CRAIG

ARCHAEOLOGIST (36 CFR 61)

YEARS OF EXPERIENCE:
With this firm:
2015-Present
With other firms: 0

EDUCATION:
MA 2020
Monmouth University
Anthropology

BA 2014
Monmouth University
Anthropology

PROFESSIONAL TRAINING:

40-hour Health and Safety Training for Hazardous Waste Operations and Emergency Response (OSHA 29 CFR 1910.120), March 2017

PROFESSIONAL ORGANIZATIONS:
Archaeological Society of New Jersey

Professional Experience Summary:

Matthew Craig is an Archaeologist at RGA with experience conducting archaeological field investigations for Phase I, II and III archaeological projects throughout the Mid-Atlantic and Northeast regions. Mr. Craig's experience includes in-field and laboratory artifact analysis, processing, and cataloging, and report writing. He has worked on cultural resources surveys completed in accordance with Section 106 of the National Historic Preservation Act and other municipal and state cultural resource regulations. Mr. Craig's educational and professional background meet the qualifications set forth in the Secretary of Interior's Standards for Archaeologists [36 CFR 61].

Representative Project Experience:

Kuser Road, Block 2596, Lots 5 and 6 Phase IB, Hamilton Township, Mercer County, NJ (Sponsor: Lenco Farm LLC) Report Author and Field Director for a Phase IB survey for a proposed commercial development. The survey included the excavation of 348 shovel test pits throughout the Area of Potential Effects for Archaeology. One isolated pre-Contact artifact, a jasper flake fragment, was recovered. A total of 89 historic period artifacts were recovered that represented a mid-nineteenth to present rural farmstead, the Quigley farmstead site. Neither the pre-Contact isolate nor the nineteenth to twentieth century artifact scatter represent significant archaeological resources and no further archaeological survey was recommended.

2062 U.S. Route 322, Block 7, Lots 4.01 and 4.02 Phase IA, Woolwich Township, Gloucester County, NJ (Sponsor: DPIF3 NJ5 2062 Woolwich, LLC) Co-report writer for the Phase IA historical and archaeological survey to assess the archaeological sensitivity of a property for proposed warehouse development. Areas of archaeological and historical sensitivity were identified and delineated. This survey was performed in accordance with the archaeological guidelines of the NJ Historic Preservation Office and in compliance with the Freshwater Wetlands Protection Act (Section 7:7A).

Allegheny National Forest, Ash Remediation Project, Bradford, Corydon, Foster, Hamilton, Hamlin, and Lafayette Townships, McKean County and Mead Township, Warren County (U.S. Department of Agriculture [USDA] Forest Service) Co-Field Supervisor/Crew Chief for a Phase I heritage reconnaissance survey for the Ash Remediation Project conducted in 71 timber stands that collectively comprise 1,851 acres (749.25 hectares) of uplands east and south of the Allegheny Reservoir. Provided oversight for a systematic pedestrian reconnaissance to identify potential areas of Pre-Contact or historic habitation and subsurface testing in areas containing moderate to high sensitivity for heritage resources. As a result of the survey, no significant cultural resources were identified.

Yellowbrook Estates Project, Howell Township, Monmouth County, NJ (Sponsor: Private Developer) As Archaeologist/Research Assistant participated in the Phase II archaeological survey and artifact cataloging at the Herbert House Site (28-Mo-442), an historic archaeological resource dating from the mid-nineteenth and twentieth centuries. The goal of the Phase II archaeological survey, conducted in compliance with the Freshwater Wetlands Protection Act (Section 7:7A) was to evaluate the National Register eligibility of the site. The survey identified several cultural features, including possible subfloor storage pits dating from the nineteenth-century occupation of the site by Quaker farmer, Hance Herbert.

APPENDIX C: SUMMARY OF NATIONAL REGISTER CRITERIA

1. New Jersey and National Registers of Historic Places Criteria
2. Criteria of Adverse Effect

1. New Jersey and National Registers of Historic Places Criteria

Significant historic properties include districts, structures, objects, or sites that are at least 50 years of age and meet at least one National Register criterion. Criteria used in the evaluation process are specified in the Code of Federal Regulations, Title 36, Part 60, National Register of Historic Places (36 CFR 60.4). To be eligible for inclusion in the National Register of Historic Places, a historic property(s) must possess:

> the quality of significance in American History, architecture, archaeology, engineering, and culture [that] is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

a) that are associated with events that have made a significant contribution to the broad patterns of our history, or

b) that are associated with the lives of persons significant in our past, or

c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components lack individual distinction, or

d) that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

There are several criteria considerations. Ordinarily, cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register of Historic Places. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

a) a religious property deriving primary significance from architectural or artistic distinction or historical importance, or

b) a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event, or

c) a birthplace or grave of a historical figure of outstanding importance if there is no other appropriate site or building directly associated with his/her productive life, or

d) a cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events, or

e) a reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived, or

f) a property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own historic significance, or

g) a property achieving significance within the past 50 years if it is of exceptional importance. (36 CFR 60.4)

When conducting National Register evaluations, the physical characteristics and historic significance of the overall property are examined. While a property in its entirety may be considered eligible based on Criteria A, B, C, and/or D, specific data is also required for individual components therein based on date, function, history, and physical characteristics, and other information. Resources that do not relate in a significant way to the overall property may contribute if they independently meet the National Register criteria.

A contributing building, site, structure, or object adds to the historic architectural qualities, historic associations, or archeological values for which a property is significant because a) it was present during the period of significance, and possesses historic integrity reflecting its character at that time or is capable of yielding important information about the period, or b) it independently meets the National Register criteria. A non-contributing building, site, structure, or object does not add to the historic architectural qualities, historic associations, or archeological values for which a property is significant because a) it was not present during the period of significance, b) due to alterations, disturbances, additions, or other changes, it no longer possesses historic integrity reflecting its character at that time or is incapable of yielding important information about the period, or c) it does not independently meet the National Register criteria.

2. Criteria of Adverse Effect

Whenever a historic property may be affected by a proposed undertaking, Federal agency officials must assess whether the project constitutes an adverse effect on the historic property by applying the criteria of adverse effect. According to the Advisory Council on Historic Preservation, the criteria of adverse effect (36 CFR 800.5), is as follows:

> (1) An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that would qualify it for inclusion in the National Register, in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation for the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or cumulative.
>
> (2) Adverse effects on historic properties include, but are not limited to (36 CFR 800.5(a)(2)):
>
> i) Physical destruction of or damage to all or part of the property;
>
> ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;
>
> iii) Removal of the property from its historic location;
>
> iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;

v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;

vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and

vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

A finding of adverse effect or no adverse effect could occur based on the extent of alteration to a historic property, and the proposed treatment measures to mitigate the effects of a proposed undertaking. According to 36 CFR 800.5(3)(b):

> The agency official, in consultation with the SHPO/THPO, may propose a finding of no adverse effect when the undertaking's effects do not meet the criteria of § 800.5(a)(1) or the undertaking is modified or conditions are imposed, such as the subsequent review of plans for rehabilitation by the SHPO/THPO to ensure consistency with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines, to avoid adverse effects.

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1983 Epistemology of the Significance Concept. American Antiquity 48(4):707-719.

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APPENDIX D: SHOVEL TEST PIT LOG

APPENDIX D: SHOVEL TEST PIT LOG

STP	Depth*	Stratum	Munsell	Soil Type	Comments/Artifacts
001	Not excavated due to gas utility				
002	0.0-1.1	Ap	2.5Y 4/2	Silt Loam w/ Roots	NCM
	1.1-1.6	B	10YR 5/6 m/w 10YR 5/1	Silt Loam w/ Water	NCM
					Stopped by water
003	0.0-0.7	Ap	10YR 4/2	Silty Clay Loam w/ Roots & 20% Rocks	NCM
	0.7-1.4	B	10YR 5/4 m/w 2.5Y 5/4	Silty Clay Loam w/ Roots & 10% Rocks	NCM
004	0.0-0.8	Ap	2.5Y 4/2	Silt Loam w/ Roots	NCM
	0.8-1.1	B	10YR 5/1	Silt Loam w/ Water, Roots, & Iron Oxide Staining	NCM
					Stopped by water
005	0.0-0.9	Ap	10YR 4/2	Silt Loam w/ Roots & 20% Rocks	NCM
	0.9-1.3	B	10YR 5/4	ilty Clay Loam w/ Iron Oxide Staining, Roots, & 10% Rock	NCM
					Stopped by rock
006	0.0-1.0	Ap	2.5Y 4/4	Silty Clay Loam	NCM
	1.0-2.2	B	5Y 6/4 m/w 7.5YR 6/8	Silty Clay	NCM
					Stopped by water
007	Not excavated due to wetlands				
008	0.0-0.2	Ap	10YR 4/2	Silt Loam w/ Water & Roots	NCM
					Stopped by roots/water
009	0.0-1.2	Ap	10YR 4/2	Silty Clay Loam w/ Roots & Water w/ 10% Rocks	NCM
					Stopped by water
010	Not excavated due to wetlands				
011	Not excavated due to wetlands				
012	Not excavated due to wetlands				
013	Not excavated due to wetlands				
014	0.0-0.6	Ap	2.5Y 4/4	Silty Clay Loam	NCM
	0.6-2.0	B	10YR 6/6	Silty Clay Loam	NCM
					Stopped by water
015	0.0-0.9	Ap	10YR 4/2	Silty Clay Loam w/ Roots & 20% Rocks	NCM
	0.9-1.5	B	10YR 5/6	Silty Clay Loam w/ 30% Rocks	NCM
					Stopped by rock
016	Not excavated due to wetlands				
017	0.0-0.9	Ap	10YR 4/2	Silt Loam w/ Iron Oxide Staining & 10% Rocks	NCM
	0.9-1.2	B	10YR 5/4	Silt Loam w/ Iron Oxide Staining & 30% Rocks	NCM
					Stopped by water/bedrock
018	0.0-0.7	Ap	2.5Y 4/4	Silty Clay Loam	NCM
	0.7-1.6	B	10YR 6/6	Silty Clay Loam	NCM
					Stopped by rock

STP	Depth*	Stratum	Munsell	Soil Type	Comments/Artifacts
019	0.0-0.7	Fill 1	10YR 4/1 m/w 5YR 5/6, 10YR 6/6	Silty Clay Loam	NCM
	0.7-2.0	B	10YR 6/6	Silty Clay Loam	NCM
					Stopped by rock
020	0.0-1.0	Ap	10YR 4/2	Silty Clay Loam w/ Roots & Water	NCM
					Stopped by water
021	0.0-0.7	Ap	10YR 4/2	Silty Clay Loam	NCM
	0.7-2.0	B	10YR 5/6	Silty Clay Loam	NCM
					Stopped by rock
022	0.0-0.6	Ap	10YR 4/4	Silt Loam w/ Roots & 20% Rocks	HM
	0.6-1.7	B	10YR 5/6	Silt Loam w/ 30% Rocks	NCM
					Stopped by water/bedrock
022A	0.0-0.8	Ap	10YR 4/2	Silty Clay Loam	NCM
	0.8-1.7	B	10YR 5/6	Silty Clay Loam	NCM
					Stopped by rock
022B	0.0-0.8	Ap	10YR 4/2	Silty Clay Loam	NCM
	0.8-1.5	B	10YR 5/6	Silty Clay Loam	NCM
					Stopped by water
022C	0.0-0.4	Ap	10YR 4/2	Silt Loam w/ Roots	NCM
					Stopped by rock
022D	0.0-0.6	Ap	10YR 4/2	Silt Loam w/ Roots & 10% Rocks	NCM
	0.6-0.7	B	10YR 4/6	Silt Loam w/ Roots	NCM
					Stopped by water
023	0.0-0.7	Ap	10YR 5/2	Silty Clay Loam	NCM
	0.7-2.0	B	10YR 5/6	Silty Clay Loam	NCM
					Stopped by water
024	0.0-0.9	Ap	10YR 4/3	Silty Clay Loam w/ Roots & 20% Rocks	NCM
	0.9-1.4	B	10YR 5/4	Silty Clay Loam	NCM
					Stopped by water
025	0.0-0.6	Ap	10YR 4/2	Silty Clay Loam	NCM
	0.6-1.6	B	2.5Y 6/6	Silty Clay Loam	NCM
					Stopped by rock
026	0.0-0.8	Ap	10YR 4/4	Silt Loam w/ Roots & 30% Rocks	NCM
	0.8-2.0	B	10YR 5/6	Silt Loam w/ 40% Rocks	NCM
					Stopped by water/bedrock
027	0.0-0.5	Ap	10YR 4/3	Silt Loam w/ Roots, Water, & 30% Rocks	NCM
					Stopped by water
028	0.0-0.6	Ap	10YR 4/2	Silty Clay Loam	NCM
	0.6-2.0	B	2.5Y 6/6	Silty Clay Loam	NCM
					Stopped by rock

STP	Depth*	Stratum	Munsell	Soil Type	Comments/Artifacts
029	0.0-1.0	Ap	10YR 4/3	Silty Clay Loam w/ Roots & 10% Rocks	NCM
	1.0-1.7	B	10YR 5/6	Silty Clay Loam w/ Roots & Water w/ 20% Rocks	NCM
					Stopped by rock
030	0.0-0.7	Ap	10YR 4/3	Silty Clay Loam w/ Roots & Water	NCM
					Stopped by water
031	0.0-0.8	Ap	10YR 4/4	Silt Loam w/ Roots & 30% Rocks	NCM
	0.8-1.6	B	10YR 5/6	Silt Loam w/ 40% Rocks	NCM
					Stopped by water
032	0.0-0.7	Ap	10YR 4/4	Silty Clay Loam	NCM
	0.7-1.6	B	10YR 6/4	Silty Clay Loam w/ 20% Gravels/Rocks	NCM
					Stopped by rock
033	0.0-0.6	Ap	10YR 4/4	Silty Clay Loam	NCM
	0.6-1.9	B	7.5YR 5/8	Silty Clay Loam w/ 20% Gravels	NCM
					Stopped by rock
034	0.0-0.7	Ap	10YR 4/4	Silt Loam w/ Roots & 25% Rocks	NCM
	0.7-1.8	B	10YR 5/6	Silt Loam w/ 40% Rocks	NCM
					Stopped by water
035	0.0-0.8	Ap	10YR 4/3	Silty Clay Loam w/ Roots & 20% Rocks	NCM
	0.8-1.6	B	10YR 5/6	Silty Clay Loam w/ Water & 20% Rocks	NCM
					Stopped by water
036	0.0-0.6	Ap	10YR 4/3	Silty Clay Loam w/ Roots & Water w/ 10% Rocks	NCM
					Stopped by water
037	0.0-0.9	Ap	10YR 4/3	Silty Clay Loam w/ Roots & 30% Rocks	NCM
	0.9-1.5	B	7.5YR 5/1 m/w 10YR 5/6	Clay Loam w/ 25% Rocks	NCM
					Stopped by rock
038	0.0-0.7	Ap	10YR 5/4	Silty Clay Loam w/ Roots & 25% Shale	NCM
	0.7-1.4	B	10YR 6/4	Silt Loam w/ 40% Rocks	NCM
	1.4-1.7	BC	7.5YR 4/4	Silt Loam w/ Water, Decaying Bedrock & 60% Rocks	NCM
					Stopped by bedrock
039	0.0-0.7	Ap	2.5Y 4/2	Silty Clay Loam	NCM
	0.7-1.8	B	2.5Y 7/6	Silty Clay Loam w/ 20% Gravels	NCM
					Stopped by water
040	0.0-1.4	Ap	10YR 4/2	Silty Clay Loam w/ Roots	NCM
	1.4-2.3	B	7.5YR 5/1 m/w 10YR 5/6	Silty Clay Loam w/ Water	NCM
					Stopped by water
041	0.0-1.3	Ap	10YR 4/3	Silty Clay Loam w/ Water & 40% Rocks	NCM
					Stopped by water
042	0.0-1.0	Ap	10YR 4/3	Silty Clay Loam w/ Water & 20% Rocks	NCM
					Stopped by water

STP	Depth*	Stratum	Munsell	Soil Type	Comments/Artifacts
043	0.0-0.7	Ap	2.5Y 4/4	Silty Clay Loam	NCM
	0.7-1.8	B	2.5Y 7/6	Silty Clay w/ 5% Rocks	NCM
					Stopped by rock
044	0.0-0.8	Ap	2.5Y 4/4	Silty Clay Loam	NCM
	0.8-1.6	B	2.5Y 7/6	Silty Clay w/ 5% Rocks	NCM
					Stopped by rock
045	0.0-0.7	Ap	10YR 4/2	Silty Clay Loam w/ Water	NCM
					Stopped by water
046	0.0-1.0	Ap	10YR 5/4	Silty Clay Loam w/ Roots	NCM
	1.0-2.0	B1	10YR 5/6	Silt Loam	NCM
	2.0-2.3	B2	10YR 7/2 m/w 10YR 5/6	Silt Loam w/ Water	NCM
					Stopped by water
047	0.0-0.7	Ap	10YR 4/3	Silty Clay Loam w/ 10% Rocks	NCM
	0.7-2.0	B1	10YR 5/6	Silty Clay Loam w/ 10% Rocks	NCM
	2.0-2.4	B2	10YR 5/6 m/w 10YR 5/1	Silty Clay Loam w/ 30% Rocks	NCM
					Stopped by rock
048	0.0-0.8	Ap	10YR 5/4	Silty Clay Loam w/ Water	NCM
	0.8-0.9	B	10YR 5/6	Silt Loam w/ Water	NCM
					Stopped by water
049	0.0-0.8	Ap	2.5Y 4/4	Silty Clay Loam	NCM
	0.8-2.1	B	10YR 6/6	Silty Clay w/ 5% Rocks	NCM
					Stopped by bedrock
050	0.0-0.7	Fill 1	10YR 4/3	Silt Loam w/ 80% Gravels	NCM
051	0.0-0.9	Ap	7.5YR 4/2	Silty Clay Loam w/ Roots & 20% Rocks	HM
	0.9-2.1	B	7.5YR 5/1 m/w 10YR 5/6	Clay Loam w/ 20% Rocks	NCM
					Stopped by rock
051A	0.0-0.3	Ap	10YR 3/2	Silt Loam w/ Water & 10% Rocks	
					Stopped by water
051B	0.0-0.8	Ap	10YR 4/2	Silty Clay Loam w/ Water	NCM
					Stopped by water
051C	0.0-1.0	Ap	10YR 5/2	Silty Clay Loam w/ Water	NCM
					Stopped by water
051D	0.0-0.8	Ap	10YR 4/1	Silty Clay Loam	NCM
	0.8-1.7	B	10YR 6/6	Silty Clay Loam	NCM
					Stopped by water
052	0.0-0.8	Ap	2.5Y 4/4	Silty Clay Loam w/ 10% Rocks	NCM
	0.8-2.0	B	10YR 6/6 m/w 10YR 6/1	Silty Clay w/ 5% Rocks	NCM
					Stopped by water

STP	Depth*	Stratum	Munsell	Soil Type	Comments/Artifacts
053	0.0-0.3	Fill 1	10YR 4/3	Sandy Clay Loam w/ 50% Gravels	NCM
	0.3-0.8	B	7.5YR 4/3	Clay Loam w/ 90% Shale	NCM
					Stopped by bedrock
054	0.0-0.7	Fill 1	7.5YR 4/3	Silty Clay Loam w/ 75% Gravel and rock	NCM
					Stopped by rocks
055	0.0-1.2	Fill 1	7.5YR 4/3	Silty Clay Loam w/ Water & 60% Rocks Gravels	NCM
					Stopped by rock
056	0.0-1.0	Fill 1	2.5Y 5/6 m/w 10YR 6/6	Silty Clay Loam w/ 10% Rocks	NCM
	1.0-1.3	Apb	5YR 5/4	Silty Clay Loam w/ 40% Rocks	NCM
					Stopped by rock
057	0.0-0.4	Fill 1	7.5YR 4/3	Silty Clay Loam w/ 80% Shale	NCM
					Stopped by bedrock
058	0.0-0.8	Fill 1	7.5YR 4/3	Silty Clay Loam w/ Roots & 60% Gravel & Rock	NCM
					Stopped by rocks
059	0.0-0.9	Fill 1	7.5YR 4/2	Silty Clay Loam w/ 10% Rocks	NCM
					Stopped by rock
060	0.0-1.5	Fill 1	10YR 4/2	Silty Clay Loam w/ Water & 40% Rocks	NCM
					Stopped by rock/ water
061	0.0-1.0	Fill 1	7.5YR 4/2	Silty Clay Loam w/ 10% Rocks	NCM
					Stopped by rock
062	0.0-0.7	Fill 1	7.5YR 4/3	Silty Clay Loam w/ 80% Gravels Rocks	NCM
	0.7-0.8	Fill 2	10YR 4/1	Sandy Clay Loam w/ 90% Gravels & Rocks	NCM
					Stopped by rocks
063	0.0-0.4	Fill 1	7.5YR 4/1	Sandy Silt Loam w/ 75% Gravel & Rock	NCM
					Stopped by rocks
064	0.0-0.7	Fill 1	10YR 4/1	Sandy Silt Loam w/ 70% Gravels	NCM
					Stopped by asphalt or concrete
065	0.0-0.8	Fill 1	10YR 4/1	Sandy Silt Loam w/ 50% Gravels	NCM
					Stopped by rock or concrete
066	0.0-0.1	Fill 1	10YR 4/2	Sandy Loam w/ Water & 90% Gravels Rocks	NCM
					Stopped by rocks/water
067	0.0-0.5	Fill 1	7.5YR 4/1	Sandy Silt Loam w/ 75% Gravel & Rock	NCM
					Stopped by rocks
068	0.0-0.5	Fill 1	10YR 2/1	Sandy Silt Loam w/ 50% Gravels	NCM
	0.5-0.8	Fill 2	5YR 3/3	Coarse Sand w/ 20% Rocks	NCM
					Stopped by rock or concrete
069	0.0-0.6	Fill 1	10YR 4/2	Sandy Loam w/ 90% Gravels Rocks	NCM
					Stopped by asphalt or concrete

STP	Depth*	Stratum	Munsell	Soil Type	Comments/Artifacts
070	0.0-0.6	Fill 1	10YR 4/2	Sandy Loam w/ Water & 90% Gravels Rocks	NCM Stopped by rocks/water
071	0.0-0.5	Fill 1	7.5YR 4/1	Sandy Silt Loam w/ 75% Gravel & Rock	NCM Stopped by rocks
072	0.0-0.7	Fill 1	10YR 4/2	Sandy Loam w/ Roots & 90% Gravels Rocks	NCM Stopped by rocks
073	0.0-0.6	Fill 1	10YR 3/1	Sandy Silt Loam w/ 75% Gravels	NCM Stopped by asphalt/ rock
074	0.0-0.5	Fill 1	7.5YR 4/1	Sandy Silt Loam w/ 75% Gravel & Rock	NCM Stopped by rocks
075	0.0-0.5	Fill 1	10YR 3/1	Sandy Loam w/ Roots & 90% Gravels	NCM Stopped by rocks
076	0.0-0.5	Fill 1	7.5YR 4/1	Sandy Silt Loam w/ 70% Gravel & Rock	NCM Stopped by rocks
077	0.0-0.5	Fill 1	10YR 2/1	Sandy Silt Loam w/ 60% Gravels & Rocks	NCM Stopped by rock/ concrete
078	0.0-0.4 0.4-0.9	Fill 1 Fill 2	10YR 2/1 5YR 3/3	Sandy Silt Loam w/ 50% Gravels Coarse Sand w/ 20% Rocks	NCM NCM Stopped by rock or concrete
079	0.0-0.5	Fill 1	10YR 3/1	Sandy Loam w/ Roots & 90% Gravels	NCM Stopped by rocks/asphalt
080	0.0-0.5	Fill 1	10YR 3/1	Sandy Loam w/ Roots & 80% Gravels	NCM Stopped by rocks
081	0.0-1.0	Fill 1	2.5YR 4/2	Silt Loam w/ 25% Rocks	NR: 5 plastic Stopped by rocks
082	0.0-1.4	Fill 1	10YR 2/1	Sandy Silt Loam w/ 80% Gravels	NR: Modern vessel glass Stopped by rock
083	Not excavated due to wetlands				
084	0.0-0.7 0.7-1.6	Ap B	10YR 4/2 10YR 5/1 m/w 7.5YR 5/6	Silty Clay Loam w/ 10% Gravels Silty Clay	NCM NCM Stopped by bedrock
085	0.0-0.8 0.8-1.3	Ap B	10YR 4/2 7.5YR 5/2	Silty Clay Loam w/ Iron Oxide Staining & 30% Rocks Clay Loam w/ Iron Oxide Staining & 30% Shale	NCM NCM Stopped by water
086	0.0-1.1 1.1-1.8	Ap B	7.5YR 4/2 7.5YR 4/3	Silty Clay Loam w/ Water & 10% Rocks Silty Clay w/ Iron Oxide Staining & 30% Rocks	NCM NCM Stopped by rocks

STP	Depth*	Stratum	Munsell	Soil Type	Comments/Artifacts
087	0.0-0.8	Ap	10YR 4/2	Silty Clay Loam w/ 10% Rocks	NCM
	0.8-2.3	B	10YR 6/6 m/w 10YR 5/1	Clay Loam w/ Decaying Bedrock & 30% Rocks	NCM
					Stopped by bedrock
088	0.0-0.5	Ao	5YR 4/2	Silty Clay Loam w/ Water & 20% Rocks	NCM
	0.5-1.0	B	2.5YR 4/2	Silty Clay w/ Decaying Bedrock, Water, & 60% Rocks	NCM
					Stopped by rocks
089	0.0-0.8	Ap	10YR 4/3	Silty Clay Loam w/ 10% Rocks	NCM
					Stopped by water
090	Not excavated due to wetlands				NCM
091	0.0-0.7	Ap	10YR 4/2	Silty Clay Loam w/ 10% Gravels	NCM
	0.7-2.5	B	10YR 6/6 m/w 10YR 6/1	Silty Clay w/ 5% Rocks	NCM
					Stopped by rock
092	0.0-0.8	Ap	10YR 4/2	Silty Clay Loam w/ Roots & 30% Rocks	NCM
	0.8-1.2	B	7.5YR 4/3	Clay Loam w/ Roots & 25% Shale	NCM
	1.2-1.4	BC	2.5Y 4/3	Sandy Clay Loam w/ Decaying Bedrock & 30% Shale	NCM
					Stopped by water
093	Not excavated due to wetlands				
094	Not excavated due to wetlands				
095	Not excavated due to wetlands				
096	Not excavated due to wetlands				
097	0.0-0.7	Ap	10YR 4/2	Silty Clay Loam w/ Roots	NCM
	0.7-1.1	B1	10YR 6/2 m/w 10YR 5/6	Clay Loam	NCM
	1.1-1.8	B2	7.5YR 4/3	Clay Loam w/ Roots	NCM
	1.8-2.0	BC	2.5Y 4/3	Sandy Clay Loam w/ Decaying Bedrock	NCM
					Stopped by water
098	0.0-1.0	Ap	10YR 5/4	Silty Clay Loam w/ 10% Rocks	NCM
	1.0-2.4	B	10YR 7/3 m/w 10 YR 5/8	Silty Clay w/ Water & 20% Rocks	NCM
					Stopped by water
099	0.0-0.9	Ap	10YR 4/2	Silty Clay w/ Roots & 10% Rocks	NCM
	0.9-1.6	B	10YR 6/2 m/w 10YR 5/6	Clay Loam w/ Roots & 10% Rocks	NCM
					Stopped by water
100	0.0-0.7	Ap	10YR 4/2	Silty Clay Loam w/ Roots	NCM
	0.7-1.2	B1	10YR 6/2 m/w 10YR 5/6	Clay Loam	NCM
	1.2-1.7	B2	10YR 5/3 m/w 10YR 4/6	Clay Loam w/ Roots	NCM
					Stopped by water
101	0.0-0.9	Ap	10YR 5/2	Silty Clay Loam w/ 10% Rocks	NCM
	0.9-1.9	B	10YR 4/4	Silty Clay w/ Decaying Bedrock & 25% Rocks	NCM
					Stopped by rocks
102	0.0-1.0	Ap	10YR 3/3	Silty Clay Loam w/ Roots	NCM
	1.0-1.9	B	10YR 5/4 m/w 10YR 6/8	Silty Clay w/ Roots	NCM
					Stopped by roots

Key:

* Depth in feet below ground surface
HM = Historic Cultural Material (See Appendix E)
m/w = Mottled With
NCM = No Cultural Material
NR = Not Retained

APPENDIX E: HISTORIC ARTIFACT CATALOG

APPENDIX E: HISTORIC ARTIFACT CATALOG

BAG #	STP	LEVEL	DEPTH*	STRATUM	COUNT	GROUP	ARTIFACT MATERIAL	ARTIFACT CLASS	ARTIFACT TYPE	DESCRIPTION	MEASUREMENTS/ DATES	WEIGHT (g)
1	022	1	0.0-0.6	Ap	1	DOM	Ceramic	Yellowware	Indeterminate Form	Base sherd, no visible decorations, exterior mostly spalled, has a bit of iron oxide staining	1830-1940 (MACL 2015)	
2	051	1	0.0-0.9	Ap	1	DOM	Ceramic	Whiteware	Indeterminate Form	Body sherd, one side spalled, the other side no visible decorations, small	1820-present (Miller et al 2000:13)	
2	051	1	0.0-0.9	Ap	1	DOM	Ceramic	Whiteware	Flatware	Body/rim sherd, no visible decorations, too small for accurate diameter	1820-present (Miller et al 2000:13)	
2	051	1	0.0-0.9	Ap	1	DOM	Ceramic	Whiteware	Flatware	Body/rim sherd, underglaze blue painted decoration along top of rim, interior spalled, exterior no visible decorations, too small for accurate diameter	1820-present (Miller et al 2000:13)	
Total Artifacts:					***4***							

Key:

* in decimalized feet below ground surface

DOM = domestic

STP = shovel test pit

g = grams

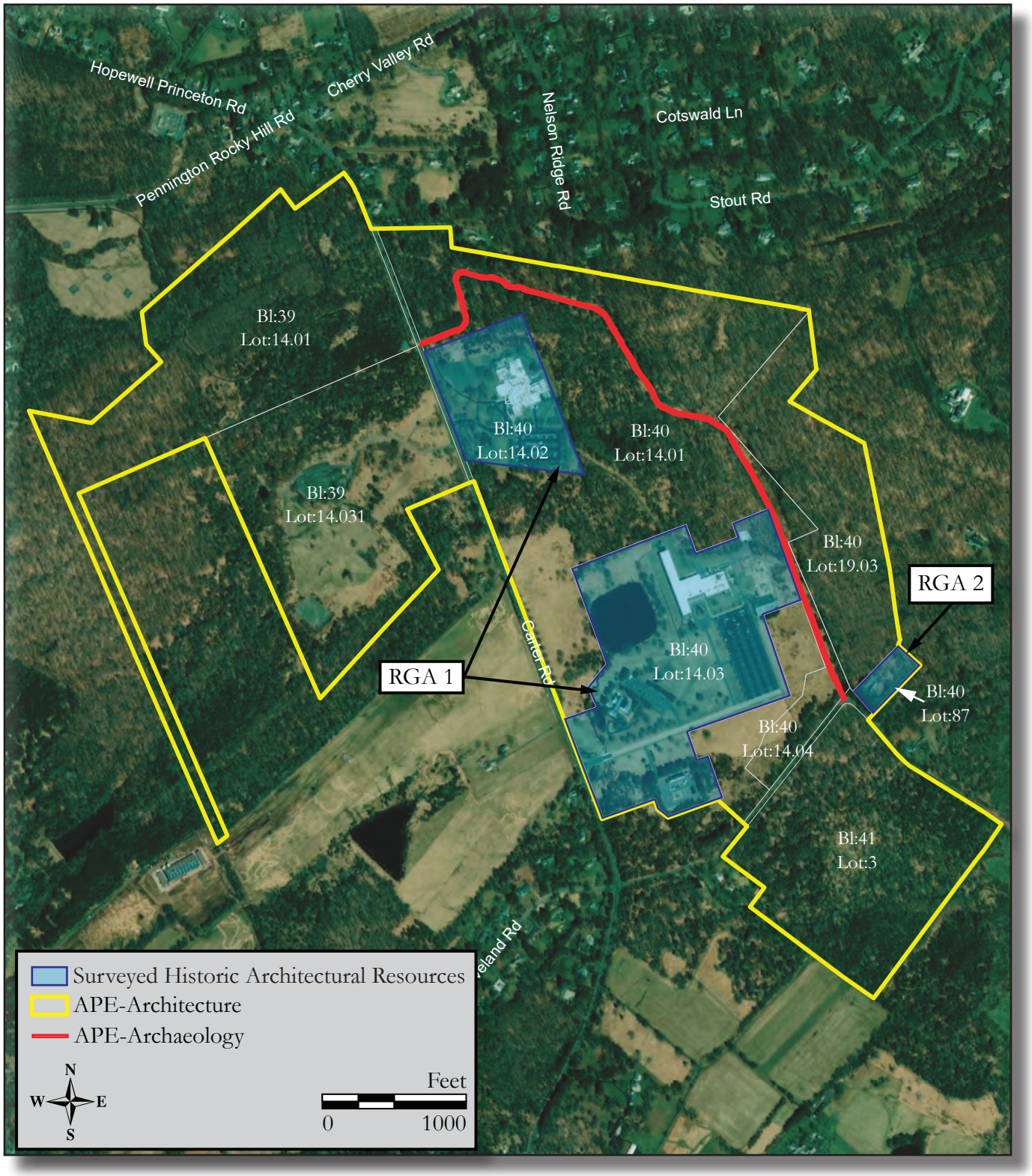
APPENDIX E: HISTORIC ARTIFACT CATALOG REFERENCES

Maryland Archaeological Conservation Laboratory (MACL)
2015 Yellow Ware. *Diagnostic Artifacts in Maryland.* Electronic document, https://apps.jefpat.maryland.gov/diagnostic/Post-Colonial%20Ceramics/Less%20Commonly%20Found/YellowWare/index-YellowWare.html, accessed March 18, 2021.

Miller, George L. with contributions by Patricia Samford, Ellen Shlasko, and Andrew Madsen
2000 Telling Time for Archaeologists. *Northeast Historical Archaeology* 29:1-22.

APPENDIX F: NEW JERSEY HISTORIC PRESERVATION OFFICE SURVEY FORMS

RGA 1: 330-350 Carter Road
RGA 2: 124 Cleveland Road



Surveyed Resources Map.

BASE SURVEY FORM

Historic Sites #:

Property Name: Western Electric Research and Education Complex

Street Address: *Street #:* 330 *(Low)* 350 *(High)* *Apartment #:* *(Low)* *(High)*

Prefix: *Street Name:* Carter *Suffix:* *Type:* RD

County(s): Mercer **Zip Code:** 08540

Municipality(s): Hopewell Township **Block(s):** 40

Local Place Name(s): Princeton **Lot(s):** 14.02, 14.03

Ownership: Private **USGS Quad(s):** Princeton, NJ

Description:

The former Western Electric Research and Education Complex (Western Electric Complex) at 330 and 350 Carter Road in Hopewell Township lies just south of the community of Mount Rose in a rural area of Mercer County. The surrounding area is characterized by an expansive nature preserve and agricultural fields with interspersed residential areas. Originally part of a larger farmstead, the buildings and structures that comprise the former Western Electric Complex at present-day 330 Carter Road are split into two general clusters: a farmhouse, water treatment facility, stone culvert, and concrete slab bridge are located in the southwest corner of the parcel; and research buildings, a maintenance building, a substation, and a warehouse are located in the northeastern corner (Plates 1-55). This property was first settled by the Gantz family, who most likely built the extant farmhouse and stone culvert. The remaining buildings were constructed after the property was purchased by Western Electric Company in the mid-twentieth century. To the north, the former Western Electric Corporate Education Center contains the company's 1969 Education Building (Plates 55-65). The Residence Hall associated with the Corporate Education Center was originally located on the opposite side of Carter Road, across from the Education Building, but was demolished around 2016.

Registration and Status Dates:

National Historic Landmark: SHPO Opinion:

National Register: Local Designation:

New Jersey Register: Other Designation:

Determination of Eligibility: Other Designation Date:

Photograph:

Survey Name: Cultural Resources Survey, Mount Rose Segment (Carter Road to Cleveland Road), Lawrence Hopewell Trail

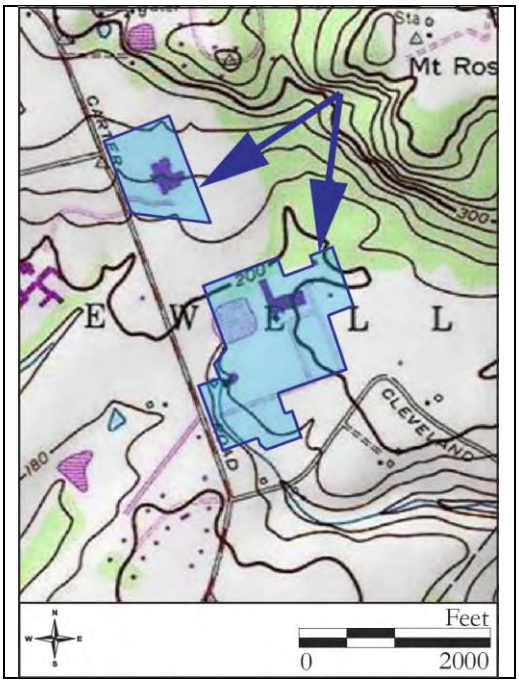
Surveyor: Lauren Dunkle and Lynn Alpert Date: May 2021

Organization: Richard Grubb & Associates, Inc.

BASE SURVEY FORM

Historic Sites #:

Location Map:



Site Map:

See Continuation Sheet

Bibliography/Sources:
See Continuation Sheet

Additional Information:
The property at 330 Carter Road was identified in the 1984 Mercer County Cultural Resources Survey (No. 1106-40-14) (Heritage Studies, Inc. 1984). Identified as the Gantz Farmstead, the survey dates the original frame farmhouse to the early or mid-nineteenth century. The survey also notes the various additions to the farmhouse after the property was converted into a research facility by Western Electric in the mid-twentieth century. The survey determined that the resource did not meet the National Register of Historic Places criteria for eligibility due to its various alterations and the demolition of associated outbuildings (Research & Heritage Studies, Inc. 1984).

More Research Needed? ☐ Yes ☒ No

INTENSIVE LEVEL USE ONLY

Attachments Included: 6 Building ____ Landscape ____ Farm
2 Bridge ____ Industry

Within Historic District? ☐ Yes ☒ No **Historic District Name:** ____

Status: ☐ Key-Contributing ☐ Contributing ☐ Non-Contributing

Associated Archaeological Site/Deposit? ☐ Yes ☒ No
(Known or potential Sites – if yes, please describe briefly)

Survey Name: Cultural Resources Survey, Mount Rose Segment (Carter Road to Cleveland Road), Lawrence Hopewell Trail
Surveyor: Lauren Dunkle and Lynn Alpert Date: May 2021
Organization: Richard Grubb & Associates, Inc.

BUILDING/ELEMENT ATTACHMENT

Historic Sites #:

☒ **BUILDING** ☐ **STRUCTURE** ☐ **OBJECT**

Common Name: Farmhouse, 330 Carter Road
Historic Name: Gantz Farmhouse
Present Use: No Activity
Historic Use: Residential Activity, Permanent, Single Family
Construction Date: c. 1800-1850 **Source:** Hopkins 1860
Alteration Date(s): Circa 1950; Circa 1960; Circa 1990 **Source:** Nationwide Environmental Title Research [NETR] 1947, 1953, 1957, 1963, 1987, 1995
Designer: Unknown **Physical Condition:** Good
Builder: Unknown **Remaining Historic Fabric:** Low
Style: Other
Form: Center Hall **Stories:** 2.5
Type: N/A **Bays:** 5
Roof Finish Materials: Asphalt Shingles
Exterior Finish Materials: Aluminum Siding, Stucco

Exterior Description:
The farmhouse at 330 Carter Road is a two-and-one-half-story, five-bay by three-bay, mixed-use industrial building constructed in the first half of the nineteenth century and heavily altered in the mid- and late twentieth century (see Plates 3-16). The original farmhouse consists of a rectangular main block with a two-story southeast wing (see Plates 4-7). Both the main block and wing are capped with slate shingle, side gable roofs that feature a strip saddle detail on the ridge and copper snow shields on the slopes. An interior brick chimney pierces the ridge of the northwest gable end, and three gabled dormers, evenly spaced, are located on both slopes of the main block. Centered wall dormers are featured in the roof of the southeast wing. The exterior of the farmhouse is clad in replacement aluminum siding throughout. The primary (southwest) elevation has a symmetrical fenestration, with the main entrance placed in the center bay. The main entrance consists of a single, modern panel door flanked by side lights and topped with a transom window. The transom lights have Gothic Revival detailing. A wood surround topped with a pediment further accentuates the main entrance. Windows primarily consist of fixed vinyl-sash replacement units with double-hung units featured in the dormers. The southeast elevation of the wing also features a symmetrical fenestration containing fixed vinyl-sash units. *See Continuation Sheet*

Interior Description:
The subject property is a privately owned parcel. As sub-consultants to Greenman-Pedersen, Inc. for this project, access to the property by Richard Grubb & Associates, Inc. was limited to the exterior and did not include interior access to the building.

Setting:
Sited on a rural industrial property and primarily surrounded by a nature preserve, the Farmhouse at 330 Carter Road is located approximately 320 feet east of Carter Road. Multiple mature trees surround the farmhouse, and a man-made pond is located approximately 35 feet to the west. Connected to the pond is a small tributary of Cleveland Brook that is crossed by a stone culvert approximately 165 feet south of the farmhouse. Located approximately 240 feet to the south is a concrete slab bridge spanning the same tributary; and the Water Treatment Building, associated with the Western Electric Engineering Research Center, is located over 500 feet to the southeast. Situated over 700 feet to the northeast are various other buildings and structures on the property, including two research buildings, a warehouse, substation, and maintenance building.

BUILDING/ELEMENT ATTACHMENT

Historic Sites #:

☒ **BUILDING** ☐ **STRUCTURE** ☐ **OBJECT**

Common Name: Research Building A, 330 Carter Road

Historic Name: Research Building A, Western Electric Engineering Research Center

Present Use: No Activity

Historic Use: Industrial Activity, Research and Development

Construction Date: 1961 **Source:** Hyatt 2014

Alteration Date(s): Circa 1965; circa 2000 **Source:** NETR 1963, 1969; stylistic

Designer: Unknown **Physical Condition:** Good

Builder: Alfred A. La Fountain **Remaining Historic Fabric:** Medium

Style: None

Form: Other **Stories:** 2

Type: N/A **Bays:** N/A

Roof Finish Materials: Unknown

Exterior Finish Materials Masonry; Metal Paneling

Exterior Description:

Research Building A is a highly altered two-story industrial building constructed in 1961. Exterior cladding, windows, and doors all appear to have been replaced in the last decade of the twentieth century or the early twenty-first century. The building consists of a two-story rectangular main block with a three-story circa 1965 addition that connects the subject research building to Research Building B (see Plates 18-23). The main block is topped with a flat, parapet roof. The exterior of the first story is clad in a concrete facing and the second story is clad in metal panels. Windows throughout the building consist of fixed metal-framed replacement units on the first story and metal-framed ribbon replacement units on the second story. The primary (southeast) elevation of the main block features a relatively symmetrical fenestration with an offset entrance on the first story (see Plate 18). The entrance contains two metal doors with glazing in the upper and lower panels. Once consisting of a symmetrical fenestration, the northeast elevation shows evidence of sealed windows on the first floor. Centered on the first floor is a single, metal-framed door. A second offset entryway, consisting of a single, metal framed door with glazing and flanked by a metal-framed sidelight, is also located on this elevation (see Plate 20). View of the southwest elevation of the main block is primarily obstructed by the circa 1965 addition. *See Continuation Sheet*

Interior Description:

The subject property is a privately owned parcel. As sub-consultants to Greenman-Pedersen, Inc. for this project, access to the property by Richard Grubb & Associates, Inc. was limited to the exterior and did not include interior access to the building.

Setting:

Research Building A at 330 Carter Road is set back over 1,200 feet east of Carter Road and 880 feet northeast of the farmhouse. Located on the northeastern half of the parcel, the building is surrounded by multiple mid-twentieth century and late-twentieth century structures including the Research Building B, which is attached to the subject building by a circa 1965 addition. Separated by a series of driveways and parking lots, the substation is situated approximately 190 feet to the east, the maintenance building is located approximately 260 feet to the northeast, and the circa 1980s warehouse is over 210 feet to the southeast.

BUILDING/ELEMENT ATTACHMENT

Historic Sites #:

☒ **BUILDING** ☐ **STRUCTURE** ☐ **OBJECT**

Common Name: Research Building B, 330 Carter Road

Historic Name: Research Building B, Western Electric Engineering Research Center

Present Use: Industrial Activity, Research and Development

Historic Use: Industrial Activity, Research and Development

Construction Date: 1961 **Source:** Hyatt 2014

Alteration Date(s): Circa 1965; circa 2000 **Source:** NETR 1963, 1969; stylistic

Designer: Unknown **Physical Condition:** Good

Builder: Alfred A. La Fountain **Remaining Historic Fabric:** Medium

Style: None

Form: Other **Stories:** 3

Type: N/A **Bays:**

Roof Finish Materials: Unknown

Exterior Finish Materials Masonry; Metal Paneling

Exterior Description:

Research Building B is a highly altered three-story industrial building constructed in 1961. Exterior cladding, windows, and doors all appear to have been replaced in the last decade of the twentieth century or the early twenty-first century. The building consists of a rectangular main block with a rectangular, three-story, circa-1965 addition that connects to Research Building A (see Plates 24-30). The main block is topped with a flat, parapet roof and clad in a masonry facing on the first story and metal panels on the upper stories. Windows throughout the building consist of fixed metal-framed units on the first story and metal-framed ribbon units on the second and third stories. Doors consist of single, metal-framed units with glazing in the upper and lower panels. All entrances are flanked by a single sidelight and topped with a metal-framed transom window. The primary (southeast) and rear elevations feature centered entrances. The southwest and northeast elevations also feature additional entrances that are irregularly placed.

Interior Description:

The subject property is a privately owned parcel. As sub-consultants to Greenman-Pedersen, Inc. for this project, access to the property by Richard Grubb & Associates, Inc. was limited to the exterior and did not include interior access to the building.

Setting:

Research Building B at 330 Carter Road is set back over 1,000 feet east of Carter Road and 700 feet northeast of the farmhouse. Located on the northeastern half of the parcel, the building is surrounded by multiple mid-twentieth century and late-twentieth-century structures, including the Research Building A, which is attached to the subject building by a circa 1965 addition. A large man-made lake is located around 165 feet to the west of the building. Connected by a large, asphalt-paved parking lot, the substation and circa 1980 warehouse are located over 400 feet to the northeast.

BUILDING/ELEMENT ATTACHMENT

Historic Sites #:

☒ **BUILDING** ☐ **STRUCTURE** ☐ **OBJECT**

Common Name: Maintenance Building, 330 Carter Road
Historic Name: Maintenance Building, Western Electric Engineering Research Center
Present Use: No Activity
Historic Use: Unclassifiable Activities
Construction Date: Circa 1965 **Source:** NETR 1963, 1969
Alteration Date(s): N/A **Source:** N/A
Designer: Unknown **Physical Condition:** Fair
Builder: Western Electric Company **Remaining Historic Fabric:** Medium
Style: None
Form: Other **Stories:** 1
Type: N/A **Bays:** 4
Roof Finish Materials: Standing Seam Metal
Exterior Finish Materials Sheet Metal

Exterior Description:
The Maintenance Building is a one-story, four-bay-wide frame industrial building constructed circa 1965 (see Plates 34-39). The building consists of a rectangular main block capped with a standing seam metal, front gable roof and a one-story east wing topped with a standing seam metal shed roof. The exterior walls of the building are clad in metal sheeting throughout. The primary (south) elevation features an irregular fenestration. Two industrial metal doors with glazing are located in the western-most bays and two metal roll-top garage doors are positioned in the eastern-most bays of the main block. Located on the west elevation are two additional entrances, spaced unevenly in the center bays. Similar to the primary elevation, they consist of industrial metal doors with glazing. The west elevation also features aluminum-sash slider windows in the two outermost bays. The rear (north) elevation features two industrial metal doors with glazing and two aluminum-sash slider windows, irregularly placed. The east elevation of the east wing contains three metal roll-top garage doors, evenly spaced. There are no window or door openings on the other elevations of the east wing.

Interior Description:
The subject property is a privately owned parcel. As sub-consultants to Greenman-Pedersen, Inc. for this project, access to the property by Richard Grubb & Associates, Inc. was limited to the exterior and did not include interior access to the building.

Setting:
The Maintenance Building at 330 Carter Road is situated in the northeastern-most corner of the parcel and is primarily surrounded by mature trees. The building is sited approximately 280 feet northeast of Research Building A and 285 feet north of the substation. An asphalt paved driveway connects the building to the large parking lot approximately 430 feet to the south.

BUILDING/ELEMENT ATTACHMENT

Historic Sites #:

☒ **BUILDING** ☐ **STRUCTURE** ☐ **OBJECT**

Common Name: Water Treatment Facility, 330 Carter Road
Historic Name: Water Treatment Facility, Western Electric Engineering Research Center
Present Use: Unclassifiable Activities
Historic Use: Unclassifiable Activities
Construction Date: Circa 1960 **Source:** NETR 1957, 1963
Alteration Date(s): Circa 1990 **Source:** NETR 1957, 1963
Designer: Unknown **Physical Condition:** Good
Builder: Western Electric Company **Remaining Historic Fabric:** Medium
Style: None
Form: None **Stories:** 1
Type: Other **Bays:** 4
Roof Finish Materials: Unknown
Exterior Finish Materials Stone Veneer

Exterior Description:
The Water Treatment Facility consists of a one-story tall, four-bay wide main building constructed circa 1960 (see Plates 40-42). Clad in two types of textured stone facing, the building has a rectangular footprint that was extended to the northeast during the 1990s and is capped with a flat, parapet roof. The primary (south) elevation features an asymmetrical fenestration consisting of paired and single industrial metal doors, vinyl-sash replacement windows, and metal roll-top garage doors. The primary entrance, situated in the third western-most bay, is sheltered by a shed-roof overhang clad in standing seam metal. No entrances or windows are featured on the east, west, or rear (north) elevations. An attached metal ladder provides access to the roof on the east elevation. A series of concrete water treatment basins surrounded by metal pipe railings are sited to the south of the building's primary elevation. Five shed roof and gable roof support buildings are located adjacent to the water treatment building and basins.

Interior Description:
The subject property is a privately owned parcel. As sub-consultants to Greenman-Pedersen, Inc. for this project, access to the property by Richard Grubb & Associates, Inc. was limited to the exterior and did not include interior access to the building.

Setting:
The Water Treatment Facility at 330 Carter Road is situated near the southern boundary of the property and set back approximately 500 feet east of Carter Road and 575 feet north of Cleveland Road. The entire water treatment facility is enclosed with a chain link fence. The facility is sited on the south side of the complex's driveway with the concrete slab bridge, stone culvert, and farmhouse located over 475 feet to the northwest.

BUILDING/ELEMENT ATTACHMENT

Historic Sites #:

☐ **BUILDING** ☒ **STRUCTURE** ☐ **OBJECT**

Common Name: Substation, 330 Carter Road
Historic Name: Substation, Western Electric Engineering Research Center
Present Use: Industrial Activity, Heavy Industrial
Historic Use: Industrial Activity, Heavy Industrial
Construction Date: Circa 1960 **Source:** NETR 1957, 1963
Alteration Date(s): Circa 1979 **Source:** NETR 1971, 1979
Designer: Unknown **Physical Condition:** Good
Builder: Western Electric Company **Remaining Historic Fabric:** Medium
Style: None
Form: None **Stories:** N/A
Type: Other **Bays:** N/A
Roof Finish Materials: N/A
Exterior Finish Materials N/A

Exterior Description:
Due to a chain link fence, access to the substation was limited. Situated within a 130 foot by 110 foot fenced-in yard laid with gravel, the substation consists of a circa 1979 metal control house with the original steel support structures (see Plates 43 and 44). The support structures are organized within a grid footprint and mainly comprised of steel I-beams with horizontal and vertical braces. What appear to be holophane triple-glass explosion-proof lights are attached to the fence and support structures throughout the substation. The transformer is located on the southern side of the distribution structures. What appears to be an associated power station or switching station is located in a separate, fenced-in area approximately 80 feet north of the larger yard. The same holophane lights are featured in each corner of the fence surrounding the smaller north yard.

Interior Description:
The subject property is a privately owned parcel. As sub-consultants to Greenman-Pedersen, Inc. for this project, access to the property by Richard Grubb & Associates, Inc. was limited to the exterior and did not include interior access to the yards.

Setting:
The substation at 330 Carter Road is situated near the northeastern boundary of the property. The circa 1980 warehouse is located just southeast of the substation and the Research Building A is located over 190 feet to the west. The maintenance building, surrounded by mature trees, is situated around 285 feet to the north.

BRIDGE ATTACHMENT

Historic Sites #:

Common Name: Stone Culvert over Cleveland Brook Tributary, 330 Carter Road
Historic Name: Stone Culvert, Gantz Farmstead
Feature Carried: Driveway
Feature Crossed: Cleveland Brook Tributary **Milepost:** N/A

Owner/Operator: Private **SI&A Structure Number:**

Construction Date: c. 1800-1850 **Source:** Otley & Keily 1849
Alteration Date(s): Unknown **Source:** Unknown

Engineer: Unknown
Builder: Unknown
Type: Other
Design: Round Arch
Material: Stone

Physical Condition: Fair
Remaining Historic Fabric: Medium
Spans: 1
Length: 25 feet
Width: 14 feet

Patent Holder: N/A
Patent Date: N/A

Description:
Constructed during the first half of the nineteenth century, the Stone Culvert spanning a tributary of Cleveland Brook consists of an approximately 20 foot long and 13 feet wide structure (see Plates 45-48). The culvert was originally constructed to carry a small farm lane over a tributary of Cleveland Brook. The substructure consists of ashlar stone abutments, a stone barrel vault, and stone wingwalls. Its superstructure features ashlar parapet walls and carries the remnants of a mid-twentieth-century asphalt-paved driveway. The coping of both the parapet walls and wingwalls consist of thin slate panels. The culvert features irregular stone voussoirs in the arches (see Plate 45). Alterations on the parapet walls include the addition of electric lights in the parapets of the wingwalls (see Plate 48). These alterations most likely occurred during the mid-to late twentieth century.

Setting:
The stone culvert is sited on a rural industrial property (330 Carter Road) primarily surrounded by a nature preserve. Spanning a small tributary, the culvert is situated roughly 185 feet east of Carter Road and approximately 165 feet southwest of the farmhouse. A small pond is located approximately 90 feet to the north and a concrete slab bridge spanning the same tributary is located around 85 feet to the south.

BRIDGE ATTACHMENT

Historic Sites #:

Common Name: Concrete Slab Bridge over Cleveland Brook Tributary, 330 Carter Road
Historic Name: Concrete Slab Bridge over Cleveland Brook Tributary, Western Electric Engineering Research Center
Feature Carried: Driveway
Feature Crossed: Cleveland Brook Tributary **Milepost:** N/A

Owner/Operator: Private **SI&A Structure Number:**

Construction Date: Circa 1960 **Source:** NETR 1958, 1963
Alteration Date(s): Early twenty-first century **Source:** Stylistic Evidence

Engineer: Unknown
Builder: Western Electric Company
Type: Slab
Design: N/A
Material: Concrete

Physical Condition: Good
Remaining Historic Fabric: Medium
Spans: 3
Length: 70 feet
Width: 40 feet

Patent Holder: N/A
Patent Date: N/A

Description:
The Concrete Slab Bridge over a tributary of Cleveland Brook is a three-span, concrete slab structure with concrete abutments and parapet walls (see Plates 49-53). Constructed circa 1960, the bridge carries the two-lane, asphalt-paved driveway that provides access to the industrial complex at 330 Carter Road. The bridge measures 70 feet in length and approximately 37 feet in width. The superstructure of the bridge consists of a concrete slab that supports an asphalt deck. Two concrete piers support the concrete slab superstructure. Flanking the roadway are the bridge's concrete parapets that measure nearly 70 feet in length (see Plates 51-53). The parapets consist of a thick concrete rail supported by four concrete posts, evenly spaced.

Setting:
The Concrete Slab Bridge is sited on a rural industrial property (330 Carter Road) primarily surrounded by a nature preserve. Spanning a small tributary, the bridge is situated approximately 150 feet east of Carter Road and approximately 240 feet southwest of the farmhouse. A stone culvert spanning the same tributary is located around 85 feet to the north.

BUILDING/ELEMENT ATTACHMENT

Historic Sites #:

☒ **BUILDING** ☐ **STRUCTURE** ☐ **OBJECT**

Common Name:	350 Carter Road		
Historic Name:	Education Building, Western Electric Corporate Education Center		
Present Use:	No Activity		
Historic Use:	Industrial Activity, Research and Development		
Construction Date:	1969	**Source:**	*The Central New Jersey Home News*, 10 August 1969:48
Alteration Date(s):	2004; Circa 2007; 2014	**Source:**	NETR 2002, 2007; Equus Capital Partners, Ltd. 2021
Designer:	Unknown	**Physical Condition:**	Good
Builder:	Western Electric Company	**Remaining Historic Fabric:**	Medium
Style:	Other		
Form:	Other	**Stories:**	1
Type:	N/A	**Bays:**	15
Roof Finish Materials:	Unknown		
Exterior Finish Materials	Brick		

Exterior Description, continued (from Base Survey Form):
The former Education Building of the Western Electric Corporate Education Center at 350 Carter Road is a one-story, embanked masonry building constructed in 1969. The building consists of an irregularly shaped footprint capped with a flat, parapet roof (see Plates 55-65). The exterior materials primarily consist of a light gray, elongated brick. Windows throughout the building are single and grouped fixed metal-framed units, generally consisting of a larger rectangular pane set above a smaller rectangular pane divided by a metal muntin. The primary (southwest) elevation features various projections and has an irregular fenestration. The main entrance is sheltered by a projecting flat-roof and contains two offset metal-framed doors with glazing flanked by window units. These windows alternate the location of the smaller windowpane above and below the larger pane, creating a geometric pattern. Two secondary entrances, consisting of single metal-frame doors flanked by one metal-framed sidelight and topped with transom windows, are irregularly placed to the southeast and northwest of the main entrance. *See Continuation Sheet*

Interior Description:
The subject property is a privately owned parcel. As sub-consultants to Greenman-Pedersen, Inc. for this project, access to the property by Richard Grubb & Associates, Inc. was limited to the exterior and did not include interior access to the building.

Setting:
The subject building is located on the northeast side of Carter Road in Hopewell Township, New Jersey. The former Education Building is situated in a rural area and surrounded by a nature preserve with mature trees lining the edge of the property. Access to Carter Road is provided by a two-lane, asphalt-paved driveway. The main driveway runs to the southwest of the building and connects to a large, asphalt-paved parking lot that is located approximately 150 feet south of the building. An extension of the driveway forms a circle in front of the main entrance around a central grassy area featuring a flagpole. Small planting areas with bushes and small trees are scattered around the exterior of the building and coniferous trees line the northwest elevation, obscuring most of it from view. Situated over 1,350 feet to the southeast are several buildings associated with the complex at 330 Carter Road.

ELIGIBILITY WORKSHEET

Historic Sites #:

History:
See Continuation Sheet

Significance:
See Continuation Sheet

Eligibility for New Jersey and National Registers: ☐ Yes ☒ No
National Register Criteria: ☐ A ☐ B ☐ C ☐ D
Level of Significance ☐ Local ☐ State ☐ National

Justification of Eligibility/Ineligibility:
The former Western Electric Research and Education Complex is recommended not eligible for listing in the National Register of Historic Places (NRHP). Architecturally, the complex is a highly altered example of a mid-twentieth-century industrial complex. Extensive renovations to the exterior of both research buildings, including the infill of the first-story cantilever and replacement of all cladding materials, windows, and doors, has altered the buildings beyond recognition. Together with extensive interior alterations to the Education Building and the demolition of the Residence Hall, the complex has diminished integrity of materials, design, workmanship, feeling, and association. Although the Engineering Research Center is significant as the first of its kind in the world and for its associations with Western Electric, the complex does not retain sufficient integrity to convey that significance. Research did not uncover associations with significant individuals. For these reasons, the Western Electric Research and Education Complex is recommended not eligible for listing in the NRHP under Criteria A, B, or C.

The former Gantz Farmhouse at 330 Carter Road is also recommended not eligible for listing in the NRHP. The early-nineteenth-century farmhouse has been highly altered over time, primarily due to its conversion to a laboratory and education building in the mid-twentieth century. The replacement of windows and cladding materials, along with the numerous large additions constructed on the farmhouse, have diminished the building's integrity of design, materials, and workmanship. Research did not uncover associations with significant persons or events. As such, the Gantz Farmhouse is recommended not eligible for listing in the NRHP under Criteria A, B, or C.

For Historic Districts Only:

Property Count: Key Contributing: _____ Contributing: _____ Non Contributing: _____

For Individual Properties Only:

List the completed attachments related to the property's significance:
Building/Element Attachment: Farmhouse, 330 Carter Road
Building/Element Attachment: Research Building A, 330 Carter Road
Building/Element Attachment: Research Building B, 330 Carter Road
Building/Element Attachment: Maintenance Building, 330 Carter Road
Building/Element Attachment: Water Treatment Facility, 330 Carter Road
Building/Element Attachment: Substation, 330 Carter Road
Bridge Attachment: Stone Culvert over Cleveland Brook Tributary, 330 Carter Road
Bridge Attachment: Concrete Slab Bridge over Cleveland Brook Tributary, 330 Carter Road
Building/Element Attachment: 350 Carter Road

Narrative Boundary Description:
N/A

CONTINUATION SHEET

Historic Sites #:

Description, continued (from Building/Element Attachment Form – Farmhouse):
The rear (northeast) elevation of the main block has an irregular fenestration with a secondary entrance placed in the center bay. A third entrance, sheltered by a one-story, slate-shingle shed roof is located on the rear elevation of the southeast wing. The northwest elevation of the original farmhouse is obstructed by the circa 1950 addition.

Built onto the farmhouse's northwest elevation, the two-story circa 1950 addition has a rectangular footprint with a two-story main block and a one-story wing projecting from the northwest elevation of the main block (see Plates 3, 8-10 and 16). The rectangular main block of the circa 1950 addition is capped with a cross-gable roof clad with slate shingles. At the southwest corner of the main block, the elevation of the roof is reduced slightly. The wing is topped with a side gable, slate shingle roof. A brick exterior chimney on the northwest elevation pierces the gable end of the main block's cross gable. The exterior walls are covered in stucco, and windows primarily consist of fixed vinyl-sash replacement units throughout. Featured on the southwest elevation of the main block are three evenly spaced wall dormers (see Plate 3). Two recessed dormers and one wall dormer, irregularly placed, interrupt the roofline of the northwest elevation (see Plate 8). A central entryway is located on the first story of the northwest elevation, which features a wood panel door accessed by a concrete stoop. The remainder of the elevation is obscured by the gable roof wing. A second entrance to the addition's main block, consisting of a metal door with glazing in both the upper and lower panels, is centered on the first floor of the main block's southeast elevation. The entrance is sheltered by a hipped-roof portico supported by square and Doric columns. The one-story wing also features a series of gabled wall dormers on both its northeast and southwest elevations (see Plates 9 and 10). Situated on the northwest elevation is a single entrance that contains a wood panel door flanked by two windows.

Constructed around 1960, the second addition consists of a two-story structure that was added onto the northeast of the circa 1950 addition. The large, square addition is capped with two asphalt-shingled gabled roofs spanning the length of the addition's northwest and southeast elevations. The two gable roofs are connected by a large, flat roof. Multiple gabled dormers, unevenly spaced, are located on the inner slopes of the two gabled roofs. A one-story wing is located off the addition's northeast elevation. Windows are vinyl-sash replacement units throughout, with irregular fenestrations on all elevations (see Plates 11-15). The northwest elevation features two entrances, placed in the two outermost bays, which consist of paired and single, industrial metal doors. Another pair of industrial metal doors is located in the northwestern-most bay of the one-story wing's northwest elevation.

The circa 1990 addition was built onto the northwest elevation of the circa 1960 addition (see Plates 11 and 12). Capped with a standing-seam metal hipped roof, the building has a square footprint and is coated in stucco. Windows are vinyl-sash units throughout and a metal door with glazing is located on the northeast elevation, sheltered by a hipped roof portico supported on square columns. A vinyl-sash window is located above the portico. The northwest and southwest elevations of the circa-1990 addition are devoid of fenestration.

Description, continued (from Building/Element Attachment Form – Research Building A):
The rear (northwest) elevation features four entrances, irregularly placed, and a truck loading dock. Three of the four entrances consist of metal-framed doors flanked by one side-light and topped with a metal-framed transom window. The fourth entrance consists of a pair of metal-framed doors with glazing, topped with a metal-framed transom window. The truck loading dock features a single, metal roll-top door (see Plate 22). A submerged staircase, located approximately 50 feet southeast of the building, provides access to the basement (see Plate 23).

Connecting Research Building A to Research Building B, the circa 1965 addition is three-stories tall, capped with a flat parapet roof. The addition is clad in stone facing on the first story and metal panels on the upper stories, matching research buildings A and B (see Plates 31-33). Doors consist of paired and single metal-framed units with glazing, flanked by sidelights and topped with metal-framed transom windows throughout. Windows also consist of metal

CONTINUATION SHEET

Historic Sites #:

Description, continued (from Building/Element Attachment Form – Research Building A):
framed-fixed units on the first story and metal-framed ribbon windows on the second and third stories. Two entrances, irregularly placed, are located on the southeast elevation and two additional entrances are located on the northwest elevation, also irregularly placed. The northeast elevation is obscured by Research Building A, and the southwest elevation is obscured by Research Building B.

Description, continued (from Building/Element Attachment Form – 350 Carter Road):
Similar to the primary elevation, the northwest and rear (northeast) elevations consist of various projecting wings. Two metal-clad mechanical structures (added circa 2007) surrounded by coniferous trees block most of the northwest elevation from view (see Plate 7). Windows and various metal-frame doors are irregularly placed throughout both elevations and multiple openings have been infilled and faced in square ceramic tiles (see Plates 9 and 10). Centrally placed on the rear elevation are three garage ports with roll-top metal doors accessed by an asphalt-paved driveway. A one-story metal refrigeration building stands just northwest of the garage ports. The southeast elevation is two stories, consisting of the main level and the full-height basement level. A two-story projection extends from the southwestern corner and features two-story recessed bays flanking three square fixed windows. Paired metal doors are situated in the recessed bays at the basement level. A loading dock with a metal roll-top door is located toward the northeast end of the southeast elevation at the basement level, accessed by another asphalt-paved driveway. A third metal-clad circa-2007 mechanical room surrounded by coniferous trees extends off the northeastern-most bay of the main level, obscuring a portion of the southeast elevation.

History:
Situated at present-day 330 and 350 Carter Road in Hopewell Township, the former Western Electric Complex is situated on land that was initially developed in the mid-nineteenth century for farming. By 1849, the southern portion of what would become the Western Electric Complex contained a farmstead owned by the Gantz family (Otley & Keily 1849). The Gantz farm was one of many farms built on the outskirts of Mount Rose during the early nineteenth century. Jacob Gantz and his family moved to the area sometime before 1849, with the farmstead first appearing cartographically that year (Figure 1; Otley & Keily 1849). By 1860, ownership of the farmstead was transferred to Jacob's oldest son, John Gantz (United States Census Bureau [USCB] 1850, 1860). John continued to run the family farm with his wife and son, Amy and Jacob, into the late nineteenth century (Beers 1875; USCB 1880). At the age of 72, John sold the farm to Willis Burd Sr. in 1899 (Mercer County Clerk Deed Book [MCC DB] 225:591-592). According to census documents, the Burd family remained on the farmstead into the 1930s (USCB 1930, 1940). The ancillary structures of the farmstead stood on the property until the late 1940s when they were demolished, leaving just the farmhouse on the property (Figure 2; New Jersey Department of Environmental Protections 1930; Nationwide Environmental Title Research [NETR] 1947).

During the mid-twentieth century, the Western Electric Company (Western Electric), the manufacturing and supply unit of the larger Bell System, purchased land along Carter Road in Hopewell Township, including the former Gantz farm, with plans to form an Engineering Research Center (*The Central New Jersey Home News* [TCNJHN], 10 August 1969:48; Hopewell Fire Department 1961). Western Electric was founded in 1869 as the firm Shawk and Barton in Cleveland, Ohio (Iardella 1964:27). While the company initially manufactured fire and burglar alarm systems, Enos Barton had a grander vision, seeing potential for the company to play "a leading part in the dawning electrical age." By the end of 1869, Barton had a new partner, the inventor, Elisha Gray, and the newly-formed Gray and Barton moved their operations to Chicago. Fortunately, the company was spared during the Great Chicago Fire in 1871, and it had a vital role in restoring communications in the city. It was due to this success that Gray and Barton expanded and reorganized as the Western Electric Manufacturing Company in 1872 (Iardella 1964:28).

CONTINUATION SHEET

Historic Sites #:

History, continued:

In 1881, Western Electric began talking with the American Bell Telephone Company (American Bell) about the possibility of becoming the manufacturing arm of the company (Iardella 1964: 29). American Bell saw the need for standardization in the telephone industry, including telephone equipment. In November 1881, the company reorganized as the Western Electric Company, with American Bell acquiring a major interest. In 1900, American Bell stockholders voted to make the American Telephone & Telegraph Company (AT&T), formed in 1885 as a subsidiary to American Bell, the central organization of the larger Bell System (Iardella 1964:8-9). The Bell System served as the umbrella under which the Bell Telephone companies, AT&T, and their various subsidiaries, including Western Electric, worked together to operate the telephone network in the United States (Iardella 1964:10).

In 1907, AT&T and Western Electric moved to consolidate their existing research and development teams into one larger department, forming the Western Electric Engineering Department (Iardella 1964: 17). In 1925, this department, along with part of a still separate AT&T Engineering Department, were reorganized as the Bell Telephone Laboratories (Bell Labs) (Iardella 1964:18). Bell Labs was jointly owned by Western Electric and AT&T and would serve as the research and development arm of the Bell System until the entire system was disbanded in 1984 (Adams and Butler 1999:205).

AT&T's first suburban corporate campus was established for Bell Labs on a 20-acre site situated in Murray Hill, New Jersey, approximately 25 miles west of their New York City headquarters. Completed by 1942, the Murray Hill facility was deemed a model for research campuses that were built in the United States in the years following. Surrounded by a pastoral landscape, designed by the Olmsted Brothers, the facility featured interconnected lab buildings organized with modular spaces in the interior. The scientific discoveries generated at the campus provided validation for placing laboratories in suburban settings, paving the way for the establishment of the subject complex and other laboratories, such as Bell Labs in Holmdel Township, New Jersey (Heritage Consulting Group 2015).

Bell Labs', and subsequently Western Electric's, entry into the countryside was part of a larger trend of urban-centered corporations pursuing similar geographic reorganization, which resulted in the construction of a new type of office building. The proliferation of the automobile, pervasion of post-World War II suburbanization across undeveloped land, and construction of the country's highway system were influential in spurring this trend. In addition to Bell Labs, other corporate giants such as IBM and General Motors were at the forefront of this trend and defined the suburban office campus, often with the help of notable architects of the time like Eero Saarinen and Ludwig Mies van der Rohe, with other companies emulating their actions. The emerging office campus looked to the design of college campuses with their generous grassed areas, landscaping, and park-like settings which corporate leaders hoped would aid in recruiting and retaining quality personnel (Rankin 2010:796). The design of the buildings was also key in imparting a company's identity for both its occupants and passers-by; it was a public reflection of the company's principles (Knowles and Leslie 2001:4).

With plans to build a corporate campus in close proximity to other Bell System research facilities, Western Electric purchased a number of properties along Carter Road during the 1950s and 1960s, amassing a total of 192 acres (MCC DB 3045:122-134; TCNJHN, 10 August 1969:48; TCNJHN, 12 May 1968:25). In 1958, Western Electric opened their Engineering Research Center, utilizing the former Gantz farmhouse along with the nearby former Princeton Film Center building as a short-term research facility (Hopewell Fire Department 1961; Iardella 1964:70). At the Carter Road site, the company continued to use the original driveway, which was carried over a tributary of Cleveland Brook by a mid-nineteenth-century stone culvert that was most likely built by the Gantz family. Prior to the opening of the facility, a two-story wing was added onto the northwest elevation of the farmhouse, with an additional one-story wing extending to the northwest of the addition. The driveway was also altered to include a parking lot situated northeast of the farmhouse (Figure 3; NETR 1947, 1953). Another structure, its use unknown, was built approximately 250 feet northeast of the farmhouse and a man-made pond was also built approximately 40 feet west of the farmhouse (NETR 1953).

CONTINUATION SHEET

Historic Sites #:

History, continued:

The Engineering Research Center was conceived "as a sort of Bell Laboratories devoted to process rather than product" (Leslie 2001:94). As "the first research laboratory in the world to devote itself entirely to manufacturing technology," the goal of the facility was to improve manufacturing methods by developing better and more efficient processes for automation (TET, 1 May 1983:35; Adams and Butler 1999:163-164). When it opened, the center conducted research in three areas related to manufacturing: "the development of new concepts and techniques to permit automatic manufacture of communications apparatus; the applications of mathematical techniques, automatic data processing, and computer technology to plan and control production; [and] the application of the principles of chemistry, metallurgy, and physics to manufacturing problems" (Iardella 1964: 70). These manufacturing innovations, when successful, were then dispersed to and implemented at the various Western Electric plants (Adams and Butler 1999:163-164). This was not an entirely new concept for Western Electric. Work of a similar nature had been taking place at Western Electric's Allentown, Pennsylvania plant since the mid-1940s, but the establishment of the Engineering Research Center took that smaller laboratory and "gave it an institutional identity within Western Electric" (Leslie 2001:77,94). The center's location in suburban New Jersey facilitated close work with Bell Labs, ensuring that new product designs would allow for "economic manufacturing" (TET, 21 January 1969:78). Engineers also collaborated with the company's various manufacturing facilities to share their manufacturing ideas and innovations with the workers implementing them (TET, 21 January 1969:78).

Around 1960, another two-story rear addition was added on the farmhouse, most likely because of the need for more laboratory and office space (NETR 1963). The Engineering Research Center continued to function out of the farmhouse and film center building until 1963, when two new buildings were completed at the Carter Road site, approximately 700 feet northeast of the farmhouse (Figure 4; *Trenton Evening Times* [TET], 7 January 1964:75; NETR 1963). Both buildings were constructed by Alfred A. La Fountain, who was based out of Hackensack, New Jersey (*The Record*, 17 December 1963:53). They consisted of two low slung rectilinear buildings, one three stories and one two stories, which stretched across landscape (Figure 5). On the three-story building, the upper two floors cantilevered out over the first, creating a covered open-air walkway around the building's ground floor. Both buildings featured a similar rhythmic fenestration organization but with different design treatments on each. Built after World War II and during the Cold War, the new buildings were designed with the threat of nuclear weapons and the potential of another world war in mind. This resulted in the construction of a bomb shelter, encased by three feet of concrete, featuring a compression space to protect equipment and important personnel, in the basement of the two-story research building (Hyatt 2014). Another larger man-made pond was also built approximately 150 feet southwest of the new research buildings (NETR 1963).

With research activities focused in the new buildings, the farmhouse was given yet another life as an educational facility. The building housed the Lehigh University Master's Degree Program (later referred to as Western Electric's Master Degree Program), which consisted of a two-year graduate program funded by Western Electric specifically for the company's engineers. The program was initially conceived to admit around 30 students a year, accommodating up to 60 students at one time. Students in the program were given the opportunity to assist with projects at the Engineering Research Center (TET, 18 February 1962:2; TET, 21 January 1969:78).

Several other structures were also built on the property by the early 1960s. These included a substation and a sewage treatment plant, providing the research center with its own direct source of electricity and making the property self-sufficient (NETR 1963). A small building with an unknown use, situated approximately 90 feet northeast of the research buildings, was also constructed at that time (see Figure 4; NETR 1963). With more traffic coming onto the property, the small farm lane and stone culvert were no longer suitable. Therefore, a concrete driveway, which doubled as an emergency landing-strip for small planes, was built to connect the farmhouse, sewage treatment plant, substation, and new research buildings to Carter Road (NETR 1963; Hyatt 2014). A circa-1961 three-span concrete slab bridge was also constructed approximately 100 feet south of the original stone culvert to carry the new driveway over the tributary of Cleveland Brook (NETR 1963).

History, continued:
The Western Electric corporate campus continued to expand during the 1960s, and by 1969, the two research buildings were connected by a large three-story, 67,000 square foot addition. The addition housed "research, administrative and technical support activities" (TET, 21 January 1969:78). A maintenance building was also built approximately 175 feet north of the substation (Figure 6; NETR 1969). The complex was also expanded to include a new Corporate Education Center situated to the northwest of the research center, which included an Education Building at present-day 350 Carter Road and a Residence Hall on the opposite side of Carter Road (no longer extant) (NETR 1969).

Western Electric had a long history of corporate education, with their first formal education program beginning at a Chicago plant in 1898 (Janney 1976:117). After World War II, increased demand for telecommunications equipment combined with a fast pace of advances in telecommunications technology greatly complicated the job of Western Electric's engineers. In 1956, Western Electric developed a task force to expand their training and educational programs to address these issues. The primary goal was to develop a unified engineering program that was meant to combine existing engineering practices with new scientific knowledge. From 1957 to 1969, the new program was implemented at three Engineering Training Centers in New York, Chicago, and Winston-Salem. In 1969, the program was centralized at the Corporate Education Center on the subject property, which also absorbed the Master's Degree Program that had been operating out of the farmhouse since 1963 (Janney 1976:118; TET, 26 August 1966:22; TET, 21 January 1969:78).

Plans for the education center's construction were initially delayed due to local residents opposing the increase of industrial development in the residential areas of the rural township (TET, 26 August 1966:22). Despite community protests, the Corporate Education Center opened by 1969 at the cost of $5,000,000 (Figure 7; TCNJHN, 10 August 1969:48; TET, 1 May 1983:35). Designed to educate up to 300 students at once, the 80,000 square-foot Education Building contained 23 classrooms, multiple laboratories, a 10,000-volume library, a color TV studio, an administrative area, and a 250-person auditorium. Also used for company conferences, the center was believed to be the "largest and most advanced of its kind" (TCNJHN, 10 August 1969:48; Janney 1976:118). The year of its completion, a dedication ceremony was held and consisted of placing a time capsule, containing telephone communications devices, in a vault situated in the entrance of the Education Building (TCNJHN, 10 August 1969:48).

The two-story Residence Hall was built in conjunction with the Corporate Education Center so that students would be able to live on campus during their one- to 22-week courses. Located on the opposite side of Carter Road, the 300-room residence hall was connected to the education center by a foot path which featured an underground tunnel (no longer extant) below Carter Road (*TCNJHN*, 10 August 1969:48). The Residence Hall contained a dining hall, several lounges, a clubroom, and both indoor and outdoor recreation facilities (Janney 1976:118). Both buildings were constructed with similar, low-profile contemporary designs to blend in with the bucolic setting and surrounding topography (TCNJHN, 10 August 1969:48).

In 1976, Lewis A. Kelly, the general manager of the education center proposed plans to convert the main lobby into an art gallery. This was in line with a larger corporate trend at the time of promoting the exhibition of fine art, which benefited employees through the creation of a relaxing environment, the heightening of employee pride in the company, and the enrichment of the lives of employees. Two years after his proposal, the company approved of his idea and developed plans for the center's art gallery. In an attempt to enhance their image with the surrounding community, the gallery was occasionally opened to the general public (Haitch 1978).

By 1979, a baseball field was built at the end of the research facility's concrete driveway and the present control house was built within the substation (NETR 1979). In the 1980s, a warehouse building was constructed just southeast of the substation (NETR 1979, 1987). No other changes to the property appear during the late twentieth century (Figure 8; NETR 1995).

CONTINUATION SHEET

Historic Sites #:

History, continued:

The Western Electric Research and Engineering Complex continued to function as an education, research, and development center for over four decades. Since its construction, the corporate campus along Carter Road housed and educated hundreds of engineers and researchers that helped improve the company's manufacturing methods (Hyatt 2014). The center specialized in laser beam research, with other innovations made at the Carter Road facility including new methods of electronic construction, ion implanters, clean room robotics for semiconductor production, and automatic circuit board assembly (TCNJHN, 12 May 1968:25; Hyatt 2014).

In 1982, the United States Justice Department and AT&T signed a landmark antitrust agreement breaking up the Bell System and the company's telecommunications monopoly (*Los Angeles Times,* 21 September 1995). The process took two years, and in 1984, the Bell System was officially disbanded. As part of the breaking up of the company, AT&T absorbed Western Electric, abandoning the Western Electric name, and AT&T Network Systems took over the majority of the former company's operations (Adams and Butler 1999:205). After 1984, AT&T was no longer a monopoly, and the now-independent regional Bell operating companies were placed in direct competition with their former parent company. This meant that AT&T Network Systems had to compete to win business from the regional operators who were hesitant to give any support to their now rival AT&T (Adams and Butler 1999:205).

AT&T soon realized that their best option for success was to spin off its manufacturing unit as a new, independent company. In 1996, Lucent Technologies, Inc. was formed to fill this role, an independent company made up of AT&T's former manufacturing unit along with Bell Labs (Adams and Butler 1999:213). One year later, Lucent Technologies, Inc. transferred ownership of the entire complex to the Townsend Property Trust Limited Partnership, though Lucent Technologies continued to operate out of the property until 2004 (MCC DB 3336:133; Hyatt 2014).

In 2004, Lexicon Pharmaceuticals renovated the former Education Building associated with the Western Electric Corporate Education Center for use as a laboratory facility (Equus Capital Partners, Ltd. 2021). In 2014, the building was renovated again for use by Bristol Meyers Squibb's cancer research group. Renovations at that time included refurbishing all mechanical equipment in the building (Equus Capital Partners, Ltd. 2021). Since the building's construction, only minor changes were made to the building's overall footprint, with the only apparent alteration occurring around 2007, when three large metal mechanical rooms were added onto the northwest and southeast elevations (Figure 9; NETR 2007). At present, the two separate parcels are both owned by a private equity real estate fund manager, BPG Properties, which is based out of Philadelphia (Hyatt 2014). Under the ownership of BPG Properties, the research center portion of the complex, situated at 330 Carter Road, was renamed the Technology Center of Princeton. In 2013, a large part of the research center was leased by Sensors Unlimited, a subsidiary of the United Technologies Corporation. Prior to moving in, Sensors Unlimited conducted a 30-million-dollar renovation that altered the interior of Research Buildings A and B in 2014 (Hyatt 2014). In 2014, the small circa-1961 building located 90 feet northeast of the research center was removed (NETR 2013, 2015).

Around 2016, the residence hall of the complex was demolished, and the 11 acres on which it sat were sold to the New Jersey Conservation Foundation, along with a majority of the undeveloped lands surrounding the subject buildings (MercerMe Staff 2018; MCC DB 6344:1792). This transfer of ownership resulted in the separation of the buildings within two discontinuous parcels and the present-day property lines. In 2020, Bristol-Myers Squibb vacated the former Corporate Education Center building, leaving Sensors Unlimited as the only tenant presently situated within the complex (Rojas 2019). The rest of the buildings on the property currently sit vacant.

CONTINUATION SHEET

Historic Sites #:

Significance:

The former Western Electric Research and Education Complex at 330 and 350 Carter Road is one of many industrial complexes constructed in Mercer County during the early 1960s. Originally a farmstead owned by the Gantz family, the farmhouse became a research facility for Western Electric in the late 1950s. Built after the devastation of multiple wars, Western Electric set out to build a self-sustaining complex that could serve as a safehouse during any future national conflicts. After operating out of the farmhouse for the first few years, Western Electric began to construct various other buildings and structures on the property including two research buildings, a substation, a maintenance building, a water treatment facility, and a larger driveway carried by a concrete slab bridge. Together, these buildings comprised the Western Electric Engineering Research Center, the first research laboratory in the world devoted entirely to manufacturing technology. In 1969, Western Electric expanded the campus with the opening of a Corporate Education Center to the north of the research center along Carter Road. The education center included the Education Building, located at present-day 350 Carter Road, and the Residence Hall, located on the opposite side of Carter Road and no longer extant. The campus was used by Western Electric to educate their workers while developing various innovations in manufacturing technology.

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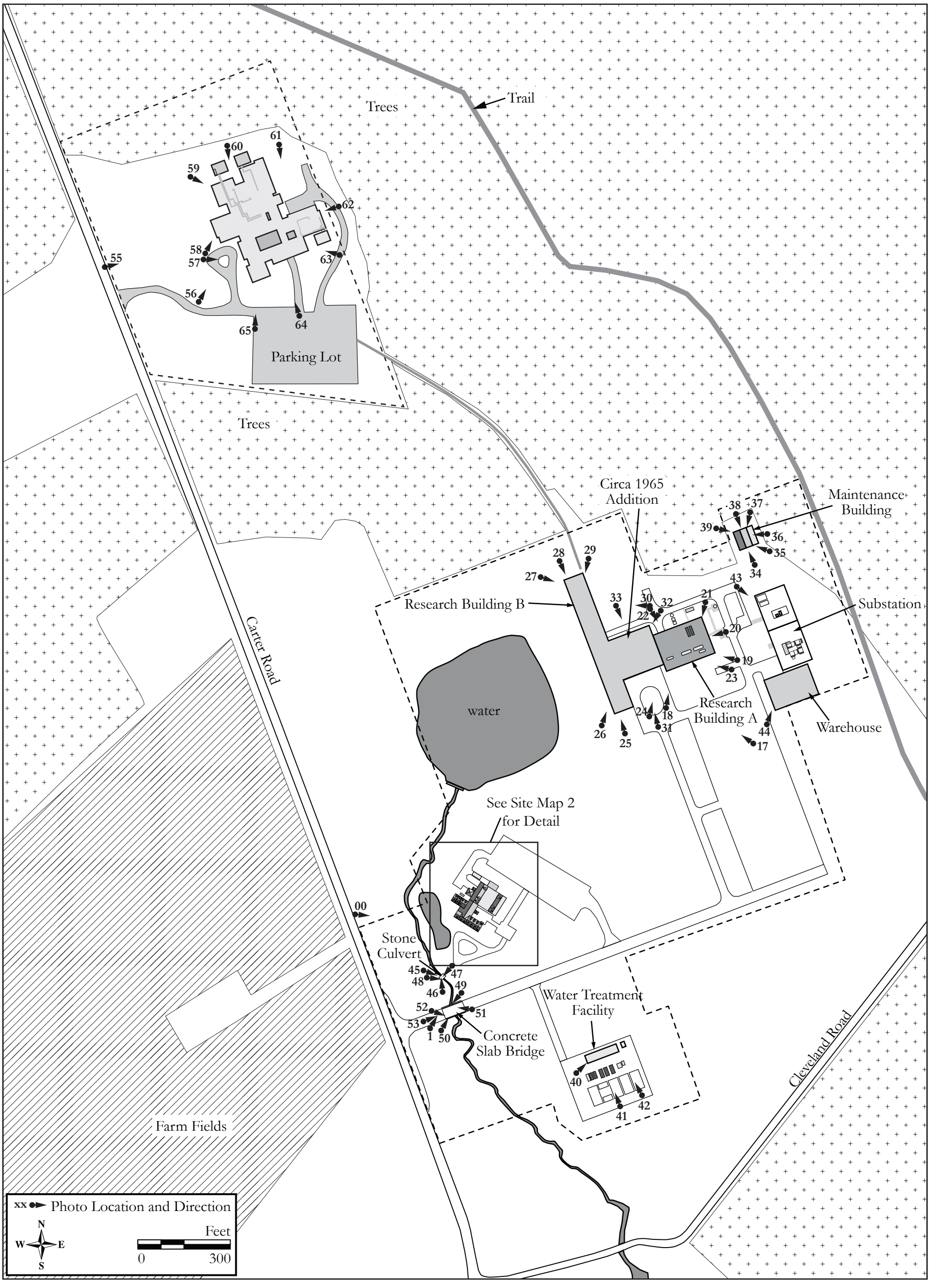

Site Map.

Survey Name: Cultural Resources Survey, Mount Rose (Carter Road to Cleveland Road) Segment, Lawrence Hopewell Trail

Surveyors: Lauren Dunkle and Lynn Alpert

Organization: Richard Grubb & Associates, Inc.

Date: May 2021

CONTINUATION SHEET

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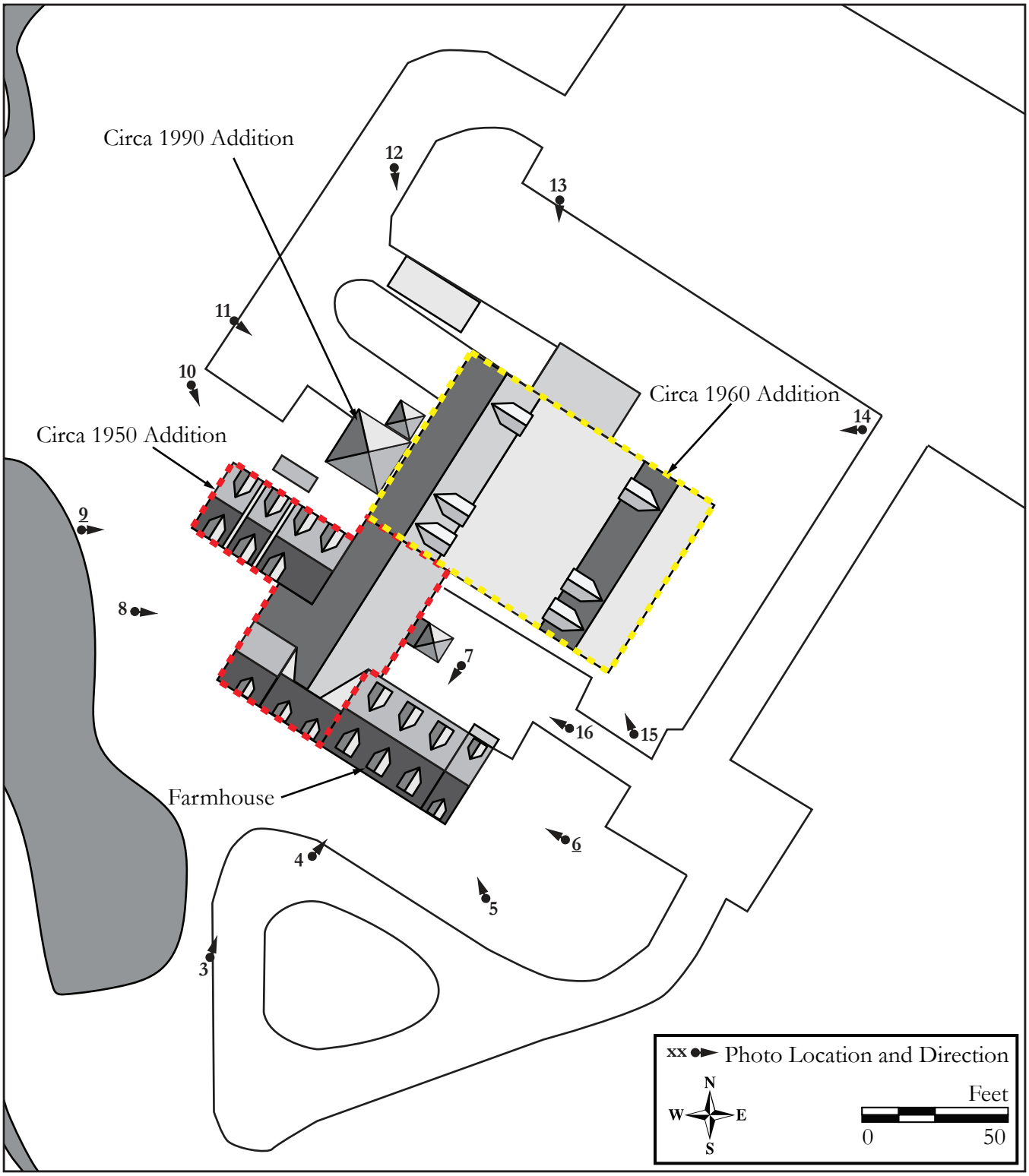

Detailed Site Map.

Survey Name: Cultural Resources Survey, Mount Rose (Carter Road to Cleveland Road) Segment, Lawrence Hopewell Trail
Surveyors: Lauren Dunkle and Lynn Alpert
Date: May 2021
Organization: Richard Grubb & Associates, Inc.

CONTINUATION SHEET

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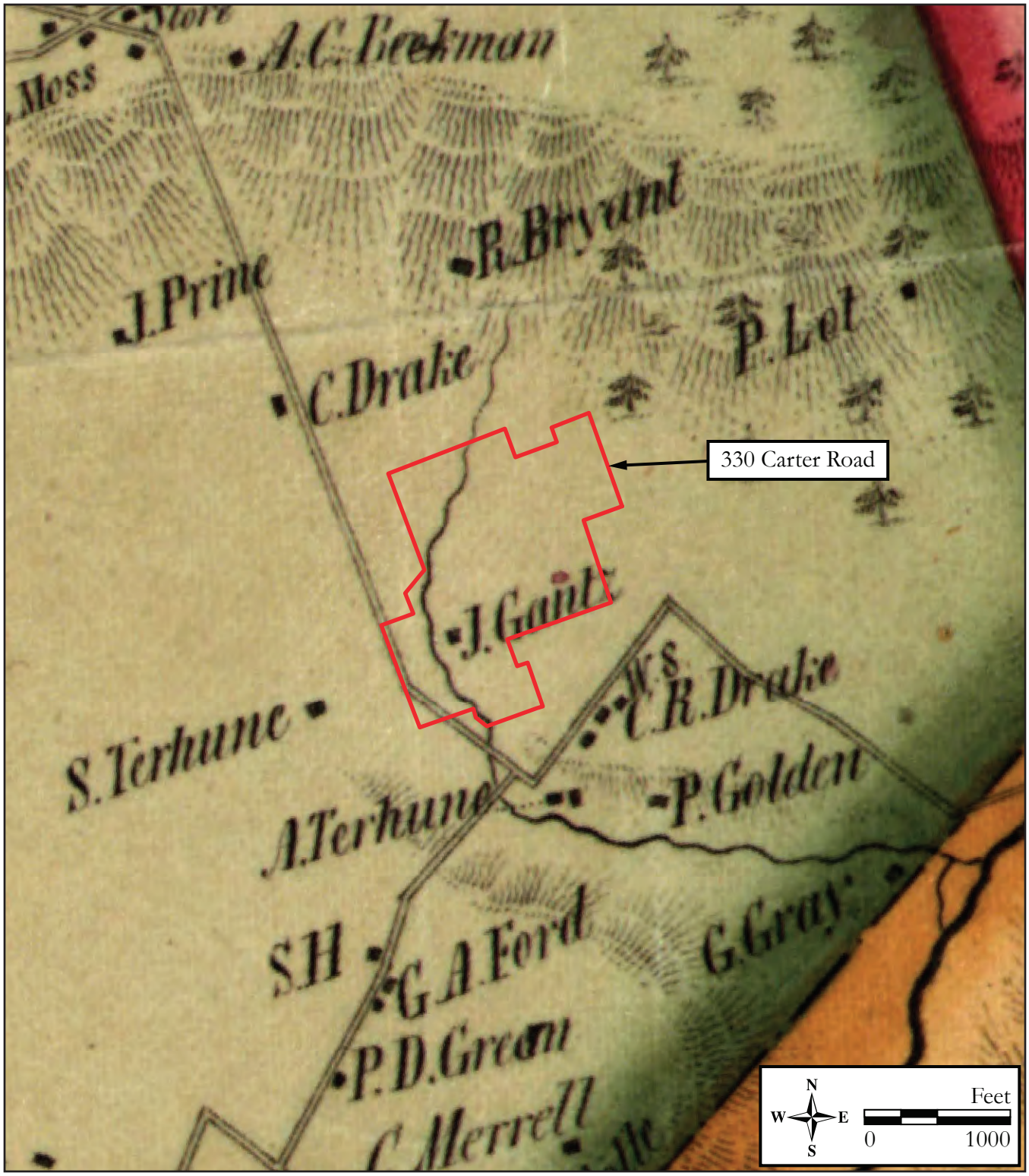

Figure 1: Historic Map showing the Gantz Farmstead (Otley & Keily 1849).

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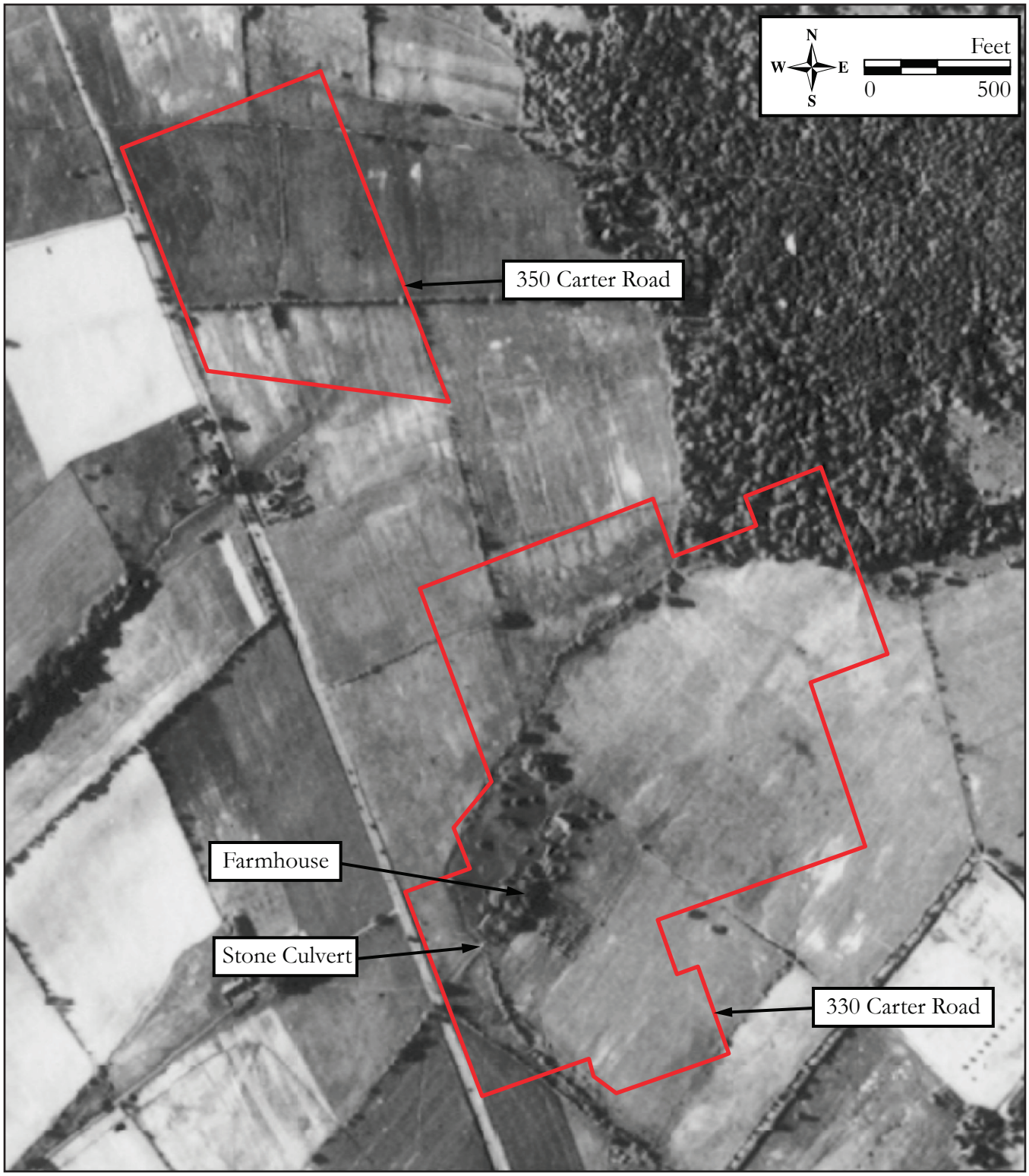

Figure 2: 1930 aerial showing the Gantz Farmstead (NJDEP 1930).

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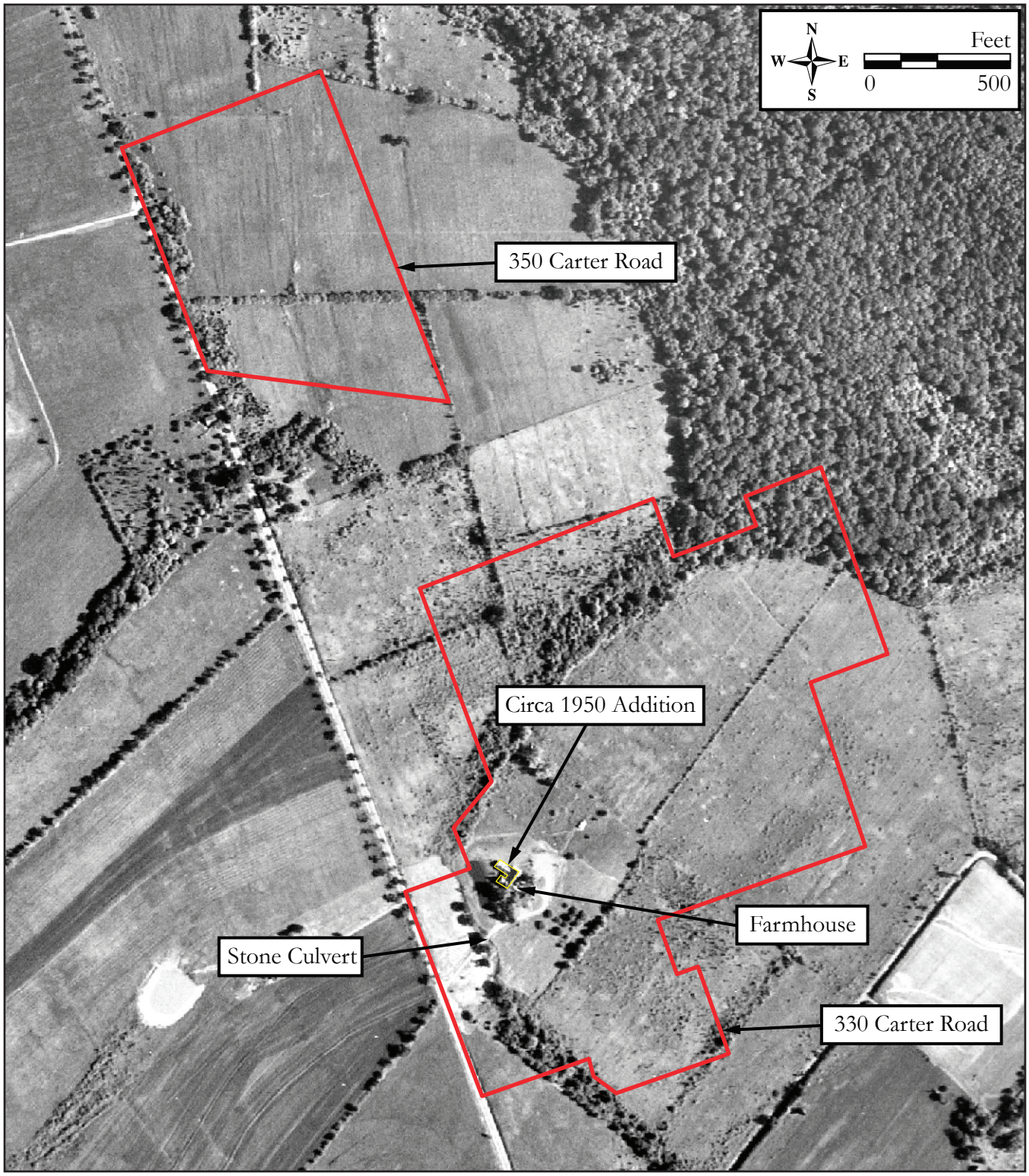

Figure 3: 1953 aerial image of the 330-350 Carter Road Corporate Complex (NETR 1953).

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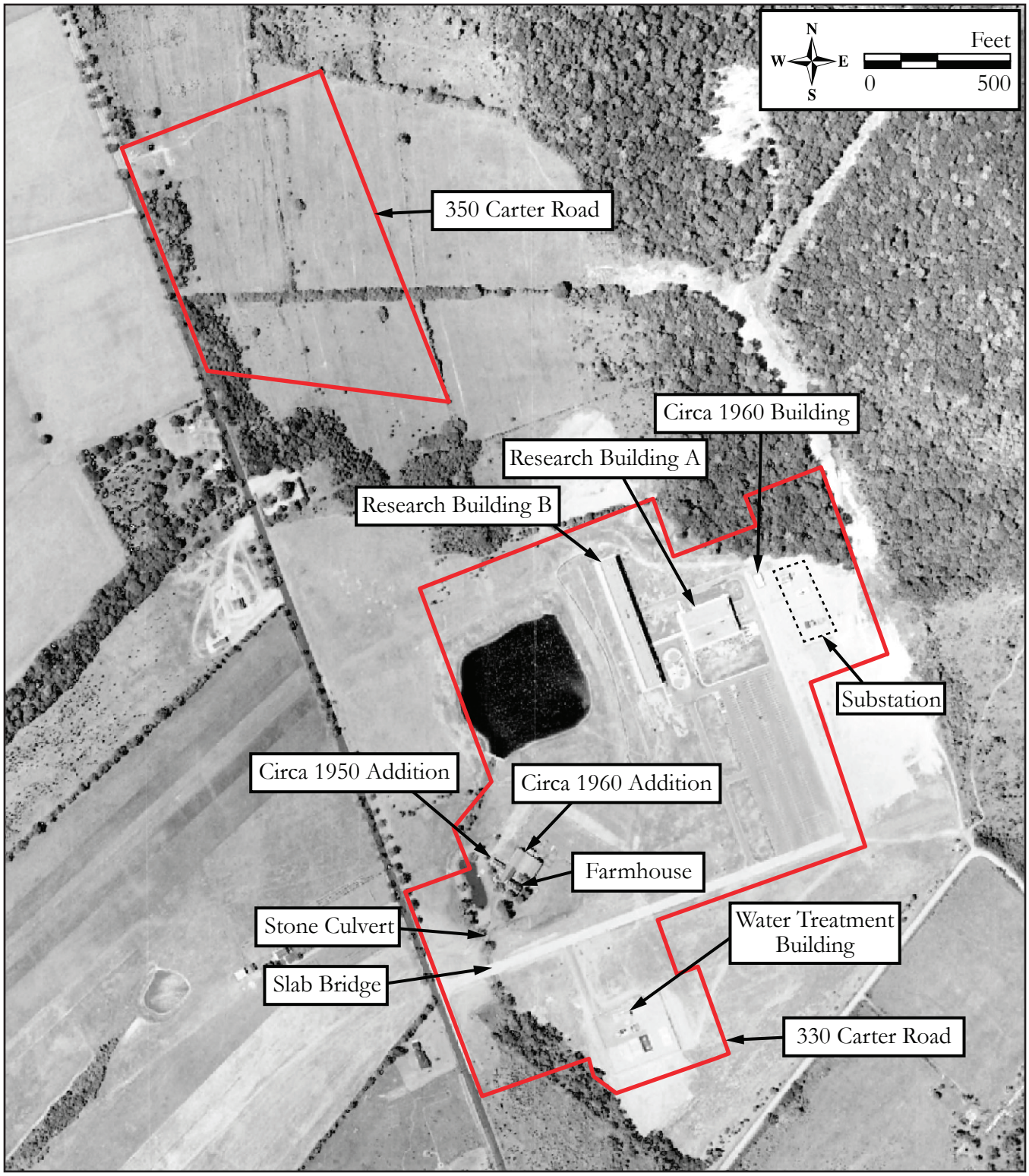

Figure 4: 1963 aerial image of the 330-350 Carter Road Corporate Complex (NETR 1963).

CONTINUATION SHEET

Historic Sites #:

Figure 5: Architectural rendering of the Engineering Research Center before its construction (Hopewell Fire Department 1961).

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Historic Sites #:

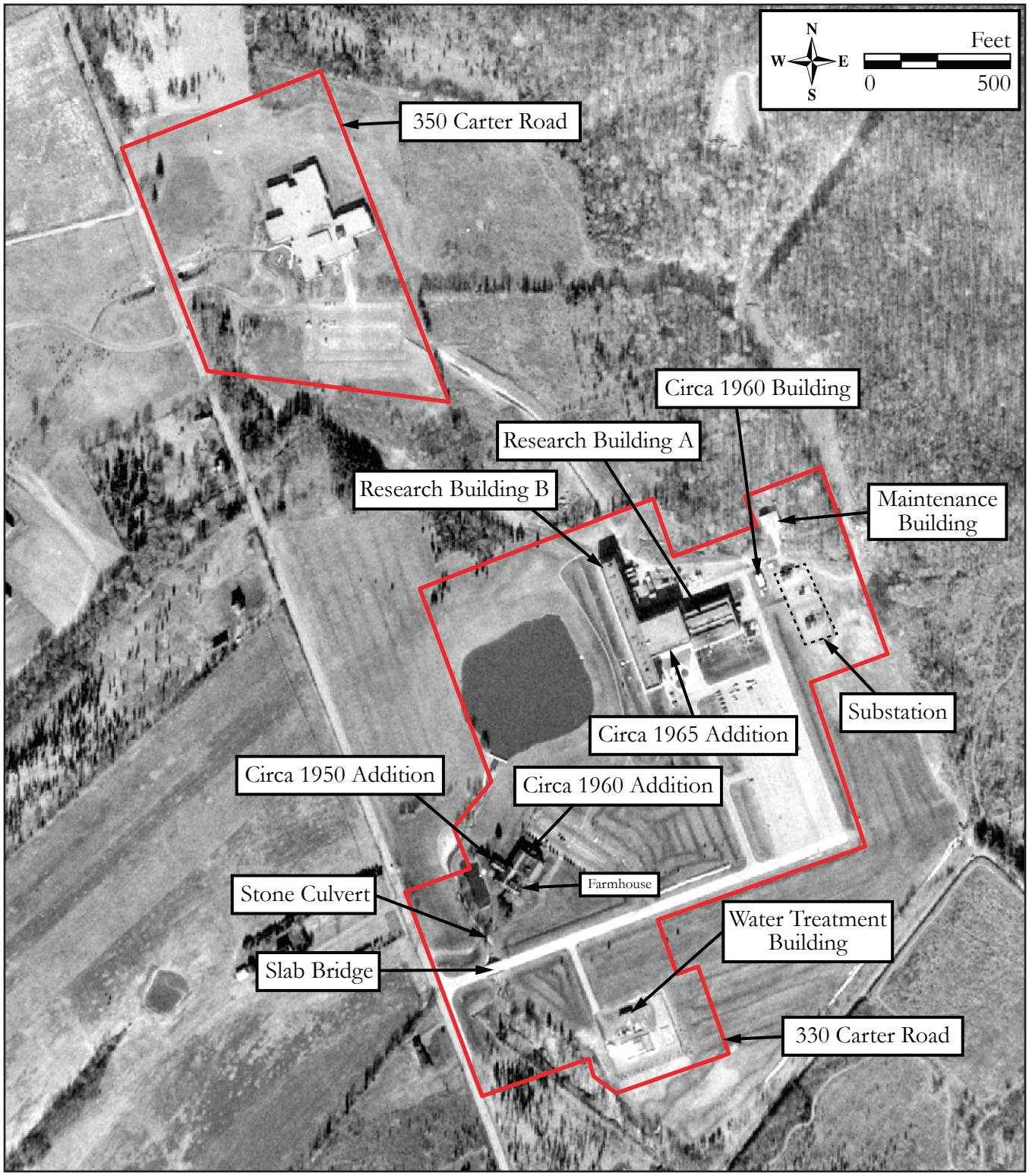

Figure 6: 1969 aerial image of the 330-350 Carter Road Corporate Complex (NETR 1969).

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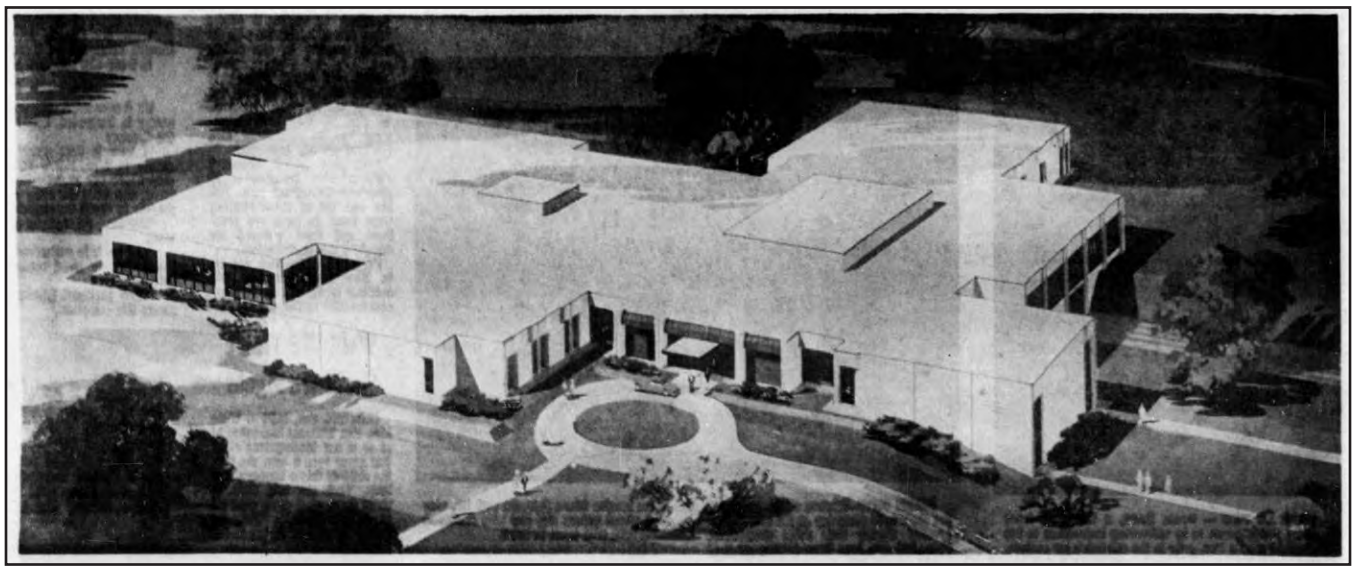

Figure 7: Image of the Corporate Education Center (The Central New Jersey Home News 10 August 1969:48).

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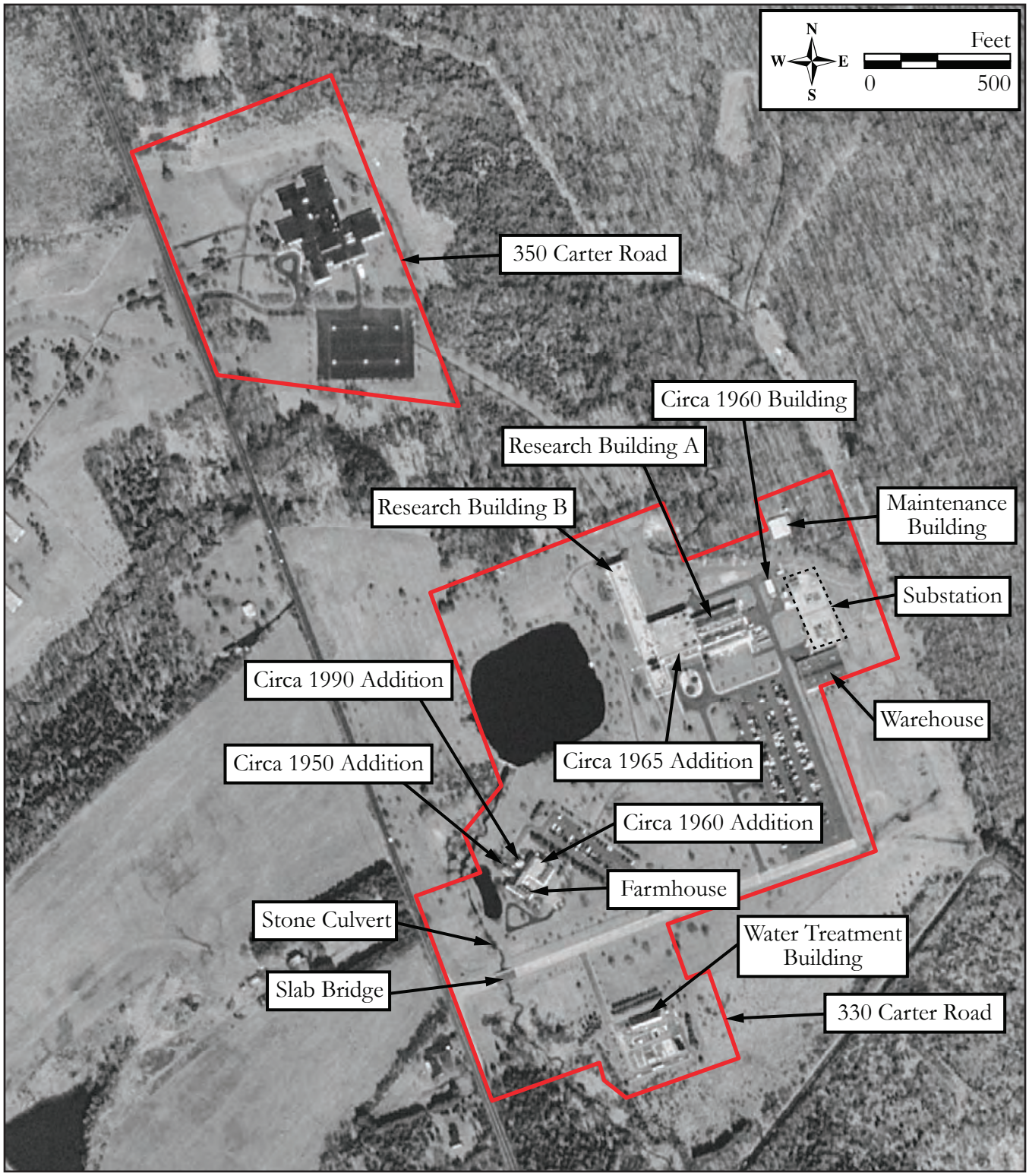

Figure 8: 1995 aerial image of the 330-350 Carter Road Corporate Complex (NETR 1995).

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Historic Sites #:

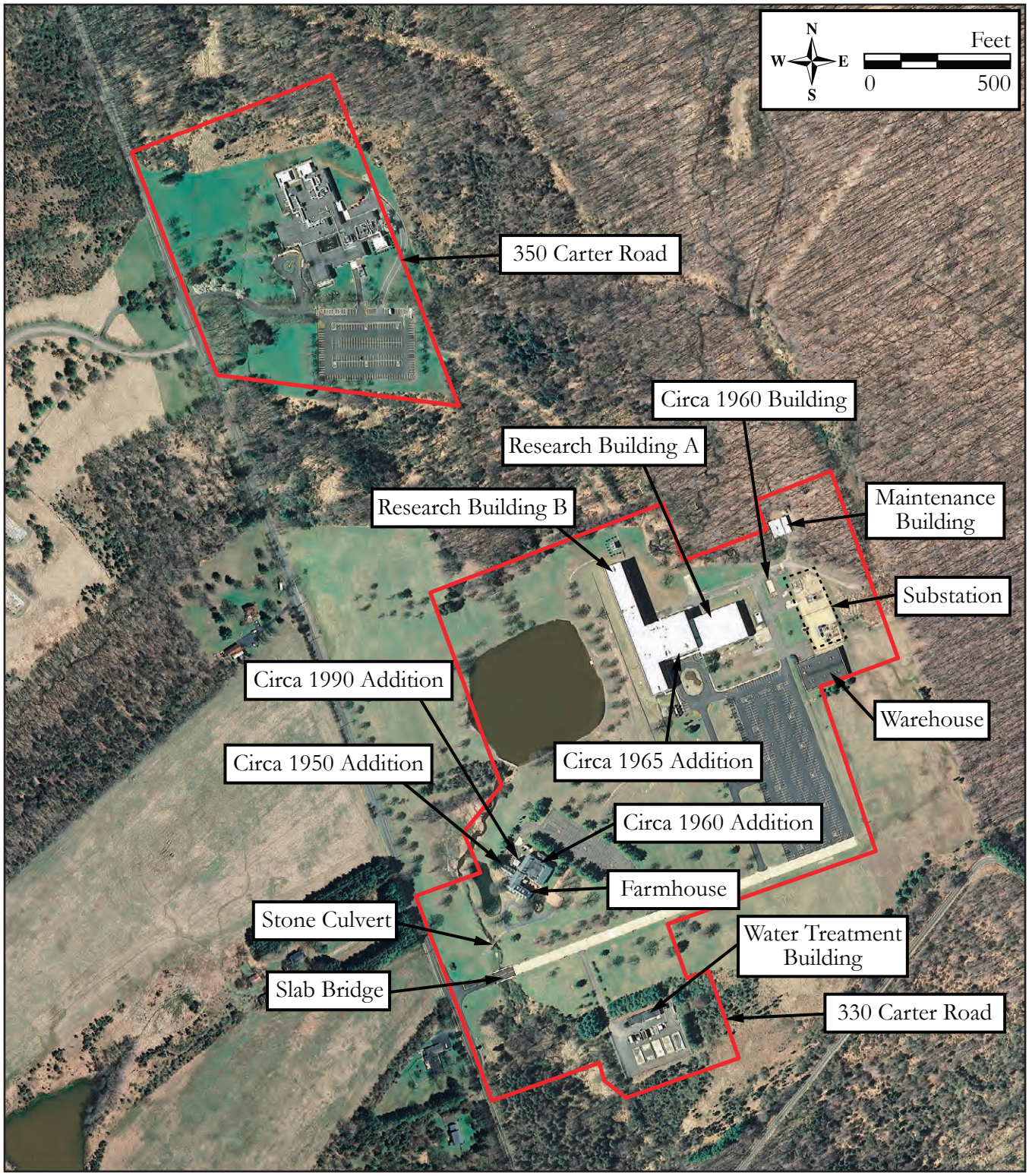


Figure 9: 2007 aerial image of the 330-350 Carter Road Corporate Complex (NETR 2007).

CONTINUATION SHEET

Historic Sites #:

Plate: 1

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2021

Overview of the former Western Electric Engineering Research Center at 330 Carter Road, showing the farmhouse and stone culvert, looking northeast from Carter Road.

Plate: 2

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2021

Overview of the northeastern half of the former Western Electric Engineering Research Center at 330 Carter Road, looking northeast from the driveway.

CONTINUATION SHEET

Historic Sites #:

Plate: 3

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the farmhouse's primary (southwest) elevation from the driveway.

Plate: 4

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2021

Detail view of the original farmhouse, consisting of a main block and two-story southeast wing.

CONTINUATION SHEET

Historic Sites #:

Plate: 5

Photo view: Northwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the southeastern corner of the original farmhouse from the driveway.

Plate: 6

Photo view: Northwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the original farmhouse's southeast elevation.

CONTINUATION SHEET

Historic Sites #:

Plate: 7

Photo view: Southwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View showing the rear (northeast) elevation of the original farmhouse.

Plate: 8

Photo view: Southeast

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the farmhouse's circa 1950 addition, showing the northwest elevation of the two-story main block.

CONTINUATION SHEET

Historic Sites #:

Plate: 9

Photo view: East

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the farmhouse's circa 1950 addition, showing the northwest and southwest elevations of the one-story wing.

Plate: 10

Photo view: South

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the farmhouse's circa 1950 addition, showing the northeast and northwest elevations of the one-story wing.

CONTINUATION SHEET

Historic Sites #:

Plate: 11

Photo view: Southeast

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the farmhouse's circa 1960 and circa 1990 additions, showing the northwest elevations.

Plate: 12

Photo view: South

Photographer: Lauren Dunkle

Date: January 28, 2021

Overview of the farmhouse's northern corner, showing the circa 1950, circa 1960, and circa 1990 additions.

CONTINUATION SHEET

Historic Sites #:

Plate: 13

Photo view: South

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the farmhouse's circa 1960 addition, showing the northeast elevation and the one-story wing.

Plate: 14

Photo view: West

Photographer: Lauren Dunkle

Date: January 28, 2021

Overview of the farmhouse's eastern corner, showing the circa 1960 addition.

CONTINUATION SHEET

Historic Sites #:

Plate: 15

Photo view: North

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the farmhouse's circa 1960 addition, showing the southeast and southwest elevations.

Plate: 16

Photo view: Northwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the farmhouse's rear courtyard, formed by the original farmhouse, the circa 1950 addition, and the circa 1960 addition.

CONTINUATION SHEET

Historic Sites #:

Plate: 17

Photo view: Northwest

Photographer: Lauren Dunkle

Date: January 28, 2021

Overview of the research buildings from the parking lot.

Plate: 18

Photo view: North

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the primary (southeast) elevation of Research Building A.

CONTINUATION SHEET

Historic Sites #:

Plate: 19

Photo view: Northwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the eastern corner of Research Building A, showing the primary and northeast elevations.

Plate: 20

Photo view: Southwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the northeast elevation of Research Building A.

CONTINUATION SHEET

Historic Sites #:

Plate: 21

Photo view: Southwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the northern corner of Research Building A, showing the northeast and rear (northwest) elevations.

Plate: 22

Photo view: Southeast

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the rear (northwest) elevation of Research Building A.

CONTINUATION SHEET

Historic Sites #:

Plate: 23

Photo view: Northwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the exterior entrance to the underground bunker located in the basement of Research Building A.

Plate: 24

Photo view: Northwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the eastern corner of Research Building B, showing the front portion of its northeast elevation.

CONTINUATION SHEET

Historic Sites #:

Plate: 25

Photo view: North

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the primary (southeast) elevation of Research Building B.

Plate: 26

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the southern corner of Research Building B, showing its primary and southwest elevation.

CONTINUATION SHEET

Historic Sites #:

Plate: 27

Photo view: East

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the western corner of Research Building B, showing its southwest and rear (northwest) elevations.

Plate: 28

Photo view: Southeast

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the rear elevation of Research Building B.

CONTINUATION SHEET

Historic Sites #:

Plate: 29

Photo view: Southwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the northern corner of Research Building B, showing the rear and northeast elevations.

Plate: 30

Photo view: West

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the northeast elevation of Research Building B, located behind the circa 1965 addition.

CONTINUATION SHEET

Historic Sites #:

Plate: 31

Photo view: North

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the primary (southeast) elevation of the circa 1965 addition connecting the two research buildings.

Plate: 32

Photo view: Southwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the northern corner of the circa 1965 addition connecting the two research buildings.

CONTINUATION SHEET

Historic Sites #:

Plate: 33

Photo view: South

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the rear (northwest) elevation of the circa 1965 addition connecting the two research buildings.

Plate: 34

Photo view: North

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the maintenance building's primary (south) elevation, showing the main block and east wing.

CONTINUATION SHEET

Historic Sites #:

Plate: 35

Photo view: Northwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the maintenance building's southeast corner, showing the primary and east elevations.

Plate: 36

Photo view: West

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the east elevation of the maintenance building's east wing.

CONTINUATION SHEET

Historic Sites #:

Plate: 37

Photo view: Southwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the maintenance building's northeast corner, showing the east and rear (north) elevations.

Plate: 38

Photo view: South

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the maintenance building's rear elevation, showing the main block and east wing.

CONTINUATION SHEET

Historic Sites #:

Plate: 39

Photo view: Southeast

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the maintenance building's northwest corner, showing the rear and west elevations.

Plate: 40

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the water treatment facility's southern corner, showing the southwest and primary (southeast) elevations.

CONTINUATION SHEET

Historic Sites #:

Plate: 41

Photo view: North

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the water treatment facility's primary elevation.

Plate: 42

Photo view: Northwest

Photographer: Lauren Dunkle

Date: January 28, 2021

Overview of the water treatment facility, also showing the eastern corner and northeast elevation of the building.

CONTINUATION SHEET

Historic Sites #:

Plate: 43

Photo view: Southeast

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the substation looking southeast.

Plate: 44

Photo view: South

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the substation, looking south.

CONTINUATION SHEET

Historic Sites #:

Plate: 45

Photo view: East

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the stone culvert's northern elevation.

Plate: 46

Photo view: North

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the stone culvert's southern elevation.

CONTINUATION SHEET

Historic Sites #:

Plate: 47

Photo view: Southwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the stone culvert's parapet walls.

Plate: 48

Photo view: South

Photographer: Lauren Dunkle

Date: January 28, 2021

Detail view of the stone culvert's mid-twentieth-century alteration.

CONTINUATION SHEET

Historic Sites #:

Plate: 49

Photo view: Southwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the concrete slab bridge's north elevation.

Plate: 50

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the concrete slab bridge's south elevation.

CONTINUATION SHEET

Historic Sites #:

Plate: 51

Photo view: West

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the concrete slab bridge's north parapet.

Plate: 52

Photo view: East

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the concrete slab bridge's south parapet.

CONTINUATION SHEET

Historic Sites #:

Plate: 53

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the concrete slab bridge from the driveway.

Plate: 54

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the southern corner of the warehouse showing the southeast and southwest elevations. Built south of the substation around 1980, the building consists of a concrete first floor and metal panels on the second floor.

CONTINUATION SHEET

Historic Sites #:

Plate: 55

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2021

Overview of the former Western Electric Corporate Education Center at 350 Carter Road, from Carter Road, looking southeast.

Plate: 56

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2021

Overview of 350 Carter Road's primary (southwest) elevation.

CONTINUATION SHEET

Historic Sites #:

Plate: 57

Photo view: East

Photographer: Lauren Dunkle

Date: January 28, 2021

View showing the southeastern portion of 350 Carter Road's primary elevation.

Plate: 58

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2021

View showing the northwestern portion of 350 Carter Road's primary elevation.

CONTINUATION SHEET

Historic Sites #:

Plate: 59

Photo view: Southeast

Photographer: Lauren Dunkle

Date: January 28, 2021

View of 350 Carter Road's northwestern corner, showing portions of the primary and northwest elevations.

Plate: 60

Photo view: South

Photographer: Lauren Dunkle

Date: January 28, 2021

View of 350 Carter Road's northwest elevation showing the circa 2007 mechanical room additions.

CONTINUATION SHEET

Historic Sites #:

Plate: 61

Photo view: South

Photographer: Lauren Dunkle

Date: January 28, 2021

View from 350 Carter Road's northeastern corner, showing a portion of the rear (northeast) elevation.

Plate: 62

Photo view: Southwest

Photographer: Lauren Dunkle

Date: January 28, 2021

Detail view showing the rear elevation of 350 Carter Road's rear projection. Note the infilled bay covered in tile.

CONTINUATION SHEET

Historic Sites #:

Plate: 63

Photo view: Northwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View from 350 Carter Road's southeast corner, showing a perspective view of the southeast elevation.

Plate: 64

Photo view: Northwest

Photographer: Lauren Dunkle

Date: January 28, 2021

View of 350 Carter Road's southeast elevation.

CONTINUATION SHEET

Historic Sites #:

Plate: 65

Photo view: North

Photographer: Lauren Dunkle

Date: January 28, 2021

View of 350 Carter Road's southwestern corner, showing the primary and southeast elevations.

BASE SURVEY FORM

Historic Sites #:

Property Name: 124 Cleveland Road

Street Address: *Street #:* 124 *(Low)* _____ *(High)* *Apartment #:* _____ *(Low)* _____ *(High)*

Prefix: _____ *Street Name:* Cleveland *Suffix:* _____ *Type:* RD

County(s): Mercer County **Zip Code:** 08540

Municipality(s): Hopewell Township **Block(s):** 40

Local Place Name(s): Princeton **Lot(s):** 87

Ownership: Private **USGS Quad(s):** Princeton, NJ

Description:

The building at 124 Cleveland Road is a one-and-one-half-story frame dwelling constructed in 1963 (TET, 18 August 1936:54; Bauhan Collection 1963). The house consists of a main block flanked by a one-and-one-half-story southwest wing, and a one-story northeast garage connected to the main block by a hyphen. The exterior is covered in what appears to be clapboard siding throughout. Windows appear to primarily consist of single and grouped, six-over-six and eight-over-eight, wood-sash double-hung units with storms; however, some vinyl-sash replacement units are also present. Measuring four bays wide and two bays deep, the main block is capped by a side-gable, slate-shingle roof with copper snow shields and an exterior masonry chimney in the southwest gable end. The primary (northwest) elevation features symmetrical fenestration with six-light, wood-sash awning windows featured on the second floor. *See Building Attachment*

Registration and Status Dates:

National Historic Landmark: _____ SHPO Opinion: _____

National Register: _____ Local Designation: _____

New Jersey Register: _____ Other Designation: _____

Determination of Eligibility: _____ Other Designation Date: _____

Photograph:

Survey Name: Cultural Resources Survey, Mount Rose Segment (Carter Road to Cleveland Road), Lawrence Hopewell Trail

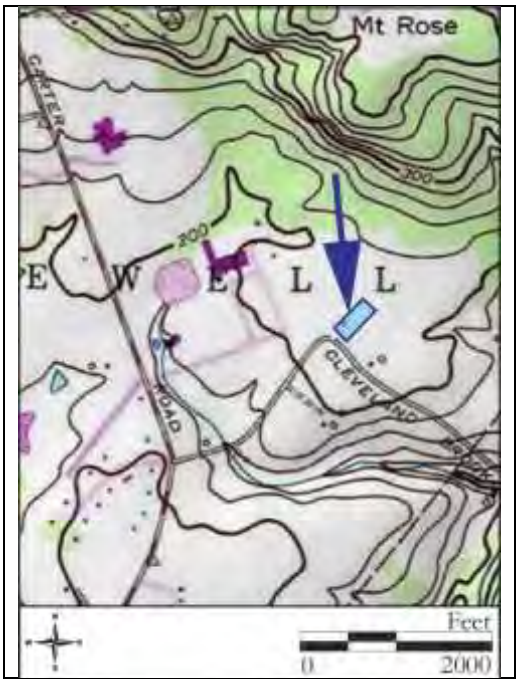
Surveyor: Lauren Dunkle Date: May 2021

Organization: Richard Grubb and Associates, Inc.

BASE SURVEY FORM

Historic Sites #:

Location Map:



Site Map:

Bibliography/Sources:
See Continuation Sheet

Additional Information:
None.

More Research Needed? ☐ Yes ☒ No

INTENSIVE LEVEL USE ONLY

Attachments Included: 1 Building _____ Landscape _____ Farm
_____ Bridge _____ Industry

Within Historic District? ☐ Yes ☒ No **Historic District Name:** _____

Status: ☐ Key-Contributing ☐ Contributing ☐ Non-Contributing

Associated Archaeological Site/Deposit? ☐ Yes ☒ No
(Known or potential Sites – if yes, please describe briefly)

Survey Name: Cultural Resources Survey, Mount Rose Segment (Carter Road to Cleveland Road), Lawrence Hopewell Trail
Surveyor: Lauren Dunkle Date: May 2021
Organization: Richard Grubb and Associates, Inc.

BUILDING/ELEMENT ATTACHMENT

Historic Sites #:

☒ **BUILDING** ☐ **STRUCTURE** ☐ **OBJECT**

Common Name: 124 Cleveland Road
Historic Name: 124 Cleveland Road
Present Use: Residential Activity, Permanent, Single Family
Historic Use: Residential Activity, Permanent, Single Family
Construction Date: 1963 **Source:** TET, 18 August 1936:54; Bauhan Collection 1963
Alteration Date(s): **Source:**
Designer: Rolf Bauhan **Physical Condition:** Good
Builder: Unknown **Remaining Historic Fabric:** High
Style: Colonial Revival
Form: Other **Stories:** 1.5
Type: N/A **Bays:** 4
Roof Finish Materials: Slate Shingle
Exterior Finish Materials Other

Exterior Description (continued from Base Survey Form):
The main entrance, consisting of a wood panel door with an aluminum storm and topped with a decorative fan light, is located in the second northeastern-most bay of the primary elevation. Concrete steps with a wrought iron rail provide access to the front door.

The southwest elevation has an asymmetrical fenestration and is predominantly obscured by the southwest wing. Situated in the southeastern-most bay of the first floor is a single, vinyl-sash replacement window, and a double-hung wood-sash unit is located in the gable, flanking the exterior chimney. The rear (southeast) elevation has a symmetrical fenestration with three, evenly spaced, hipped dormers, containing six-over-six double-hung units, lining the roof. A secondary entrance with an aluminum storm is located in the center bay of the first floor, sheltered by a full-length covered porch, formed by an extension of the roof. The northeast elevation of the main block was not visible from the public-right-of-way. The southwest wing is one-bay-wide and one-bay-deep and capped with a side-gable roof clad with slate shingles. Copper snow shields line both slopes. A fixed, four-light window is centered in the gable end. View of the one-story northeast garage wing is limited from the public right-of-way. Attached to the main block by a one-story side-gable hallway, it is capped with a slate-shingle, hipped roof with a small, central cupola.

Interior Description:
The subject property is a privately held parcel owned by Christopher Myers and Thomas Pinneo. As sub-consultants to Greenman-Pedersen, Inc. for this project, access to the property by Richard Grubb & Associates, Inc. was limited to the exterior and did not include interior access to the building.

Setting:
The dwelling at 124 Cleveland Road is situated on a rectangular parcel (Block 40, Lot 87) on the northeast side of Cleveland Road in Hopewell Township, Mercer County, New Jersey. The building is oriented with its primary elevation facing northwest and is located approximately 100 feet from the road. A gravel driveway leads from the road to an attached garage, located northeast of the dwelling. The parcel consists of a manicured lawn surrounded by mature trees. The property is bounded by Cleveland Road to the southwest and dense forested areas to the northwest, northeast, and southeast. The surrounding area is characterized by multiple farmsteads dating from the nineteenth century, twentieth-century residences, and several mid-twentieth-century industrial buildings.

Survey Name: Cultural Resources Survey, Mount Rose Segment (Carter Road to Cleveland Road), Lawrence Hopewell Trail
Surveyor: Lauren Dunkle Date: May 2021
Organization: Richard Grubb and Associates, Inc.

ELIGIBILITY WORKSHEET

Historic Sites #:

History:
See Continuation Sheet

Significance:
The dwelling at 124 Cleveland Road is a well-preserved example of a mid-twentieth-century Colonial Revival residence in Mercer County. Built for the Clark family by Dean Mathey, the subject building has a porch addition that was designed by the locally recognized architect Rolf Bauhan. Bauhan is known to have designed over 70 buildings in the area, many of which are still standing today including the better-known Manor House situated on the campus of the Princeton Academy of the Sacred Heart and the Terrace Club at Princeton University. Research could not confirm whether Bauhan was the architect for the overall house design, though it is clear he designed the porch addition. Since its construction, the dwelling appears to have undergone minimal exterior alterations.

Eligibility for New Jersey and National Registers: ☐ Yes ☒ No **National Register Criteria:** ☐ A ☐ B ☐ C ☐ D

Level of Significance ☐ Local ☐ State ☐ National

Justification of Eligibility/Ineligibility:
The dwelling at 124 Cleveland Road is recommended not eligible for listing in the National Register of Historic Places (NRHP). Architecturally, the dwelling appears to have retained its integrity of design, materials, and workmanship; however, it is a common example of a mid-twentieth century Colonial Revival dwelling, and evidence could not be found to confirm the building as the work of a master. Further, there are better-preserved and more prominent examples of Bauhan's work found throughout the Princeton area that have a confirmed association with the architect. Research did not uncover that the subject residence is associated with significant historic events or individuals. For these reasons, the dwelling at 124 Cleveland Road is recommended not eligible for listing in the NRHP under Criteria A, B, or C.

For Historic Districts Only:

Property Count: Key Contributing: _____ Contributing: _____ Non Contributing: _____

For Individual Properties Only:

List the completed attachments related to the property's significance:

Narrative Boundary Description: N/A.

CONTINUATION SHEET

Historic Sites #:

History:

The subject property was originally part of a larger tract of land located along Cleveland Road in Hopewell Township. Situated less than half a mile south of the mid-nineteenth-century community of Mount Rose, the area remained relatively agricultural and undeveloped well into the twentieth century. During the early twentieth century, the property was owned by Dorothy T. Smith and was most likely used for farmland until it was purchased by Dean Mathey in 1930 (Mercer County Clerk [MCC] Deed Book [DB] 1773:11).

A graduate of the nearby Princeton University, Dean Mathey was a successful Wall Street businessman working primarily in investment and commercial banking. Although he was working in New York City, Mathey resided in Princeton with his family on a farm that he had purchased with his wife, Gertrude, in 1924 (Doremus and Company 1972). The farmstead, referred to as Pretty Brook Farm, was situated along present-day Pretty Brook Road, which merges with Cleveland Road, approximately 2,200 feet west of the subject property. Six years after purchasing their farm, Mathey expanded his landholdings in the area by purchasing Smith's land along Cleveland Road (MCC DB 1773:11).

Still an active member of his alma mater, Mathey served as an emeritus trustee of the school from 1927 to 1960. In 1954, Mathey likely helped his friend and local architect, Rolf Bauhan, also a Princeton graduate, to receive a commission for the building of 11 faculty houses on Lake Carnegie for the University. With a shared fondness for colonial architecture, Mathey hired Bauhan for multiple personal projects as well, including a role in the design of the dwelling on the subject property at 124 Cleveland Road (Croll 1998:25; Bauhan Collection 1955, 1963).

A prominent Princeton Architect during the early and mid-twentieth century, Rolf Bauhan became known as Princeton's first preservation architect. He designed over 70 revival-style buildings in the area in addition to renovating and restoring around 150 more (Levin n.d.). Some of his recognized works include the Manor House, situated on the Princeton Academy of the Sacred Heart campus, and Princeton University's Terrace Club. He also conducted consultation work on the restoration of Colonial Williamsburg and the historic Bainbridge House. His designs often included fine craftsmanship and the integration of historical styles into modern living. He was most known for his use of the Colonial Revival style and often used it in his designs for country houses (Levin n.d.). Bauhan served on the board of directors for the New Jersey Chapter of the American Institute of Architects in the 1940s (TET, 21 June 1940:18).

By the 1960s, Mathey was working on establishing residential developments in the Princeton area, particularly on the land surrounding his family's residence at Pretty Brook Farm. In 1963, he had applied for the construction of multiple residential developments in the area, including one on the east side of Provinceline Road, less than one mile east of the subject dwelling (TET, 13 October 1963:42). After owning the land along Cleveland Road for over three decades, Mathey initiated plans to subdivide a portion of the property. His development was laid out on a plan titled "Sketch Plan of Proposed Subdivision, Property of Dean Mathey," with the subject property identified as Lot 1. On November 18, 1966, the Township of Hopewell approved of Mathey's plans to develop a minor subdivision on his property, and he began selling the tracts along Cleveland Road (MCC DB 1773:11).

Although the subdivision and sale did not take place until 1966, it appears that Matthey had the house on the property designed and built prior to that time. While no plans could be located for the design of the house itself, a plan sheet for a porch addition on the dwelling's southeast elevation is on file at the Historical Society of Princeton (Bauhan Collection 1955). A hand-written notation on the plan sheet gives Bauhan as the architect for the project in February 1955. The residence, including the porch, was likely built in the latter half of 1963. The building does not appear on a 1963 aerial photograph, but in August 1963, Mathey applied for a permit to construct a "one and one-half story frame dwelling" on Cleveland Road and a historic photograph depicts the completed building, including the porch, in its present location that year (Figure 1; Nationwide Environmental Title Research [NETR] 1963, 1969; TET, 18 August 1936:54; Bauhan Collection 1963).

CONTINUATION SHEET

Historic Sites #:

History, continued:

Francis G. Clark and his wife, Jane, officially purchased Lot 1, the subject property, from Mathey in 1966 (MCC DB 1773:11). It appears from the language in the deed that the Clarks were already residing on the property at the time of sale, and information on file at the Historical Society of Princeton indicates that Mathey commissioned the porch addition to the subject building on behalf of the Clarks (Bauhan Collection 1955, 1963). Francis and his wife first moved to the area in 1943, after he was hired by the Mercer County and Princeton YMCA. Prior to his relocation to Princeton, Francis had been working for the Trenton YMCA in 1938. There he started a young people's group, which later set the foundation for various other youth programs that Francis would run through the YMCA (TET, 5 May 1991:2).

At the time of his hiring, the program was operating out of Dorthea's House, a community center that was originally founded in 1913 to help Italian immigrants transition to life in America (Immordino n.d.). While working for the Princeton YMCA, Francis Clark founded various youth programs including the successful Youth Speaks Out radio station and journalism workshops at nearby Rider University (TET, 5 May 1991:2). Jane also taught programs at the YMCA, one of which was an adult horseback riding program (TET, 3 January 1960:22). Through their work at the YMCA, the Clarks unofficially adopted Albert Cook, whom they met when he was 10 years old and looking to start a newspaper (TET, 5 May 1991:2). Francis continued to work as the YMCA's executive secretary for decades, until his retirement in 1977 (TET, 5 May 1991:2; Immordino n.d.). Following his retirement, he became the Building Manager of Dorthea's House and continued to support the development of the Princeton YMCA (Immordino n.d.). Research did not uncover any specific connection between the Clarks and Dean Mathey, but it is likely they were acquainted through their active roles in the Princeton community.

Since the dwelling's construction and porch addition in 1963, minimal changes have occurred the property. A small shed was built approximately 50 feet northeast of the dwelling around 1979 (NETR 1979). In 1995, Francis died, leaving the house to Jane who remained on the property until her death in 2005 (U.S. Find A Grave 2021a; U.S. Find A Grave 2021b). Albert J. Cook, the executor of Jane Clark's estate and noted as her son, sold the property in 2006 to Christopher Meyers and Thomas Pinneo (MCC DB 5167:18). Photographs from a 2009 real estate listing for the property provide some views of the building and its interiors at that time (Realtor.com 2009; Figures 2-5). Sometime between 2011 and today, the exterior of the dwelling was painted white (Google Imagery 2011).

Bibliography:

Bauhan Collection

1955 Alteration for Dean Mathey, Esq, Princeton, N.J. On file, Bauhaun Collection, Historical Society of Princeton, Princeton, New Jersey.

1963 Photograph, Mathey, Dean (Frank Clark) Cleveland Rd. 1963. On file, Bauhaun Collection, Historical Society of Princeton, Princeton, New Jersey.

Croll, Emily

1998 *Craftsmanship, Comfort, and Elegance*: *The Architecture of Rolf W. Bauhan 1920-1966*. Historical Society of Princeton, Princeton, New Jersey.

Doremus and Company

1972 Death of Dean Mathey Press Release. On file, Cranford Historical Society, Cranford, New Jersey.

Google Imagery

2011 Google Streetview. Electronic document, https://www.google.com/maps/, accessed March 2021.

CONTINUATION SHEET

Historic Sites #:

Bibliography, continued:

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n.d. A Look at Princeton's First Preservation Architect. Princeton Magazine. Electronic Document, http://www.princetonmagazine.com/buildings-by-bauhan/, accessed March 2021.

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1969 Historic aerial photograph. Electronic document, http://historicaerials.com, accessed March 2021.
1979 Historic aerial photograph. Electronic document, http://historicaerials.com, accessed March 2021.

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1960 Equestrian Instructions. 3 January: 22. Trenton, New Jersey,
1963 Hopewell Township Building Permits. 18 August: 54. Trenton, New Jersey.
1963 Subdivision Approval Announcement. 13 October: 42. Trenton, New Jersey.
1991 A Touching Tribute for a Caring Man. 5 May: 2. Trenton, New Jersey.

United States Find A Grave, 1600s-Current
2021a Francis G. Clark, 29 March 1995, Princeton Cemetery, U. S. Find A Grave, accessed May 2021, https://www.findagrave.com/memorial/162871947/francis-gerald-clark.
2021b Jane G. Clark, 4 January 2005, Princeton Cemetery, U. S. Find A Grave, accessed May 2021, https://www.findagrave.com/memorial/148655998/jane-clark.

CONTINUATION SHEET

Historic Sites #:

Figure 1: 1969 aerial showing the subject dwelling at 124 Cleveland Road (NETR 1969).

CONTINUATION SHEET

Historic Sites #:

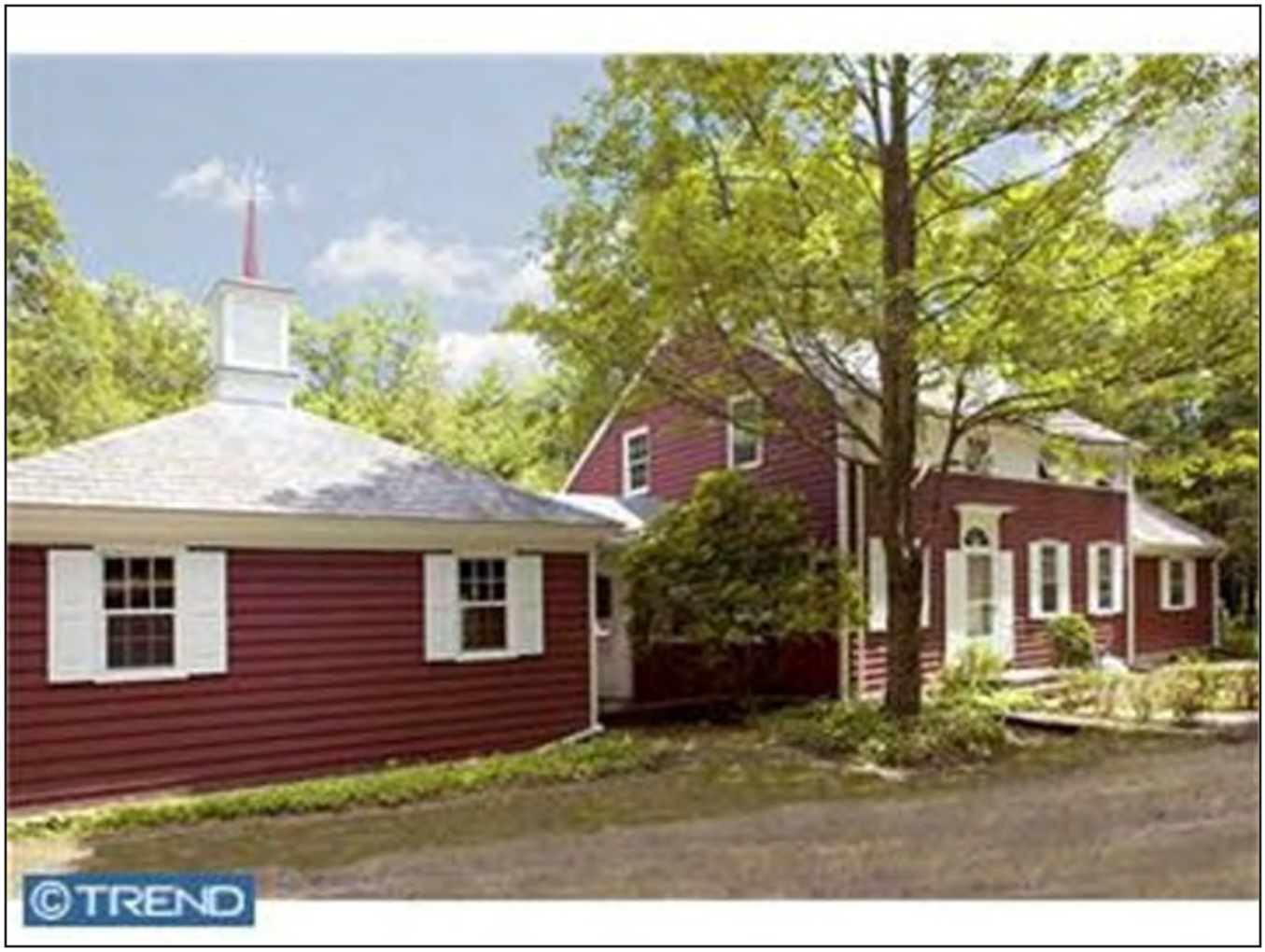

Figure 2: 2009 photograph of the dwelling at 124 Cleveland Road (Realtor.com 2009).

CONTINUATION SHEET

Historic Sites #:

Figure 3: 2009 photograph of the dwelling at 124 Cleveland Road (Realtor.com 2009).

CONTINUATION SHEET

Historic Sites #:

Figure 4: 2009 photograph of the living room in the dwelling at 124 Cleveland Road (Realtor.com 2009).

CONTINUATION SHEET

Historic Sites #:

Figure 5: 2009 photograph of the front entryway in the dwelling at 124 Cleveland Road (Realtor.com 2009).

CONTINUATION SHEET

Historic Sites #:

Plate: 1

Photo view: East

Photographer: Lauren Dunkle

Date: January 28, 2021

Overview of the primary (northwest) elevation of the dwelling at 124 Cleveland Road.

Plate: 2

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2021

Perspective view of the primary (northwest) and southwest elevations of the dwelling at 124 Cleveland Road.

CONTINUATION SHEET

Historic Sites #:

Plate: 3

Photo view: Northeast

Photographer: Lauren Dunkle

Date: January 28, 2021

View of the southwest elevation of the dwelling at 124 Cleveland Road.

Plate: 4

Photo view: North

Photographer: Lauren Dunkle

Date: January 28, 2021

Perspective view of the rear (southeast) elevation of the dwelling at 124 Cleveland Road.

APPENDIX G: LIST OF CONSULTING AND INTERESTED PARTIES

List of Consulting Parties:
FHWA
NJTPA
NJDOT-BEPR
NJHPO
Hopewell Township
Mercer County

List of Interested Parties:
Salem County Historical Society
Greater Elmer Area Historical Society
Salem County Cultural and Heritage Commission

APPENDIX H: ANNOTATED BIBLIOGRAPHY

Authors:	Matthew Craig, Lauren Dunkle, and Alison Eberhardt
Title:	Cultural Resources Survey, the Mount Rose (Carter Road to Cleveland Road) segment of the Lawrence Hopewell Trail, Hopewell Township, Mercer County, New Jersey
Date:	May 2021
RGA Database Title:	NJDOT TAP Lawrence Hopewell Trail
RGA Project No:	2020-286
State:	New Jersey
County:	Mercer
Municipality:	Hopewell Township
U.S.G.S. Quad:	Princeton, NJ
Drainage Basin:	Cleveland Brook, Stony Brook, Millstone River, Raritan River, Raritan Bay Atlantic Ocean
Regulation:	Section 106 of the National Historic Preservation Act, as amended; National Environmental Policy Act
Project Type:	Transportation: Trail Improvement
Project Sponsor:	Hopewell Township
Client:	Greenman-Pedersen, Inc.
Level of Survey:	Phase I Archaeological Survey and Intensive-level Historic Architectural Survey
Cultural Resource:	None