Chestnut Hill College, SugarLoaf Campus Entrance Project,
City of Philadelphia, Philadelphia County, Pennsylvania

PHASE IA ARCHAEOLOGICAL SURVEY

ER Project #2022PR00666

Prepared for:

Chestnut Hill College
Philadelphia, PA

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by

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Prepared for:

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ABSTRACT

This report documents the results of a Phase IA Archaeological Survey performed for the Chestnut Hill College, SugarLoaf Campus Entrance Project, City of Philadelphia, Philadelphia County, Pennsylvania. This report is the first cultural resources submission for the project. The cultural resources work was performed for the Chestnut Hill College. The Phase IA Archaeological Survey was conducted in response to the receipt of a letter dated February 25, 2022 received from the Pennsylvania State Historic Preservation Office (SHPO) concerning the project. As all permits had been acquired, construction of the project was underway at the time the request for additional information about potential project impacts to cultural resources was received. This report was prepared to address the concerns raised by the February 2022 letter from the SHPO.

An assessment of precontact archaeological potential indicated that although the Statewide Pre-Contact Probability Model identified several locations within the project APE that have moderate to high precontact archaeological potential, the landscape setting of the project was sloped and not conducive to precontact occupation. If precontact archaeological deposits were present, they would be small, ephemeral sites that would not be eligible for listing on the National Register of Historic Places. Precontact archaeological potential was assessed as low pre-construction. An assessment of historical archaeological potential noted the presence of a nineteenth-century dwelling and a variety of twentieth-century greenhouses in or adjacent to the APE. All of the buildings had been demolished by early twenty-first century. Historic archaeological potential was assessed as low pre-construction. Construction activities have destroyed or disturbed the APE. There is no archaeological potential. No archaeological work is recommended.

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INTRODUCTION

This report documents the results of a Phase IA Archaeological Survey performed for the Chestnut Hill College, SugarLoaf Campus Entrance Project, City of Philadelphia, Philadelphia County, Pennsylvania (Figure 1; USGS 1997). The APE lies within the Piedmont Upland Section of the Piedmont Physiographic Province. This report is the first cultural resources submission for the project. The cultural resources work was performed for the Chestnut Hill College.

The Phase IA Archaeological Survey was conducted in response to the receipt of a letter dated February 25, 2022 received from the Pennsylvania State Historic Preservation Office (SHPO) concerning the project. As all permits had been acquired, construction of the project was underway at the time the request for additional information about potential project impacts to cultural resources was received. This report was prepared to address the concerns raised by the February letter from the SHPO.

The Phase IA archaeological survey work was undertaken in March of 2022. Kenneth J. Basalik, Ph.D. served as Principal Investigator. Philip Ruth conducted historical research. Graphics for the report were prepared by Morgan Rouscher. Editorial work was executed by Kevin Quigg and Maria Rossi of the CHRS, Inc. staff and (Appendix A). The work was performed under contract to Chestnut Hill College.

BACKGROUND RESEARCH

Introduction

Background research was conducted in order to identify and provide a context for evaluating cultural resources in, and immediately adjacent to, the Area of Potential Effects (APE). Repositories and/or personnel consulted include those associated with the Pennsylvania Historical and Museum Commission (including the Pennsylvania Bureau for Historic Preservation and PASHARE), the Pennsylvania State Archives, the Philadelphia Department of Records, the Greater Philadelphia GeoHistory Network, Ancestry.com, Newspapers.com, the Pennsylvania Imagery Navigator, USGS EarthExplorer, USGS Topoview, Google Earth, the Chestnut Hill Conservancy, and Chestnut Hill College (Table 1). A variety of source materials were consulted including archaeological site data, precontact archaeological site potential, regional and municipal histories, newspaper archives, land records, aerial photographs, historical and archaeological resource files, as well as environmental, geological, and other pertinent studies. Maps and aerial photographs reflecting conditions in the study area from the mid-nineteenth century through the present were used to determine the locations of structures, identify property owners, and assess changes in physical assets within the study area.

TABLE 1

INSTITUTIONS AND REPOSITORY RECORDS CONSULTED

Chestnut Hill College, SugarLoaf Campus Entrance Project,
City of Philadelphia, Philadelphia County, Pennsylvania

Institution/Repository	Records Consulted
Pennsylvania Historical and Museum Commission	Environmental resource reports; Archaeological site data, Pennsylvania Historic Resource Survey Forms; National Register Nominations, through PASHARE
Pennsylvania State Archives	Historic maps; aerial photographs; regional histories
Philadelphia Department of Records	Tax maps and registers; grantor-grantee indexes
Greater Philadelphia GeoHistory Network	Historic maps; aerial photographs
Ancestry.com	Population census schedules, municipal directories
Newspapers.com	Archival newspaper facsimiles
Pennsylvania Imagery Navigator	Historic aerial photographs
USGS EarthExplorer	Historic aerial photographs
USGS Topoview	Historic and modern topographic quadrangles
Google Earth	Aerial photographs
Chestnut Hill Conservancy	Historic structure records and images
Chestnut Hill College	Newsletters, web postings

Environment

The APE lies within the Piedmont Upland Section of the Piedmont Physiographic Province. The landscape is drained by Wissahickon Creek which drains into the Delaware River. The underlying bedrock in the APE is mainly schist, gneiss, and quartzite (Socolow 1980). The Soil Survey of Philadelphia County, Pennsylvania identifies the APE as being comprised of three main soil types. The easternmost third of the APE is mapped as Urban Land – Chester Complex (8 to 15 percent slope). Approximately 20% of the APE is mapped as Manor Loam (15 to 25 percent slope), and the western half of the APE is mapped as Manor Extremely Stony Loam (8 to 15 percent slope). Depth to the B horizon is generally 6 to 7 inches.

Pennsylvania has undergone radical changes in environment in the last 15,000 years. At the end of the Late Pleistocene Period (15,000 to 8,000 BC), the Laurentide ice sheet had retreated to the area near the headwaters of the Delaware River (in the Catskill Mountains of what is now New York State). This ice sheet continued to impact weather patterns until roughly 8,000 BC, after it had retreated well into Canada (Custer 1996:97). At this time, a multiplicity of vegetation communities existed in Eastern Pennsylvania (Carbone 1976; Bernabo and Webb 1977; Watts 1979). Spruce-pine forests, including birch, hemlock, and chestnut, would have been intermingled with grasslands, and deciduous tree species would have existed in riverine environments near wetlands. Other indicators of the multiple environments are found in faunal remains of this period. Mammalian species included vole, lemming, mice, and ground squirrels; larger mammals, or megafauna, could include

musk ox, giant moose, peccaries, mammoth, and mastodon (Carbone 1976:67). Other mammals included deer, caribou, and elk (Custer 1996:97).

Between 8,000 BC and 6,500 BC, major environmental changes began. Open grasslands diminished, and woodland settings of pine and spruce mixed with smaller amounts of oak spread across eastern Pennsylvania. As ecotones disappeared, food resources dwindled, and perennial water sources became the focal point for mammals such as moose, deer, and elk. After 6,500 BC, a continental climate developed that was characterized by seasonal differences in temperature and increased precipitation (Carbone 1976:75; Custer 1996:145). Mixed mesic forests covered the area; by 6,000 BC, hemlock and oak covered eastern Pennsylvania. As 4,000 BC approached, hemlock had retreated into the northern part of the state, and oak predominated the rest of Pennsylvania. As the environment continued to shift and homogenize, interior parts of the state became more attractive for habitation.

During the Late Archaic Period (4,000 BC to 1,000 BC), additional climactic changes appear to have taken place. The environment went through several phases of decreased precipitation and warmer temperatures, as evidenced by the appearance of paleosols in riverine soil profiles (Knox 1983; Vento and Rollins 1989). Stewart notes the presence of buried landscapes and soil discontinuities dating to the Late Archaic in the Delaware River Valley (Stewart 1991), which are indicative of phases of erosion and deposition. Periodic dryness reduced the available water in interior sections of Pennsylvania. Dryness allowed hickory to begin to replace hemlock in forests. Hickory nuts were a more easily processed food source than the acorns of the Early and Middle Archaic (Custer 1996:182); in addition, the early stages of development of an oak and hickory forest encouraged the expansion of deer and other game populations. These environments would be attractive for short-term exploitation of resources, but less so for habitation. Coastal environments stabilized, allowing for the development of stable marine sources of sustenance, including shellfish beds and marshes. These resources were located primarily in the Chesapeake and Delaware bays, and were readily accessible via canoe from eastern Pennsylvania. In terms of stability, riverine environments emerged as preferred zones for settlement.

The modern form of environment was in place in eastern Pennsylvania by ca. 500 BC (Custer 1996:232). The number of tree species present in the region had increased exponentially; the majority of eastern Pennsylvania falls into Braun's (1967:192) Oak-Chestnut Forest Region. Tree species in the Piedmont Region include black walnut, bitternut, butternut, chestnut, wild black cherry, and white poplar. Grassland areas include red cedar, post oak groves, and blackjack oak bordering the grasslands. This diversity in tree species is also representative of an increase in the diversity of food sources available to precontact peoples. Acorns, chestnuts, hickory nuts, berries, lambs quarter (Chenopodium), and pigweed (Amaranthus) were readily available for use as food, medicine, and dyes. Although the predominant game species were deer and turkey (Shelford 1964), a large number of smaller mammalian species (squirrels, rabbits) were available. Waterfowl were increasingly hunted, and the greater availability of estuarine resources also appears in the archaeological record more frequently. This diverse multi-layered forest provides many resources for animal and human exploitation, including food (nuts, seeds, berries, and fruit), fuel, wood, fibers, and various plant products used for dyes and medicinal purposes.

The forests in this region, at the time of European settlement, were not completely untouched; thousands of years of Native American exploitation had modified considerable portions of them. The effects of the activities of these original inhabitants were minimal, however, when compared to the impact of the Europeans. The extensive clearing of the existing forests for fuel, lumber, and agricultural purposes rapidly destroyed the integrity of the existing biotic community. Similarly, the faunal resources (elk, deer, bear, wolf, fox, rabbit, hare, beaver, turkey, partridge, pigeon and other fowl) had been exploited by the Native Americans, but their habitats were largely destroyed by European settlement. For the precontact and early historic populations, however, this region contained an abundance of resources.

Precontact Period

Evidence from precontact sites in the eastern United States indicates that there were a number of successive regional cultural traditions. Although the exact number of these traditions (which varies locally) remains the subject of debate, three major cultural periods can be defined: Paleo-Indian, Archaic, and Woodland. These traditions are best viewed as responses to changing social and environmental conditions.

The Paleo-Indian Tradition, 12,000–8,000 BC: The earliest, widely recognized tradition in the northeastern United States is the Paleo-Indian. This tradition is believed to have been characterized by small hunter-gatherer groups subsisting mainly on large mammals, many of which are now extinct or no longer present in the area (woolly mammoth, mastodon, and caribou). The artifact distinctive to this tradition is the fluted projectile point, lanceolate-shaped with a central flake removed from both faces along its longitudinal axis. This and related tools have been found in association with various floral and faunal resources in sites across the eastern United States (Funk 1969; Gardner 1974; Adovasio 1977). This evidence suggests that the Paleo-Indian population exploited a wide variety of subsistence resources. The Paleo-Indian Period is marked by specific cultural ecological adaptations to the Pleistocene and Early Holocene environments. Two models for Paleo-Indian settlement/subsistence patterns have been proposed. According to Gardner (1974, 1976, 1977) the predominance of cryptocrystalline lithic material in the production of fluted projectile points may have influenced the distribution of settlements and the overall size and shape of exploitative territories. Gardner states that groups may have been restricted to a territory of 30 to 70 miles, with movements being cyclical around the known sources of the cryptocrystalline material. An alternative theory argues that the groups were not limited to settlement in areas that possessed large outcrops of cryptocrystalline material (Custer 1996:129). In this model, groups would have obtained lithic raw materials from secondary sources of the fine-grained material such as pebbles and cobbles, while engaging in other subsistence activities. In Pennsylvania, the location of known Paleo-Indian sites suggests a preference for poorly drained floodplains, sinkholes, or bogs and are believed to have represented attractive areas for game (Custer and Wallace 1982:146).

Custer has outlined the expected site types for the Paleo-Indian Period and they include the following: quarry, quarry reduction, base camps, base camp maintenance stations, and hunting sites (Custer 1984, 1985). Excavations from sites in the southern sections of Ridge and Valley Province reveal a complex of functionally specific sites. Settlement pattern components suggest that Paleo-Indian hunters occupied home ranges containing resource locations visited on a regular or semi-regular basis (Hatch et. al. 1985; Gardner 1976). A number of tools diagnostic of the Paleo-Indian

tradition have been found in the Delaware River Valley (Mason 1959; Kinsey et al. 1972). Major Paleo-Indian sites in the general region include the Shawnee-Minisink Site and the Plenge Site. The Shawnee-Minisink Site, a multicomponent stratified base camp site including a Paleo-component (McNett, McMillan, and Marshall 1977), is located near Delaware Water Gap. The Plenge Site, located along the Musconetcong River in Warren County, New Jersey, has also been interpreted as a base camp containing a wide variety of tool types (Kraft 1973; Eisenberg 1978). Sites in the region containing Paleo-Indian artifacts include the Mate Site (36LH0058), the Kecks Bridge Site (36LH0016), the Stahler Site (36LH00l5), and the Bachman Site (36NM0080). Paleo-Indian and Early Archaic sites have been found in both valley and upland settings. Upland sites are generally small, transient, special purpose sites, while larger sites on the flood plain represent base camps from which a variety of resources were procured (John Milner Associates 1983; McNett, McMillan, and Marshall 1977). Anthony and Roberts postulate substantial use of locally quarried Hardyston jaspers during this period. They suggest a relatively active extra-regional trade in this material as well (1988:152).

The Archaic Tradition, 8,000–1,000 BC: At the end of the Pleistocene, around 10,000 Before Present (BP), preserved pollen remains and associated radiocarbon dates suggest a gradual warming trend following the retreat of the Pleistocene glaciers that began around 17,000 BP. The warming Holocene climate resulted in environmental changes that encouraged population migrations and the development of new subsistence strategies. These developments characterize the Archaic Period, dating ca. 8000 to 1100 BC. In contrast to Paleo-Indian populations, Archaic populations manifested greater varieties of artifact types, suggesting that new and varied technologies were employed in the exploitation of more diverse resources (Louis Berger and Associates, Inc. 1991:111-2).

The initial phase of this period, the Early Archaic (8000 to 6000 BC) appears to represent an elaboration of earlier Paleo-Indian lifeways. The Early Archaic is traditionally divided from the Paleo-Indian Period on the basis of distinctive projectile point types that include corner-notched, stemmed, and bifurcated-stemmed varieties (Broyles 1971; Coe 1964). Cavallo (1980) and Gardner (1974), however, have argued that cultural adaptations during the Early Archaic were not substantially different than those of the preceding period. The primary difference in the tool assemblage from the Paleo-Indian Period is the introduction of new projectile point forms that appear to reflect a technological rather than an economic shift. Based on similar overall technologies, site distributions, and other adaptations, these researchers contend that Early Archaic cultures are largely a continuation of Paleo-Indian traditions (Cavallo 1980; Gardner 1974).

An increasing proportion of deciduous vegetation in the region during this period suggests that new environments may have been available to Early Archaic populations. The presence of higher frequencies of Early Archaic sites relative to those of the preceding period suggests population increases or a greater use of the general region and new habitats. However, the location and distribution of sites suggest that group territories and general settlement rounds were comparable to those of the Paleo-Indian Period.

Because Paleo-Indian and Early Archaic lifeways are thought to represent a continuum, similar influences would have affected the subsistence and settlement strategies of both groups. Early Archaic sites likely reflect the same functions and activities as Paleo-Indian sites. Site data suggests

that Early Archaic populations lived in small, highly mobile groups. Base camps, if established, were presumably located in lowlands along larger rivers and streams where environmental diversity, and thus usable resources, were greater (Hunter Research, Inc. 1990).

The Middle Archaic (6000 to 4000 BC) is problematic because of unclear typological definitions for the period. The paucity of information on the Middle Archaic in the region frequently leads researchers to group the period with either the Early or the Late Archaic (Hunter Research, Inc. 1990; Kraft and Mounier 1982). However, at present the Middle Archaic is characterized by diagnostic projectile points including Kirk-like, Stanly Stemmed, Morrow Mountain, Neville, and Stark points (Kinsey et al. 1972; Kraft 1986a; Ritchie and Funk 1971). These designations are based largely on formal similarities to projectile point types of the southeast or New England. Efforts to further understand the Middle Archaic in southeastern Pennsylvania have been hindered by the relative absence of stratified deposits yielding diagnostic artifacts.

In addition to diagnostic projectile points of this period, the Middle Archaic toolkit included hunting- and butchering-related objects similar to those of the preceding periods. Additions to the assemblage include atlatl weights (sometimes called bannerstones), chipped-stone axes or celts, adzes for woodworking, and netsinkers. Flat and pitted stones that may represent milling equipment also have been found in association with Middle Archaic sites (Bebrich 1967; Dumont and Dumont 1979:46; Hunter Research, Inc. 1990; Kraft 1975, 1986a; McMillan 1977).

These tools imply increased utilization of aquatic and plant resources, as well as woodworking, and may indicate a gradual shift in subsistence towards a more broad-based economy. The recent excavation of the Sandts Eddy Site in eastern Pennsylvania supports the position of an increased use of plant resources during the Middle Archaic. According to Bergman, Doershuk and Schuldenrein (1994), fragments of hazelnuts have been found in association with pitted stones in a Middle Archaic deposit, providing evidence for the processing of gathered plant resources during the early Middle Archaic.

The period of time that signals the cultural adaptation to the fully emergent Holocene milieu is the Middle Archaic division. Settlement patterns in southeastern Pennsylvania during the Middle Archaic are still not fully understood. However, judging from the available data, Middle Archaic sites in the Piedmont tend to be located near ephemeral streams, springheads, or along the base of slopes adjacent to floodplains (Custer and Wallace 1982). According to some researchers (Bergman, Doershuk and Schuldenrein 1994; Stewart and Cavallo 1991), the settlement pattern for the Delaware Valley Middle Archaic reflects a period of high mobility for relatively small foraging groups. The apparent absence of base camps in the Piedmont further suggests the limited use of this region during the Middle Archaic (Custer and Wallace 1982). The current evidence from the Sandts Eddy Site also supports this position. At the site, the Middle Archaic deposits were interpreted as representing restricted procurement activities undertaken by a small band, implying limited use of the Piedmont during the Middle Archaic (Bergman, Doershuk and Schuldenrein 1994).

Evidence suggests that Archaic peoples lived in small nomadic groups (Cushman 1981:9). The resources exploited varied on the basis of local availability. This factor, coupled with the types and quantities of the lithic materials employed in toolmaking, results in different artifact assemblages at different sites. It is therefore difficult to characterize a typical regional Late Archaic tool

assemblage. Archaic assemblages are, however, clearly distinguished from those of the preceding Paleo-Indian Tradition by the replacement of fluted points with smaller points of cruder materials and the emergence of grinding and ground stone tool (axes, chisels, and gouges) technologies. In general, tool assemblages from this tradition are marked by increasing diversification and specialization through time.

The increased number of sites dating to the Archaic is evidence that population density was greater during the Archaic than it was during the Paleo-Indian Tradition. This increase in population density was possible because, as climatic fluctuations stabilized and hardwood forests became established, the carrying capacity of the environment increased. In addition, the warming trend caused a rise in the sea level, which allowed for the formation of extensive marshes and estuaries along the Delaware River. As resources became more abundant in and around major waterways and marshes, settlement was increasingly focused along them (Kraft 1977; Gardner 1980). Despite this trend, there is evidence of continued seasonal nomadism based on a resource-scheduling strategy (Cushman 1981:12).

Late Archaic artifact assemblages reflect the variety of exploitative activities practiced during the period, and the diversity of habitats that were utilized. Artifacts found include knives, drills, atlatl weights, axes, celts, grinding and pounding implements, and netsinkers (Kinsey et al. 1972; Kraft 1975, 1986a). Milling stones and other food-grinding implements attest to an increased reliance on gathered wild plants. The recorded netsinkers, stone-boiling features, and faunal remains indicate the importance of fishing and shellfishing. The variety of lithic resources employed in tool manufacture shows an emphasis on materials, often local, such as quartzite and vein quartz that previously had experienced only limited use (Snethkamp and Ebright 1982). In southeastern Pennsylvania, however, the evidence from the Reading Prong jasper quarries suggests an increase in the use of jasper and jasper quarrying activities during the Late Archaic (Hatch 1994).

Louis Berger and Associates, Inc. (1986) have suggested three alternative models for Late Archaic settlement. The first involves a central-based wandering system wherein a fixed base camp is occupied on a semi-sedentary basis. Seasonal or constant forays to other camps would occur with the base camp periodically or seasonally abandoned and reoccupied during the later parts of the annual cycle. A second alternative settlement pattern involves a shifting base camp location. This model suggests that base camp positions would move when local resource bases became depleted or as seasonal resources became available elsewhere. The third alternative model proposes restricted wandering inside a given territory, with periodic group consolidation at changing base camp locations as resource availability allowed (Louis Berger and Associates, Inc. 1986:111-127). In all three alternatives, base camp locations were likely located along larger watercourses (Kraft 1986a).

Around approximately 2000 BC, unique artifact types appear in the regional archaeological record which mark the beginning of the Transitional Period or Terminal Late Archaic (2000 to ca. 1000 BC) (Kraft 1986a; Snow 1981; Witthoft 1953). The Transitional Period is characterized by the presence of distinctive large, thin, and broad-bladed projectile points such as the Perkiomen, Orient Fishtail, and Susquehanna types. These points evidence a lithic raw material preference for jasper and rhyolite. In addition, carved soapstone or steatite vessels make an initial appearance in the archaeological assemblage as well as fire cracked rock features (Kinsey et al. 1972; Kraft 1986a). Such features are more widespread than during previous periods. During the Late Transitional

Archaic Period, trade (particularly in non-local lithic material) expanded, and new artifact forms, such as steatite (soapstone) vessels, were used. The large number of sites and the more diverse cultural assemblages found in the region from this cultural period suggest a large population with more diverse procurement activities. It is likely that these factors led to an increase in the importance of upland areas in the region during this period. Custer, feeling a continuity in resource exploitation, combines the traditional Late Archaic, Terminal Late Archaic, Early Woodland, and Middle Woodland Periods together under the term Woodland I. Woodland I, according to Custer, is characterized by "focus on the highest productivity settings, an intensified use of certain resources, appearance of large semi-sedentary macro-band base camps, development of storage and processing facilities, extensive use of a wide range of environments, development and maintenance of trade and exchange networks, and the appearance of incipient ranked societies" (Custer 1985:36-37).

The appearance of new technologies and toolkits in the region has been the subject of various interpretations; these include the migration of new populations into the region and the incorporation of new technologies into an existing technological tradition (Snethkamp and Ebright 1982). The widespread appearance of soapstone or steatite vessels in Pennsylvania provides evidence of interregional trade and also may suggest residential stability, since stone bowls are items not easily transportable from site to site. Settlement and subsistence strategies during this period demonstrate an enhanced focus on rivers and the exploitation of anadromous fish (Hunter Research, Inc. 1990:IV-17).

The Woodland Tradition, 1,000 BC–AD 1600: The beginning of the Woodland Tradition in this region is marked by the introduction of ceramics (Gardner 1980:3) and by two major trends: increasing sedentism and the development of extensive agriculture (Curry and Custer 1982:4; Cushman 1981:14). During the Woodland Tradition, permanent or semi-permanent settlements replaced the seasonal base camp. Settlement patterns derived from sites dating to this period are focused on major waterways (Curry and Custer 1982:1), where the exploitable biomass was the greatest. The harvesting of various plants, waterfowl, fish, and shellfish would have provided a more than adequate supply of food. These waterways supplied relatively easy transportation, facilitated trade, and increased the range and quantity of resources that could be exploited. The Late Woodland (Custer's "Woodland II") Period is generally characterized by the introduction of maize and squash cultigens and the appearance of sedentary villages. These developments were neither unilateral nor temporally concomitant throughout the Mid-Atlantic region.

The Early Woodland (1000 to 400 BC) is traditionally distinguished from the preceding Late Archaic and Transitional Periods by the introduction of ceramic vessels. Trends toward greater sedentism and subsistence specialization begun during the Transitional Period continued and were eventually accompanied by experimentation with cultigens. By 1000 BC, regional climates and environments approximated historic/modern conditions. The productive deciduous element of plant environments would have remained intact from earlier periods. Early Woodland adaptations to this environment are generally thought to represent a continuation of preceding Archaic patterns. The introduction of ceramic technology, however, represented an important addition to material culture. Additional changes included the replacement of the Transitional Period broad projectile point forms by new point types.

Diagnostic projectile point types associated with this period include Meadowood side-notched and unnotched, Adena, and Fishtail points (Kraft 1986a). The earliest pottery associated with this period includes Marcey Creek and Ware Plain types and consists of flat-bottomed, straight-sided vessels with lugs or handles. These are thought to have been followed by the Vinette I conical-based, coarse-gritted, coil-constructed vessels, the interiors and exteriors of which are covered with the marks of cord-wrapped paddles (Kraft 1975; Williams and Thomas 1982). Ceramic forms of the period also include tobacco pipes (Hunter Research, Inc. 1990).

Early Woodland populations appear to have used uplands and low-order stream environments more frequently than did their Archaic predecessors. In addition, major Woodland habitation sites located in the floodplains of rivers show a degree of permanence or sedentism not evident during the Archaic Period. Increased utilization of peripheral habitats during Early Woodland times, as suggested by Kuznar (1984), is probably a direct result of longer occupations at floodplain habitation sites—in effect, an intensification of traditional hunting and gathering subsistence activities.

Gardner (1982) attributes the greater degree of sedentism during the Early Woodland to several factors. He argues for increased efficiency among Early Woodland populations in exploiting a variety of localized resources through settlement selection and resource scheduling. He also suggests the development of social institutions that encouraged or compelled the generation of food surpluses. Finally, he notes that environments, along with associated sets of food resources, became stabilized (Gardner 1982). The introduction of pottery also contributed to greater sedentism by facilitating the ability of Early Woodland populations to store food for periods of low environmental productivity.

As noted above, Early Woodland settlement patterns resemble those of the Late Archaic. Two possible settlement models are suggested by the data from Early Woodland sites. One alternative proposes the occupation of base camps located near zones of maximum resource availability. Small groups would foray from these bases to exploit available resources, but would not extend beyond the major environmental zone in which the base camp was located. A second model posits that seasonal fusion and fissioning of groups at specialized procurement and processing sites occurred. Such consolidation might have taken place during runs of anadromous fish, after which smaller groups would split off and move into a variety of environments on forays. Group fusion would later follow in other areas for the exploitation of other seasonal resources (Louis Berger and Associates, Inc. 1986:111-30).

During the Middle Woodland Period in eastern Pennsylvania, coarse cordmarked pottery was replaced by net-impressed and zoned ceramics. However, Middle Woodland cultures show a basic continuity of lifestyles with their Late Archaic and Early Woodland predecessors. Continuities include overlaps of site locations and the types of activities performed in various locations. Ceramic studies suggest, however, that the exploitative territories of some groups were more restricted during the Middle Woodland than in earlier times. In the absence of significant environmental and technological change, the limiting of territorial boundaries is viewed as a result of growing populations and elaborations of social relationships and organization.

Diagnostic artifacts of the Middle Woodland Period include Rossville, Lagoon, Fox Creek, and Jack's Reef points. During this period, argillite appears to have been the preferred raw material for chipped-stone tools (Hunter Research, Inc. 1990). However, this is not universal in all Piedmont Middle Woodland sites. At Lower Black's Eddy, located in Bucks County, the Woodland assemblages demonstrated a marked decrease in the reliance on argillite, with an increase in jasper and cherts (Robertson and Kingsley 1994). Other artifacts commonly associated with this time period include pestles, hammerstones, and anvilstones, which indicate the collection and processing of plant foods. This is supported by the presence of sizable quantities of acorn and hickory in the Middle Woodland deposits at such sites as Lower Black's Eddy (Robertson and Kingsley 1994). In addition, the continued exploitation of fish is indicated by the presence of netsinkers at many Middle Woodland sites (Williams and Thomas 1982).

The Late Woodland Period reflects a continuation of similar land use patterns and settlement location from the earlier Late Archaic-Early through Middle Woodland Periods. The major difference appears as an "increasing use of floodplain settings for relatively large semi-sedentary communities and the habitation-utilization of certain levees along major drainages" (Custer and Wallace 1982:159). Stating the obvious, it appears that the primary determinant of precontact settlement pattern distributions, excluding mortuary or ceremonial sites, is the location of water resources (Stewart 1981; Custer and Wallace 1982; Hatch et al. 1985; Snethkamp and Ebright 1982; Gardner 1987). Custer's research into the lithic scatter sites of the Piedmont uplands found that the most common topographical setting was the upland slope, and that 67% of the sites are located within 131.23 feet of surface water.

Except for stylistic differences, Late Woodland toolkits reflect the same functional diversity as earlier assemblages. Hallmarks of the period include triangular Levanna and Madison projectile points. The utilization of a wide range of lithic materials coincided with sedentary settlements and the exploitation of immediately available resources. Ceramic types include collared and collarless vessels decorated with incised geometric motifs and cordmarking, and a variety of chipped- and pecked-stone tools, and groundstone tools. Hoes, used in horticultural activities, are included in some assemblages of the period (Kinsey et al. 1972; Kraft 1986a). The distinctive pottery styles suggest that group territories were established by the Late Woodland (Hunter Research, Inc. 1990:IV-28).

The Contact Period, AD 1500-1750: The period during which Native American populations first encountered and co-existed with European traders and colonists is termed the Contact Period. For this region, the Contact Period dates roughly between the early 1600s and the 1740s.

During this period, increased contact with European traders and settlers resulted in the breakdown of traditional lifestyles and an increased reliance on European trade goods that were acquired in exchange for land and furs. The intensification of the fur trade ultimately led to conflict with neighboring aboriginal groups. Warfare, disease, and alcoholism decimated native populations in the region. In the vicinity of the study area, most of the indigenous Lenape groups had abandoned the area by the 1750s (Grumet 1991).

Contact Period assemblages are essentially similar to those of the later Late Woodland with the addition of items acquired through trade, such as projectile points of cut brass, copper, or glass, a

variety of other metal implements and ornaments, glass beads and bottles, and copper vessels (Kinsey et al. 1972; Kraft 1981, 1986b). Trade goods are typically emphasized in discussions of this period, and it is unclear at what rates these items were adopted by regional indigenous groups and how they functioned in their societies. It is likely that Native American groups continued to manufacture and use traditional objects alongside imported objects and materials. However, the status of traditional objects in the Native American culture is not clear for this period, which is frequently characterized as one of significant cultural change.

By 1640 in southeastern Pennsylvania, most stone tools were replaced by metal implements and guns had replaced traditional weapons. Native American groups used cloth more than hides, while beads and domestic wampum were being used most often for ornamentation (Becker 1985). In the Susquehanna Valley, the dependence on European goods led to a deterioration in the quality of traditional crafts (Kent 1984). Becker (1985:47) asserts, however, that despite dramatic changes in material culture, few changes occurred in the structure of Native American society. During the period between 1640 and 1680, the Native American cultural integrity is suggested by the resistance of regional groups to trade goods such as silver ornaments and European coins that had social and economic associations to Europeans (Becker 1985:50). Becker (1990) suggests that the Native American adoption of such objects by 1750 may be indicative of social changes among the aboriginal population. These changes included incipient social ranking that may not have existed previously.

Contact Period subsistence patterns likely changed from those of the Late Woodland Period as the economic focus of indigenous groups shifted from hunting, gathering, and horticulture to the fur trade. The demands of the fur trade led to intensified hunting by native groups, and ultimately to the virtual extermination of beaver and other fur-bearing animals. This shift in economic emphasis led to transitions in Native American subsistence patterns.

The emphasis on procuring furs contributed to a decrease in the hunting of animals for food. The preparation of furs also reduced the amount of time available to complete other tasks (Kraft 1986b:200). Despite the demands of the fur trade, Becker (1985) suggests that few changes in precontact settlement and subsistence occurred early in the Contact Period. Evidence of the continued presence of horticultural products in native diets is known from the Miller Field Site, where squash remains and copper fragments were cached together (Kinsey et al. 1972:52). The presence of European goods in large storage pits and other features characteristic of Late Woodland settlements further suggests continuity with earlier subsistence/settlement strategies (Kinsey et al. 1972; Kraft 1981). In portions of southeastern Pennsylvania, local populations may have actually intensified horticultural activity to produce a surplus for trade with Dutch colonists (Becker 1985:49).

At the time of European forays into southeastern Pennsylvania, the Lenapes (Delawares) occupied the region. Interaction with the Europeans in the early period consisted primarily of the Swedish and Dutch fur trade on the Delaware River. Becker suggests that the Lenape may have altered their settlement pattern to a more sedentary and concentrated form as a response to a commensurable relationship with Europeans (Becker 1985). He suggests that in the 1660s the Lenape were concentrated in the flatlands of Passyunk in what is now southern Philadelphia (Becker 1985:48). At the end of Dutch rule in the area, and with the dispersion of the Minquas by

the Seneca, the Lenape may have returned to a dispersed settlement pattern. By the 1680s the Lenape may have operated with the settlement system of one extended family band per feeder river (Becker 1985:50); however, the evidence for such a conclusion is scanty. The Lenape groups were gradually displaced by the Europeans in southeastern Pennsylvania. Lenape groups began arriving in the Susquehanna River area in the 1680s. Some groups were forced further west by the Iroquois as early as the 1720s (Kraft 1986a). In 1742, the coastal Delaware Indian groups which remained in eastern Pennsylvania were asked by Governor Thomas to move to the Susquehanna River. In the Treaty of Lancaster of 1744, all of the Indians still remaining in the Lower Delaware River Valley were ordered to leave (Kraft 1986a:233).

In Bucks County, Pennsylvania, the Playwicki Farm Site represents a multicomponent Lenape site dating to the early eighteenth century (Post-Contact Period) (Stewart 1995), located on lands sold to the Lenape by William Penn in 1683. Included in the artifact assemblage at the Playwicki Farm Site were white clay pipe bowl and stem fragments, glass trade beads, a possible jasper gunflint, a jasper strike-a-light, and a jack knife. More traditional artifacts included argillite and chert/jasper bifaces and cores, and chert/jasper, argillite, and quartz flake tools. Workable quartz was found on the property, distinguished by the presence of graphite phenocrysts. Cobble-based tools (hammers, millstones, notched weights) have also been found at Playwicki. A unique aspect of the site involves the use of a foundation trench to construct one of the buildings, an aspect commonly associated with the Iroquois tradition and not seen in the Delaware Valley.

Previously Identified Precontact Sites. Only one previously identified precontact site is located within a mile of the APE. Site 36PH0025 is located 0.25 miles south of the APE along the Wissahickon Creek. The site is identified as a 4 foot by 5 foot "chipping feature" containing quartz.

Study Area History

The Area of Potential Effects (APE) comprises swaths of land totaling approximately 6.66 acres in the northern portion of Chestnut Hill College's SugarLoaf Campus, a 30.17-acre property at 9220-50 Germantown Avenue, in the Chestnut Hill section of Philadelphia, Pennsylvania (Office of Property Assessment Account No. 775519500) (Figure 1; USGS 1997; City of Philadelphia 2022a). According to the Philadelphia's online "Atlas" application, one active tax parcel is located at 9220-50 Germantown Avenue: Philadelphia County Tax Parcel 131N140100, addressed as 9220-42 Germantown Avenue, containing 29.84 acres (City of Philadelphia 2022b). The associated map indicates that all but the westernmost 90 feet of the APE lies within Tax Parcel 131N140100.

Maps of northern Philadelphia County published prior to 1863 present no evidence of structures within or immediately adjacent to the APE (Melish 1819; Ellet 1843; Barnes 1855; Smedley 1862). The only cultural feature denoted on any of those maps within 90 feet of the APE was the road known today at Germantown Avenue. Its precursor was "a simple cart road [extending] from Philadelphia through Germantown, and northward to Plymouth Meeting" in Montgomery County as early as 1687. The road was lengthened and improved during the period 1801-1804, then opened in the latter year as the Germantown and Perkiomen Turnpike (Adams 2017:n.p.). As it approached a crossing of the Wissahickon Creek near the western tip of the APE, the turnpike curved around the northern base of a hill "named Sugarloaf by early settlers who thought it resembled a loaf of sugar" (Keels and Jarvis 2002:58). Bounded on the northeast by the

turnpike, on the northwest and southwest by the Wissahickon Creek, and on the southeast by what is now known as W. Bells Mill Road, Sugarloaf Hill (including the APE) appears to have been undeveloped and structure-free through 1862 (Figure 2; Smedley 1862).

By a deed dated December 3, 1863, Philadelphia merchant William Miller conveyed 16.13 acres on Sugarloaf Hill to brothers Edward H. Trotter and Charles W. Trotter. The Trotters paid $16,135.94 for the tract, which was described in the deed as "a lot or piece of ground" lying on the south side of the "Germantown and Perkiomen Turnpike Road" and the west side of "Bells Mill road" (Philadelphia County Deed Book LRB4:1). Elder brother Edward Trotter was then 49 years of age, and was entering his 24th year as an employee of the iron manufacturing and importing firm founded by his now-deceased father, Nathan Trotter. He had also been married for 20 years to Mary Jane Hart, with whom he had two daughters. For the past seven years or so, Edward's family had been spending the summer months away from their Center City home, occupying a house in Chestnut Hill on the east side of Bells Mill Road north of the Germantown and Perkiomen Turnpike. Edward's brother Charles occupied similar accommodations in that vicinity (Anonymous 2022a:n.p., 2020b:n.p.; Smedley 1862). Their joint acquisition of land on neighboring Sugarloaf Hill in December 1863 appears to have been a first step toward establishing a larger and more refined residence in that vicinity. According to a Trotter genealogist, the Trotter brothers "acquired additional adjacent acres [on Sugarloaf Hill] in January 1864, then divided the land on April 6, 1864" (Anonymous 2022a:n.p. 2020b:n.p.; Philadelphia County Deed Books LRB6:328; LRB23:510, 512).

The contents of the latter deeds have not been ascertained, but subsequent records indicate that within the next few years Edward Trotter oversaw construction of a "country place and residence called 'Wyndcliffe'" on a site approximately 400 feet south of the Germantown and Perkiomen Turnpike, and 640 feet northwest of Bells Mill Road (the mansion site is now a gravelled parking lot approximately 60 feet removed from the eastern section of the APE [see Figures 12, 13]). A journalist describing his observation of the "beautiful [Trotter] house" in August 1869 reported that Charles W. Trotter had "laid out the grounds" around Wyndcliffe, whose "walks are constructed of a foundation of broken stone, on which a mixture of tar and gravel is laid, over which more gravel is spread. The sides or gutter part of the carriage drives are made in the same manner. Passing over an undulating surface, they are consequently exposed to a thorough test of their capacity to resist washing, and an experience of several years, with no part impaired, would seem to show that something like a correct principle in roadmaking had been adopted" (Ward 1869:378-379). This reference to "several years" reflects the journalist's belief that the grounds had been laid out circa 1866, a year or so after the end of the Civil War.

A second "beautiful house" constructed at or around the same time as Wyndcliffe on "the hill of considerable extent, formerly called 'The Sugar Loaf,'" was also observed by the journalist in August 1869. Its builder and occupant was John J. Thompson, a brother-in-law of Edward and Charles Trotter (Ward 1869:378; Anonymous 2022c:n.p.). A principal in the I.P. Morris Company (Philadelphia-based manufacturers of iron and brass castings, steam engines, and boilers), Thompson had married the Trotter brothers' sister Elizabeth in 1852 (Anonymous 2020b:n.p.). The warm relations between the Thompsons and Trotters was reflected in John J. Thompson's construction of a country residence barely 300 feet west of Wyndcliffe, and Wyndcliffe's orientation so that its front façade faced southwestward, looking across an invisible property line

toward the Thompson residence, which the Thompsons eventually dubbed "Rockwood" (Figure 3; Hopkins 1885; Anonymous 2020b:n.p.).

On federal census schedules completed on June 23, 1870, the households of "iron merchant" Edward Trotter and "iron founder" John Thompson were recorded side-by-side in District 73 of Philadelphia's 22nd Ward (United States Bureau of the Census 1870). As it was early summer, the families had moved out to Sugarloaf Hill from their Center City residences. Enumerated in separate dwellings nearby were the households of Irish gardener Thomas McNutt and Irish servants Rosana Boyd and Anna Caven. Insofar as a gardener and his family would be enumerated as next-door neighbors to the Wyndcliffe residents in each federal decennial census enumeration from 1870 through 1940 (with the exception of 1890, for which schedules are unavailable), it appears that the 2½-story stone dwelling that stood until 2008 on the south side of Germantown Avenue, approximately 135 feet west of its intersection with E. Hillcrest Avenue, was constructed at or around the same time as Wyndcliffe to accommodate the Trotters' gardener. In a Chestnut Hill Historic District Inventory compiled before the demolition of the gardener's house, the structure was recorded as follows: "Building 8: mid-19th century; A 2½-story, 3-rank, stone Gothic Revival building with bracketed eaves, double arched openings within the gable, crossgabled roof and 1 shed dormer, located on Germantown Avenue opposite Hillcrest Avenue. Presently vacant" (Chestnut Hill Conservancy 2019:139). On what appears to be the earliest property atlas map reflecting conditions on Sugarloaf Hill after its development by the Trotters and Thompsons—published in 1885—a portion of the stone gardener's house was depicted within or immediately adjacent to the APE, approximately 200 feet to the east of a rectangular greenhouse also depicted partly within the APE (Figure 3; Hopkins 1885). Also denoted on this map was an outbuilding standing approximately 220 feet northwest of the Trotter residence, in the location of the building identified on present plans of Chestnut Hill College's campus as a "carriage house." That structure was recorded on the Chestnut Hill Historic District Inventory as follows: "Building 2: ca. 1875; A 1½-story, 3-rank, sidegabled stone stable and dwelling with arched openings, 2 gabled wall dormers flanking a center flat dormer and bracketed eaves" (Chestnut Hill Conservancy 2019:139). Like the Wyndcliffe residence, this carriage house stood more than 150 feet outside the APE.

It should be noted that construction information concerning the Trotter residence presented in the *Chestnut Hill Historic District Inventory* does not jibe with the historical records cited above. The pertinent entry in the itemization of structures within the SugarLoaf Conference Center on the west side of Bells Mill Road reads as follows: "Building 1: 'Wyncliffe'; 1875-1876; Joseph F. Page, owner; A 2½-story, 3-rank, stone Gothic Revival dwelling with crossgabled outside ranks, projecting center rank with quoining, gabled wall dormer in the center rank, arched openings and wood sills throughout the building, ground floor porch, bracketed wood cornice, small 2½-story, 2-rank north wing with gabled wall dormers and several 2-story hipped additions on the north" (Chestnut Hill Conservancy 2019:138). The assertion that Joseph Page built "Wyncliffe" in 1875 is published elsewhere, including the 2002 book *Images of America: Chestnut Hill*, prepared for the Chestnut Hill Historical Society, which states: "Wyncliffe was built in 1875 by Joseph F. Page at the northwest corner of Germantown Avenue and Bells Mill Road" (Keels and Jarvis 2002:58). The several inaccuracies in that assertion are made manifest by the following excerpt from Edward Trotter's lengthy will, composed on March 27, 1871: "I give and devise unto my beloved wife Mary Jane, all that, my country place and residence called 'Wyndcliffe'" (Philadelphia County Will Book 74:503).

Edward Trotter died of pneumonia "at his country seat at Chestnut Hill" on May 3, 1872 (Anonymous 2020a:n.p.). The administrators of his estate, valued at nearly $900,000, took several years to settle its accounts. Toward the end of that period, by a deed dated May 1, 1875, widow Mary Jane Trotter conveyed Wyndcliffe and its associated structures on approximately 10 acres to retired Philadelphia wholesale dry goods dealer Joseph French Page Sr. (Philadelphia County Deed Book FJW 200:377; French 1913:322). The property was described on Philadelphia County Tax Registry Plan 131-NB-14A as fronting 749.7 feet on "Perkiomen Pike," west of Bells Mill Lane, and extending southwestward approximately 578 feet (City of Philadelphia n.d.). The 54-year-old Page appears to have acquired the Wyndcliffe property to serve as a country seat for his family, which included his wife Ellen and six sons. The Page family, which lived for most of the year in central Philadelphia, was enumerated in a residence along the "Reading Turnpike" in the vicinity of Bells Mill Road on June 8, 1880 (French 1913:322; United States Bureau of the Census 1880). That record appears to reflect the Pages' occupation of the former Trotter residence, which was attributed on the aforementioned 1885 map to "Jos. F. Page," the property's owner since the spring of 1875 (Figure 3; Hopkins 1885).

The 1885 map also indicated that the western 1,000 feet of the APE was then part of two abutting tracts of unimproved land—a smaller parcel attributed to the "W. Miller, Est." (likely referring to the William Miller who had conveyed the adjoining land to the east to the Trotter brothers in 1863-64); and a larger parcel attributed to J. Penrose Collins (Figure 3; Hopkins 1885). Subsequent maps and aerial photographs would document the continuing undeveloped state of those tracts under a succession of owners through the early 1950s, when they would be acquired by Albert M. Greenfield and incorporated into a larger property embracing the former Page and Thompson estates (Franklin Survey Company 1955).

Joseph F. Page's continuing ownership of the approximately 10-acre Wyndcliffe property was documented on a map published in 1889 (Figure 4; Bromley and Bromley 1889). In addition to denoting the property's mansion, the neighboring carriage house, the gardener's residence, and the greenhouse, the 1889 cartographer denoted a rectangular, stone "stable or shed" approximately 60 feet southwest of the greenhouse, partly within the APE. The latter structure would be denoted in that location on maps of the area published from 1889 through 1910, but not from 1925 through the present.

Joseph Page Sr. owned the Wyndcliffe property until October 1, 1889, on which date he conveyed it to Philadelphia lumber merchant Charles Hebard, in consideration of $75,000 (Philadelphia County Deed Book GGP 542:401). Hebard, his wife Mary C., and their four children moved to the former Page residence within the next few months, as evidenced by a note in the April 20, 1890 edition of the *Philadelphia Inquirer* reporting that "C.S. Hebard, of 'Wyndcliffe,' Chestnut Hill, son of Charles Hebard, the extensive lumber merchant, will spend the summer in the west" (*Philadelphia Inquirer* 1890:10).

Charles Hebard owned and occupied the Wyndcliffe property with his family for the final 12 years of his life. His ownership was reflected on maps published in 1895 and 1901 (Figure 5; Bromley and Bromley 1895; Figure 6; Bromley and Bromley 1901), and his family's residency was reflected on census schedules recorded on June 1, 1900 (United States Bureau of the Census 1900).

Those schedules also reflected the occupation of Wyndcliffe's gardener's house by the family of 34-year-old Austrian-born gardener John Schemburger, as well as the carriage house's occupation by 27-year-old Pennsylvania-born coachman Joseph P. Martin and his wife Mary.

Charles Hebard died "at Chestnut Hill" at the age of 71 on June 11, 1902 (Anonymous 2013:n.p.) An obituary published in the *Philadelphia Inquirer* described him as "one of the city's leading lumber merchants. . . . He was a trustee of the Jefferson Hospital, regent of the Michigan University, member of the Union League, New England and other societies. He leaves a widow, two sons and two daughters" (*Philadelphia Inquirer* 1902:12). Philadelphia County Tax Registry Plan 131-NB-14A indicates that Hebard left a will bequeathing the Wyndcliffe property to his widow Mary and four children, who then conveyed the property to widow Mary C. Hebard alone by a deed dated June 8, 1904 (Philadelphia County Deed Book WSV 20:350). Following Mary's death on June 25, 1907, the executors of her will conveyed the Wyndcliffe property to her 42-year-old, unmarried daughter Mary Euphemia Hebard (Anonymous 2013:n.p.). As noted on Philadelphia County Tax Registry Plan 131-NB-14A, the deed of conveyance was recorded on June 26, 1909.

Mary E. Hebard's ownership of the Wyndcliffe property was noted on a map published a few months later, in 1910 (Figure 7; Bromley and Bromley 1910). The map registered a slight reduction of the property's frontage on Germantown Avenue to 673.55 feet. On census schedules completed on April 25, 1910, Mary E. Hebard was identified as the 42-year-old head of a household along Germantown Avenue that additionally comprised four unmarried Scandinavian servants ranging in age from 19 to 24 (United States Bureau of the Census 1910). She was enumerated in similar circumstances a decade later (on January 24, 1920), when she was living at Wyndcliffe with four servants and her 40-year-old cousin Gertrude Allen (United States Bureau of the Census 1920).

Mary E. Hebard's ownership of the Wyndcliffe property ended May 4, 1921, when she conveyed it to Bruce Ford, the wealthy and socially prominent vice president of the Electric Storage Battery Company in Philadelphia (Philadelphia County Deed Book JMH 1107:160). Ford had married Sophie du Pont, a daughter of Victor and Alice (Hounsfield) du Pont, in 1904. The marriage had produced no children by the time the Fords moved into the Wyndcliffe property with several servants in 1921 (United States Bureau of the Census 1910, 1920; *Morning News* 1957:18). As reported in the October 15, 1922 edition of the *Philadelphia Inquirer*, the Fords soon adopted the name "Leuvenigh" for their new home "at 9230 Germantown ave." (*Philadelphia Inquirer* 1922:44). That name appears to have been short-lived, however, as subsequent newspaper articles variously referred to the Fords living at "Sugar Loaf, Chestnut Hill"; at "Windcliff"; and, by 1931, at "Boxwood" (*Philadelphia Inquirer* 1931:25).

On fire insurance maps published in 1925, no greenhouse or neighboring stone shed were denoted west of the gardener's residence on the Ford property (Figure 8; Sanborn Map Company 1925). This likely reflects the structures' razing by either Mary E. Hebard or, after May 1921, the Fords. The only structure depicted within or immediately adjacent to the APE on the 1925 maps was the gardener's residence. The Fords were not uninterested in gardening, as witnessed by their construction during the period 1925-1932 of a pair of significantly larger greenhouses on a site approximately 100 feet west of the earlier greenhouse site. That development was documented on an oblique aerial photograph taken from an airplane on November 29, 1932 (Figure 9; Dallin Aerial Surveys 1932).

The 1925 fire insurance maps also identified a new owner of the former Thompson property adjoining the southwest side of the Ford property. The "A.H. Steele" to whom the property was attributed is identified elsewhere as Amy Howe Steel, wife of Philadelphia banker Alfred G.B. Steel (Figure 8; Sanborn Map Company 1925; *Philadelphia Inquirer* 1949:5). Mrs. Steel and her family would occupy the former Rockwood property—which they called "Sugar Loaf"—for more than a quarter-century (United States Bureau of the Census 1930, 1940; *Philadelphia Inquirer* 1949:5).

Sophie Ford occupied the adjoining Boxwood estate throughout the Steels' tenure, spending most of that time as a widow. Her husband died on August 10, 1931, at the age of 58. An obituary published in the *Philadelphia Inquirer* noted that "socially prominent inventor and engineer" Bruce Ford had died "at his home, 'Boxwood,' 9230 Germantown avenue, Chestnut Hill" (*Philadelphia Inquirer* 1931:25). When a census enumerator visited Boxwood nine years later, on April 13, 1940, he recorded the resident household as comprising 58-year-old widow Sophie du Pont Ford and her staff of four women: a cook, a waitress, a chambermaid, and a house maid. The enumerator then proceeded to a second residence on the Boxwood estate (also at "9230 Germantown Avenue") and identified its occupants as 41-year-old Irish-born "gardner" Edward Moore and his Irish wife Anna (United States Bureau of the Census 1940).

Sophie Ford was still living at Boxwood on June 18, 1949 when her neighbor Alfred G.B. Steel died (*Philadelphia Inquirer* 1949:5). The banker's widow Amy continued to own the Sugar Loaf property until March 1953, when she conveyed it to banker and real estate developer Albert M. Greenfield (Philadelphia County Deed Book MLS 351:234). Around that time, Greenfield acquired from Elizabeth K. Morris the two wooded parcels to the west that now include the westernmost 1,000 feet of the APE (Philadelphia County Deed Book MLS 351:400). Those acquisitions set the stage for Greenfield to acquire Sophie Ford's Boxwood property when it became available.

A property atlas map published in 1955 reflected Albert M. Greenfield's ownership of the former Steel and Morris parcels abutting the southwest and northwest sides of the Boxwood property, which was still attributed to Bruce Ford (Figure 10; Franklin Survey Company 1955). On the latter property, a square stone outbuilding was depicted approximately 150 feet southwest of the gardener's residence, partly within the APE, in a location where no structures had been depicted on previous maps. It is possible that this building was inexactly mapped, and the denotation was meant to mark the location of the stone "stable or shed" depicted approximately 60 feet southwest of the property's original greenhouse on maps published from 1889 through 1910, but not on the 1925 fire insurance maps.

Sophie Ford died at Boxwood on April 19, 1957, having reached the age of 86 (*Morning News* 1957:18). As reported in a Wilmington, Delaware newspaper, she had "willed her estate at 9230 Germantown avenue, Philadelphia, to the Episcopal Diocese of Pennsylvania as a residence for the bishop, with $125,000 to maintain it. Her will makes the gifts unrestricted. The 10½-acre estate overlooking the Whitemarsh Valley may be sold and the money used for any purpose by the Diocese" (*News Journal* 1957:5). By one or more conveyances that have not been identified, Albert M. Greenfield acquired the Boxwood estate in 1958 (Keels and Jarvis 2002:58). From that year until his death on January 5, 1967, Greenfield owned five contiguous parcel totaling approximately 30 acres on the top and northern slope of Sugar Loaf Hill (*Philadelphia Inquirer* 1967:1). As

reflected on the 1955 map, Greenfield's holdings including all but the westernmost 90 feet of the APE, which Greenfield had conveyed to the City of Philadelphia for incorporation into Fairmount Park (Figure 10; Franklin Survey Company 1955).

On January 17, 1969, "it was announced [that] Temple University has been given the 30-acre Sugar Loaf estate of the late financier-philanthropist Albert M. Greenfield," according to a newspaper report published the following day. "The new facility . . . will be known as the Albert M. Greenfield Conference Center," the article continued. "It is a gift of the Greenfield Foundation and will be used to study urban, national and international problems. . . . Beside the outright gift of the ground and buildings, the Greenfield Foundation will make contributions to support the program during the early years of the conference center. . . . The estate . . . includes the Greenfields' former home, designed by architect Edward Durell Stone, which will be used as an administration, reception and meeting area; a Victorian structure [presumably the Wyndcliffe mansion] which will be refurbished to provide additional meeting rooms; a recreation building with swimming pool and tennis court and general service buildings and living quarters for personnel. In addition, a lodge will be constructed so that groups can be housed at the conference center while engaging in concentrated studies and discussion. The estate, comprised of five parcels, is assessed at a total of $286,400 for tax purposes" (*Philadelphia Inquirer* 1969:17). An aerial photograph taken on March 27, 1973 reflected the addition of the lodge to the collection of structures surrounding the former Greenfield mansion (Figure 11; USGS 1973).

On December 12, 2004, a fire caused "irreparable damage" to the Wyndcliffe mansion (Chestnut Hill Conservancy 2020:n.p.; Chestnut Hill College 2007:6). The damaged mansion remained in place as Temple University conveyed the Conference Center to the Albert M. Greenfield Foundation on January 27, 2005, setting the stage for the Foundation to convey the property to Chestnut Hill College on July 31, 2006 (Figure 12; Delaware Valley Regional Planning Commission 2005; City of Philadelphia 2022b). The latter conveyance "offered the College a once-in-a-lifetime opportunity to nearly double the size of its campus and allow for expansion to accommodate a growing student body," a College newsletter recounted in July 2007. "The existing structures at SugarLoaf have all been renovated and are currently being used as classrooms, lodging for undergraduate students and space for conferences and social events. In the long-term, additional renovations will allow for more residential and academic buildings in accordance with the College's Master Plan" (Chestnut Hill College 2007:6).

Elsewhere in the July 2007 *Chestnut Hill College Newsletter*, conditions and anticipated changes to facilities on "SugarLoaf Hill" were described as follows:

> **Renovations**
>
> The College is currently reviewing renovation proposals for the Mansion and Lodge. After matching the proposals to the budget, it is our goal to fast track necessary work to the extent possible and to begin ASAP. Work will begin with hazardous materials abatement/removal and then go into a typical construction schedule. Based on comments from a few of the bidders, the construction timeline will be three to five months, depending on the final work that is approved.

Roofs have been repaired or replaced on the Mansion and Cottage. There are a few additional areas to be repaired on the Mansion and a study of the Lodge roof is currently underway.

The Lodge will be renovated as a residence hall, with additional use as a living space for academic and rental conferences and events. There will be electrical upgrades, sprinkler installation, new HVAC, new finishes (carpet, lighting, paint), and the possibility of new windows. The elevator will be brought up to code. The Mansion will be renovated as classroom, conference, and event space for use by students, the College, and the surrounding community. There will be electrical upgrades, HVAC work and lighting improvements. Finishes will be refreshed or updated as needed.

The Cottage will most likely be renovated this summer as either a residence or an office building. . . .

Demolition

Of the six structures on the property, three will have to be demolished. These regrettably include the original Wyncliffe [*sic*] Mansion, irreparably damaged by fire, as well as the dilapidated small stone house [i.e., the former gardener's house], know to some as the "hippie house" and the greenhouse visible from Germantown Avenue. However, the College is studying the feasibility of salvaging the Wissahickon schist from these buildings to enhance future SugarLoaf buildings.

Landscaping

We have removed dead, diseased, and dangerous trees and have cleaned up the forested buffer along Germantown Avenue. Future landscaping plans will be incorporated into the College's master plan which is currently being revised by Dagit Saylor to include the SugarLoaf Hill property.

The College is seeking bids on repairs to the stone wall on the Bell's Mill Avenue side of the property. The walls in some sections are in bad shape and the removal of a few very large trees has made things worse. In the very near term, we will proceed with this repair work.

The College is also having a study done about storm water drainage on the south western quadrant of the property (Chestnut Hill College 2007:6).

The remnants of the Wyndcliffe (more recently referred to as Wyncliffe) mansion were removed and a gravel parking area was created in its former location by May 27, 2008, as documented by an aerial photograph taken on that date (Google Earth 2008). Another aerial photograph taken in 2008 documented ongoing efforts to remove the "dilapidated" former gardener's house and nearby greenhouse within and abutting the APE (City of Philadelphia 2022b). That process was completed by the end of 2009, as documented on an aerial photograph taken during that year (Figure 13; City of Philadelphia 2009).

PROJECT NARRATIVE

The project site is situated within the northern portion of the SugarLoaf Campus of Chestnut Hill College located at 9220 Germantown Avenue, Philadelphia, PA 19118. The project is approximately 6.66 acres out of the entirety and consists of a new signalized entrance at Germantown Avenue which is aligned with and will create the fourth leg of the existing intersection with Hillcrest Road. This connecting driveway will continue into the property following a serpentine or switchback route necessitated by the steeply sloping terrain on the property. Retaining walls will also be constructed along the drive in both cut and fill configurations to facilitate an acceptable gradient for the cartway. Considerable cut and fill of existing earth will be required to complete the driveway, retaining walls and related underground stormwater management controls. The stormwater drainage system also includes an underground basin located at the natural low point of the property. The deepest cut areas will encounter rock and mechanical removal methods and blasting will be employed to achieve required subgrade and installation of the improvements. These cut areas range from 1 to 2 feet below ground surface at the point of connection with Germantown Avenue to as much as 12 to 15 feet below ground surface, deeper into the site. Some lengths of stormwater piping trenching and manholes may be as deep as 15 to 20 feet below ground surface.

In addition to the scope described above, the project will also include a pervious pavement walking trail that will connect an existing trail adjacent to the Wissahickon Creek at the far western edge of the site to the pathways with the campus. The trail will be construct by excavating approximately 0.5 feet below ground surface and placing 2 inches of asphalt pavement on a 4 inch compacted stone base. Site lights will be installed along side of the trail at regular intervals and will rest on foundations set 4 feet below ground surface, with connecting conduit at a depth of 1.5 feet below ground surface.

Chestnut Hill College received the necessary approval to commence construction for this project in November of 2021 and work began on the main portion of the improvement shortly thereafter. The trail area was cleared of existing trees and vegetation. Trees were cut down and the stumps were ground down. There is a minor shift in the trail location than what was originally proposed to conserve some of the more mature trees.

ARCHAEOLOGICAL POTENTIAL

Existing Conditions

The Area of Potential Effects (APE) for the project lies with suburban college campus setting. The easternmost third of the APE is mapped as Urban Land – Chester Complex (8 to 15 percent slope). Much of this area is currently under construction. The base for the connector drive to the current college entrance has been graded (Photograph 1). Much of the steep slope for the new entry drive at the intersection of Germantown Avenue and Hillcrest Avenue has been excavated and retaining walls have been installed (Photographs 2, 3 and 4).

The section of the APE to the west of the new entry driveway is mapped as Manor Loam (15 to 25 percent slope). A basin is proposed for this area. There is currently an access drive in this area and the landscape has been altered (Photographs 5 and 6)

The western half of the APE is mapped as Manor Extremely Stony Loam (8 to 15 percent slope). The landscape in this area is sloped. The proposed trail has been cleared of underbrush and trees. At some locations the APE follows a relatively flat contour, but for the most part the APE is on slopes (Photographs 7-12).

Precontact Archaeological Potential

The Statewide Pre-Contact Probability Model identifies several locations within the project APE that have moderate to high precontact archaeological potential (Figure 14; Google Earth 2018). The landscape within the APE is not conducive to precontact occupation or use except for a small flat area overlooking the Wissahickon Creek. This area was subjected to archaeological testing in 1998 (URS Greiner Inc. 1998). No archaeological sites were found. Nearly all of the areas identified as having precontact archaeological potential are in areas that are sloped either in the direction of Germantown Avenue or toward Wissahickon Creek. Historical data indicates that buildings had been constructed in or adjacent to the APE during the twentieth century. Those buildings have subsequently been removed. Given that the depth of soils to the B horizon is generally between 6 to 7 inches, the construction and demolition of these buildings would likely have destroyed precontact archaeological deposits in these areas if they were present. While the potential for precontact archaeological remains cannot be dismissed, any sites that may have been present in the APE would have been situated mid-slope and would have been small ephemeral sites not eligible for listing on the National Register of Historic Places. Precontact archaeological potential pre-construction was low. The construction activities underway have destroyed any archaeological deposits in the area of the new college campus entrance. The proposed trail area has also witnessed disturbances relating to the movement of heavy equipment across the area during the removal of trees and vegetation, as well as the establishment of erosional controls. There is no precontact archaeological potential within the project APE.

Historic Archaeological Potential

There was little historical development within the APE during the most of the nineteenth century. The main dwellings on the property were constructed in the second half of the nineteenth century west of the APE. Two buildings were present in the late nineteenth century in the vicinity of the proposed basin. One was a stone dwelling along Germantown Avenue, the function of the other is unknown. Both buildings were demolished in the late twentieth century and early twenty-first century. During the twentieth century a group of greenhouses and other structures were constructed in and adjacent to the APE. They have also been demolished. Figures 15 (Wagner 1897) and 16 (USGS 1973) show the buildings that were once located in or adjacent to the APE. While there may have been historical archaeological potential in the yard areas surrounding the dwelling along Germantown Avenue that would have extended into the APE, an aerial photograph from 2004 shows the location of the nineteenth-century dwelling and yard areas as having been substantially disturbed. No significant archaeological remains would be expected in the vicinity of the greenhouses built and demolished in the APE. Given the shallow nature of the soil, it is unlikely that intact historic period deposits have survived the demolition of the buildings. Historical archaeological potential was low pre-construction. The construction activities underway have

destroyed any archaeological deposits in the area of the new college campus entrance. The proposed trail area has also witnessed disturbances relating to the movement of heavy equipment across the area during the removal of trees and vegetation, as well as the establishment of erosional controls. There is no historical archaeological potential within the project APE.

SUMMARY

This report documents the results of a Phase IA Archaeological Survey performed for the Chestnut Hill College, SugarLoaf Campus Entrance Project, City of Philadelphia, Philadelphia County, Pennsylvania. This report is the first cultural resources submission for the project. The cultural resources work was performed for the Chestnut Hill College. The Phase IA Archaeological Survey was conducted in response to the receipt of a letter dated February 25, 2022 received from the Pennsylvania State Historic Preservation Office (SHPO) concerning the project. As all permits had been acquired, construction of the project was underway at the time the request for additional information about potential project impacts to cultural resources was received. This report was prepared to address the concerns raised by the February 2022 letter from the SHPO.

An assessment of precontact archaeological potential indicated that although the Statewide Pre-Contact Probability Model identified several locations within the project APE that have moderate to high precontact archaeological potential, the landscape setting of the project was sloped and not conducive to precontact occupation. If precontact archaeological deposits were present, they would be small, ephemeral sites that would not be eligible for listing on the National Register of Historic Places. Precontact archaeological potential was assessed as low pre-construction. An assessment of historical archaeological potential noted the presence of a nineteenth-century dwelling and a variety of twentieth-century greenhouses in or adjacent to the APE. All of the buildings had been demolished by early twenty-first century. Historic archaeological potential was assessed as low pre-construction. Construction activities have destroyed or disturbed the APE. There is no archaeological potential. No archaeological work is recommended.

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APPENDIX A

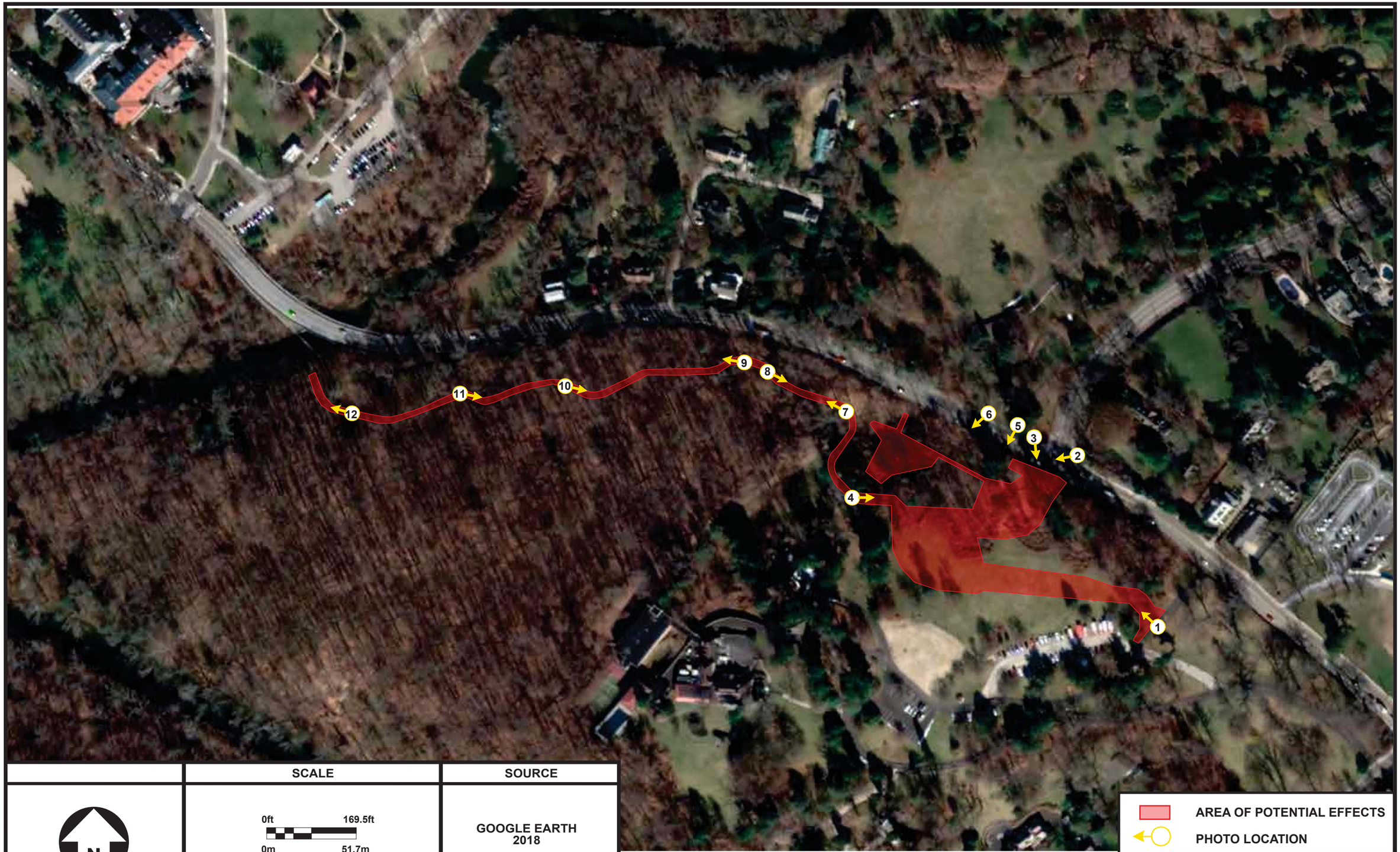
QUALIFICATIONS OF RESEARCHERS

QUALIFICATIONS OF RESEARCHERS

Principal Investigator:	Kenneth J. Basalik, Ph.D., RPA
Professional Experience:	44 years
Education:	Ph.D. Anthropology, Temple University
	M.A. Anthropology, Temple University
	B.A. Anthropology, University of Pennsylvania
Project Responsibility:	Administration, report review, and report writing
Senior Historian:	Philip Ruth
Professional Experience:	32 years
Education:	M.A. English, University Of New Hampshire
	B.A. English, Goshen College
Project Responsibility:	Historical research, review, analysis, and report writing
Graphic Illustrator:	Morgan Rouscher
Professional Experience:	4 years
Education:	M.Litt. Celtic & Viking Archaeology, University of Glasgow
	B.A. Anthropology, Gettysburg College
Project Responsibility:	Graphics preparation
Editor:	Kevin Quigg
Professional Experience:	25 years
Education:	M.A. English, Beaver College
	B.A. Communications, Temple University
Project Responsibility	Report editing
Editor:	Maria Rossi
Professional Experience:	15 years
Education:	B.A. English with Communications, Gwynedd-Mercy College
Project Responsibility	Report editing

APPENDIX B

PHOTOGRAPHS



	SCALE	SOURCE
N	0ft 169.5ft 0m 51.7m *Prepared by CHRS, Inc.*	GOOGLE EARTH 2018

PHOTOGRAPH LOCATIONS

Photograph 1: Eastern edge of APE looking northwest.

Photograph 2: New Entrance at intersection of Germantown and Hillcrest Avenues looking west.

Photograph 3: New Entrance at intersection of Germantown and Hillcrest Avenues looking south.

Photograph 4: New Entrance at intersection of Germantown and Hillcrest Avenues (in background) looking east.

Photograph 5: Landscape adjacent to proposed basin looking southwest.

Photograph 6: Area of proposed basin with existing drive looking northwest.

Photograph 7: Eastern end of trail looking northwest.

Photograph 8: Looking southeast toward the eastern end of the proposed trail.

Photograph 9: Proposed trail looking northwest.

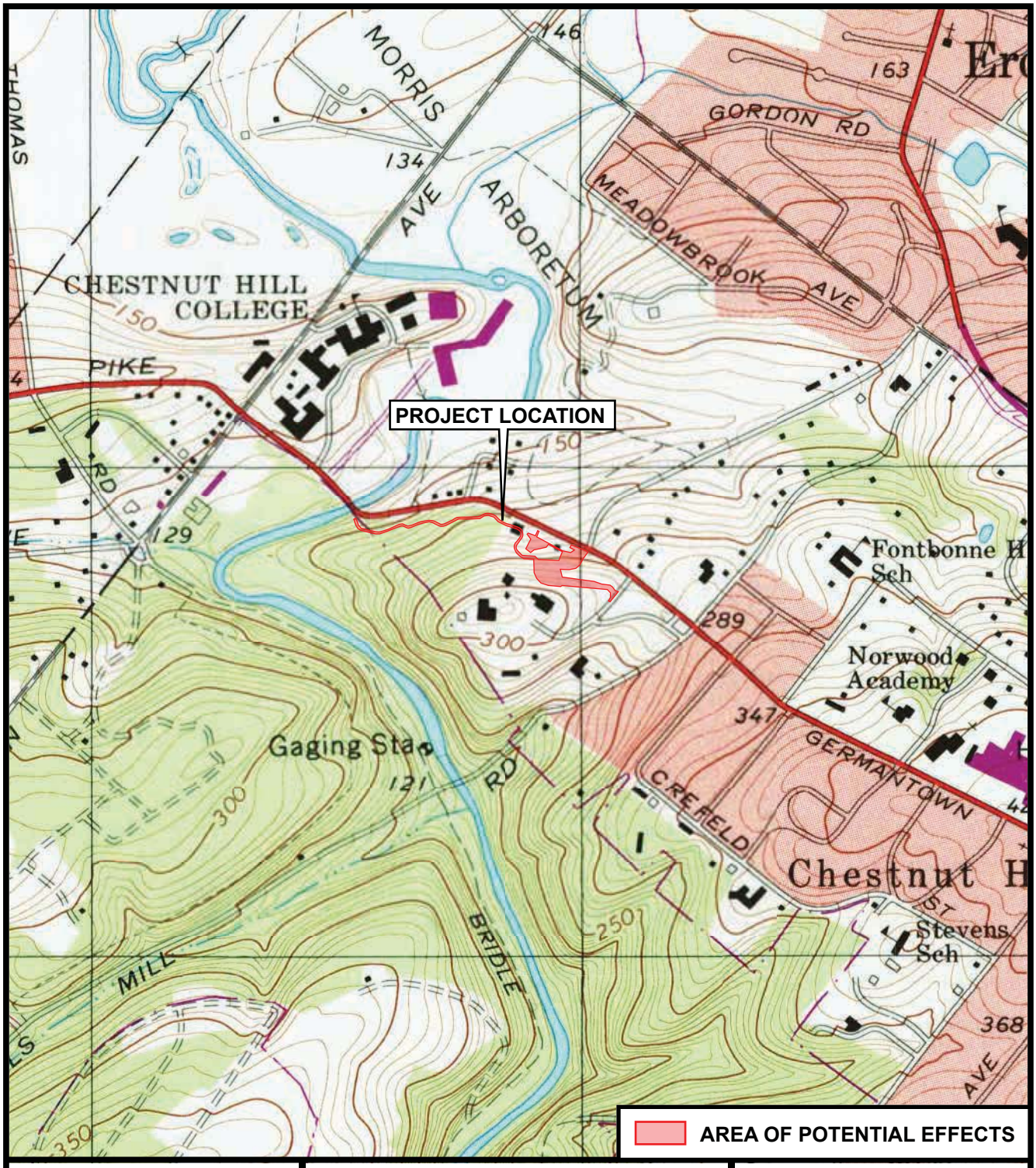
Photograph 10: Proposed trail looking southeast.

Photograph 11: Proposed trail looking southeast.

Photograph 12: Looking northwest to the western end of the trail.

APPENDIX C

FIGURES



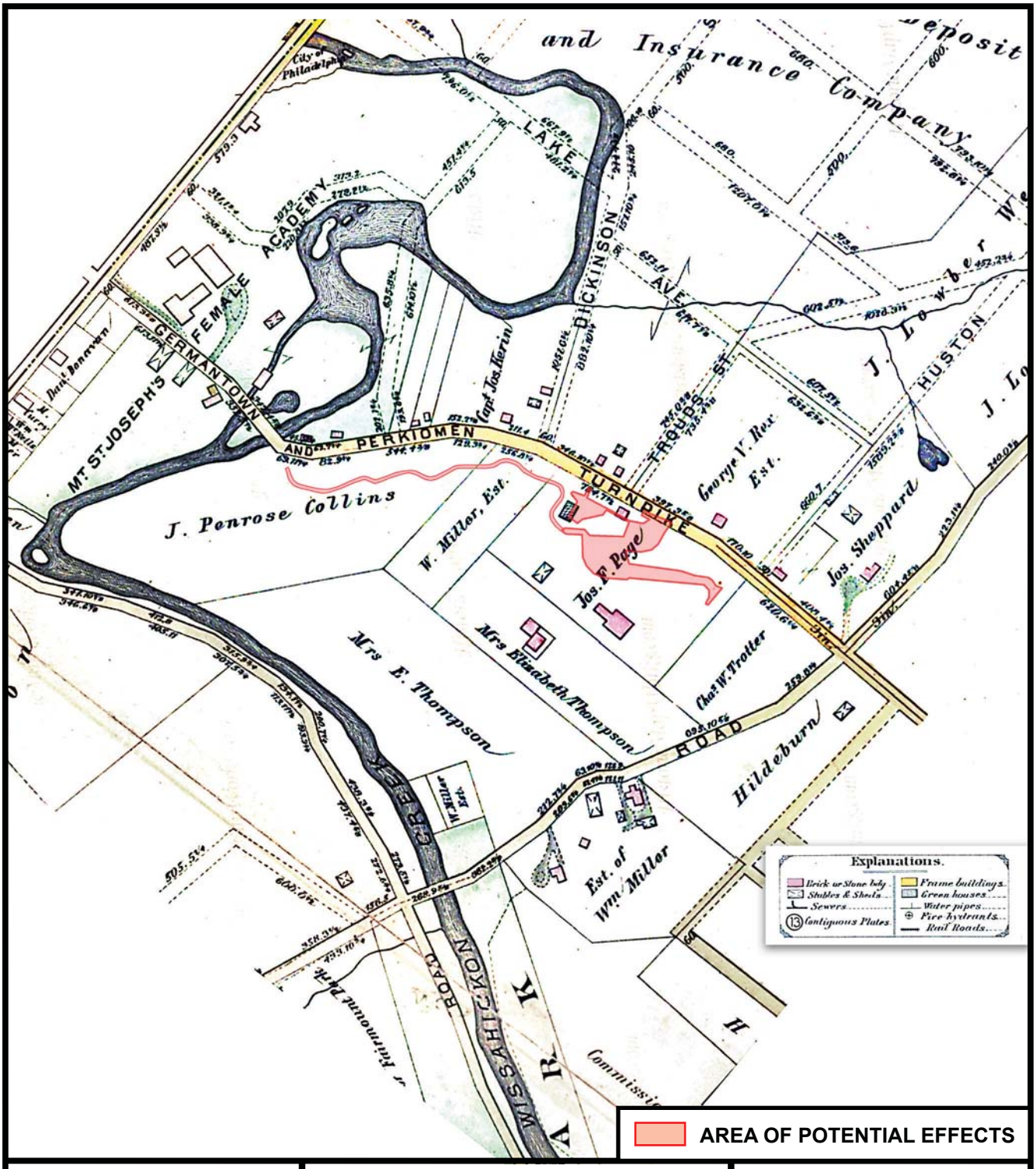
	SCALE	SOURCE
N	0ft 1000ft 0m 304.8m Prepared by CHRS, Inc.	USGS 1997 GERMANTOWN, PA

PROJECT LOCATION MAP | **FIGURE 1**

AREA OF POTENTIAL EFFECTS

	SCALE	SOURCE
N	0ft 600ft 0m 182.9m Prepared by CHRS, Inc.	SMEDLEY 1862

PROJECT AREA CIRCA 1862 | **FIGURE 2**



AREA OF POTENTIAL EFFECTS

	SCALE	SOURCE
N	0ft 600ft 0m 182.9m	HOPKINS 1885

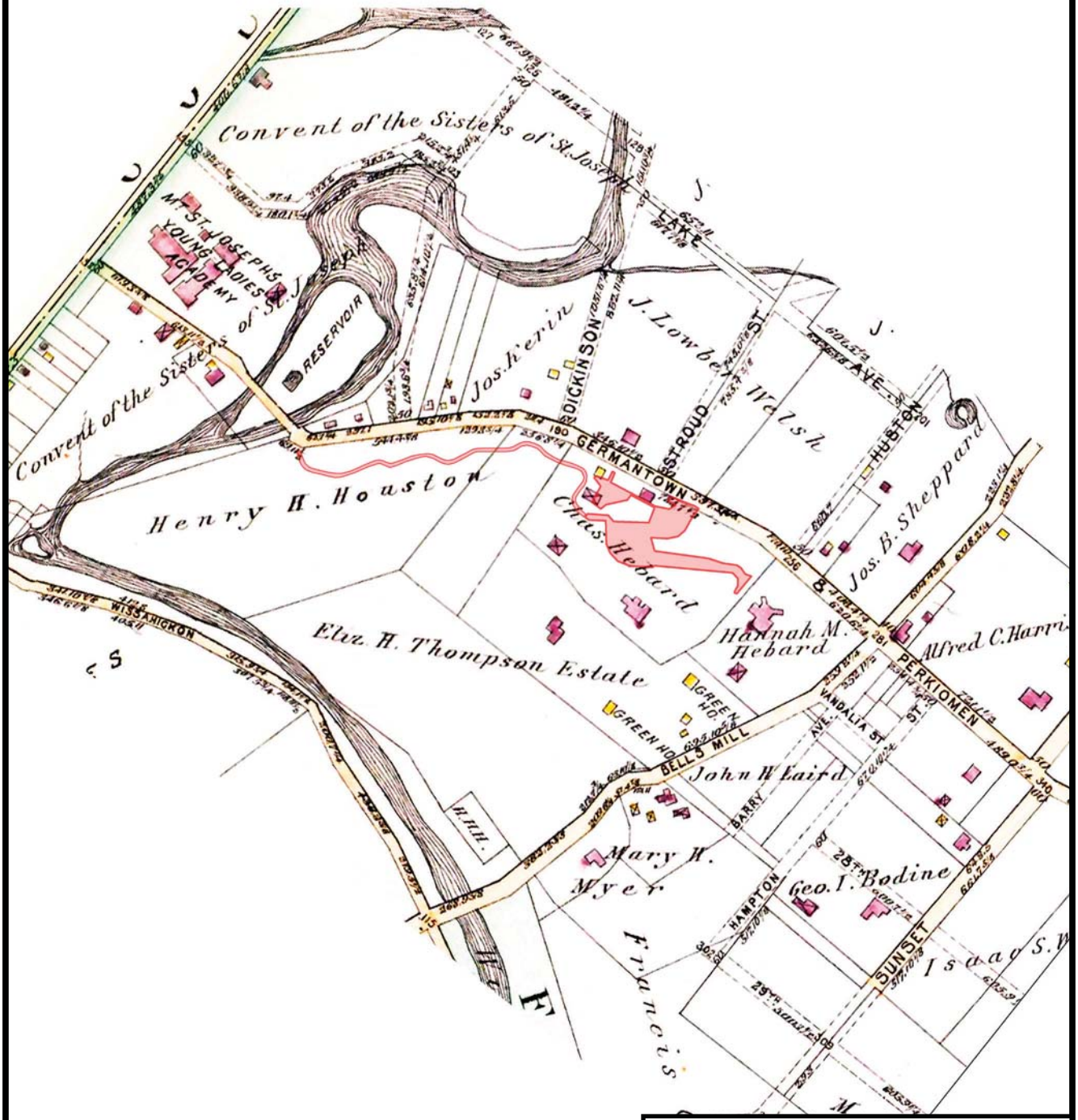
Prepared by CHRS, Inc.

PROJECT AREA CIRCA 1885 | **FIGURE 3**

AREA OF POTENTIAL EFFECTS

	SCALE	SOURCE
N	0ft 600ft 0m 182.9m Prepared by CHRS, Inc.	BROMLEY AND BROMLEY 1889

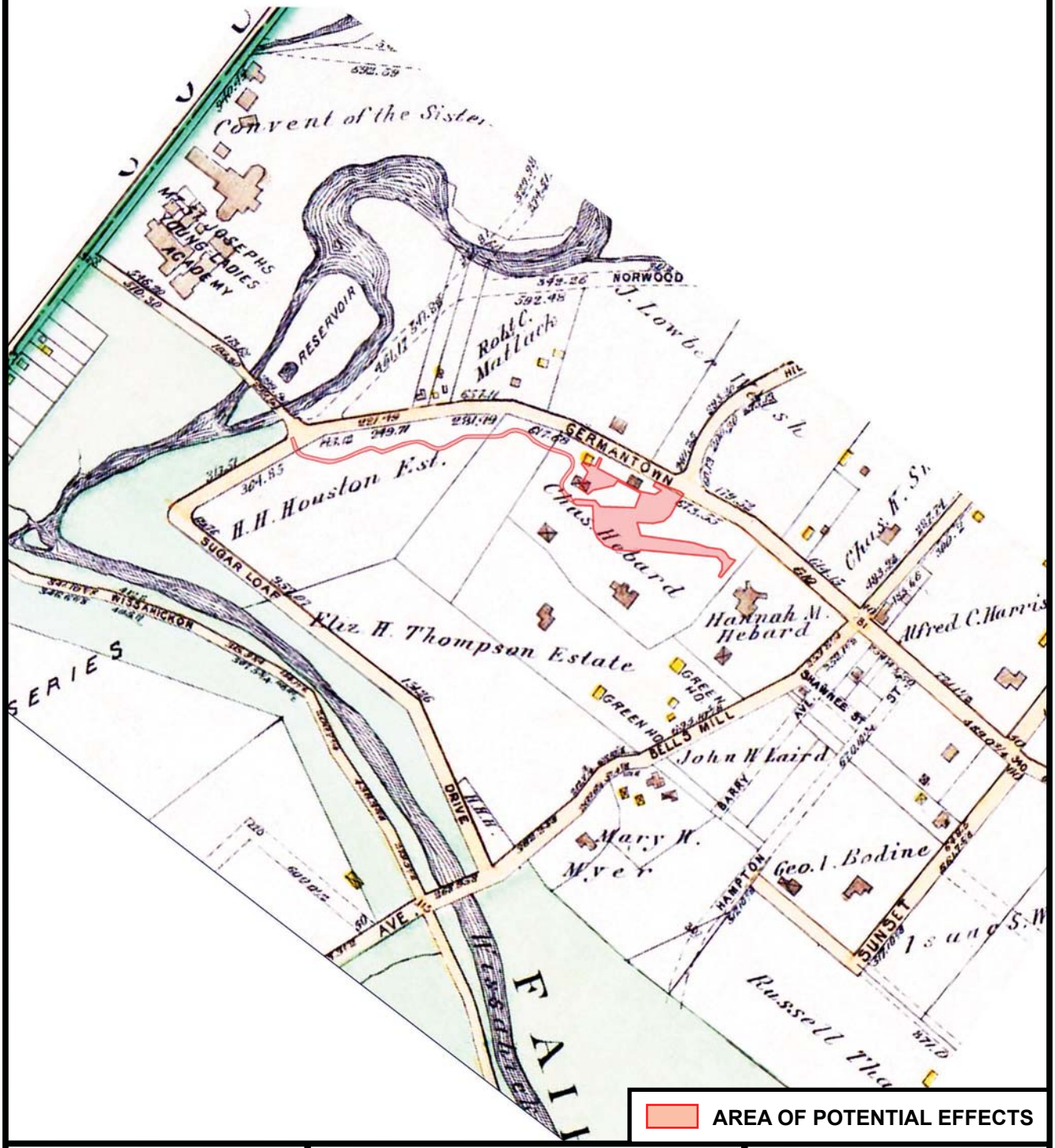
PROJECT AREA CIRCA 1889 | **FIGURE 4**



AREA OF POTENTIAL EFFECTS

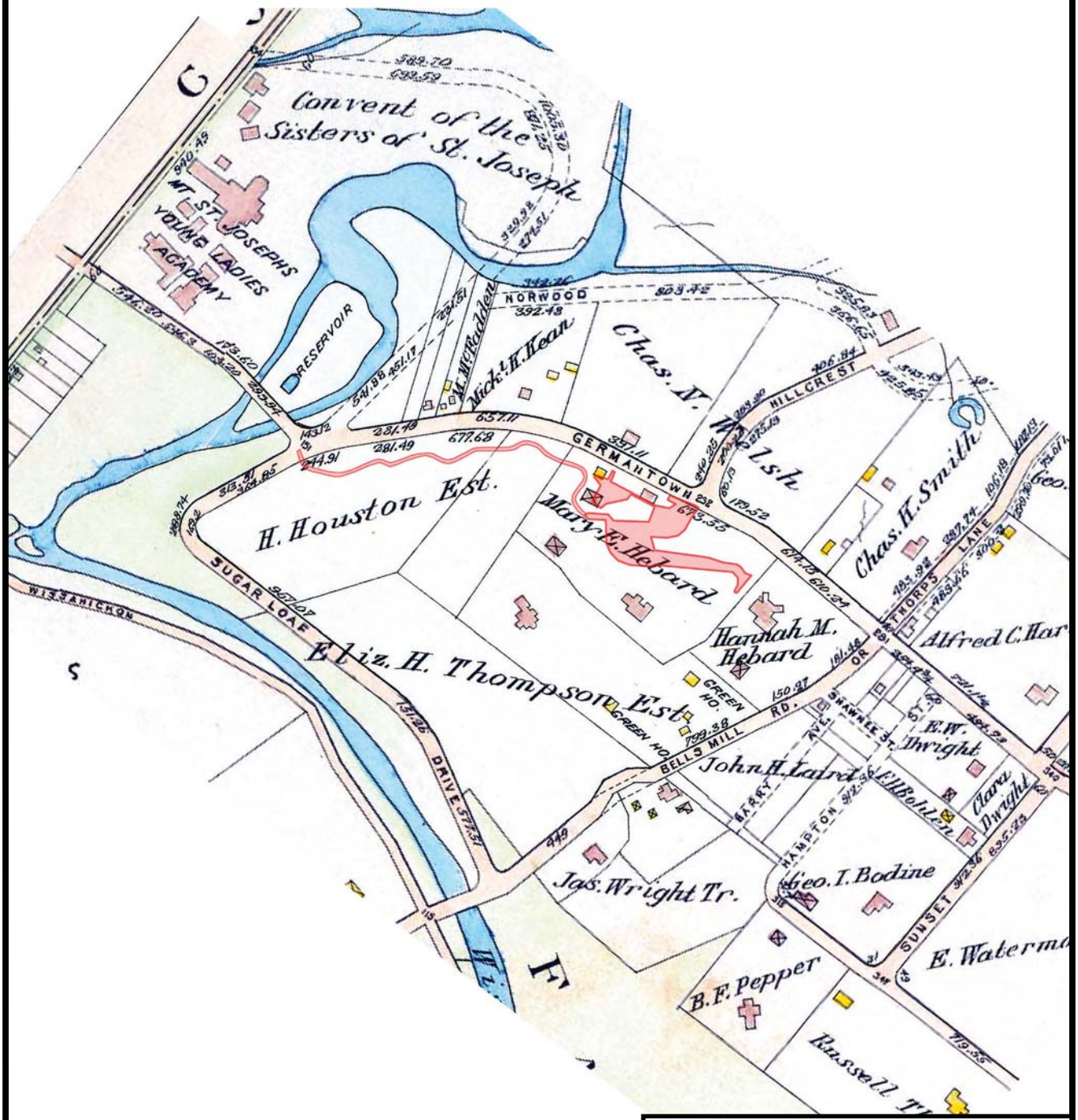
	SCALE	SOURCE
N	0ft 600ft 0m 182.9m Prepared by CHRS, Inc.	BROMLEY AND BROMLEY 1895

PROJECT AREA CIRCA 1895	FIGURE 5



	SCALE	SOURCE
N	0ft 600ft 0m 182.9m Prepared by CHRS, Inc.	BROMLEY AND BROMLEY 1901

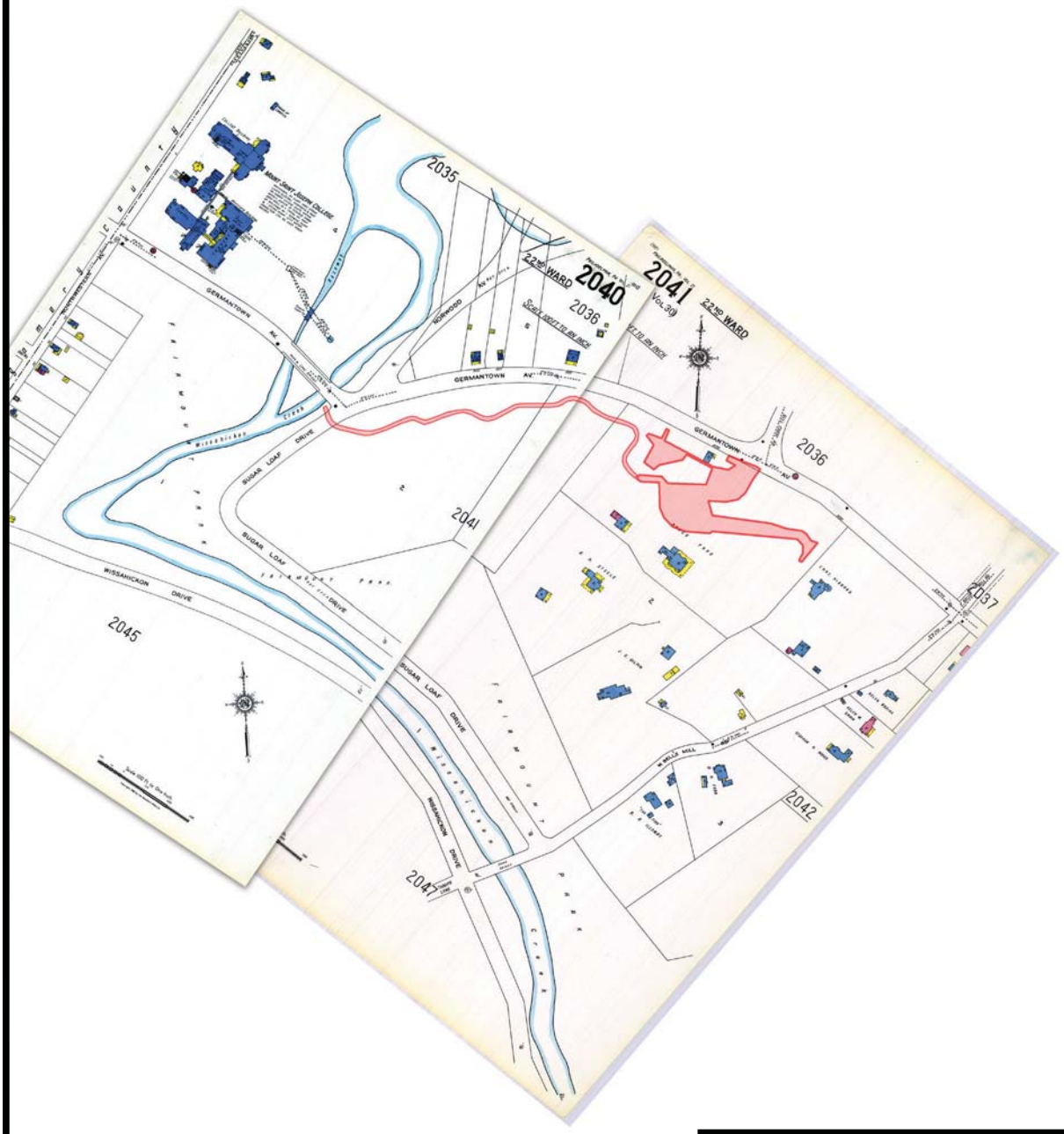
PROJECT AREA CIRCA 1901 | **FIGURE 6**



AREA OF POTENTIAL EFFECTS

	SCALE	SOURCE
N	0ft 600ft 0m 182.9m Prepared by CHRS, Inc.	BROMLEY AND BROMLEY 1910

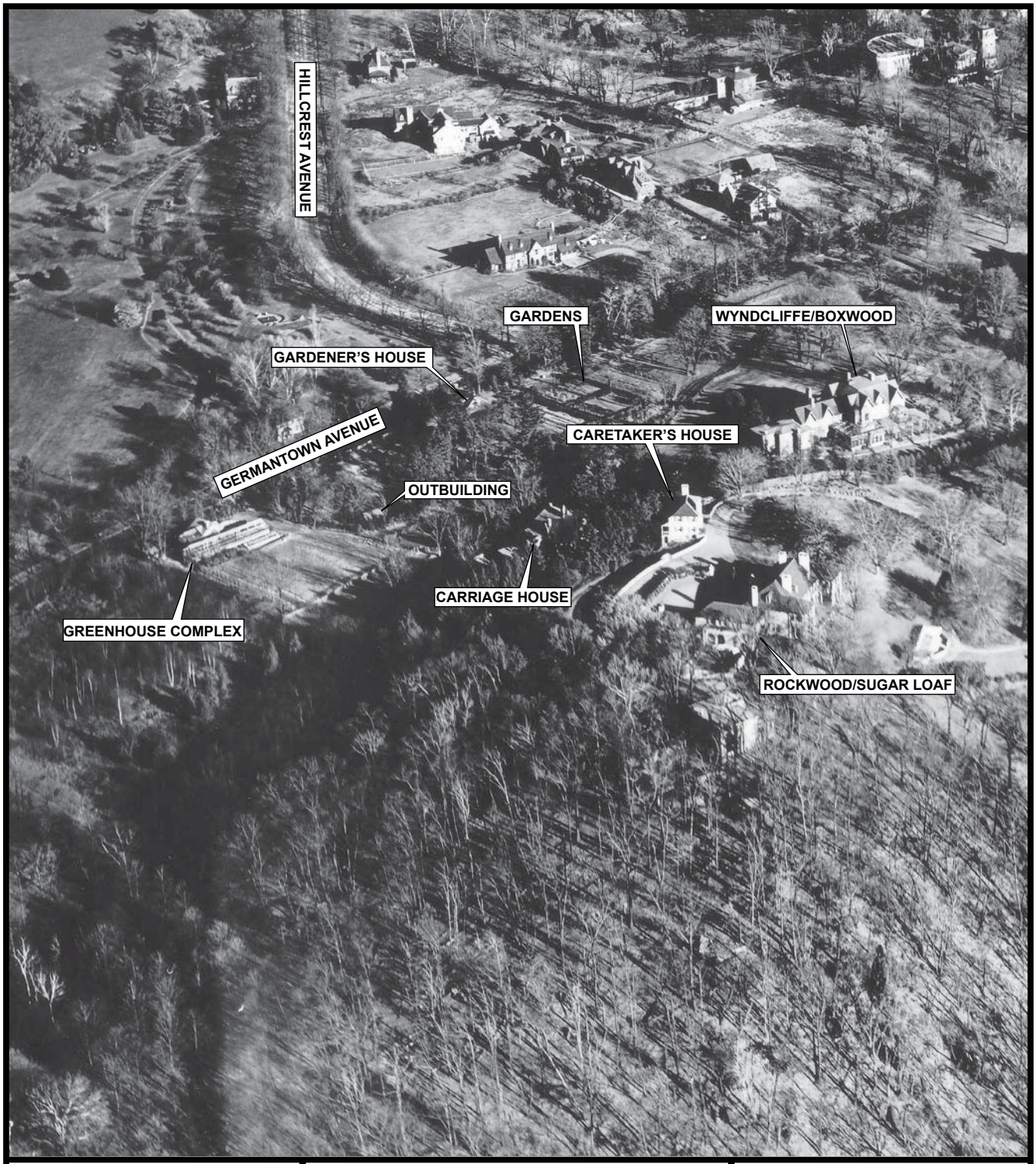
PROJECT AREA CIRCA 1910 | **FIGURE 7**



AREA OF POTENTIAL EFFECTS

	SCALE	SOURCE
N	0ft 600ft 0m 182.9m Prepared by CHRS, Inc.	SANBORN MAP COMPANY 1925

PROJECT AREA CIRCA 1925 | **FIGURE 8**



	SCALE	SOURCE
N	NOT TO SCALE Prepared by CHRS, Inc.	DALLIN AERIAL SURVEY CO. 1932

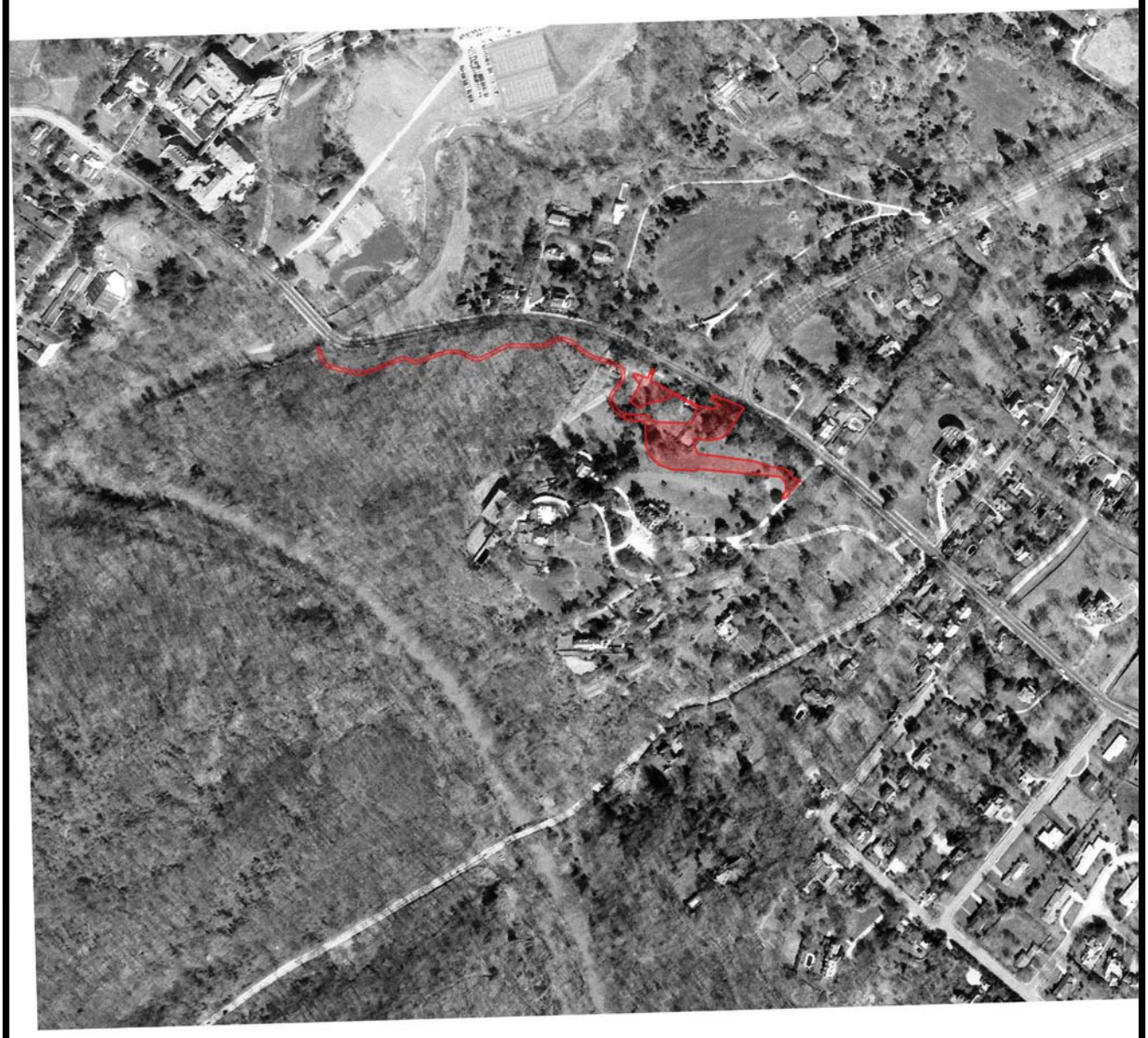
NORTHEASTWARD VIEW OF SUGAR LOAF HILL, NOVEMBER 29, 1932 (CHRS ANNOTATIONS)

FIGURE 9

AREA OF POTENTIAL EFFECTS

	SCALE	SOURCE
N	0ft 600ft 0m 182.9m Prepared by CHRS, Inc.	FRANKLIN SURVEY CO. 1955

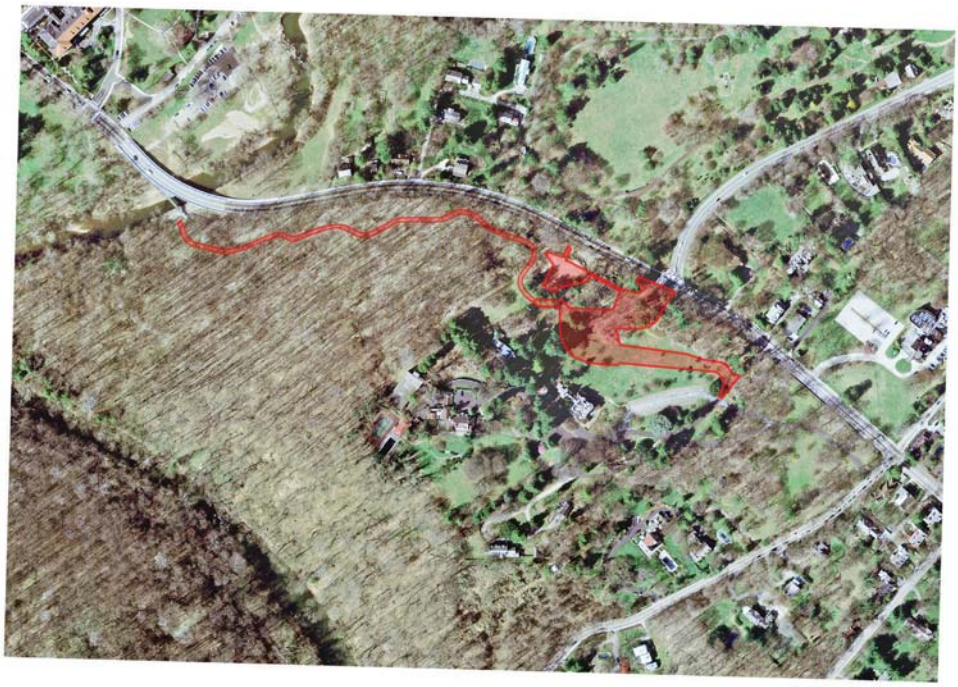
PROJECT AREA CIRCA 1955 | **FIGURE 10**



AREA OF POTENTIAL EFFECTS

	SCALE	SOURCE
N	0ft 600ft 0m 182.9m Prepared by CHRS, Inc.	USGS 1973

PROJECT AREA 1973 | **FIGURE 11**



AREA OF POTENTIAL EFFECTS

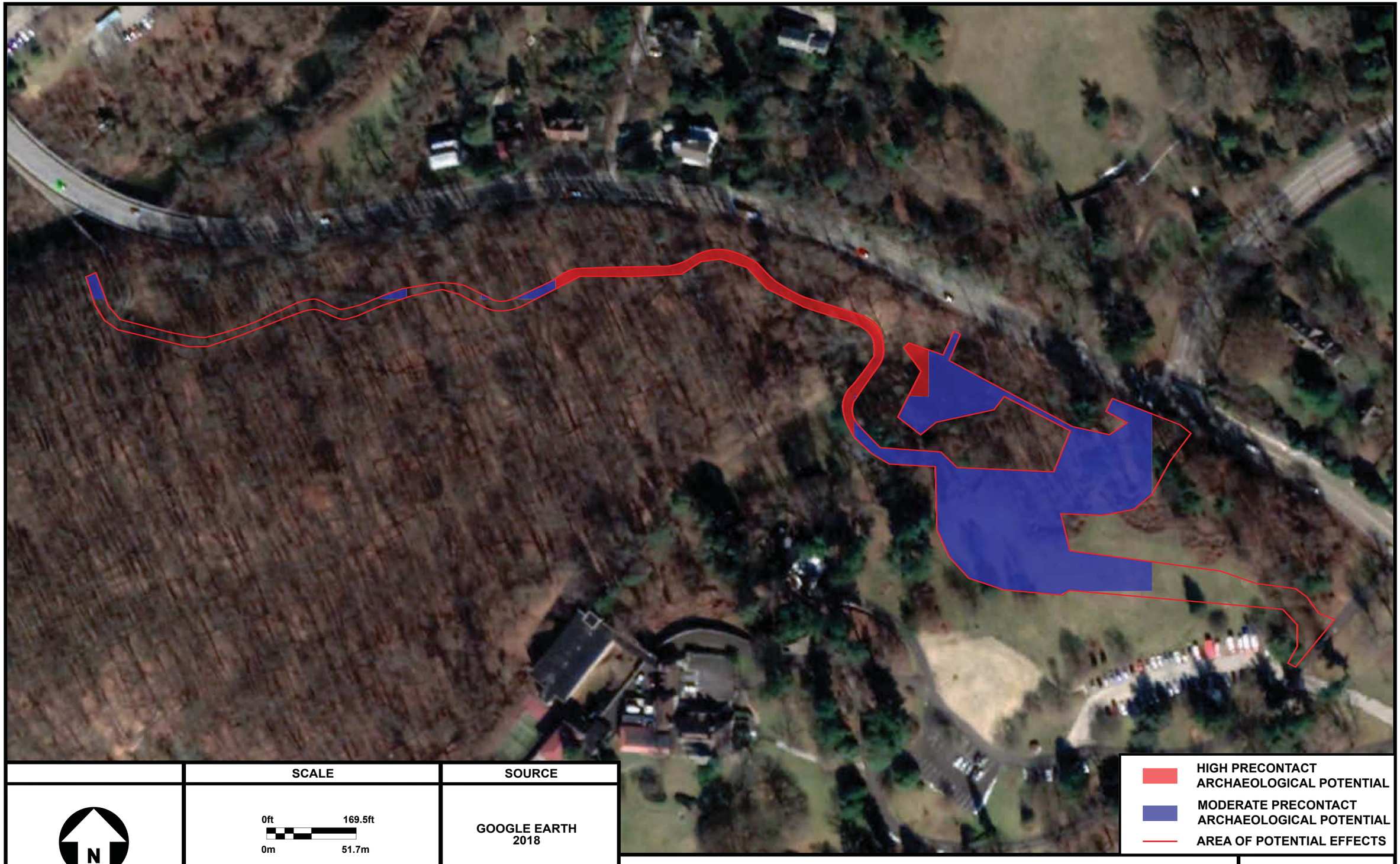
	SCALE	SOURCE
N	0ft 600ft 0m 182.9m Prepared by CHRS, Inc.	DELAWARE VALLEY REGIONAL PLANNING COMMISSION 2005

PROJECT AREA 2005 | **FIGURE 12**

AREA OF POTENTIAL EFFECTS

	SCALE	SOURCE
N	0ft 600ft 0m 182.9m Prepared by CHRS, Inc.	CITY OF PHILADELPHIA 2009

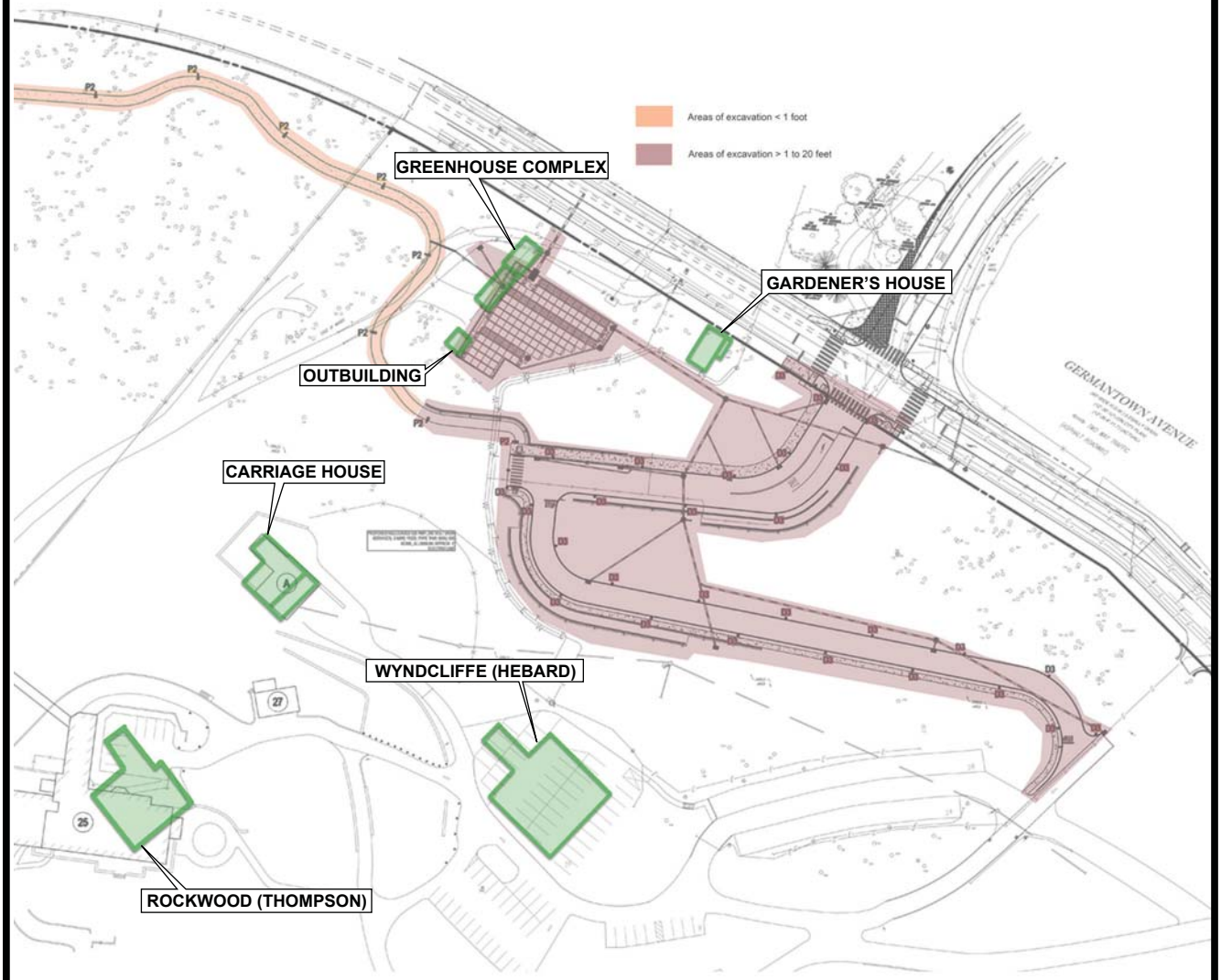
PROJECT AREA 2009 | **FIGURE 13**



	SCALE	SOURCE
N	0ft 169.5ft 0m 51.7m *Prepared by CHRS, Inc.*	GOOGLE EARTH 2018

PRECONTACT ARCHAEOLOGICAL POTENTIAL

FIGURE 14

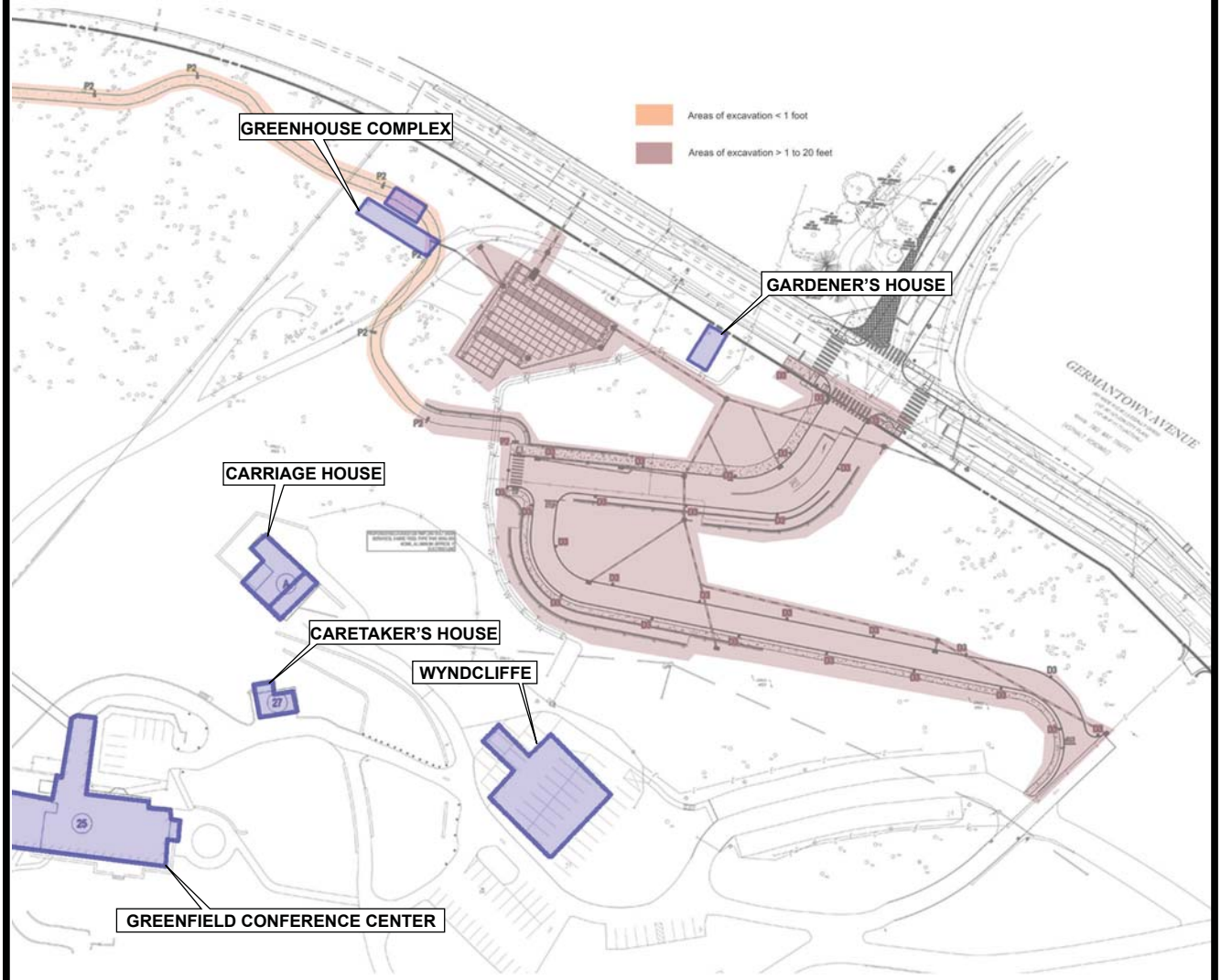


	SCALE	SOURCE
N	0ft 160ft 0m 48.7m	WAGNER 1897

Prepared by CHRS, Inc.

1897 STRUCTURE FOOTPRINTS (FROM WAGNER 1897) IN RELATION TO APE

FIGURE 15



	SCALE	SOURCE
N	0ft 160ft 0m 48.7m Prepared by CHRS, Inc.	USGS 1973

1973 STRUCTURE FOOTPRINTS (FROM USGS 1973) IN RELATION TO APE

FIGURE 16