Department of Economic and Community Development

State Historic Preservation Office

June 2, 2020

Mr. David R. George
Heritage Consultants
PO Box 310249
Newington, CT 06131

Subject: Phase IA Cultural Resources Assessment Survey
Proposed Gravel Pits Solar
Apothecaries Hall Road et al
East Windsor, Connecticut
ENV-20-0698

Dear Mr. George:

The State Historic Preservation Office (SHPO) has reviewed the archeological survey report prepared by Heritage Consultants, LLC (Heritage), dated May 2020. The proposed activities are under the jurisdiction of the Connecticut Siting Council and are subject to review by this office pursuant to the Connecticut Environmental Policy Act (CEPA). The proposed undertaking includes the construction of a 120-megawatt, alternating current, ground-mounted solar facility, which is to occupy an approximately 485 acre project site within a larger 737 acre area, located within 8 parcels adjacent to Apothecaries Hall Road, Plantation Road, Wapping Road, and Windsorville Road. Surrounding land uses include housing developments, agricultural fields, a utility transmission corridor, railroad line, wooded areas, and a golf course. The submitted report is well-written, comprehensive, and meet the standards set forth in the *Environmental Review Primer for Connecticut's Archaeological Resources*.

The reconnaissance survey consisted of a contextual overview of the area's prehistory, history, and natural setting, literature to identify previously completed cultural resource surveys and recorded sites, review of historic maps, pedestrian survey of the study area, and preparation of a current archaeological assessment report.

The Phase IA assessment survey identified that approximately 238.9 acres of the 485 project area retain a moderate to high potential to contain intact archaeological deposits. These areas are primarily forested tracks and agricultural fields. Additionally, the survey also identified 41 historic period structures within and immediately adjacent to the project site, and include tobacco sheds, English-style barns, residential structures, a water tower, and other ancillary structures. Many of these appear to retain a high degree of historic integrity.

We therefore recommend that a Phase IB professional cultural resources assessment and reconnaissance survey that includes subsurface testing techniques be completed in areas identified

as having moderate to high archaeological sensitivity and will be impacted by the proposed solar project prior to construction. This office concurs with the proposed method of subsurface testing as proposed in *Chapter VII: Results of the Investigation & Management Recommendations* of the Phase IA. Additionally, SHPO concurs that that additional examination and documentation of exteriors and interiors (where possible) of the historic structures within the study area be undertaken in order to ascertain their potential eligibility for listing on either the State or National Register of Historic Places. All work should be in compliance with our *Environmental Review Primer for Connecticut's Archaeological Resources* and no construction or other project-related ground disturbance or demolition should be initiated until SHPO has had an opportunity to review and comment upon the requested survey.

This office appreciates the opportunity to review and comment upon this project. These comments are provided in accordance with the Connecticut Environmental Policy Act. For additional information, please contact Marena Wisniewski, Environmental Reviewer, at (860) 500-2357 or marena.wisniewski@ct.gov.

Sincerely,

Mary B. Dunne
State Historic Preservation Officer

May 13, 2020

Ms. Marena Wisniewski
National Register Specialist/Architectural Historian
Department of Economic and Community Development
State Historic Preservation Office
450 Columbus Boulevard, Suite 5
Hartford, Connecticut 06103

**RE: Phase IA Cultural Resources Assessment Survey of the Proposed Gravel Pits Solar Project in East Windsor, Connecticut**

Ms. Wisniewski:

Heritage Consultants, LLC has completed a Phase IA cultural resources assessment survey on behalf of VHB for the Gravel Pits Solar Project in East Windsor, Connecticut. This work was completed in April of 2020 and included both a review of the archaeological potential of the Project Site, as well as photo-documentation of historic buildings within the area of the proposed solar facility. The report for this effort is attached for your review and comment.

Please do not hesitate to contact me at 860-299-6328 or at dgeorge@heritage-consultants.com with any questions you may have. I look forward to consulting with you, as does the remainder of the project team, during our teleconference scheduled for May 19 at 2-3 pm. As always, thank you for your time and consideration.

David George, M.A., R.P.A.

David R. George

Principal Investigator
Heritage Consultants, LLC

P.O. Box 310249 • Newington, Connecticut 06131
Phone (860) 299-6328
Email: dgeorge@heritage-consultants.com

MAY 2020
Updated: July 2020

# PHASE IA CULTURAL RESOURCES ASSESSMENT SURVEY OF THE PROPOSED GRAVEL PITS SOLAR PROJECT IN EAST WINDSOR, CONNECTICUT

PREPARED FOR:

1 CEDAR STREET #400,
PROVIDENCE, RHODE ISLAND 02903

PREPARED BY:

55 EAST CEDAR STREET
NEWINGTON, CONNECTICUT 06111

# ABSTRACT

This report presents the results of a Phase IA cultural resources assessment survey for the proposed Gravel Pit Solar, LLC, Gravel Pit Solar II, LLC, Gravel Pit Solar III, LLC, and Gravel Pit Solar IV, LLC (collectively Gravel Pit Solar) Project in the Town of East Windsor, Connecticut. The Project includes development of a 120-megawatt (MW) alternating current (AC) ground-mounted solar photovoltaic system. The 485-acre Project Site is situated on portions of eight parcels, totaling approximately 737 acres, located near Apothecaries Hall Road, Plantation Road, Wapping Road, and Windsorville Road in the Town of East Windsor, Connecticut. The current investigation consisted of detailed background research, a pedestrian survey and photo-documentation of the 45-acre Project Site to determine its archaeological sensitivity, and photo-documentation and examination of historic standing structures within the Project Site.

The results of the survey indicate that 238.9 acres of land within the Project Site retain a moderate sensitivity for intact archaeological deposits. This acreage is divided between forested areas and agricultural fields. It is recommended that the moderate sensitivity areas within the forested zones be subjected to Phase IB cultural resources reconnaissance survey using a systematic subsurface testing regime. It is further recommended that moderate sensitivity areas within agricultural fields be subjected to systematic pedestrian survey augmented by limited shovel testing where artifacts are recovered. The remaining 278.1 acres possess a no/low potential for producing archaeological sites; no additional archaeological examination of these areas is recommended prior to construction.

The survey also identified 41 historic period buildings that are situated on or immediately adjacent to the Project Site, a portion of which is a functioning tobacco and vegetable farm with historical roots. The historic buildings include tobacco sheds, several English style barns, residences, a water tower, and ancillary structures. A preliminary review of these buildings, some of which were documented through the Connecticut Trust for Historic Preservation's Barn Survey, revealed that many exhibit a high level of integrity. It is recommended that additional examination documentation of these buildings take place prior to final design and implementation of the Project so that their National Register of Historic Places eligibility can be ascertained. Subsequent research should also consider potential direct or indirect affects to local historic buildings, whether they be within or near to the Project Site.

# TABLE OF CONTENTS

# LIST OF FIGURES

# LIST OF PHOTOS

# CHAPTER I
# INTRODUCTION

This report presents the results of a Phase IA cultural resources assessment survey (the Survey) of the proposed Gravel Pit Solar (GPS) Project in the Town of East Windsor, Connecticut (Figures 1 and 2). Vanasse Hangen Brustlin (VHB), the primary environmental and engineering consultant in support of the Project, requested that Heritage Consultants, LLC (Heritage) complete the Survey as part of the planning process for the proposed Project, which includes development of a 120 MW AC ground-mounted solar photovoltaic system. The 485-acre Project Site is situated on portions of eight parcels of land located near Apothecaries Hall Road, Plantation Road, Wapping Road, and Windsorville Road in the Town of East Windsor, Connecticut. It is surrounded by land that has various uses, including a golf course, housing developments, an electrical transmission line corridor, a railroad, agricultural fields, and wooded areas. Heritage completed this investigation on behalf of VHB in March of 2020. All work associated with this undertaking was performed in accordance with the *Environmental Review Primer for Connecticut's Archaeological Resources* (Poirier 1987) promulgated by the Connecticut State Historic Preservation Office (CT-SHPO).

**Project Description and Methods Overview**

GPS is proposed in part due to the Project's selection in the 2018 Zero Carbon request for proposals solicited by the Connecticut Department of Energy and Environmental Protection (CT DEEP) and the 2019 Long-Term Contract request for proposals solicited by the Rhode Island Public Utilities Commission (PUC). The Project is a new 120 MW-AC solar power generating facility that will be constructed on a 517-acre Project Site located within eight parcels. The land is situated along Apothecaries Hall Road, Plantation Road, Wapping Road, and Windsorville Road in East Windsor, Connecticut (Figures 1 and 2). GPS is advancing the Project to design and permitting through the Connecticut Siting Council review process and will also obtain other federal and state permits, as necessary.

This Phase IA cultural resources assessment survey consisted of the completion of the following tasks: 1) a contextual overview of the region's prehistory, history, and natural setting (e.g., soils, topography, ecology, hydrology, etc.); 2) a literature search to identify and discuss previously recorded cultural resources in the region encompassing the Project Site; 3) a review of readily available historic maps and aerial imagery depicting the Project Site to identify potential historic resources and/or areas of past disturbance; 4) a pedestrian survey and photo-documentation of the Project Site in order to determine its archaeological sensitivity; 5) photo-documentation and preliminary examination of historic standing structures within the Project Site; and 6) preparation of the current Phase IA cultural resources assessment survey report.

**Project Results and Management Recommendations Overview**

The review of historic maps and aerial images of the Project Site and files maintained by the CT-SHPO indicated that there are no previously identified archaeological sites or National/State Register of Historic Places properties located within 1.6 km (1 mile) of the Project Site. This is likely due to a lack of professional surveys in this part of East Windsor rather than an actual absence of cultural resources.

Heritage also combined data from the historic map and aerial image analysis, as well as pedestrian survey, to stratify the Project Site into zones of no/low and/or moderate/high archaeological sensitivity.

Upon completion of the above-referenced analysis and pedestrian survey, it was determined that portions of the Project Site contain steeps slopes and wet soils or have been impacted by sand and gravel operations, an existing electrical transmission line corridor, and a north to south trending railroad that bisects the Project Site. These areas encompass 278.1 acres of land and they retain little, if any, intact deposits. Thus, they were assessed as retaining a no/low archaeological sensitivity. The remaining 238.9 acres of land consist of level, well drained farmland and forested areas. While some of these areas have been impacted by the cultivation of tobacco and vegetables, they may yield intact archaeological sites below the plow zone. Thus, they were assessed as possessing a moderate potential to yield archaeological sites. It is recommended that the moderate sensitivity areas be subjected to archaeological examination as part of a Phase IB cultural resources reconnaissance survey, the recommended methods for which are described in Chapter VII.

Historic research, analysis of maps and aerial images, and the pedestrian survey, revealed that the Project Site and the immediate surroundings contain numerous historic standing structures associated with a portion of a farm owned by Edward and Dorothy Markowski. They include residences, tobacco sheds, English style barns, a water tower, and ancillary farm buildings. Some of these structures, including the water tower, four of the tobacco sheds, and three other buildings, will not be impacted directly by the Project. The historic structures located within and immediately adjacent to the Project Site retain a high level of integrity, are of importance to the historical landscape, and some may be considered dwindling resources. It is recommended that additional examination and documentation of exteriors and interiors (where possible) of the buildings take place prior to final design and implementation of the Project so that their National Register of Historic Places eligibility can be determined. Subsequent research should also consider potential direct or indirect effects of the Project on the historic buildings, whether they be situated within or near to the Project Site.

**Project Personnel**

Key personnel for this project included Mr. David R. George, M.A., R.P.A, who served as Principal Investigator for this effort; he was assisted by Mr. Cory Atkinson, M.A., and Mr. Timothy Das, B.A., who completed the fieldwork portion of the project. Dr. Kristen Keegan prepared the historic background research portion of the report, while Mr. Stephen Anderson, B.A., completed all GIS tasks associated with the undertaking. Ms. Stacey Vairo, M.F.S., completed the preliminary review and interpretation of the historic standing structures located within the Project Site. Finally, Ms. Elizabeth Correia, M.A., assisted with compilation of the report and the associated figures.

**Organization of the Report**

The natural setting of the region encompassing the Project Site is presented in Chapter II; it includes a brief overview of the geology, hydrology, and soils, of the Project region. The prehistory of the development region is outlined briefly in Chapter III. The history of the region encompassing the Project Site is chronicled in Chapter IV, while a discussion of previous archaeological investigations in the vicinity of the Project Site is presented in Chapter V. The methods used to complete this investigation are discussed in Chapter VI. Finally, the results of this investigation and management recommendations for the Project Site and the identified cultural resources are presented in Chapter VII.

# CHAPTER II
# NATURAL SETTING

**Introduction**

This chapter provides a brief overview of the natural setting of the region containing the Project Site. Previous archaeological research has documented that a few specific environmental factors can be associated with both prehistoric and historic period site selection. These include general ecological conditions, as well as types of fresh water sources and soils present. The remainder of this section provides a brief overview of the ecology, hydrological resources, and soils present within the Project Site and the larger region in general.

**Ecoregions of Connecticut**

Throughout the Pleistocene and Holocene Periods, Connecticut has undergone numerous environmental changes. Variations in climate, geology, and physiography have led to the "regionalization" of Connecticut's modern environment. It is clear, for example, that the northwestern portion of the state has quite different natural characteristics than the coastline. Recognizing this fact, Dowhan and Craig (1976), as part of their study of the distribution of rare and endangered species in Connecticut, subdivided the state into various ecoregions. Dowhan and Craig (1976:27) defined an ecoregion as:

> "an area characterized by a distinctive pattern of landscapes and regional climate as expressed by the vegetation composition and pattern, and the presence or absence of certain indicator species and species groups. Each ecoregion has a similar interrelationship between landforms, local climate, soil profiles, and plant and animal communities. Furthermore, the pattern of development of plant communities (chronosequences and toposequences) and of soil profile is similar in similar physiographic sites. Ecoregions are thus natural divisions of land, climate, and biota."

Dowhan and Craig defined nine major ecoregions for the State of Connecticut. They are based on regional diversity in plant and animal indicator species (Dowhan and Craig 1976). Only one of the ecoregions is germane to the current investigation: North-Central Lowlands ecoregion. A brief summary of this ecoregion is presented below. It is followed by a discussion of the hydrology and soils found in and adjacent to the Project Site.

**North-Central Lowlands Ecoregion**

The North-Central Lowlands ecoregion consists of a broad valley located between 40.2 and 80.5 km (25 and 50 mi) to the north of Long Island Sound (Dowhan and Craig 1976). It is characterized by extensive floodplains, backwater swamps, and lowland areas situated near large rivers and tributaries. Physiography in this region is composed of a series of north-trending ridge systems, the easternmost of which is referred to as the Bolton Range (Bell 1985:45). These ridge systems comprise portions of the terraces that overlook the larger rivers such as the Connecticut and Farmington Rivers. The bedrock of the region is composed of Triassic sandstone, interspersed with durable basalt or "traprock" (Bell 1985). Soils found in the upland portion of this ecoregion are developed on red, sandy to clayey glacial till, while those soils situated nearest to the rivers are situated on widespread deposits of stratified sand, gravel, silt, and alluvium resulting from the impoundment of glacial Lake Hitchcock.

**Hydrology in the Vicinity of the Project Site**

The Project Site is situated within a region that contains to several sources of freshwater, including Pecks Brook, Ketch Brook, Spring Glen Brook, and Windsorville Pond, as well as unnamed streams, ponds, and wetlands. These freshwater sources may have served as resource extraction areas for Native American and historic populations. Previously completed archaeological investigations in Connecticut have demonstrated that streams, rivers, and wetlands were focal points for prehistoric occupations because they provided access to transportation routes, sources of freshwater, and abundant faunal and floral resources.

**Soils Comprising the Project Site**

Soil formation is the direct result of the interaction of several variables, including climate, vegetation, parent material, time, and organisms present (Gerrard 1981). Once archaeological deposits are buried within the soil, they are subject to several diagenic processes. Different classes of artifacts may be preferentially protected, or unaffected by these processes, whereas others may deteriorate rapidly. Cyclical wetting and drying, freezing and thawing, and compression can accelerate the chemical and mechanical decay processes for animal bones, shells, lithics, ceramics, and plant remains. Lithic and ceramic artifacts are largely unaffected by soil pH, whereas animal bones and shells decay more quickly in acidic soils such as those that are present in within the current Project Site. In contrast, acidic soils enhance the preservation of charred plant remains.

A review of the soils within the Project Site is presented below. The Project Site is characterized by the presence of five major soil types: Agawam, Haven, Enfield, Manchester, and Udorthent soils (Figure 3). A review of the first four of these soils shows that they consist of well drained sandy loams; they are the types of soils that are typically correlated with prehistoric and historic use and occupation. Descriptive profiles for each soil type are presented below; they were gathered from the National Resources Conservation Service. The final soil type, Udorthents, are typical of areas that have been largely disturbed in the past and no longer retain archaeological sensitivity.

<u>Agawam Soils (Soil Code 29A):</u>

The Agawam series consists of very deep, well drained soils that have formed in sandy, water deposited materials. They are typically found on outwash plains and high stream terraces where slope ranges from 0 to 15 percent. A typical profile associated with Haven soils is as follows: **Ap**--0 to 11 inches; dark grayish brown (10YR 4/2) fine sandy loam; light brownish gray (10YR 6/2) dry; weak medium and coarse subangular blocky structure; very friable; common fine and medium roots; strongly acid; abrupt smooth boundary; **Bw1**--11 to 16 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak medium and coarse subangular blocky structure; very friable; common fine and medium roots; strongly acid; abrupt smooth boundary; **Bw2**--16 to 26 inches; light olive brown (2.5Y 5/4) fine sandy loam; weak medium subangular blocky structure; very friable; common fine and medium roots; strongly acid; clear smooth boundary; **2C1**--26 to 45 inches; olive(5Y 5/3) loamy fine sand; massive; very friable; few fine roots; strongly acid; clear smooth boundary; **2C2**--45 to 55 inches; olive brown (2.5Y 4/4) loamy fine sand; massive; very friable; strongly acid; abrupt smooth boundary; and **2C3**--55 to 65 inches; olive (5Y 5/3) loamy sand; single grain; loose; strongly acid.

<u>Haven Soils (Soil Code 32A):</u>

The Haven series consists of very deep, well drained soils that have formed in loamy over sandy and gravelly outwash. They are typically found on outwash plains, valley trains, terraces, and water-sorted moraine deposits where slope ranges from 0 through 15 percent. A typical profile associated with Haven soils is as follows: **Oi**--0 to 2 inches (0 to 5 centimeters); slightly decomposed plant material derived

from loose pine needles, leaves and twigs. **Oa**-- 2 to 3 inches (5 to 8 centimeters); black (5YR 2/1) highly decomposed plant material; **A**--3 to 6 inches (8 to 15 centimeters); dark grayish brown (10YR 4/2) loam; weak fine and medium granular structure; friable; many fine and coarse roots; very strongly acid; abrupt smooth boundary; **Bw1**-- 6 to 13 inches (15 to 33 centimeters); brown (7.5YR 4/4) loam; weak fine and medium subangular blocky structure; friable; common fine roots; many fine pores; very strongly acid; clear wavy boundary. **Bw2**-- 13 to 22 inches (33 to 56 centimeters); strong brown (7.5YR 5/6) loam; weak fine and medium subangular blocky structure; friable; common fine roots; many fine pores; 5 percent fine gravel; very strongly acid; gradual wavy boundary; **BC**-- 22 to 31 inches (56 to 79 centimeters); yellowish brown (10YR 5/6) gravelly loam; weak medium and fine subangular blocky structure; friable; few fine roots; common fine pores; 20 percent fine gravel; very strongly acid; clear wavy boundary; and **2C**-- 31 to 65 inches (79 to 165 centimeters); yellowish brown (10YR 5/4) to brownish yellow (10YR 6/6) stratified gravelly sand; single grained; loose; 30 percent fine gravel; very strongly acid.

Enfield Soils (Soil Code 32A):

The Enfield series consists of very deep, well drained loamy soils formed in a silty mantle overlying glacial outwash. They are found on level to sloping areas characterized by outwash plains and terraces. A typical profile associated with Enfield soils is as follows: **Ap**--0 to 7 inches; dark grayish brown (10YR 4/2) silt loam; moderate fine granular structure; friable; many very fine and fine roots; 5 percent fine gravel; strongly acid; abrupt smooth boundary; **Bw1**--7 to 16 inches; strong brown (7.5YR 5/6) silt loam; weak medium subangular blocky structure; friable; common very fine and many fine roots; 5 percent fine gravel; strongly acid; clear wavy boundary. **Bw2**--16 to 25 inches; light olive brown (2.5Y 5/4) silt loam; weak medium subangular blocky structure; friable, few very fine and common fine roots; 5 percent fine gravel; strongly acid; abrupt wavy boundary; and **2C**--25 to 60 inches; brown (10YR 5/3) very gravelly sand; single grain; loose; stratified; 45 percent gravel and 5 percent cobbles; strongly acid.

Manchester Soils (Soil Code 37E):

The Manchester series consists of very deep, excessively drained soils that have formed in sandy and gravelly glacial outwash and stratified drift. They are found on outwash plains, terraces, kames, deltas, and eskers where slopes ranges from 0 to 45 percent. A typical profile associated with Manchester soils is as follows: **Ap**--0 to 9 inches; dark brown (7.5YR 3/2) gravelly sandy loam; weak medium granular structure; very friable; many fine and common medium roots; 20 percent gravel; strongly acid; clear smooth boundary; **Bw**--9 to 18 inches; reddish brown (5YR 4/3) gravelly loamy sand; very weak fine and medium granular structure; very friable; few fine roots; 25 percent gravel; strongly acid; clear wavy boundary; and **C**--18 to 65 inches; reddish brown (5YR 4/4) very gravelly sand; single grain; loose; 50 percent gravel; very strongly acid.

Udorthent Soils (Soil Code 305):

Udorthent soils occur within cuts (road, railroad, etc.), spoil piles, landfills, and gravel pits. The slope ranges from 0 to 25 percent and the runoff class is medium. The depth to a restrictive feature is greater than 60 inches. The drainage class is moderately well drained. Areas characterized by Udorthent soils are largely disturbed by cutting, smoothing, filling, or large-scale excavations. They do not retain archaeological sensitivity.

**Summary**

The natural setting of the Project Site is common throughout the North-Central Lowlands ecoregion. Streams and rivers of this area empty into the Connecticut River, which in turn, drains into the Long Island Sound. Further, the landscape in general is dominated by sandy loamy soil types with some

wetland soils intermixed. In addition, low slopes dominate the region. Thus, in general, the project region was well suited to Native American occupation throughout the prehistoric era. This portion of East Windsor was also used throughout the historic era, as evidenced by the presence of numerous historic residences, barns, outbuildings, and agricultural fields throughout the region; thus, archaeological deposits dating from the prehistoric and historic era may be expected near or within the proposed Project Site.

# CHAPTER III
# PREHISTORIC SETTING

**Introduction**

Prior to the late 1970s and early 1980s, very few systematic archaeological surveys of large portions of the state of Connecticut had been undertaken. Rather, the prehistory of the region was studied at the site level. Sites chosen for excavation were highly visible and they were in such areas as the coastal zone, e.g., shell middens, and Connecticut River Valley. As a result, a skewed interpretation of the prehistory of Connecticut was developed. It was suggested that the upland portions of the state, i.e., the northeastern and northwestern hills ecoregions, were little used and rarely occupied by prehistoric Native Americans, while the coastal zone, i.e., the eastern and western coastal and the southeastern and southwestern hills ecoregions, were the focus of settlements and exploitation in the prehistoric era. This interpretation remained unchallenged until the 1970s and 1980s when several town-wide and regional archaeological studies were completed. These investigations led to the creation of several archaeological phases that subsequently were applied to understand the prehistory of Connecticut. The remainder of this chapter provides an overview of the prehistoric setting of the region encompassing the Project Site.

**Paleo-Indian Period (12,000 to 10,000 Before Present [B.P.])**

The earliest inhabitants of the area encompassing the State of Connecticut, who have been referred to as Paleo-Indians, arrived in the area by circa (ca.), 12,000 B.P. (Gramly and Funk 1990; Snow 1980). Due to the presence of large Pleistocene mammals at that time and the ubiquity of large fluted projectile points in archaeological deposits of this age, Paleo-Indians often have been described as big-game hunters (Ritchie and Funk 1973; Snow 1980); however, as discussed below, it is more likely that they hunted a broad spectrum of animals.

While there have been numerous surface finds of Paleo-Indian projectile points throughout the State of Connecticut, only two sites, the Templeton Site (6-LF-21) in Washington, Connecticut and the Hidden Creek Site (72-163) in Ledyard, Connecticut, have been studied in detail and dated using the radiocarbon method (Jones 1997; Moeller 1980). The Templeton Site (6-LF-21) was occupied between 10,490 and 9,890 years ago (Moeller 1980). In addition to a single large and two small fluted points, the Templeton Site produced a stone tool assemblage consisting of gravers, drills, core fragments, scrapers, and channel flakes, which indicates that the full range of stone tool production and maintenance took place at the site (Moeller 1980). Moreover, the use of both local and non-local raw materials was documented in the recovered tool assemblage, suggesting that not only did the site's occupants spend quite some time in the area, but they also had access to distant stone sources, the use of which likely occurred during movement from region to region.

The only other Paleo-Indian site studied in detail in Connecticut is the Hidden Creek Site (72-163) (Jones 1997). The Hidden Creek Site is situated on the southeastern margin of the Great Cedar Swamp on the Mashantucket Pequot Reservation in Ledyard, Connecticut. While excavation of the Hidden Creek Site produced evidence of Terminal Archaic and Woodland Period components (see below) in the upper soil horizons, the lower levels of the site yielded artifacts dating from the Paleo-Indian era. Recovered Paleo-Indian artifacts included broken bifaces, side-scrapers, a fluted preform, gravers, and end-scrapers. Based on the types and number of tools present, Jones (1997:77) has hypothesized that the Hidden

Creek Site represented a short-term occupation, and that separate stone tool reduction and rejuvenation areas were present.

While archaeological evidence for Paleo-Indian occupation is scarce in Connecticut, it, combined with data from the West Athens Road and King's Road Site in the Hudson drainage and the Davis and Potts Sites in northern New York, supports the hypothesis that there was human occupation of the area not long after ca. 12,000 B.P. (Snow 1980). Further, site types currently known suggest that the Paleo-Indian settlement pattern was characterized by a high degree of mobility, with groups moving from region to region in search of seasonally abundant food resources, as well as for the procurement of high-quality raw materials from which to fashion stone tools.

**Archaic Period (10,000 to 2,700 B.P.)**

The Archaic Period, which succeeded the Paleo-Indian Period, began by ca. 10,000 B.P. (Ritchie and Funk 1973; Snow 1980), and it has been divided into three subperiods: Early Archaic (10,000 to 8,000 B.P.), Middle Archaic (8,000 to 6,000 B.P.), and Late Archaic (6,000 to 3,400 B.P.). These periods were devised to describe all non-farming, non-ceramic producing populations in the area. Regional archeologists recently have recognized a final "transitional" Archaic Period, the Terminal Archaic Period (3,400-2,700 B.P.), which was meant to describe those groups that existed just prior to the onset of the Woodland Period and the widespread adoption of ceramics into the toolkit (Snow 1980; McBride 1984; Pfeiffer 1984, 1990; Witthoft 1949, 1953).

Early Archaic Period (10,000 to 8,000 B.P.)

To date, very few Early Archaic sites have been identified in southern New England. As a result, researchers such as Fitting (1968) and Ritchie (1969), have suggested a lack of these sites likely is tied to cultural discontinuity between the Early Archaic and preceding Paleo-Indian Period, as well as a population decrease from earlier times. However, with continued identification of Early Archaic sites in the region, and the recognition of the problems of preservation, it is difficult to maintain the discontinuity hypothesis (Curran and Dincauze 1977; Snow 1980).

Like their Paleo-Indian predecessors, Early Archaic sites tend to be small and produce few artifacts, most of which are not temporally diagnostic. While Early Archaic sites in other portions the United States are represented by projectile points of the Kirk series (Ritchie and Funk 1973) and by Kanawha types (Coe 1964), sites of this age in southern New England are identified based on a series of ill-defined bifurcate-based projectile points. These projectile points are identified by the presence of their characteristic bifurcated base, and they generally are made from high quality raw materials. Moreover, finds of these projectile points have rarely been in stratified contexts. Rather, they occur commonly either as surface expressions or intermixed with artifacts representative of later periods. Early Archaic occupations, such as the Dill Farm Site and Sites 6LF64 and 6LF70 in Litchfield County, an area represented by camps that were relocated periodically to take advantage of seasonally available resources (McBride 1984; Pfeiffer 1986). In this sense, a foraging type of settlement pattern was employed during the Early Archaic Period.

Middle Archaic Period (8,000 to 6,000 B.P.)

By the onset of the Middle Archaic Period, essentially modern deciduous forests had developed in the region (Davis 1969). It is at this time that increased numbers and types of sites are noted in Connecticut (McBride 1984). The most well-known Middle Archaic site in New England is the Neville Site, which is in Manchester, New Hampshire and studied by Dincauze (1976). Careful analysis of the Neville Site indicated that the Middle Archaic occupation dated from between ca., 7,700 and 6,000 years ago. In fact, Dincauze (1976) obtained several radiocarbon dates from the Middle Archaic component of the

Neville Site. The dates, associated with the then-newly named Neville type projectile point, ranged from 7,740±280 and 7,015±160 B.P. (Dincauze 1976).

In addition to Neville points, Dincauze (1976) described two other projectile points styles that are attributed to the Middle Archaic Period: Stark and Merrimac projectile points. While no absolute dates were recovered from deposits that yielded Stark points, the Merrimac type dated from 5,910±180 B.P. Dincauze argued that both the Neville and later Merrimac and Stark occupations were established to take advantage of the excellent fishing that the falls situated adjacent to the site area would have afforded Native American groups. Thus, based on the available archaeological evidence, the Middle Archaic Period is characterized by continued increases in diversification of tool types and resources exploited, as well as by sophisticated changes in the settlement pattern to include different site types, including both base camps and task-specific sites (McBride 1984:96)

Late Archaic Period (6,000 to 3,700 B.P.)

The Late Archaic Period in southern New England is divided into two major cultural traditions that appear to have coexisted. They include the Laurentian and Narrow-Stemmed Traditions (Funk 1976; McBride 1984; Ritchie 1969a and b). Artifacts assigned to the Laurentian Tradition include ground stone axes, adzes, gouges, ulus (semi-lunar knives), pestles, atlatl weights, and scrapers. The diagnostic projectile point forms of this time period in southern New England include the Brewerton Eared-Notched, Brewerton Eared and Brewerton Side-Notched varieties (McBride 1984; Ritchie 1969a; Thompson 1969). In general, the stone tool assemblage of the Laurentian Tradition is characterized by flint, felsite, rhyolite and quartzite, while quartz was largely avoided for stone tool production.

In terms of settlement and subsistence patterns, archaeological evidence in southern New England suggests that Laurentian Tradition populations consisted of groups of mobile hunter-gatherers. While a few large Laurentian Tradition occupations have been studied, sites of this age generally encompass less than 500 $m^2$ (5,383 $ft^2$). These base camps reflect frequent movements by small groups of people in search of seasonally abundant resources. The overall settlement pattern of the Laurentian Tradition was dispersed in nature, with base camps located in a wide range of microenvironments, including riverine as well as upland zones (McBride 1978, 1984:252). Finally, subsistence strategies of Laurentian Tradition focused on hunting and gathering of wild plants and animals from multiple ecozones.

The second Late Archaic tradition, known as the Narrow-Stemmed Tradition, is unlike the Laurentian Tradition, and it likely represents a different cultural adaptation. The Narrow-Stemmed tradition is recognized by the presence of quartz and quartzite narrow stemmed projectile points, triangular quartz Squibnocket projectile points, and a bipolar lithic reduction strategy (McBride 1984). Other tools found in Narrow-Stemmed Tradition artifact assemblages include choppers, adzes, pestles, antler and bone projectile points, harpoons, awls, and notched atlatl weights. Many of these tools, notably the projectile points and pestles, indicate a subsistence pattern dominated by hunting and fishing, as well the collection of a wide range of plant foods (McBride 1984; Snow 1980:228).

The Terminal Archaic Period (3,700 to 2,700 B.P.)

The Terminal Archaic Period, which lasted from ca., 3,700 to 2,700 BP, is perhaps the most interesting, yet confusing of the Archaic Periods in southern New England prehistory. Originally termed the "Transitional Archaic" by Witthoft (1953) and recognized by the introduction of technological innovations, e.g., broadspear projectile points and soapstone bowls, the Terminal Archaic has long posed problems for regional archeologists. While the Narrow-Stemmed Tradition persisted through the Terminal Archaic and into the Early Woodland Period, the Terminal Archaic is coeval with what appears

to be a different technological adaptation, the Susquehanna Tradition (McBride 1984; Ritchie 1969b). The Susquehanna Tradition is recognized in southern New England by the presence of a new stone tool industry that was based on the use of high-quality raw materials for stone tool production and a settlement pattern different from the "coeval" Narrow-Stemmed Tradition.

The Susquehanna Tradition is based on the classification of several Broadspear projectile point types and associated artifacts. There are several local sequences within the tradition, and they are based on projectile point type chronology. Temporally diagnostic projectile points of these sequences include the Snook Kill, Susquehanna Broadspear, Mansion Inn, and Orient Fishtail types (Lavin 1984; McBride 1984; Pfeiffer 1984). The initial portion of the Terminal Archaic Period (ca., 3,700-3,200 BP) is characterized by the presence of Snook Kill and Susquehanna Broadspear projectile points, while the latter Terminal Archaic (3,200-2,700 BP) is distinguished by the use Orient Fishtail projectile points (McBride 1984:119; Ritchie 1971).

In addition, it was during the late Terminal Archaic that interior cord marked, grit tempered, thick walled ceramics with conoidal (pointed) bases made their initial appearance in the Native American toolkit. These are the first ceramics in the region, and they are named Vinette I (Ritchie 1969a; Snow 1980:242); this type of ceramic vessel appears with much more frequency during the ensuing Early Woodland Period. In addition, the adoption and widespread use of soapstone bowls, as well as the implementation subterranean storage, suggests that Terminal Archaic groups were characterized by reduced mobility and longer-term use of established occupation sites (Snow 1980:250).

Finally, while settlement patterns appeared to have changed, Terminal Archaic subsistence patterns were analogous to earlier patterns. The subsistence pattern still was diffuse in nature, and it was scheduled carefully. Typical food remains recovered from sites of this period consist of fragments of white-tailed deer, beaver, turtle, fish and various small mammals. Botanical remains recovered from the site area consisted of *Chenopodium* sp., hickory, butternut and walnut (Pagoulatos 1988:81). Such diversity in food remains suggests at least minimal use of a wide range of microenvironments for subsistence purposes.

**Woodland Period (2,700 to 350 B.P.)**

Traditionally, the advent of the Woodland Period in southern New England has been associated with the introduction of pottery; however, as mentioned above, early dates associated with pottery now suggest the presence of Vinette I ceramics appeared toward the end of the preceding Terminal Archaic Period (Ritchie 1969a; McBride 1984). Like the Archaic Period, the Woodland Period has been divided into three subperiods: Early, Middle, and Late Woodland. The various subperiods are discussed below.

<u>Early Woodland Period (ca., 2,700 to 2,000 B.P.)</u>

The Early Woodland Period of the northeastern United States dates from ca., 2,700 to 2,000 B.P., and it has thought to have been characterized by the advent of farming, the initial use of ceramic vessels, and increasingly complex burial ceremonialism (Griffin 1967; Ritchie 1969a and 1969b; Snow 1980). In the Northeast, the earliest ceramics of the Early Woodland Period are thick walled, cord marked on both the interior and exterior, and possess grit temper.

Careful archaeological investigations of Early Woodland sites in southern New England have resulted in the recovery of narrow stemmed projectile points in association with ceramic sherds and subsistence remains, including specimens of White-tailed deer, soft and hard-shell clams, and oyster shells (Lavin and Salwen: 1983; McBride 1984:296-297; Pope 1952). McBride (1984) has argued that the combination

of the subsistence remains and the recognition of multiple superimposed cultural features at various sites indicates that Early Woodland Period settlement patterns were characterized by multiple re-use of the same sites on a seasonal basis by small co-residential groups.

Middle Woodland Period (2,000 to 1,200 B.P.)

The Middle Woodland Period is marked by an increase in the number of ceramic types and forms utilized (Lizee 1994a), as well as an increase in the amount of exotic lithic raw material used in stone tool manufacture (McBride 1984). The latter suggests that regional exchange networks were established, and that they were used to supply local populations with necessary raw materials (McBride 1984; Snow 1980). The Middle Woodland Period is represented archaeologically by narrow stemmed and Jack's Reef projectile points; increased amounts of exotic raw materials in recovered lithic assemblages, including chert, argillite, jasper, and hornfels; and conoidal ceramic vessels decorated with dentate stamping. Ceramic types indicative of the Middle Woodland Period includes Linear Dentate, Rocker Dentate, Windsor Cord Marked, Windsor Brushed, Windsor Plain, and Hollister Stamped (Lizee 1994a:200).

In terms of settlement patterns, the Middle Woodland Period is characterized by the occupation of village sites by large co-residential groups that utilized native plant and animal species for food and raw materials in tool making (George 1997). These sites were the principal place of occupation, and they were positioned close to major river valleys, tidal marshes, estuaries, and the coastline, all of which would have supplied an abundance of plant and animal resources (McBride 1984:309). In addition to villages, numerous temporary and task-specific sites were utilized in the surrounding upland areas, as well as in closer ecozones such as wetlands, estuaries, and floodplains. The use of temporary and task-specific sites to support large village populations indicates that the Middle Woodland Period was characterized by a resource acquisition strategy that can best be termed as logistical collection (McBride 1984:310).

Late Woodland Period (ca., 1,200 to 350 B.P.)

The Late Woodland Period in southern New England dates from ca., 1,200 to 350 B.P., and it is characterized by the earliest evidence for the use of corn in the lower Connecticut River Valley (Bendremer 1993; Bendremer and Dewar 1993; Bendremer et al. 1991; George 1997; McBride 1984); an increase in the frequency of exchange of non-local lithics (Feder 1984; George and Tryon 1996; McBride 1984; Lavin 1984); increased variability in ceramic form, function, surface treatment, and decoration (Lavin 1980, 1986, 1987; Lizee 1994a, 1994b); and a continuation of a trend towards larger, more permanent settlements in riverine, estuarine, and coastal ecozones (Dincauze 1974; McBride 1984; Snow 1980).

Stone tool assemblages associated with Late Woodland occupations, especially village-sized sites, are functionally variable and they reflect plant and animal resource processing and consumption on a large scale. Finished stone tools recovered from Late Woodland sites include Levanna and Madison projectile points; drills; side-, end-, and thumbnail scrapers; mortars and pestles; nutting stones; netsinkers; and celts, adzes, axes, and digging tools. These tools were used in activities ranging from hide preparation to plant processing to the manufacture of canoes, bowls, and utensils, as well as other settlement and subsistence-related items (McBride 1984; Snow 1980). Finally, ceramic assemblages recovered from Late Woodland sites are as variable as the lithic assemblages. Ceramic types identified include Windsor Fabric Impressed, Windsor Brushed, Windsor Cord Marked, Windsor Plain, Clearview Stamped, Sebonac Stamped, Selden Island, Hollister Plain, Hollister Stamped, and Shantok Cove Incised (Lavin 1980, 1988a, 1988b; Lizee 1994a; Pope 1953; Rouse 1947; Salwen and Ottesen 1972; Smith 1947). These types are

more diverse stylistically than their predecessors, with incision, shell stamping, punctation, single point, linear dentate, rocker dentate stamping, and stamp and drag impressions common (Lizee 1994a:216).

**Summary of Connecticut Prehistory**

In sum, the prehistory of Connecticut spans from ca., 12,000 to 350 B.P., and it is characterized by numerous changes in tool types, subsistence patterns, and land use strategies. For most of the prehistoric era, local Native American groups practiced a subsistence pattern based on a mixed economy of hunting and gathering wild plant and animal resources. It is not until the Late Woodland Period that incontrovertible evidence for the use of domesticated species is available. Further, settlement patterns throughout the prehistoric era shifted from seasonal occupations of small co-residential groups to large aggregations of people in riverine, estuarine, and coastal ecozones. In terms of the region containing the proposed Project Site, a variety of prehistoric site types may be expected. These range from seasonal camps utilized by Archaic populations to temporary and task-specific sites of the Woodland era.

# CHAPTER IV
# HISTORIC OVERVIEW

**Introduction**

As Chapter I states, the Project Site associated with GPS encompasses 485 acres of land in eight parcels. It is in the southeastern quarter of the Town of East Windsor, which is situated in Hartford County, Connecticut. Ketch Brook flows from east to west through the Project Site and forms a boundary of several of the parcels, which are set back from the surrounding roads except in the northeastern area, where two of them follow the line of Apothecaries Hall Road. An active railroad line also passes by several of the parcels from north to south. The remainder of this chapter provides a historical overview of the Project region, as well as data specific to the Project Site.

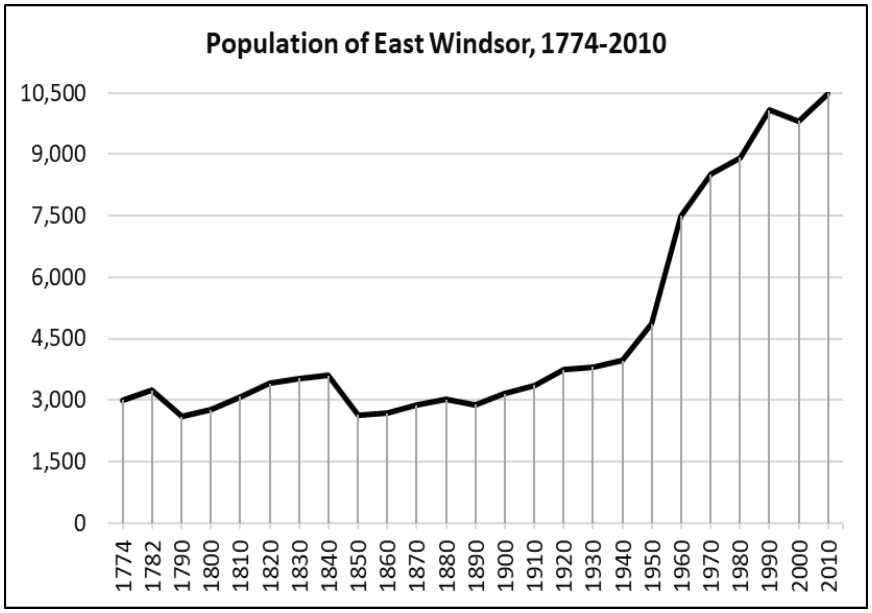
**Native American History of East Windsor**

East Windsor was formerly part of the Town of Windsor, and is also the parent town of both of the present Towns of South Windsor and Ellington. The Native Americans who lived in the Windsor area, on the west bank of the Connecticut River, were known to the colonists as the Poquonocks; a road and a village in Windsor still bear that name (Stiles 1891). The Native Americans who lived on the east side of the Connecticut River, in the areas that included the present South Windsor, were known to the colonists as the Podunks. Multiple Podunk villages were recorded along the bank of the river, and upland camps and seasonal villages have been found throughout the area. The primary Podunk village site during the contact period appears to have been situated beside the Connecticut River, near the border between South Windsor and East Hartford (Goodwin 1886, 1879; Spiess 1937). These lands were claimed by the sachem Aramamet, under the English colonists' convenient understanding of land ownership by an individual sovereign, and he also claimed parts of the future Hartford and Windsor lands on the river's west side (Stiles 1892). At the time of King Philip's War in 1675-1676, the Podunks were believed to be quite numerous, and to their misfortune they took the side of King Philip. Many of them fled from colonial retribution and the loss of their land, although a few nonetheless remained behind. The last mention of a Podunk Native American in the colonial records was in 1722, but local records mentioned small numbers as late as 1745 and even 1879 (Spiess 1937; Goodwin 1879; De Forest 1852).

**History of the Town of East Windsor**

Hartford County was the site of one of the two earliest loci of colonial settlement in Connecticut, with three of its towns dating to the 1630s, including Hartford, Windsor, and Wethersfield. The county extends southward from the Connecticut/Massachusetts border and flanks the Connecticut River on both sides. The earliest colonial development of the region depended on the agricultural and transportation advantages of the river and its valley; areas further from the Connecticut River valley were colonized later and usually grew more slowly through the early nineteenth century. Thereafter, the main source of differentiation in Hartford County towns' development was first, whether they had significant levels of industrialization, and later, whether they had significant levels of suburbanization. East Windsor, located on the east bank of the Connecticut River, had the expected agricultural and transport advantages, with only modest early industrial development. Its suburbanization began early in the twentieth century, then increased exponentially after the close of World War II. The following discussion outlines the history of East Windsor in more detail and discusses the presence or absence of historical resources in the vicinity of the Project Site.

As mentioned above, Windsor was one of three colonial communities planted near each other on the Connecticut River in the 1630s, the others being Hartford and Wethersfield. Initially the colonists settled on the west side of the river, but eventually they claimed a wide area on both sides of it. Colonists began moving permanently to the eastern and northern Windsor territory in 1680, after King Philip's War (1675-1676) had reduced both their fears and the numbers of the Native Americans living there (Crofut 1937). The Town's initial area was very large, and over time it was divided into the Towns of East Windsor, South Windsor, Ellington, Windsor Locks, and part of Bloomfield (Barry 1985). Its population spread out across the landscape in search of agricultural land, cultivating the higher-quality areas first. According to a census taken in 1762, the whole Town of Windsor supported 4,019 residents. In 1768, the section on the east side of the Connecticut River became the separate Town of East Windsor, and as of 1774, the new Town of East Windsor was home to 2,999 residents, and then 3,237 residents as of 1782 (see the population chart below; Keegan 2012; Barry 1985). East Windsor (still including South Windsor) sent as many as 400 men to fight in the Revolutionary War; in addition, East Windsor contained a great deal of excellent agricultural land whose products must have fed many soldiers during the war (Tarbox 1886; Destler 1973).




During the first 50 years of the new United States, Windsor and its municipal offspring remained agricultural in economy, their populations slowly rising but staying below 4,000 people through 1840, when the census reported only 3,600 residents in East Windsor. In 1845, South Windsor was created out of East Windsor, and as of the 1850 federal census both towns had populations of under 3,000 people (Keegan 2012; see the population chart above). Interestingly, and perhaps significantly in terms of their economic history, East Windsor and South Windsor were entirely bypassed by the turnpike system that developed between ca. 1790 and 1850, under which private companies undertook to build and/or improve roads in order to speed the movement of people and goods. Often, though not always, the presence of such roads did indeed foster the development of commerce and industry (Wood 1919). It is likely that instead of turnpikes, the Connecticut River was used for commercial transport by residents of these towns. This river access also encouraged some early industrial development. As of the federal census of industry taken in 1850, East Windsor had 13 firms making products worth at least $500 per year, two of them steam-operated textile manufacturers employing a total of 210 men and 115 women;

the remainder employed between 21 people and one person, including three cigar-makers (U.S. Census 1850).

Although the 1813 map of Connecticut is not precise enough for the Project Site parcels to be mapped against it, the details it shows are relevant. According to the map, "Catch" Brook (latterly known as Ketch Brook) hosted six small industrial facilities between the Scantic River to the west and the road presently known as Wapping Road to the east. These included three sawmills, two grist mills, and a distillery (Figure 4; Warren and Gillet 1813). By the time the 1855 map of Hartford County was compiled, however, the cartographer placed a cashmere textile factory and a sawmill much further to the east, near a large mill pond on the far side of the road. The area was also given the name of Windsorville at that time (Figure 5; Woodford 1855). It is possible that the older mills were already abandoned by this time, especially if the upstream mill dam reduced the flow of the brook. It should also be noted that the cartographer placed the course of Ketch Brook well to the south of its actual course. The map of the Town published in 1869 showed the same arrangement, although with a mill pond on the west side of the road supplying the woolen factory at Windsorville. It also added a cemetery and a Methodist church on the north side of Apothecaries Hall Road, while still placing the course of the brook too far to the south (Figure 6; Baker & Tilden 1869). Unlike some of the facilities shown in the 1813 map, it seems that none of the later facilities and buildings were within the Project Site, although some of them were certainly within 152 m (500 ft) of it.

By the 1890s, East Windsor's agricultural emphasis had shifted from food and feed crops such as rye, corn, and hay to the growing of tobacco. The distilleries that once made use of the rye had also closed. Windsorville, previously known as Ketch Mills, had a gin distillery that burned down in the 1840s; it was be replaced by a woolen textile mill. This facility burned down in 1889, taking with it a boarding house along with all its equipment (Stiles 1891:745-746). It is not certain when nineteenth-century railroad service came to East Windsor and South Windsor. No railroad was shown on the 1869 map (Baker & Tilden). In 1880, the Connecticut Central Railroad, a 32 km (20 mi) track extending from East Hartford to South Windsor and up to Springfield, Massachusetts, was leased by the New York & New England Railroad; the same line had also been leased in 1876 by the Connecticut Valley Railroad (Turner and Jacobus 1989). At whatever time it was built, however, its population effects in East Windsor appear to have been limited. As the population chart above shows, East Windsor had 3,158 residents as of 1900 and 4,859 residents as of 1950 (Keegan 2012). While this shows a continuing growth trend during the first half of the twentieth century, it was not a spectacular growth trend. In economy, these nineteenth- and twentieth-century towns were, and to some extent still are, focused on agriculture. According to a 1932 assessment of the Towns' economic activity, East Windsor's main industries included only agriculture and textiles (Connecticut 1932).

A map from 1931 included some land owners in the vicinity, including Apothecaries Hall Company owning part of the northernmost Project parcel and J. Titus owning land to the south of the eastern end of the Project Site (Figure 7; Dolph & Stewart 1931). The Apothecaries Hall Company was originally a drug store in Waterbury, Connecticut; it was founded in 1849 and incorporated in 1852 (Anderson 1896:874-875). The successful business made many different kinds of medicines and chemicals, including paint supplies and fertilizers (Wiehn and Heiss 2003:30). According to the 1930 federal census, Joseph A. Titus was a widowed, Lithuanian-born tobacco farmer who worked the farm with his son Andrew, also born in Lithuania; his household also included his daughter Ardella, who was born in the United States (United States Census 1930). The 1934 and 1941 aerial photographs confirms that the Titus farm was growing tobacco at the end of the Great Depression. Within the Project Site itself, fields in the southwestern and northern sections were also being used for growing tobacco, and the northern

and central fields also contained three tobacco barns. The rest of the Project Site was forested. A utility corridor crossed the parcels from southeast to northwest, and the railroad line still ran up the center of it (Figure 8 and 9; USGS 1941).

Tobacco growing in Connecticut goes back to the colonial era. Although it was not the overwhelmingly important activity that it was in more southern colonies, it was an important cash crop in the Connecticut River valley by 1700. In 1810, cigar making began at East Windsor and Suffield, and by 1830 a new way of curing tobacco for cigar wrappers called "sweating" was discovered by an East Windsor company. After that, all or most of the industry shifted to producing for cigars, and high profit margins encouraged farmers to try their hand at growing it from the Housatonic valley to New Haven and as far north as Vermont and Maine. By the late nineteenth century, competition and overproduction had brought about a gradual decrease of acreage, until only the "best lands in the immediate vicinity of the Connecticut river continued to be used," presumably because those lands produced the highest yield (McDonald 1936:5,14). An improvement in tobacco production, which occurred in 1896, was the development of a method for growing "shade tobacco," and consisted simply of building light cloth tents on poles over the plants. This caused the tobacco leaves to take on a more attractive color, and the technique rapidly spread throughout the market. It resulted in significant increases in the grower's profit base (McDonald 1936). These tents, and the associated barns for drying or "curing" the tobacco, are clearly visible in the 1941 aerial photograph mentioned above.

After 1950, although East Windsor saw further substantial population increases, its population only reached 10,482 residents as of 2010 (Keegan 2012). Some of this growth may be related to the construction of Interstate 91, since the highway section on the east side of the Connecticut River opened in 1959 (Oglesby 2014). During the later twentieth and early twenty-first centuries, East Windsor witnessed modest industrial development. In 2018, 9.6 percent of its 7,032 jobs were in the manufacturing sector; a far larger proportion, approximately 20 percent, were in a sector identified in an economic profile document as "Administrative and Waste Service." Nonetheless, as of 2014 the Town's largest employers were in retail, health care, auto sales, farming, and metal working, suggesting a very mixed economy (CERC 2019). The Town's 2016 planning document, like many of its era for similar towns, called for the continuing improvement of certain focused areas of commercial and industrial development, as well as village areas. At the same time, it also displayed a preference for the support of low-density residential and agricultural uses in the majority of the Town's area, and also the preservation of open space and cultural and historical resources. The location of the Project Site, in the southeasternmost section of the Town, were within the large area designated as rural residential (East Windsor 2016; Figure 10).

The appearance of the Project Site in the 1963 aerial photograph is consistent with this modest population growth: all the fields and barns were still present, and there was only a small amount of new housing development in the area. The cleared utility corridor, however, had been substantially widened by the middle of the twentieth century (Figure 11; USGS 1963). By the time of the 2016 aerial photograph, more housing and some solar centers had been built in the vicinity of the Project Site. The Project Site itself, however, remained undeveloped, except that the use of some of the fields and wooded areas had been turned to sand and gravel operations. A few agricultural fields, striped with the marks of tobacco tenting poles, remained. It appears, however, that the sites of the three tobacco barns mentioned above had been severely impacted by this activity. In addition, an access road and a parking area for trucks and trailers had been placed in the easternmost parcel (Figures 12 and 13; CT ECO 2016 and 2019). These impacts, being set back from the roads, seem likely to have remained invisible to passers-by, allowing the ground-view appearance of the area to remain apparently undisturbed.

**Conclusions**

The documentary record indicates that most of the Project Site contains historic structures and farm fields associated with tobacco production. This complex, known as the Markowksi Farm has roots that extend back to the beginning of the twentieth century, if not earlier. This complex of barns, buildings, and fields is large in scale and unusual in type, as most historic farms in Connecticut have been either abandoned or developed. Thus, the Markowksi Farm may be viewed as a historical landscape, the development of which should be undertaken carefully to preserve the historical fabric of the area.

# CHAPTER V
# PREVIOUS INVESTIGATIONS

**Introduction**

This chapter presents an overview of previous archaeological research completed within the vicinity of the Project Site in East Windsor, Connecticut. Specifically, this chapter reviews previously identified archaeological sites and National/State Register of Historic Places properties situated in the region (Figures 14 and 15). The discussions presented below are based on information currently on file at the CT-SHPO in Hartford, Connecticut. In addition, the electronic site files maintained by Heritage also were examined during this investigation. Both the quantity and quality of the information contained in the original cultural resources survey reports and State of Connecticut archaeological site forms are reflected below.

**Previously Recorded Archaeological Sites and National/State Register of Historic Places Properties/Districts in the Vicinity of the Project Site**

A review of data currently on file at the CT-SHPO, as well as the electronic site files maintained by Heritage, did not reveal any previously identified archaeological sites or National/State Register of Historic Places properties situated within 1.6 km (1 mi) of the Project Site (Figures 14 and 15). Although no archaeological sites have been previously identified in the region, the natural setting discussed in Chapter II suggests Native Americans may have once inhabited the area, and that prehistoric archaeological sites may yet be discovered within the Project Site. In addition, the larger project region has been in use as agricultural land since East Windsor's settlement and there may be archaeological evidence of occupation in the Project Site that may predate the establishment of the current farming operation. These types of resources likely have not been identified within the study region and the Project Site due to a lack of professional archaeological and historical surveys.

# CHAPTER VI
# METHODS

**Introduction**

This chapter describes the research design and field methodology used to complete the Phase IA cultural resources assessment survey of the Project Site in East Windsor, Connecticut. The following tasks were completed during this investigation: 1) study of the region's prehistory, history, and natural setting, as presented in Chapters II through IV; 2) a literature search to identify and discuss previously recorded cultural resources in Project region; 3) a review of historic maps, topographic quadrangles, and aerial imagery depicting the Project Site in order to identify potential historic resources and/or areas of past disturbance; and 4) pedestrian survey and photo-documentation of the Project Site to determine its archaeological sensitivity. These methods are in keeping with those required by the CT-SHPO in the document entitled: *Environmental Review Primer for Connecticut's Archaeological Resources* (Poirier 1987).

**Research Framework**

The current Phase IA cultural resources assessment survey was designed to assess the cultural resources sensitivity of the Project Site, as well as to visually examine the Project Site for any previously unidentified archaeological sites and/or historic resources during a pedestrian survey. The undertaking was comprehensive in nature, and project planning considered the distribution of previously recorded cultural resources located within the project region, as well as a visual assessment of the Project Site. The methods used to complete this investigation were designed to provide coverage of all portions of the Project Site. The fieldwork entailed not only pedestrian survey, but also photo-documentation and GPS recordation (see below).

**Archival Background Research & Literature Review**

Background research for this project included a review of a variety of historic maps depicting the proposed Project Site; an examination of USGS 7.5' series topographic quadrangles; an analysis of aerial images dating from 1934 through 2019; and a review of all archaeological sites and National/State Register of Historic Places on file with the CT-SHPO, as well as electronic cultural resources data maintained by Heritage. The intent of this background research was to identify all previously recorded cultural resources situated within the Project Site, and to provide a natural and cultural context for the project region. This information then was used to develop the archaeological and historical context of the Project Site, and to assess its sensitivity with respect to the potential for producing intact cultural resources.

**Field Methodology and Data Synthesis**

Heritage also performed fieldwork for the Phase IA cultural resources assessment survey of the Project Site associated with the proposed GPS facility in East Windsor, Connecticut. This included pedestrian survey, photo-documentation, and mapping of the Project Site. During the completion of the pedestrian survey, representatives from Heritage photo-documented all potential areas of impact using digital media. Additionally, Heritage personnel recorded all above ground cultural resources and archaeologically sensitive areas using a GPS unit with submeter accuracy. GPS recordation was completed using Heritage's Trimble R1 receiver, which is a rugged, compact, lightweight GNSS receiver that provides sub-meter positioning information to any one of Heritage's Samsung Galaxy S4 tablets

using Bluetooth connectivity. These components seamlessly transferred all field data to Heritage's GIS professionals. This system not only provided Heritage with accurate locational data for the investigations, but it also allowed our field staff to instantly transfer GPS data related to survey to Heritage's home office.

**Curation**

Following the completion and acceptance of the Final Report of Investigations, all project materials, including drawings, maps, photographs, and field notes will be curated with:

Dr. Sarah Sportman
Connecticut State Archaeologist
Office of Connecticut State Archaeology
Box U-1023
University of Connecticut
Storrs, Connecticut 06269

# CHAPTER VII
# RESULTS OF THE INVESTIGATION & MANAGEMENT RECOMMENDATIONS

**Introduction**

This chapter presents the results of the Phase IA cultural resources assessment survey of the Project Site in East Windsor, Connecticut. As stated in the introduction of this report, the goals of the investigation included completion of the following tasks: 1) a contextual overview of the region's prehistory, history, and natural setting (e.g., soils, ecology, hydrology, etc.); 2) a literature search to identify and discuss previously completed cultural resources surveys and previously recorded cultural resources in the project region; 3) a review of readily available historic maps and aerial imagery depicting the Project Site in order to identify potential historic resources and/or areas of past disturbance; 4) pedestrian survey and photo-documentation of the Project Site in order to determine its archaeological sensitivity and the type and condition of historic period structures there; and 5) preparation of the current Phase IA cultural resources assessment survey report. The results of the investigation are presented below.

**Results of Phase IA survey**

As outlined in Chapter I, the 485-acre Project Site will be a subset of eight parcels of land in the southern part of the Town of East Windsor. It is bounded generally by Windsorville Road to the south, Wapping Road to the east, Apothecaries Hall Road to the north, and Ketch Brook to the west. The Project Site contains a variety of landscape types including agricultural fields, wooded areas, and large sand and gravel mining operations. In addition, an electrical transmission line corridor crosses the northern portion of the Project Site from northwest to southeast, and a railroad extends from north to south through the center of the Project Site. In general, the Project Site is relatively level and is situated at elevations ranging from 32.8 m to 67.7 to m (100 to 222 ft). The predominant soil types located throughout the Project Site are Agawam, Haven, Enfield, and Manchester sandy loams, which are found on slopes of 0 to 15 percent. Also present are Udorthent soils, which are located within the heavily disturbed areas associated with sand and gravel pits in the northern portion of the Project Site. The remainder of this chapter presents the result of an archaeological review of the Project Site followed by a discussion of historic built resources noted during survey and their integrity and preliminary assessment applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]).

<u>Overall Sensitivity of the Project Site, Archaeological Assessment, & Management Recommendations</u>

Field data associated with local soil conditions, slopes, aspect, distance to water, and previous disturbance collected during the pedestrian survey of the Project Site was used in conjunction with the analysis of historic maps, aerial images, and data regarding previously identified archaeological sites, and National and State Register of Historic Places properties to stratify the Project Site into zones of no/low and/or moderate/high archaeological sensitivity. In general, historic period archaeological deposits are relatively easy to identify on the current landscape because the features associated with them tend to be relatively permanent constructions that extend above the ground surface (i.e., stone foundations, pens, wells, privies, etc.). Archaeological sites dating from the prehistoric era, on the other hand, are less often identified during pedestrian survey because they are buried, and predicting their locations relies more on the analysis and interpretation of environmental factors that would have informed Native American site choices.

With respect to the potential for identifying prehistoric archaeological sites, the Project Site was divided into areas of no/low and/or moderate to high archaeological potential by analyzing the landform types, slope, aspect, soils contained within them, and their distance to water. In general, areas located between 0 and 600 m (0 and 2,000 ft) from a freshwater source and that contain slopes of less than 8 percent and undisturbed well-drained soils possess a moderate to high potential for producing prehistoric archaeological deposits. This is in keeping with broadly based interpretations of prehistoric settlement and subsistence models that are supported by decades of previous archaeological research throughout Connecticut. It is also expected that there may be variability of prehistoric site types found in moderate to high sensitivity zones. For example, large Woodland period village sites and Archaic period seasonal camps may be expected along large river floodplains and near stream/river confluences, while smaller temporary or task specific sites may be expected on level areas with well-drained soils that are situated more than 300 m (1,000 ft) but less than 600 m (2,000 ft) from a water source. Finally, steeply sloping areas, poorly drained soils, or areas of previous disturbance are generally deemed to retain a no/low archaeological sensitivity with respect to their potential to contain prehistoric archaeological sites.

In addition, the potential for a given area to yield evidence of historic period archaeological deposits is based not only on the above-defined landscape features but also on the presence or absence of identified historic period archaeological and architectural resources identified during previous cultural resources surveys, recorded on historic period maps, or captured in aerial images of the region under study. In this case, proposed impact areas that are situated within 100 m (328 ft) of a previously identified historic period archaeological site or a National or State Register of Historic Places district/individually listed property also may be deemed to retain a moderate to high archaeological sensitivity. In contrast, those areas situated over 100 m (328 ft) from any of the above-referenced properties would be considered to retain a no/low historic period archaeological sensitivity.

The combined review of historic maps, aerial images, land deeds, and pedestrian survey indicates that the Project Site contains a variety of landscape types and conditions. The northernmost and north-central portions of the Project Site contain large sand and gravel mining operations. These areas have been heavily disturbed by the mining process, resulting in grade reduction and soil removal to a depth of several meters in some areas. This has effectively eliminated the possibly of identifying intact archaeological deposits in these areas. The northern part of the Project Site also contains an electrical transmission line corridor that extends in a southeast to northwest direction. The Project will be interconnected with this electrical transmission line, which also contains large amounts of prior disturbance and little, if any, sensitivity for archaeological deposits. There is also a north-to-south trending railroad that crosses the Project Site; the land that it traverses also has been disturbed and no longer retains any potential to yield intact cultural deposits (Figure 16).

The central and southern portions of the Project Site are characterized by extensive agricultural fields that have been used historically for shade tobacco and vegetable production. These fields, which are part of a farm currently owned by Edward and Dorothy Markowski, are crisscrossed by a series of dirt access roads, and they have been routinely plowed for hundreds of years. Nevertheless, as been determined through previously completed archaeological research throughout the Connecticut River Valley, agricultural fields have the potential to contain intact archaeological deposits buried beneath the plow zone, especially those of the prehistoric era. Thus, the agricultural fields associated with the Project Site have been assessed as retaining a moderate potential to yield archaeological sites since the uppermost limits of the local soils have been impacted by plowing (Figure 16).

Finally, there are several areas distributed throughout the Project Site that were covered in mixed deciduous forests at the time of survey. They were noted along local streams and on some areas determined to contain moderate to steep topography. It is likely that these areas remain in forest today because they do not contain expansive areas suitable for agricultural production. Most of these areas were considered to retain a no/low potential to yield intact archaeological sites due to the presence of steep slopes and/or wet soils (Figure 16). However, a few smaller forested areas were identified on more gently sloping areas with well drained soils; these areas are places where intact archaeological deposits may remain; thus, they were deemed to possess a moderate archaeological potential.

In sum, the review of historic maps and aerial images, as well as the pedestrian survey, revealed that the Project Site is characterized by a patchwork of various landscape types and contains varying levels of depositional integrity, which range from destroyed in the graveled area to no/low in the steeply sloping areas to moderate in the agricultural fields and wooded portions of the parcel characterized by low slopes and well drained soils. A total of 278.1 acres of the Project Site were deemed to possess a no/low archaeological sensitivity due to previous disturbances related to gravel production, the installation of the existing electrical transmission line, the above-referenced railroad, of steep slopes and wet soils (Figure 16). No additional archaeological examination of these areas is recommended prior to the construction of the proposed solar facility.

The remaining 238.9 acres of land in the Project Site were assessed as having a moderate potential to produce intact archaeological deposits (Figure 16). These areas may produce intact archaeological deposits. It is recommended that the wooded portions of the moderate archaeological sensitivity be subjected to Phase IB cultural resources reconnaissance survey using a subsurface testing regime characterized by the excavation of shovel tests measuring 50 x 50 cm (19.7 x 19.7 in) in size at 15 m (49.2 ft) intervals along survey transects spaced 15 m (49.2 ft) apart. It is further recommended that the agricultural fields also be subjected to Phase IB cultural resources reconnaissance survey through a modified field approach using pedestrian survey augmented by limited shovel testing. It is recommended that pedestrian survey of the agricultural fields be completed by spacing archaeologists 5 m (16.4 ft) apart and having them traverse each field and visually inspect the surface for the presence of artifacts. If artifacts are not recovered from the surface, no additional fieldwork will be completed. In contrast, if artifacts are identified, archaeologists will excavate shovel tests at 15 m (49.2 ft) intervals throughout the area containing surface expressions of cultural material only. This approach has been undertaken on similar projects in the region and it has proven effective for determining whether intact archaeological sites exist within agricultural fields.

Sensitivity of the Proposed Project Site, Built Resources, & Management Recommendations

As mentioned above, the Project Site includes portions of a working tobacco and vegetable farm that is representative of an agricultural complex with residences, tobacco sheds, English style barns, a water tower, and ancillary farm buildings. A review of the Project Site on both aerial images and through pedestrian survey revealed that it is situated in a section of East Windsor that is rural in character and includes a mixture of agricultural and residential properties. The review of historic maps of the region containing the Project Site indicates that it may not have contained any standing structures prior to the turn of the twentieth century, and that it was likely an outlying parcel of land until that point in time (Figures 4 through 6). It is not until a map was drawn in 1931 that the parcel was associated with a particular owner, who was listed simply as “Griffin Farm.” Still, the 1931 map did not record any buildings on the property, though some most likely existed by that time (Figure 7).

Despite the results of the historic map analysis above, the earliest available aerial image for the region, which dates from 1934, clearly shows numerous farm-related structures on the development parcel, including many tobacco sheds and the heart of the farm where the residence, barns, and water tower are located (Figure 8). Thus, it is clear that the parcel was developed for use as a farm at least as early as 85 years ago. Subsequent aerial images, including those from 1941 through 1963, show remarkable stability in the location and use of the earliest historic buildings within Project Site (Figures 9-11). Finally, aerial images dating from 2016 and 2019 shows that while most of the historic buildings remain on the Project Site, several modern additions were made in the form of large barns and what appear to be greenhouse type buildings (Figures 12 and 13).

During the Phase IA review, Heritage plotted all buildings within the Project Site on a 2019 aerial image and labeled each with a distinct symbol that indicated the dates by which they were constructed. These were labeled as buildings from 1934, 1941, and 1963, as well as those that were "Not Historic" (Figure 18). This image shows that there are 41 historic buildings located within or along the borders of the Project Site. These include 32 tobacco sheds, three English barns, three residential structures, a water tower, and two ancillary structures. In addition, there are 19 other buildings in the Project Site. They are marked with an "X" to denote that they are modern constructions (Figure 18). These include 11 greenhouses and five steel-framed sheds found at the center of the complex, as well as three tobacco sheds. The latter appear to date from the first decades of the twenty first century (Photographs 51-53).

Some of the buildings on the Project Site were previously documented as part of the Connecticut Trust's Barn Survey in 2010. It should be noted that the previous survey was not comprehensive, as it was only conducted from streets abutting the Project Site and does not contain all structures located on the property. According to that survey, as well as the pedestrian survey conducted as part of this Phase IA cultural resource assessment survey, the most common type of building found within the Project Site is the tobacco shed. The sheds situated throughout the Project Site are gable roofed structures that contain a gabled vent along the ridge of the building and moveable vertical slat siding (see Photograph 65 for a typical example). During the pedestrian survey, it was noted that many of these buildings rest on granite block foundations. Their purpose was for drying tobacco after the harvest and equipment storage during the remainder of the year.

Other historic buildings noted on or adjacent to the Project Site include English style barns, residences, a water tower, and ancillary buildings. The English style barns, for the most part, are represented by gable roofed buildings with either end of side entrances secured with wooden doors. These buildings are characterized by either cedar shake or vertical board siding, as well as asphalt shingle roofs (Figure 18 and Photos 84, 85, and 87). Of the identified residences on the property, two contain gable roofs that are covered with asphalt shingles and either cedar shake or clapboard style siding. The residence covered in cedar shakes was abandoned at the time of its recordation and is in a significant state of disrepair. The third residence recorded on the property is large house topped with a pyramidal roof that was covered in asphalt shingles. This building has a symmetrical front plan with evenly spaced windows on both of its two stories, as well as a centrally located front door on its relatively unadorned façade. This residence also had what appears to have been a large addition on the rear (Figure 18 and Photos 86, 89, and 91). The above-referenced water tower is of steel construction and is supported by steel lattice legs (Figure 18 and Photo 83). The tower was quite tall and contained numerous cellular communications antennae. The ancillary buildings on the property consist of small to moderate sized one story buildings that appear to have been used as offices or as other support facilities (Figure 18 and Photo 90). The Project sponsor will be avoiding direct impacts to the core of the farm, including, four nearby historic tobacco sheds, the water tower mentioned above, and a few other buildings.

The historical buildings discussed above, which are largely characterized by a high level of integrity for the most part, are part of an agricultural complex characterized by open fields, rows of tobacco sheds dating from the first half of the twentieth century, associated residences, and ancillary agricultural buildings. It is recommended that additional examination and documentation of exteriors and interiors (where possible) of the historic buildings situated on the Project Site be undertaken prior to final design and implementation of the Project so that their National Register of Historic Places eligibility can be determined. Subsequent research should also consider potential direct or indirect effects of the Project on local historic buildings, whether they be situated within or near to the Project Site.

Anderson, Joseph, contr. ed.
1896 *The Town and City of Waterbury, Connecticut, from the Aboriginal Period to the Year Eighteen Hundred and Ninety-Five*. Volume 3. New Haven, Connecticut: The Price & Lee Company.

Baker & Tilden
1869 *Atlas of Hartford and Tolland Counties: With a Map of Connecticut: From Actual Surveys*. Hartford, Connecticut: Baker & Tilden.

Barry, Ann P.
1985 *Connecticut Towns and Their Establishment.* Hartford, Connecticut: Connecticut State Library.

Bendremer, J.
1993 *Late Woodland Settlement and Subsistence in Eastern Connecticut*. Ph.D. Dissertation, Department of Anthropology, University of Connecticut, Storrs, Connecticut.

Bendremer, J. and R. Dewar
1993 The Advent of Maize Horticulture in New England. In *Corn and Culture in the Prehistoric New World.* Ed. by S. Johannessen and C. Hastorf. Westview Press, Boulder.

Bendremer, J., E. Kellogg and T. Largy
1991 A Grass-Lined Storage Pit and Early Maize Horticulture in Central Connecticut. *North American Archaeologist 12(4):325-349.*

CERC
2019 East Windsor, Connecticut, CERC Town Profile 2019. Accessed November 6, 2019. https://s3-us-west-2.amazonaws.com/cerc-pdfs/2019/east-windsor-2019.pdf.

Coe, J.L.
1964 The Formative Cultures of the Carolina Piedmont. *Transactions of the American Philosophical Society*, Vol. 54, Part 5. Philadelphia, Pennsylvania.

Connecticut, State of
1932 *State Register and Manual*. Hartford, Connecticut: State of Connecticut.

Connecticut Environmental Conditions Online (CT ECO)
2019 *Connecticut 2019 Orthophotography*. Storrs, Connecticut: University of Connecticut, Connecticut Environmental Conditions Online. http://www.cteco.uconn.edu/data/flight2019/index.htm.

Crofut, F. S. M.
1937 *Guide to the History and the Historic Sites of Connecticut*. 2 volumes. New Haven, Connecticut: Yale University Press.

Curren, M.L., and D.F. Dincauze

1977 Paleo-Indians and Paleo-Lakes: New Data from the Connecticut Drainage. In *Amerinds and their Paleoenvironments in Northeastern North America.* Annals of the New York Academy of Sciences 288:333-348.

Cutter, William Richard, comp.

1913 *New England Families, Genealogical and Memorial: A Record of the Achievements of Her People in the Making of Commonwealths and the Founding of the Nation.* Volume 2. New York: Lewis Historical Publishing Company.

De Forest, J. W.

1852 *History of the Indians of Connecticut from the Earliest Known Period to 1850.* Wm. Jas. Hamersley, Hartford, Connecticut.

Destler, Chester M.

1973 *Connecticut: The Provisions State*. Connecticut Bicentennial Series V. Chester, Connecticut: Pequot Press.

East Windsor, Town of

2016 *East Windsor: 2016 Plan of Conservation and Development*. Accessed November 6, 2019. https://www.eastwindsor-ct.gov/sites/eastwindsorct/files/uploads/2016_plan_of_conservation_development.pdf.

Dincauze, D.F.

1974 An Introduction to Archaeology in the Greater Boston Area. *Archaeology of Eastern North America* 2(1):39-67.

1976 *The Neville Site: 8000 Years at Amoskeag.* Peabody Museum Monograph No. 4. Cambridge, Massachusetts.

Dowhan, J.J. and R.J. Craig

1976 *Rare and endangered species of Connecticut and Their Habitats*. State Geological Natural History Survey of Connecticut Department of Environmental Protection, Report of Investigations No. 6.

Fairchild Aerial Surveys

1934 *Connecticut Statewide Aerial Photograph Series*. Hartford, Connecticut: Connecticut State Archives.

Feder, K.

1984 *Pots, Plants, and People: The Late Woodland Period of Connecticut*. Bulletin of the Archaeological Society of Connecticut 47:99-112.

Fitting, J.E.

1968 *The Spring Creek Site*. In *Contributions to Michigan Archaeology*, pp. 1-78. Anthropological Papers No. 32. Museum of Anthropology, University of Michigan, Ann Arbor.

Funk, R.E.
1976 *Recent Contributions to Hudson Valley Prehistory.* New York State Museum Memoir 22. Albany.

George, D.
1997 A Long Row to Hoe: The Cultivation of Archaeobotany in Southern New England. *Archaeology of Eastern North America* 25:175 - 190.

George, D. and C. Tryon
1996 *Lithic and Raw Material Procurement and Use at the Late Woodland Period Cooper Site, Lyme, Connecticut.* Paper presented at the joint meeting of the Archaeological Society of Connecticut and the Massachusetts Archaeological Society, Storrs Connecticut

George, D.R., and R. Dewar
1999 Prehistoric Chenopodium in Connecticut: Wild, Weedy, Cultivated, or Domesticated? *Current Northeast Paleoethnobotany*, edited by J. Hart, New York State Museum, Albany, New York.

Gerrard, A.J.
1981 *Soils and Landforms, An Integration of Geomorphology and Pedology*. George Allen & Unwin: London.

Goodwin, Joseph O.
1879 *East Hartford: Its History and Traditions*. Hartford, Connecticut: The Case, Lockwood & Brainard Co.; facsimile ed. East Hartford, Connecticut: The Raymond Library Company, 1975; re-indexed ed. Camden, Maine: Picton Press, 1992.

Gramly, R. Michael, and Robert E. Funk
1990 What is Known and Not Known About the Human Occupation of the Northeastern United States Until 10,000 B. P. *Archaeology of Eastern North America* 18: 5-32.

Griffin, J.B.
1967 Eastern North America Archaeology: A Summary. *Science* 156(3772):175-191.

Guilette, Mary E.
1979 *American Indians in Connecticut: Past to Present*. [Hartford, Connecticut]: State of Connecticut, Department of Environmental Protection, Connecticut Indian Affairs Council.

Hauptman, Laurence M. and James D. Wherry, eds.
1990 *The Pequots in Southern New England: The Fall and Rise of an American Indian Nation*. Norman, Oklahoma: University of Oklahoma Press.

Herzan, John
1997 *Eastern Coastal Slope: Historical and Architectural Overview and Management Guide*. Historic Preservation in Connecticut, Volume V. Hartford, Connecticut: Connecticut Historical Commission.

Jones, B.
1997 The Late Paleo-Indian Hidden Creek Site in Southeastern Connecticut. *Archaeology of Eastern North America* 25:45-80.

Keegan, Kristen Noble, comp.
2012 *Historical Population Data of Connecticut*. Dataset on file, Manchester, Connecticut.

Lavin, L.
1980 Analysis of Ceramic Vessels from the Ben Hollister Site, Glastonbury, Connecticut. *Bulletin of the Archaeological Society of Connecticut* 43:3-46.

1984 Connecticut Prehistory: A Synthesis of Current Archaeological Investigations. *Archaeological Society of Connecticut Bulletin* 47:5-40.

1986 *Pottery Classification and Cultural Models in Southern New England Prehistory*. North American Archaeologist 7(1):1-12.

1987 The Windsor Ceramic Tradition in Southern New England. *North American Archaeologist* 8(1):23-40.

1988a Coastal Adaptations in Southern New England and Southern New York. *Archaeology of Eastern North America*, Vol.16:101-120.

1988b The Morgan Site, Rocky Hill, Connecticut: A Late Woodland Farming Community in the Connecticut River Valley. *Bulletin of the Archaeological Society of Connecticut* 51:7-20.

Lizee, J.
1994a *Prehistoric Ceramic Sequences and Patterning in southern New England: The Windsor Tradition*. Unpublished Ph.D. dissertation, Department of Anthropology, University of Connecticut, Storrs.

1994b *Cross-Mending Northeastern Ceramic Typologies.* Paper presented at the 1994 Annual Meeting of the Northeastern Anthropological Association, Geneseo, New York.

McBride, K.
1978 Archaic Subsistence in the Lower Connecticut River Valley: Evidence from Woodchuck Knoll. *Man in the Northeast* 15 & 16:124-131.

1983 *Prehistory of the Lower Connecticut River Valley.* Ph.D. Dissertation, Department of Anthropology, University of Connecticut, Storrs, Connecticut.

McDonald, Adrian Francis
1936 *The History of Tobacco Production in Connecticut*. Tercentenary Commission of the State of Connecticut Series, No. LII. New Haven, Connecticut: The Tercentenary Commission by Yale University Press.

Moeller, R.
1980 *6-LF-21: A Paleo-Indian Site in Western Connecticut.* American Indian Archaeological Institute, Occasional Papers No. 2.

Oglesby, Scott
2014 I-91. *Connecticut Roads*. Accessed June 20, 2017. http://www.kurumi.com/roads/ct/i91.html.

Pagoulatos, P.
1988 Terminal Archaic Settlement and Subsistence in the Connecticut River Valley. *Man in the Northeast* 35:71-93.

Pfeiffer, J.
1984 The Late and Terminal Archaic Periods in Connecticut Prehistory. *Bulletin of the Bulletin of the Archaeological Society of Connecticut* 47:73-88.

1986 Dill Farm Locus I: Early and Middle Archaic Components in Southern Connecticut. *Bulletin of the Archaeological Society of Connecticut* 49:19-36.

1990 The Late and Terminal Archaic Periods in Connecticut Prehistory: A Model of Continuity. In *Experiments and Observations on the Archaic of the Middle Atlantic Region.* R. Moeller, ed.

Poirier, D.
1987 *Environmental Review Primer for Connecticut's Archaeological Resources.* Connecticut Historical Commission, State Historic Preservation Office, Hartford, Connecticut.

Pope, G.
1952 Excavation at the Charles Tyler Site. *Bulletin of the Archaeological Society of Connecticut* 26:3-29.

1953 The Pottery Types of Connecticut. *Bulletin of the Archaeological Society of New Haven* 27:3-10.

Ritchie, W.A.
1969a *The Archaeology of New York State*. Garden City: Natural History Press.

1969b *The Archaeology of Martha's Vineyard: A Framework for the Prehistory of Southern New England; A study in Coastal Ecology and Adaptation*. Garden City: Natural History Press

1971 *A Typology and Nomenclature for New York State Projectile Points*. New York State Museum Bulletin Number 384, State Education Department. University of the State of New York, Albany, New York.

Ritchie, W.A., and R.E. Funk
1973 *Aboriginal Settlement Patterns in the Northeast*. New York State Museum Memoir 20. The State Education Department, Albany.

Rouse, I.
1947 Ceramic Traditions and sequences in Connecticut. *Bulletin of the Archaeological Society of Connecticut* 21:10-25.

Salwen, B., and A. Ottesen
1972 Radiocarbon Dates for a Windsor Occupation at the Shantok Cove Site. *Man in the Northeast* 3:8-19.

Shelford, V.E.
1963 *The Ecology of North America*. University of Illinois Press.

Smith, C.
1947 An Outline of the Archaeology of Coastal New York. *Bulletin of the Archaeological Society of Connecticut* 21:2-9.

Snow, D.
1980 *The Archaeology of New England.* Academic Press, New York.

Spiess, Mathias
1937 Podunk Indian Sites. *Bulletin of the Archaeological Society of Connecticut* 5:2-6.

Stiles, Henry R.
1891 *The History and Genealogies of Ancient Windsor, Connecticut; Including East Windsor, South Windsor, Bloomfield, Windsor Locks, and Ellington*. Volume I. Hartford, Connecticut: Press of the Case, Lockwood & Brainard Company; reprint edition, Rockport, Maine: Picton Press, 2000.

Tarbox, Increase N.
1886 East Windsor and South Windsor. In *The Memorial History of Hartford County, Connecticut, 1633-1884*, J. Hammond Trumbull, ed., pp. 107-138. Boston: Edward L. Osgood, Publisher.

Turner, G. M., and M. W. Jacobus
1989 *Connecticut Railroads: An Illustrated History*. Hartford, Connecticut: Connecticut Historical Society.

United States Census
1850 *Seventh Census of the United States. Schedule 5 – Products of Industry*. Washington, DC: Bureau of the Census.

1930 *Fifteenth Census of the United States: 1930, Population Schedule*. HeritageQuest Online. Ann Arbor, Michigan: ProQuest LLC.

United States Department of Agriculture (USDA)
1941 *Aerial Photograph Series for Connecticut*. Reston, Virginia: USGS.

1963 *Aerial Photograph Series for Connecticut*. Reston, Virginia: USGS.

Warren, M. and Gillet, G.
1813 *Connecticut From Actual Survey Made in 1811*. Hartford, Connecticut: Hudson & Goodwin.

Wiehn, John and Mark Heiss
2003 *Waterbury, 1890-1930*. Postcard History Series. Portsmouth, New Hampshire: Arcadia Publishing.

Witthoft, J.
1949 An Outline of Pennsylvania Indian History. *Pennsylvania History* 16(3):3-15.

1953 Broad Spearpoints and the Transitional Period Cultures. *Pennsylvania Archaeologist*, 23(1):4-31.

Wood, Frederic J.
1919 *The Turnpikes of New England and Evolution of the Same Through England, Virginia, and Maryland*. Boston: Marshall Jones Company.

Woodford, E. M.
1855 *Smith's Map of Hartford County, Connecticut, From Actual Surveys*. Philadelphia: H. & C. T. Smith.

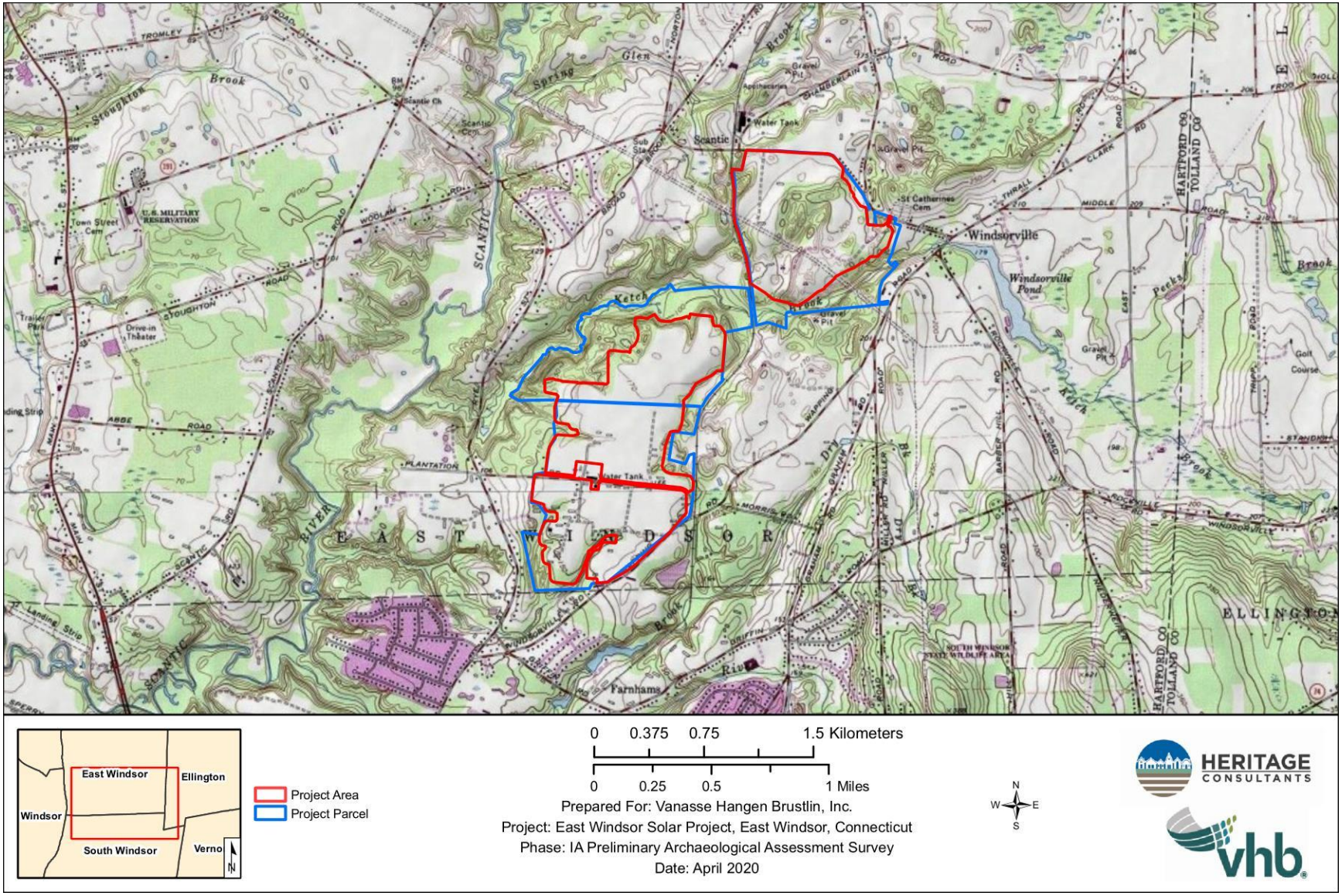



Figure 1. Excerpt from a USGS 7.5' series topographic quadrangle image showing the location of the Project Site in East Windsor, Connecticut.

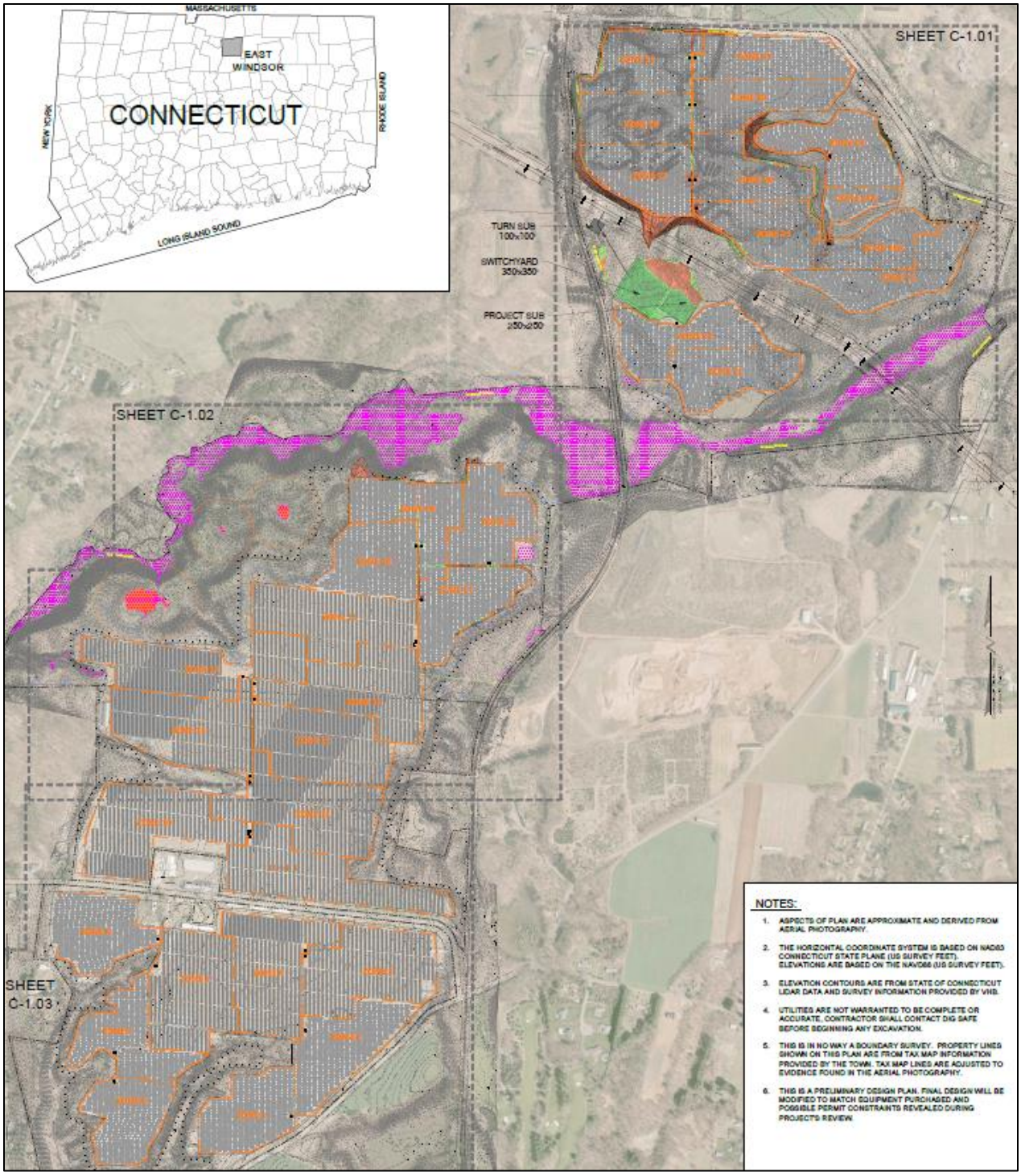



Figure 2. Draft plan of the proposed Gravel Pits Solar facility in East Windsor, Connecticut.

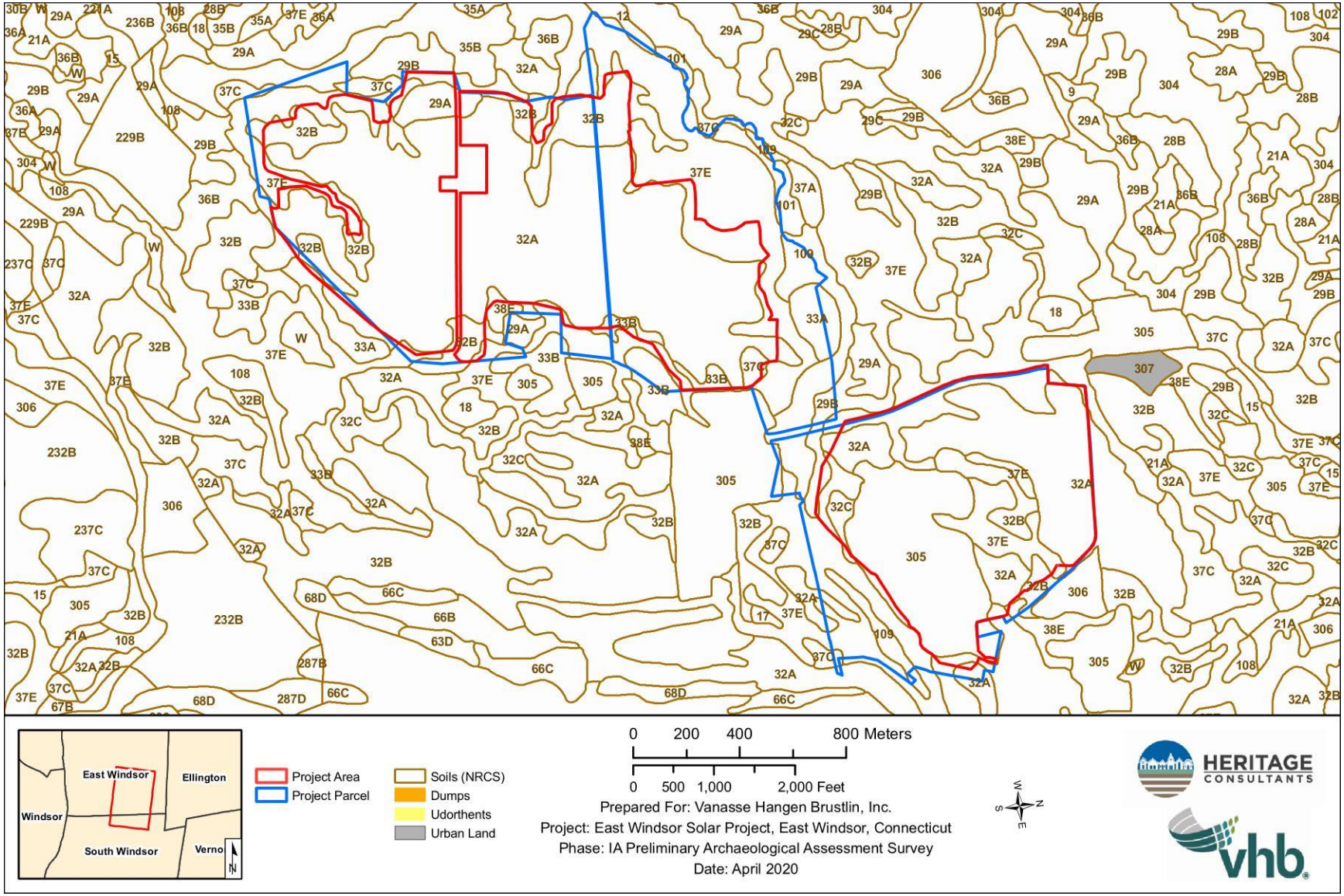



Figure 3. Map of soils located in the vicinity of the Project Site in East Windsor, Connecticut.

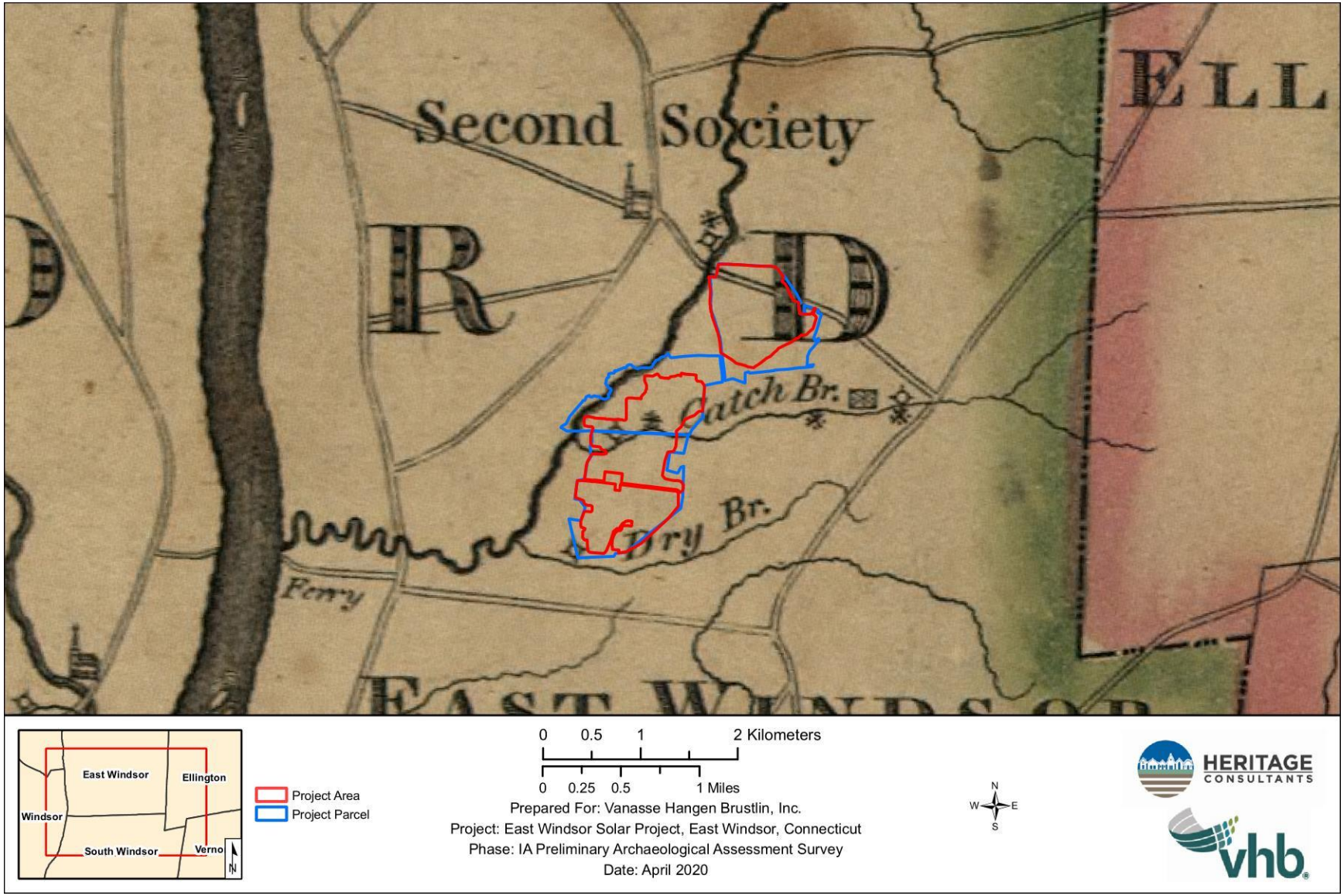



Figure 4. Excerpt from an 1813 historic map showing the location of the Project Site in East Windsor, Connecticut.

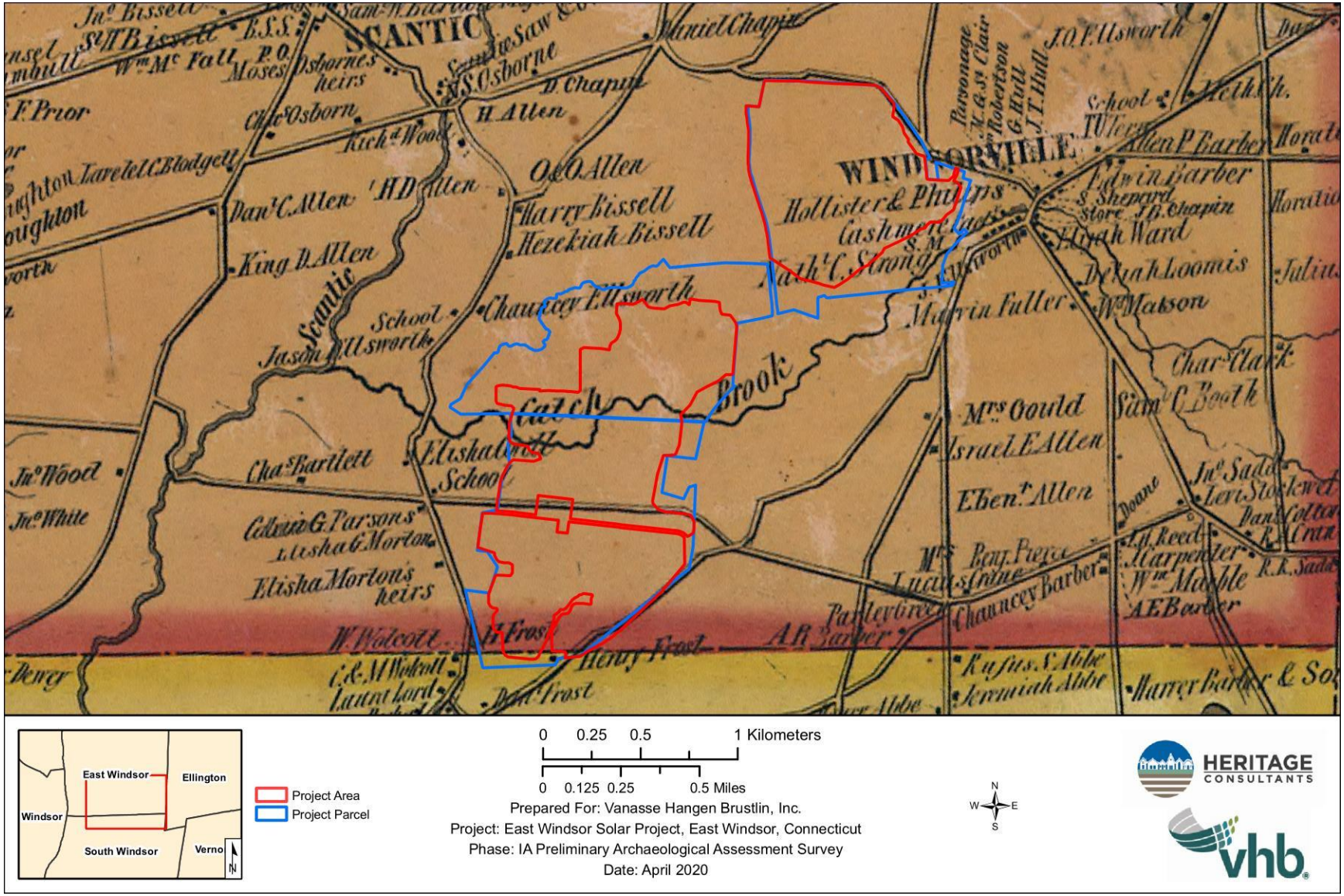



Figure 5. Excerpt from an 1855 historic map showing the location of the Project Site in East Windsor, Connecticut.

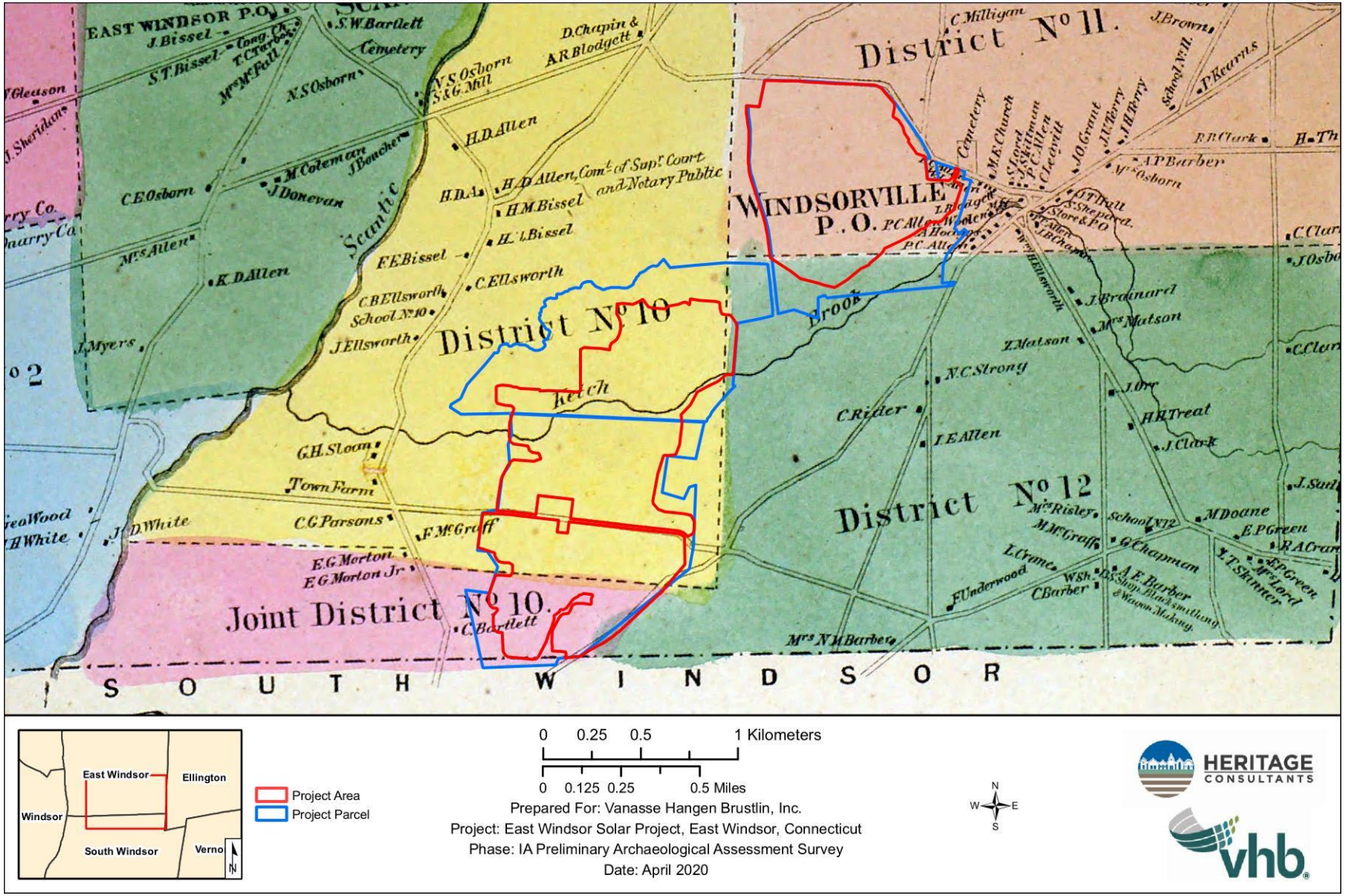



Figure 6. Excerpt from an 1869 historic map showing the location of the Project Site in East Windsor, Connecticut.

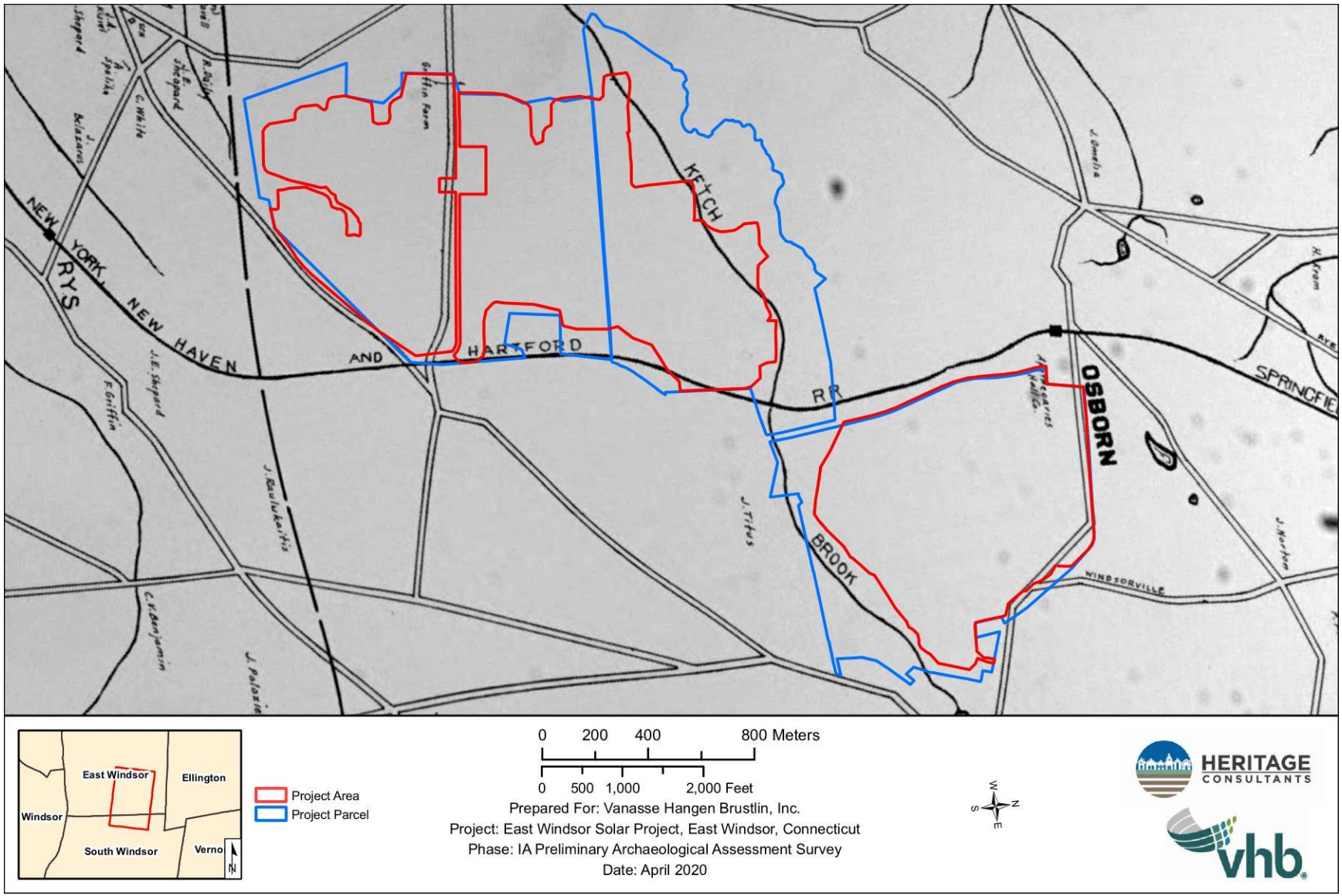



Figure 7. Excerpt from a 1931 historic map showing the location of the Project Site in East Windsor, Connecticut.

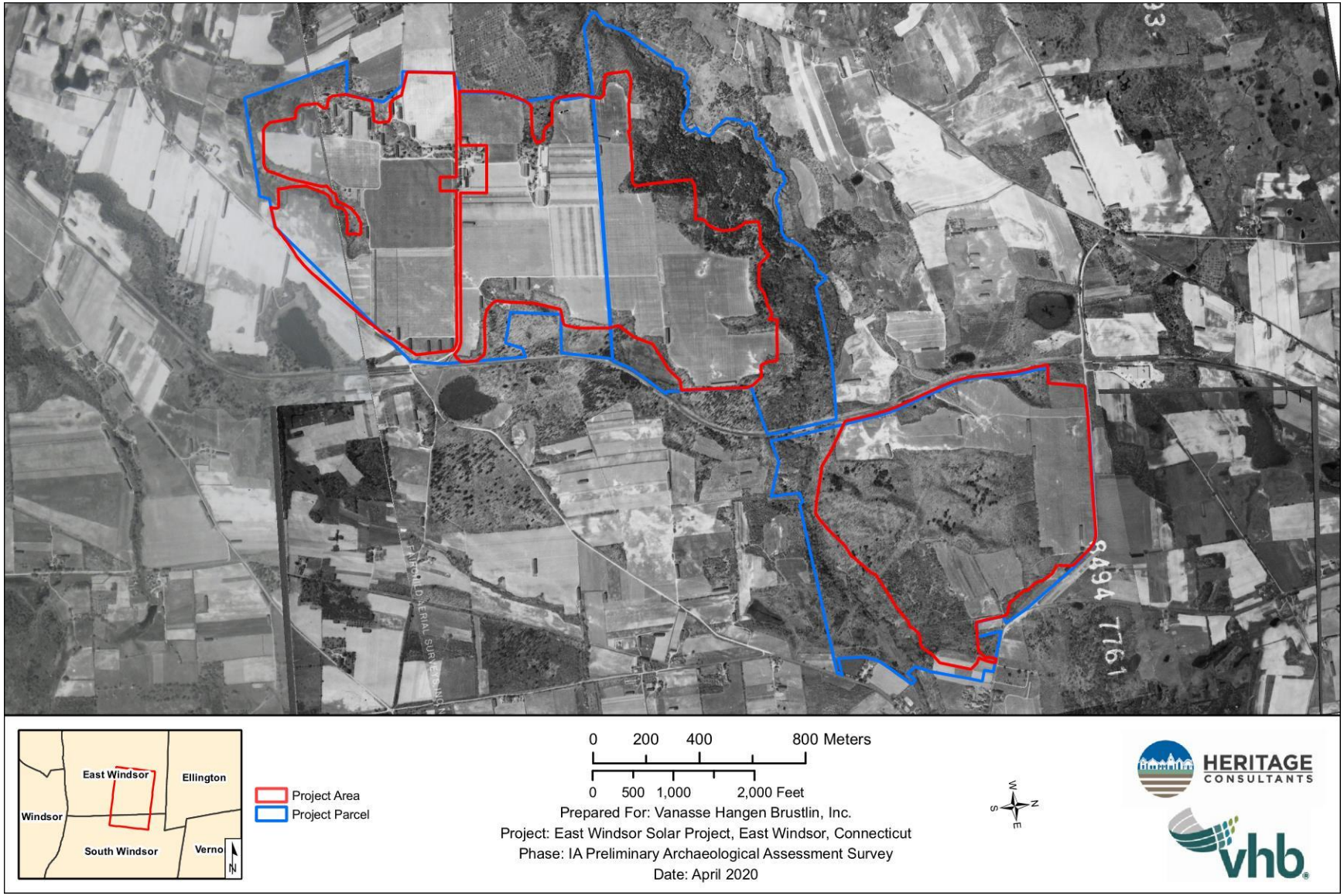



Figure 8. Excerpt from a 1934 aerial photograph showing the location of the Project Site in East Windsor, Connecticut.

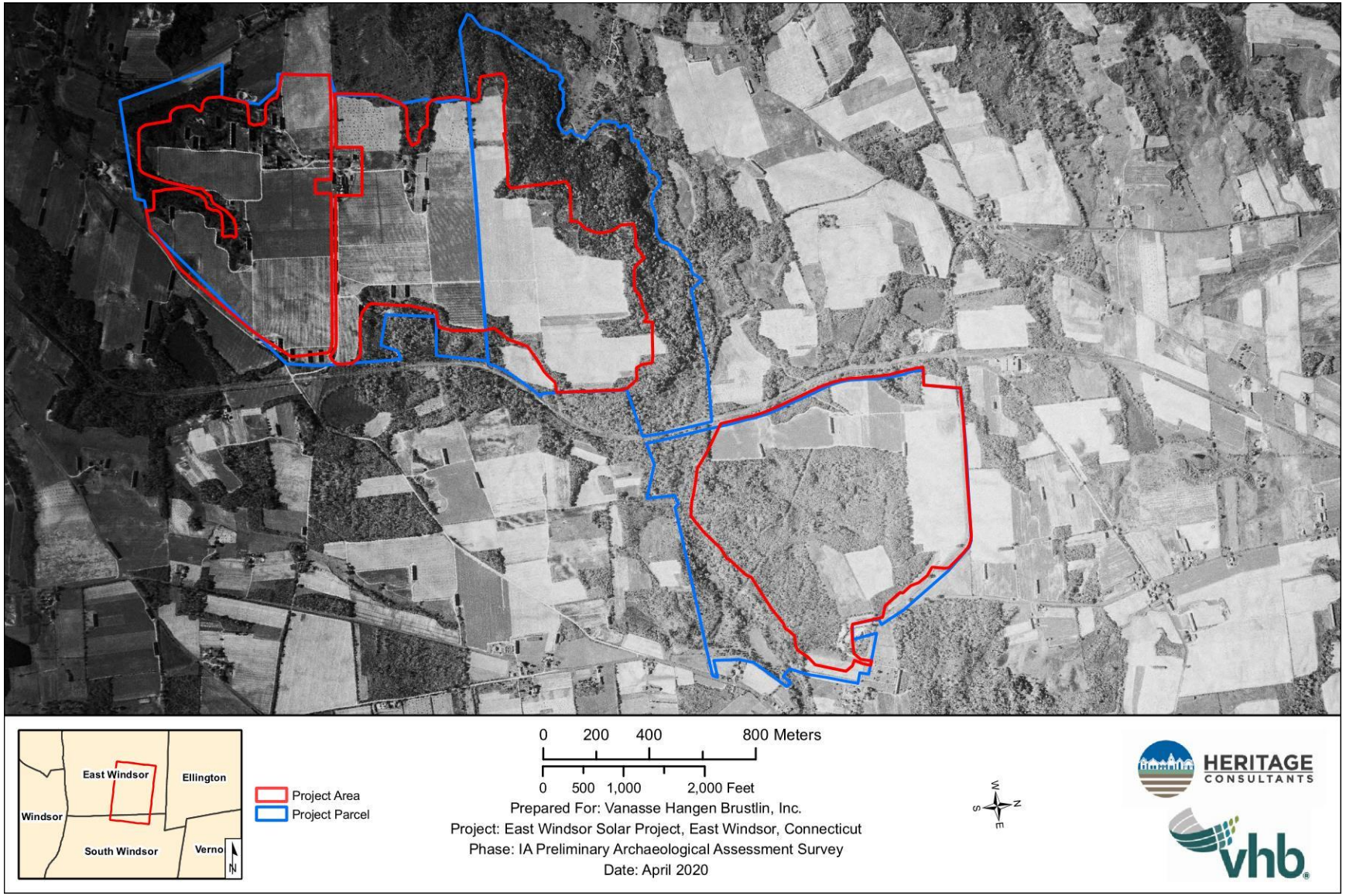



Figure 9. Excerpt from a 1941 aerial photograph showing the location of the Project Site in East Windsor, Connecticut.

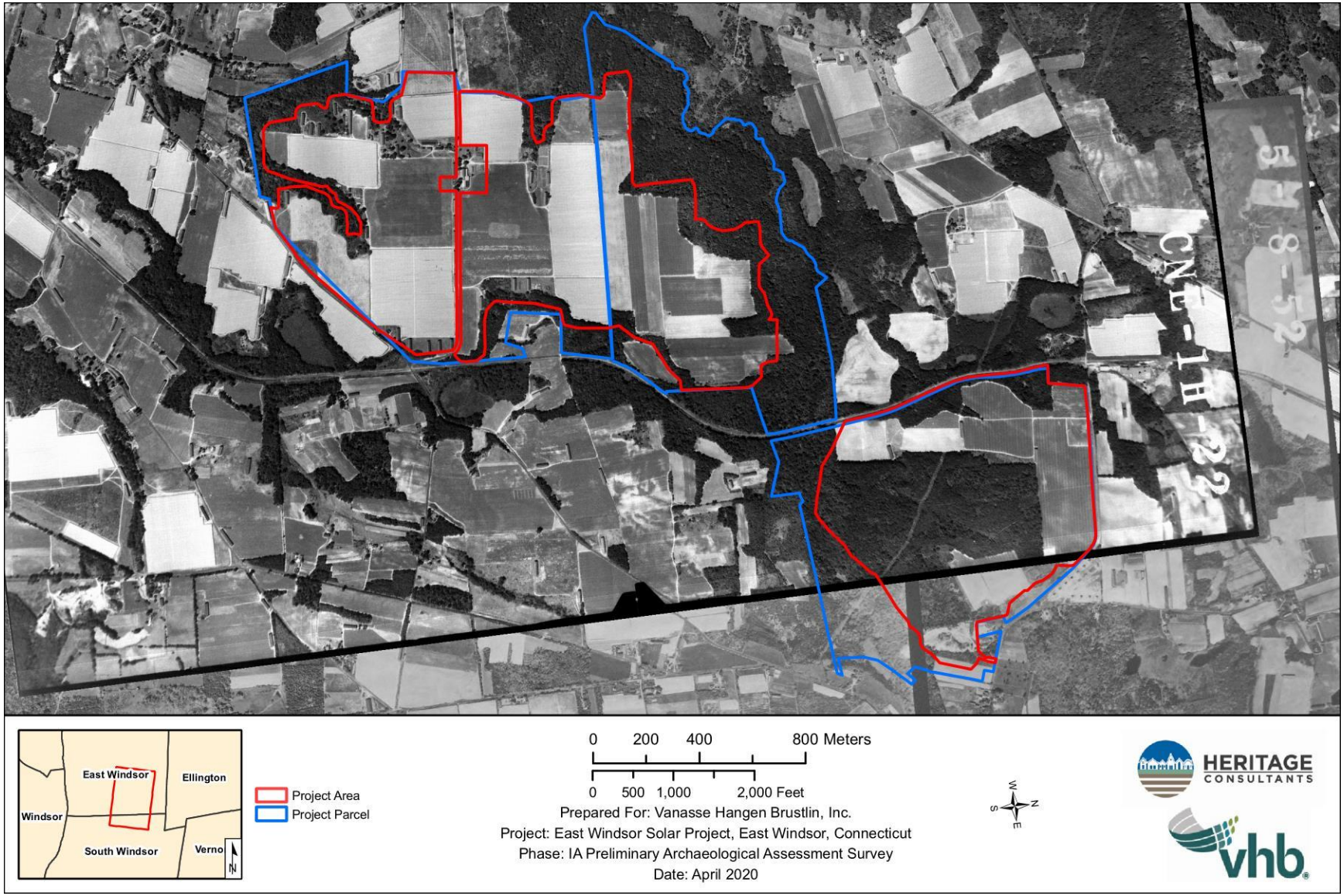



Figure 10. Excerpt from a 1951 aerial photograph showing the location of the Project Site in East Windsor, Connecticut.

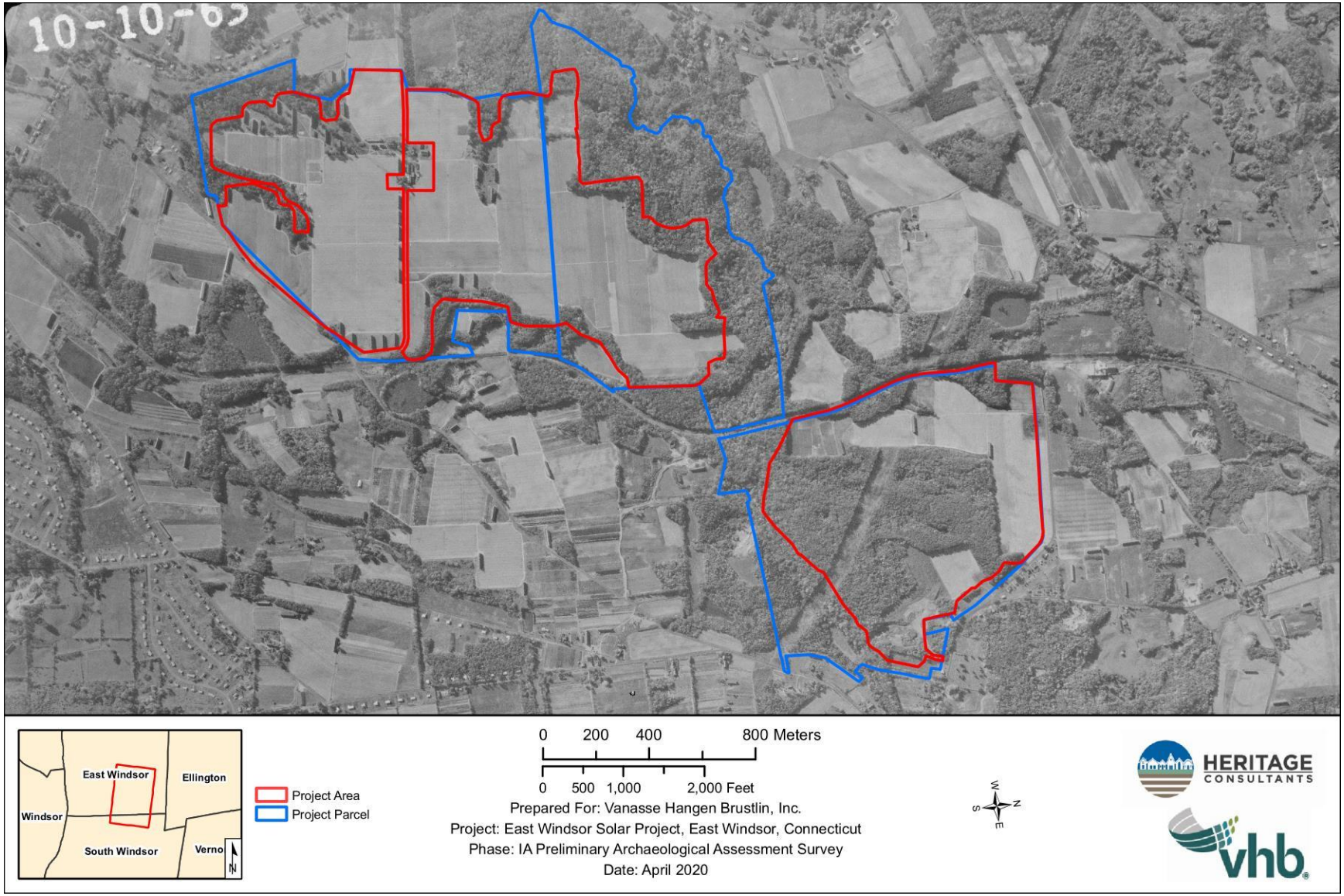



Figure 11. Excerpt from a 1963 aerial photograph showing the location of the Project Site in East Windsor, Connecticut.

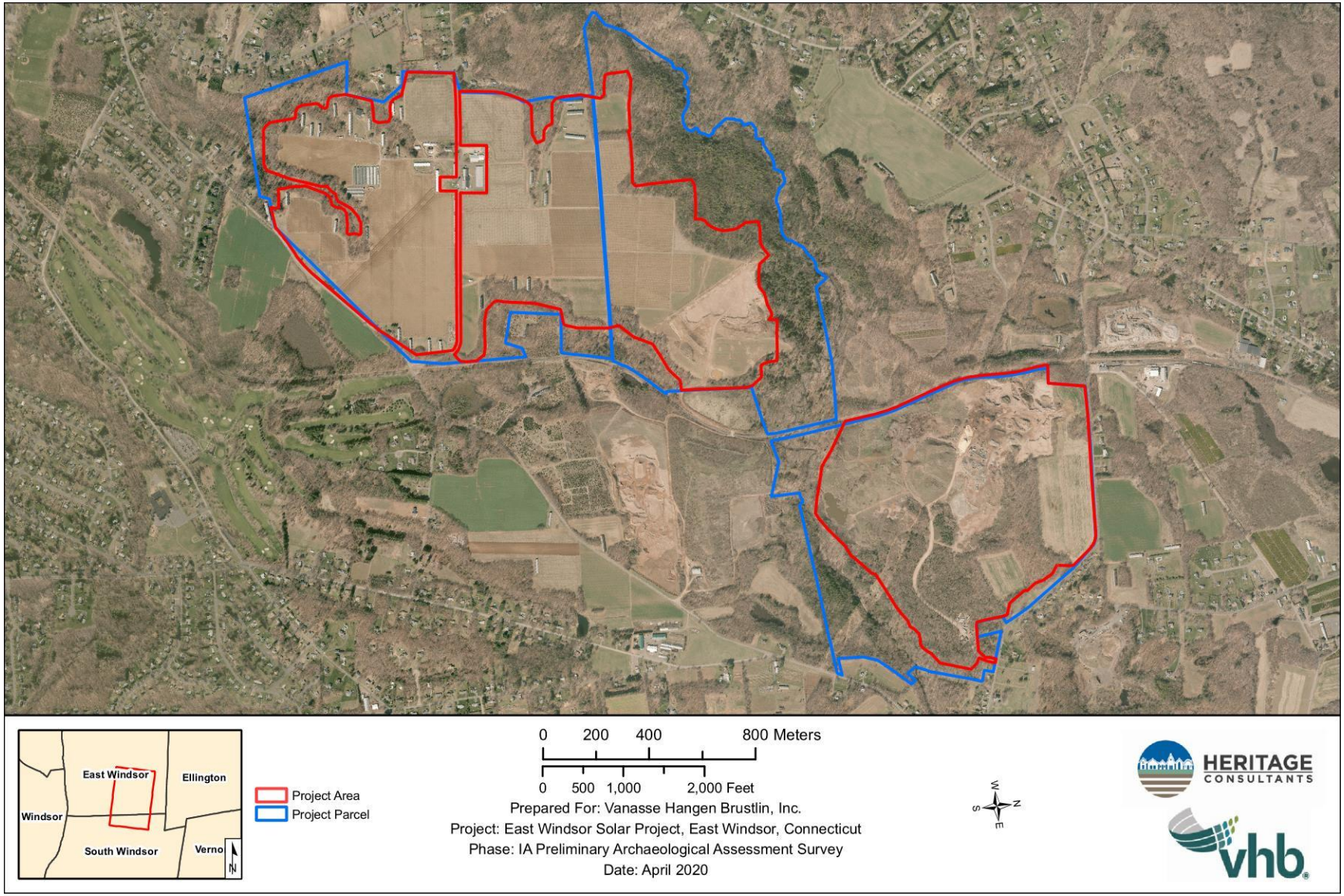



Figure 12. Excerpt from a 2016 aerial photograph showing the location of the Project Site in East Windsor, Connecticut.

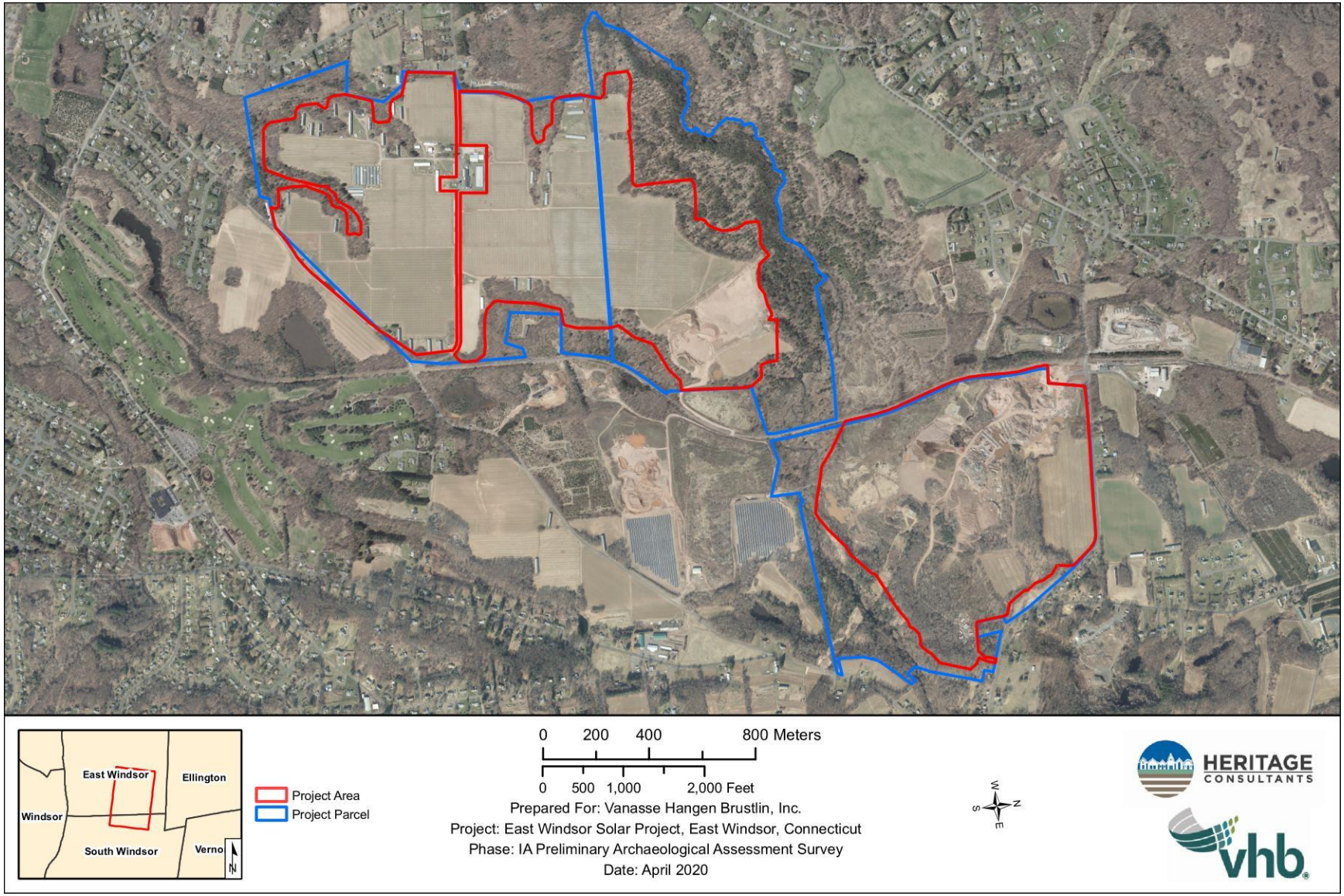



Figure 13. Excerpt from a 2019 aerial photograph showing the location of the Project Site in East Windsor, Connecticut.

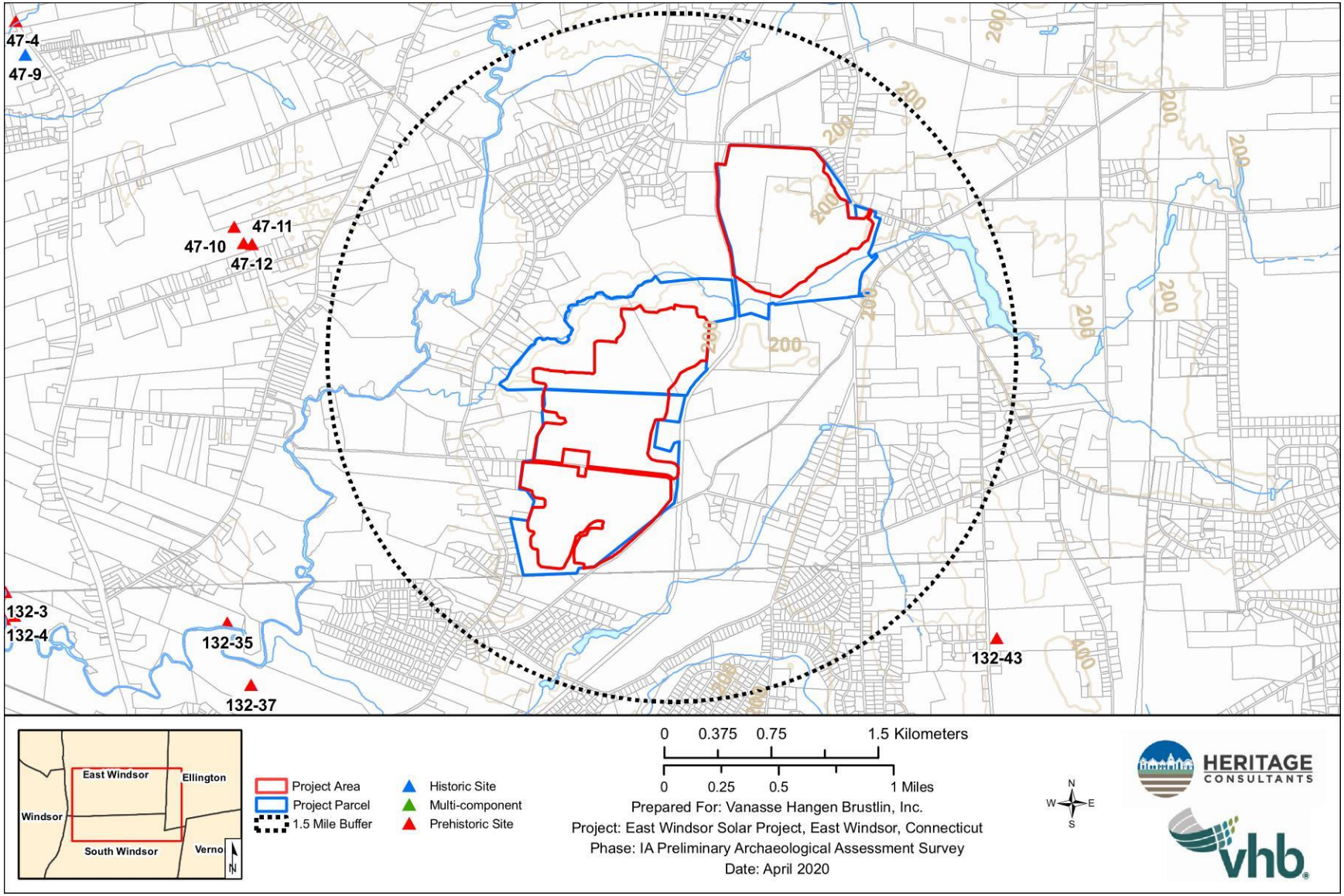



Figure 14. Digital map showing the location of previously identified archaeological sites in the vicinity of the Project Site in East Windsor, Connecticut.

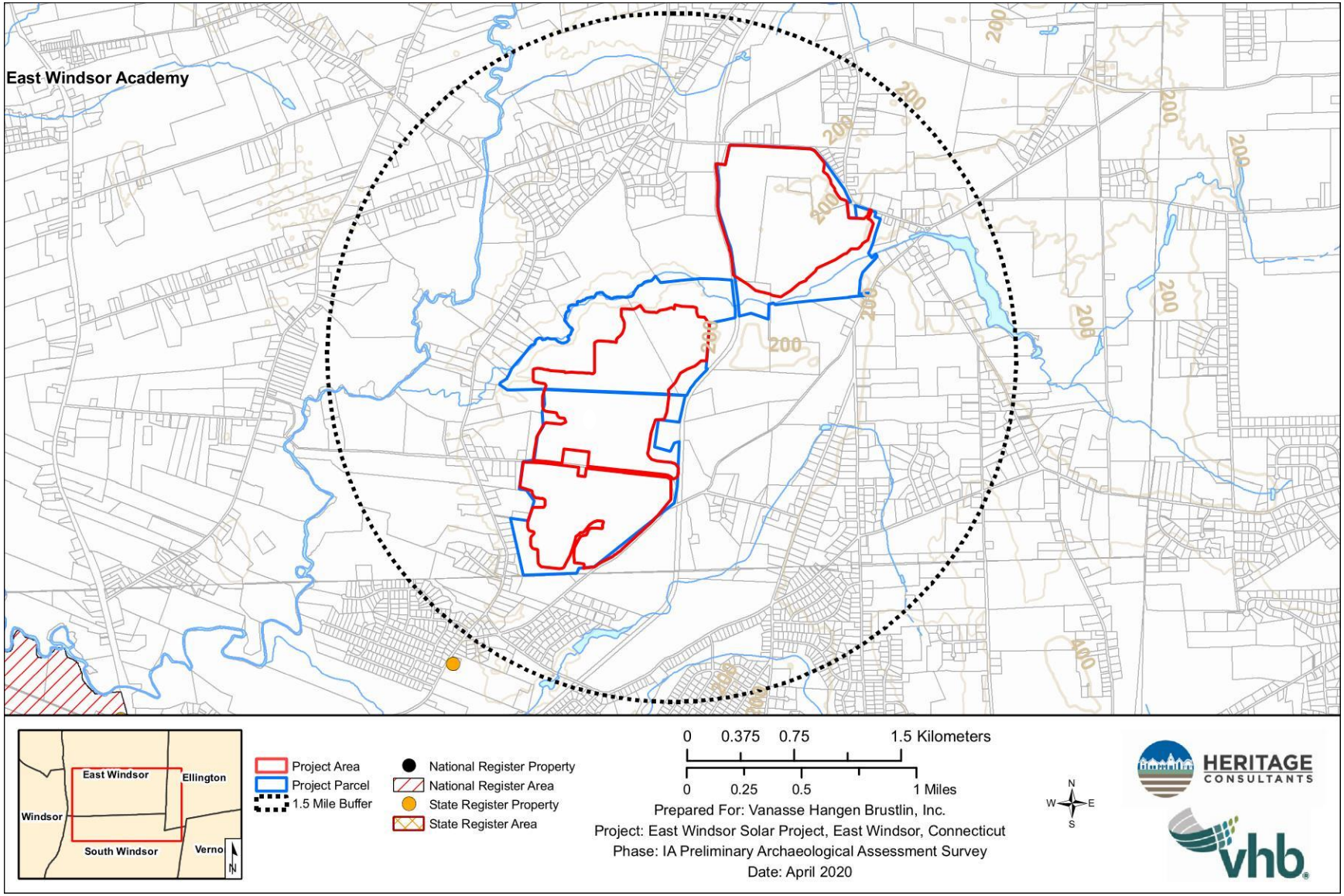



Figure 15. Digital map depicting the locations of previously identified National/State Register of Historic Places properties in the vicinity of the Project Site in East Windsor, Connecticut.

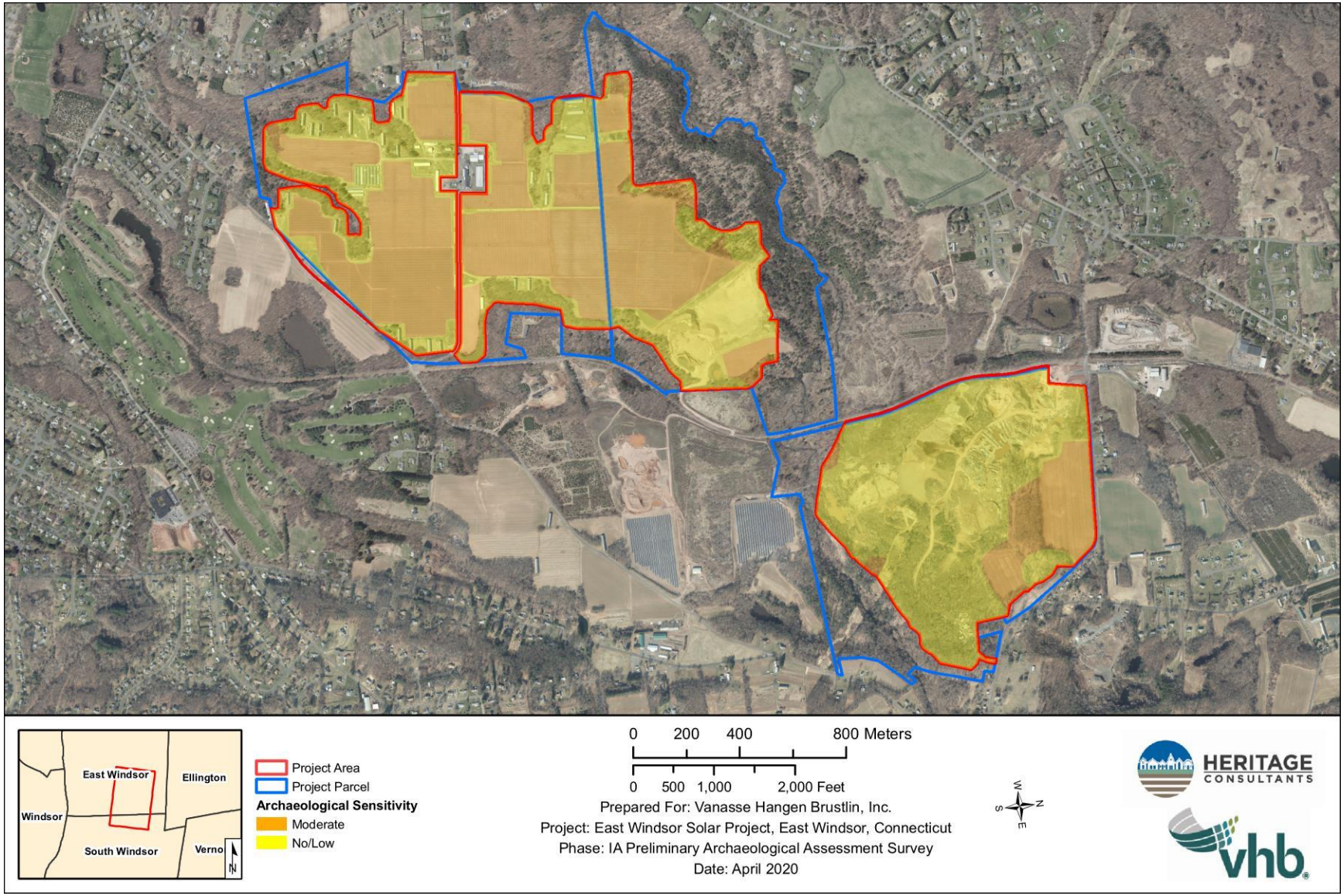



Figure 16. Excerpt from a 2019 aerial image depicting the locations of no/low and moderate archaeologically sensitive zone throughout the Project Site in East Windsor, Connecticut.

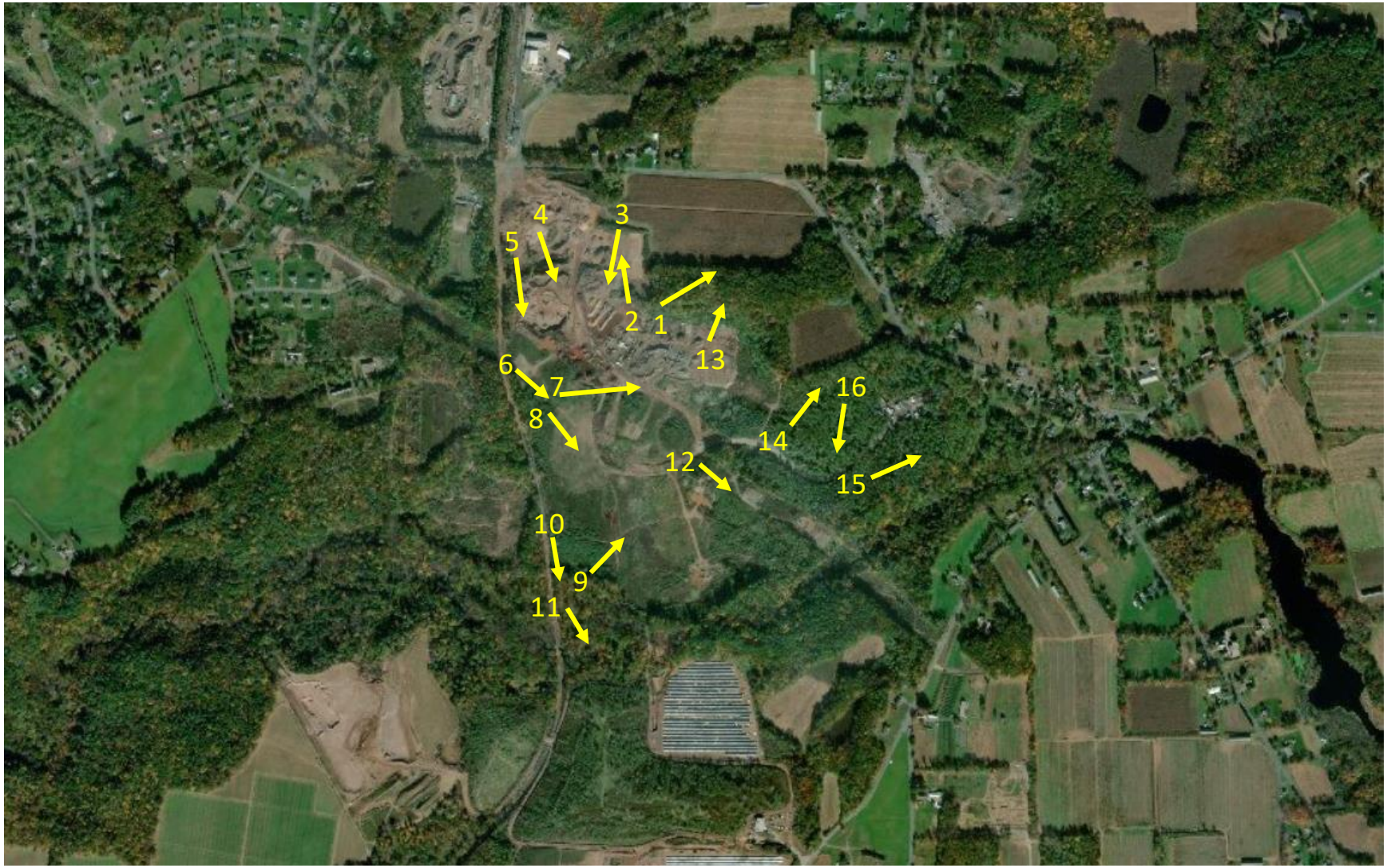



Figure 17; Sheet 1. Excerpt of a recent aerial image depicting photo locations, numbers, and directions within the northern portion of the Project Site in East Windsor, Connecticut.

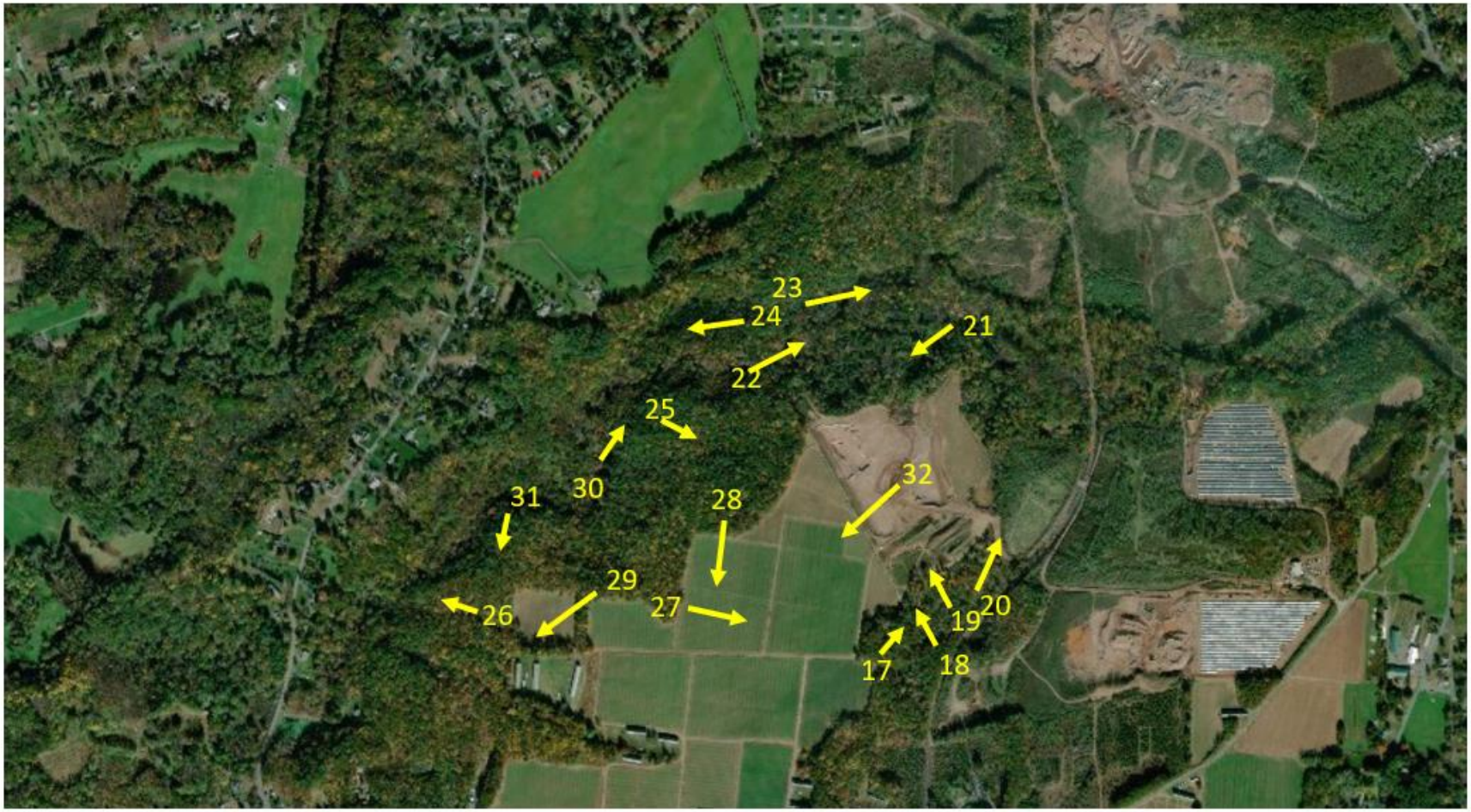



Figure 17; Sheet 2. Excerpt of a recent aerial image depicting photo locations, numbers, and directions within the central portion of the Project Site in East Windsor, Connecticut.

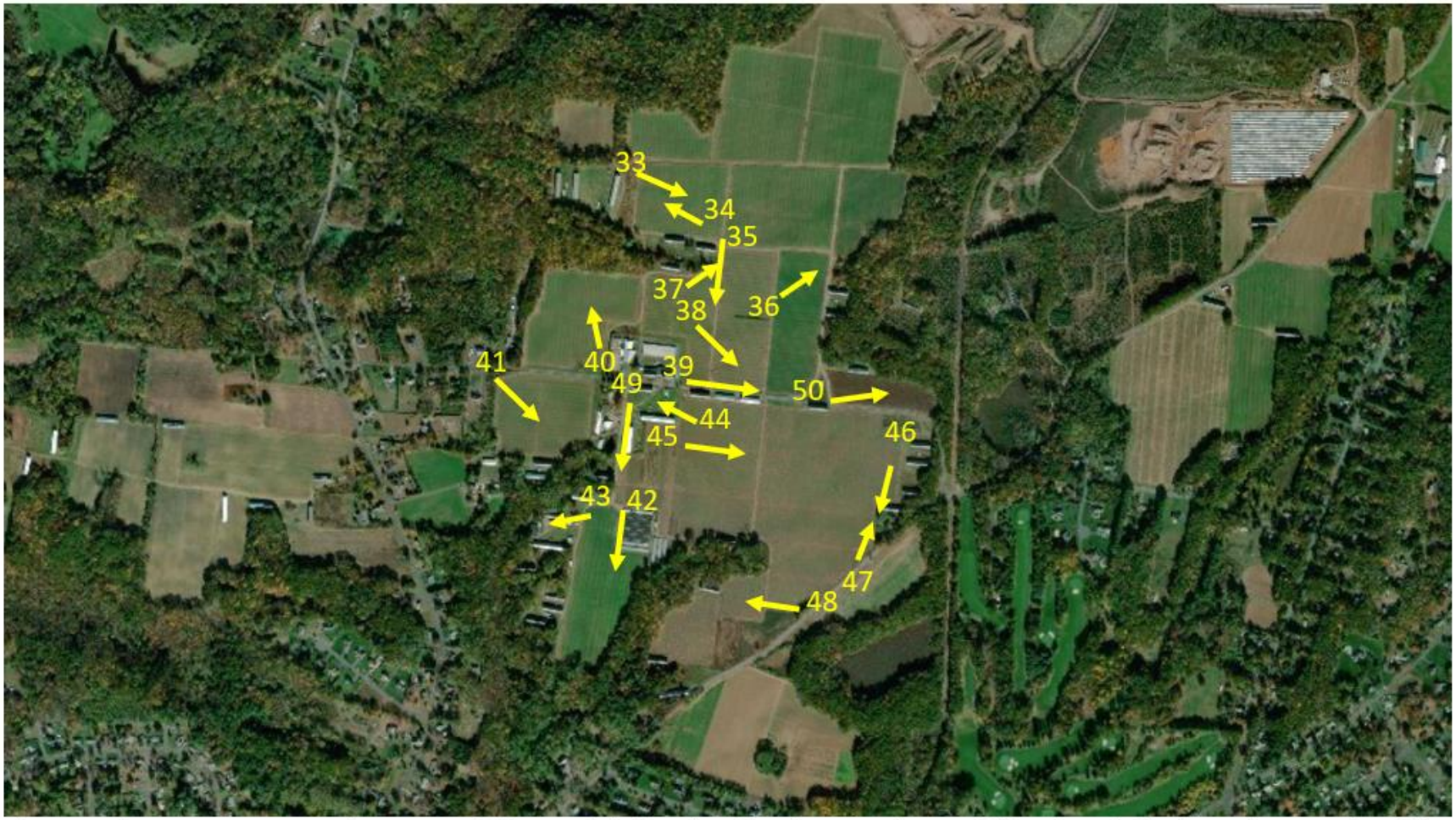



Figure 17; Sheet 3. Excerpt of a recent aerial image depicting photo locations, numbers, and directions within the southern portion of the Project Site in East Windsor, Connecticut.

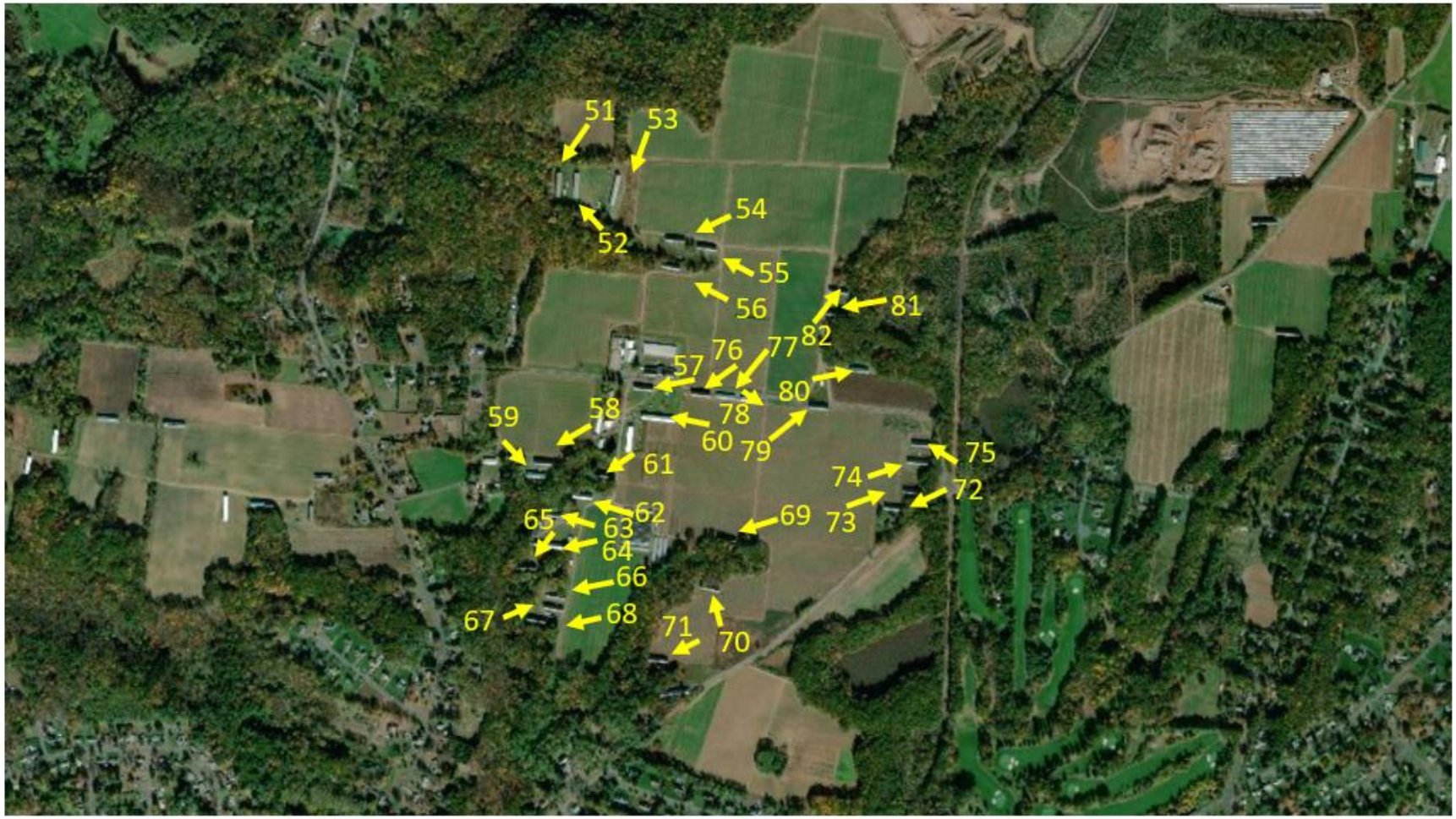



Figure 17; Sheet 4. Excerpt of a recent aerial image depicting photo locations, numbers, and directions of all 32 tobacco sheds within the Project Site in East Windsor, Connecticut.


Figure 17; Sheet 5. Excerpt of a recent aerial image depicting photo locations, numbers, and directions of other historic structures located within the Project Site in East Windsor, Connecticut.

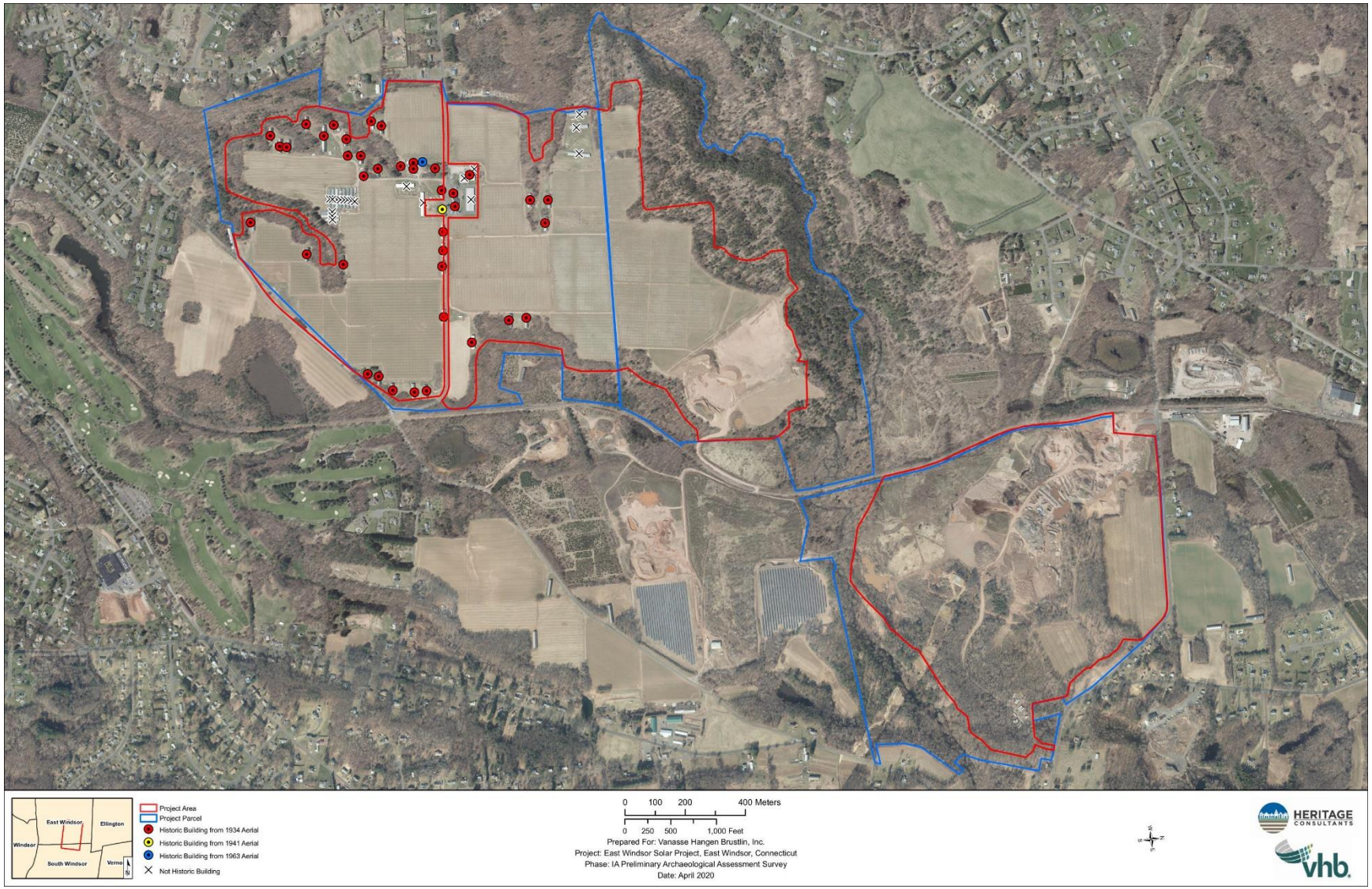



Figure 18. Excerpt of a 2019 aerial image depicting the locations of historic and modern buildings within or immediately adjacent to the Project Site in East Connecticut (note the colored dots represent historic buildings and the "x" marks denote modern

Photo 1. Overview photo of the northern portion of the Project Site facing northeast.

Photo 2. Overview photo of the northern portion of the Project Site facing north.

Photo 3. Overview photo of the northern portion of the Project Site facing south.

Photo 4. Overview photo of the northern portion of the Project Site facing south.

Photo 5. Overview photo of the northern portion of the Project Site facing south.

Photo 6. Overview photo of the northern portion of the Project Site facing southeast.

Photo 7. Overview photo of the northern portion of the Project Site facing southeast.

Photo 8. Overview photo of the northern portion of the Project Site facing southeast.

Photo 9. Overview photo of the northern portion of the Project Site facing northeast.

Photo 10. Overview photo of the northern portion of the Project Site facing south.

Photo 11. Overview photo of the northern portion of the Project Site facing south.

Photo 12. Overview photo of the northern portion of the Project Site facing southeast.

Photo 13. Overview photo of the northern portion of the Project Site facing northeast.

Photo 14. Overview photo of the northern portion of the Project Site facing northeast.

Photo 15. Overview photo of the northern portion of the Project Site facing east.

Photo 16. Overview photo of the northern portion of the Project Site facing south.

Photo 17. Overview photo of the central portion of the Project Site facing northeast.

Photo 18. Overview photo of the central portion of the Project Site facing northwest.

Photo 19. Overview photo of the central portion of the Project Site facing north.

Photo 20. Overview photo of the central portion of the Project Site facing northeast.

Photo 21. Overview photo of the central portion of the Project Site facing southwest.

Photo 22. Overview photo of the central portion of the Project Site facing northeast.

Photo 23. Overview photo of the central portion of the Project Site facing east.

Photo 24. Overview photo of the central portion of the Project Site facing west.

Photo 25. Overview photo of the central portion of the Project Site facing southeast.

Photo 26. Overview photo of the central portion of the Project Site facing west.

Photo 27. Overview photo of the central portion of the Project Site facing east.

Photo 28. Overview photo of the central portion of the Project Site facing south.

Photo 29. Overview photo of the central portion of the Project Site facing southwest.

Photo 30. Overview photo of the central portion of the Project Site facing northeast.

Photo 31. Overview photo of the central portion of the Project Site facing south.

Photo 32. Overview photo of the central portion of the Project Site facing southwest.

Photo 33. Overview photo of the southern portion of the Project Site facing east.

Photo 34. Overview photo of the southern portion of the Project Site facing northwest.

Photo 35. Overview photo of the southern portion of the Project Site facing south.

Photo 36. Overview photo of the southern portion of the Project Site facing northeast.

Photo 37. Overview photo of the southern portion of the Project Site facing northeast.

Photo 38. Overview photo of the southern portion of the Project Site facing southeast.

Photo 39. Overview photo of the southern portion of the Project Site facing east.

Photo 40. Overview photo of the southern portion of the Project Site facing north.

Photo 41. Overview photo of the southern portion of the Project Site facing southeast.

Photo 42. Overview photo of the southern portion of the Project Site facing south.

Photo 43. Overview photo of the southern portion of the Project Site facing west.

Photo 44. Overview photo of the southern portion of the Project Site facing west.

Photo 45. Overview photo of the southern portion of the Project Site facing east.

Photo 46. Overview photo of the southern portion of the Project Site facing south.

Photo 47. Overview photo of the southern portion of the Project Site facing north.

Photo 48. Overview photo of the southern portion of the Project Site facing west.

Photo 49. Overview photo of the southern portion of the Project Site facing south.

Photo 50. Overview photo of the southern portion of the Project Site facing east.

Photo 51. Photo of Tobacco Shed Number 32 facing southwest.

Photo 52. Photo of Tobacco Shed Number 33 facing northwest.

Photo 53. Photo of Tobacco Shed Number 27 facing southwest.


Photo 54. Photo of Tobacco Shed Number 29 facing west.

Photo 55. Photo of Tobacco Shed Number 28 facing west.

Photo 56. Photo of Tobacco Shed Number 25 facing west.

Photo 57. Photo of Tobacco Shed Number 1 facing west.

Photo 58. Photo of Tobacco Shed Number 24 facing southwest.


Photo 59. Photo of Tobacco Shed Number 23 facing southeast.

Photo 60. Photo of Tobacco Shed Number 5 facing west.

Photo 61. Photo of Tobacco Shed Number 22 facing southwest.

Photo 62. Photo of Tobacco Shed Number 21 facing west.

Photo 63. Photo of Tobacco Shed Number 20 facing west.

Photo 64. Photo of Tobacco Shed Number 19 facing west.

Photo 65. Photo of Tobacco Shed Number 18 facing southwest.

Photo 66. Photo of Tobacco Shed Number 17 facing west.

Photo 67. Photo of Tobacco Shed Number 16 facing east.

Photo 68. Photo of Tobacco Shed Number 15 facing west.

Photo 69. Photo of Tobacco Shed Number 12 facing west.

Photo 70. Photo of Tobacco Shed Number 13 facing north.

Photo 71. Photo of Tobacco Shed Number 14 facing west.

Photo 72. Photo of Tobacco Shed Number 11 facing southwest.

Photo 73. Photo of Tobacco Shed Number 10 facing east.

Photo 74. Photo of Tobacco Shed Number 9 facing east.

Photo 75. Photo of Tobacco Shed Number 8 facing northwest.

Photo 76. Photo of Tobacco Shed Number 2 facing southwest.

Photo 77. Photo of Tobacco Shed Number 3 facing southwest.

Photo 78. Photo of Tobacco Shed Number 4 facing southeast.

Photo 79. Photo of Tobacco Shed Number 6 facing northeast.

Photo 80. Photo of Tobacco Shed Number 31 facing east.


Photo 81. Photo of Tobacco Shed Number 30 facing west.

Photo 82. Photo of Tobacco Shed Number 29 facing northeast.

Photo 83. Photo of a water tower in the southern portion of the Project Site facing north (note this tower will not be directly impacted by the Project).

Photo 84. Photo of a historic structure in the southern portion of the Project Site facing northwest.

Photo 85. Photo of a historic structure in the southern portion of the Project Site facing northwest.

Photo 86. Photo of a historic residence in the southern portion of the Project Site facing west.

Photo 87. Photo of a historic structure in the southern portion of the Project Site facing northwest.

Photo 88. Photo of a historic structure in the southern portion of the Project Site facing west.

Photo 89. Photo of a historic structure in the southern portion of the Project Site facing west.

Photo 90. Photo of a historic structure in the southern portion of the Project Site facing west.

Photo 91. Photo of a historic structure in the southern portion of Project Site facing north.

Photo 92. Photo of the location of a historic structure identified on an 1855 map of the Project Site (see Figure 5; note that there are no remains of this structure.