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PHASE IA CULTURAL RESOURCES ASSESSMENT
OF A PROPOSED SOLAR CENTER ALONG MIDDLEFIELD ROAD
IN DURHAM, CONNECTICUT

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ABSTRACT

This report presents the results of a Phase IA cultural resources assessment survey for a proposed solar center situated along Middlefield Road in Durham, Connecticut. The project area encompasses approximately 11 acres of land off of Middlefield Road. The current investigation consisted of: 1) preparation of an overview of the region's precontact, post-European Contact period, and natural settings; 2) a literature search to identify and discuss previously recorded cultural resources in the region; 3) a review of readily available maps and aerial imagery depicting the solar facility to identify potential post-European Contact period resources and/or areas of past disturbance; and 4) pedestrian survey and photo-documentation of the project area to determine its archaeological sensitivity. The results of the pedestrian survey indicate that the entirety of the project parcel contains low slopes, well-drained soils, and is in close proximity to the Coginchaug River to the west, Sawmill Brook, and the Connecticut River to the east. In addition, there are two previously identified archaeological sites nearby. The Gastler Site (38-2), which is characterized as a precontact Archaic period site, is situated within the boundary of the southern portion of the project area. Based on the above referenced information, the project area is deemed to possess a moderate/high archaeological sensitivity, and it is recommended that it be subjected to Phase IB cultural resources survey prior to the construction of the proposed solar center.

Finally, two dry laid stonewalls were identified along the eastern boundary of the southern portion of the project parcel during the pedestrian survey. It is recommended, to the extent practicable, that these two stonewalls be protected in place and that they be included on construction maps and marked with high visibility fencing in the field so that they are not impacted during construction.

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CHAPTER I

INTRODUCTION

This report presents the results of a Phase IA cultural resources assessment survey of the proposed solar facility (the Facility) located along Middlefield Road in Durham, Connecticut (Figure 1). Vanasse Hangen Brustlin, Inc., (VHB) requested that Heritage Consultants, LLC (Heritage) complete the Phase IA assessment survey as part of the planning process for the proposed Facility. Heritage completed this investigation in July of 2023. All work associated with this project 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

The Facility will be built located off Middlefield Road in Durham, Connecticut. The project area is situated at elevations ranging from approximately 60 to 113 m (197 to 371 ft) NGVD and will be the location of two solar arrays, an interconnection route, fencing, and associated infrastructure (Figure 2). At the time of the pedestrian survey, the project area was accessed via Middlefield Road, and vegetation consisted of a mixture of open areas, forests, and dense weeds and shrubs.

The Phase IA cultural resources assessment survey consisted of the completion of the following tasks: 1) a contextual overview of the region's precontact, post-European Contact period, and natural settings (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 region encompassing the Facility; 3) a review of readily available historical maps and aerial imagery depicting the project area in order to identify potential post-European Contact period resources and/or areas of past disturbance; and 4) pedestrian survey and photo-documentation of the Facility area in order to determine its archaeological sensitivity.

Project Results and Management Recommendations Overview

The review of maps and aerial images depicting the study area, as well as files maintained by the CT-SHPO resulted in the identification of two previously identified archaeological sites within 1.6 km (1 mi) of the Facility, one of which is Site 38-2 (Gastler Site). This is an Archaic period occupations that is situated within the boundaries of the project area. These two archaeological sites are discussed in Chapter V. In addition, the Fairchild Merwin House and the John Swathel House, two Connecticut State Register of Historic Places properties, as well as the Main Street Historic District and Thomas Lyman House, two National Register of Historic places properties/districts, were also identified within 1.6 km (1 mi) of the project area. They are also are discussed in Chapter V. Finally, Heritage also combined data from map and aerial image analyses, as well as subsequent pedestrian survey, to stratify the project area into zones of no/low and/or moderate/high archaeological sensitivity.

Pedestrian survey of the project area revealed that the entirety of the Facility contains low slopes, well-drained soils, and is in close proximity to the Coginchaug River to the west, Sawmill Brook, and the Connecticut River to the east. Based on the above referenced information, the Facility area is deemed to possess a moderate/high archaeological sensitivity. It is recommended that the Facility area be subjected to Phase IB cultural resources survey prior to the construction of the proposed solar center.

Finally, two single dry laid stonewalls were identified along the eastern boundary of the southern portion of the project parcel during the pedestrian survey. It is recommended that these two stonewalls be protected in place and that they be included on construction maps and marked with high visibility fencing in the field so that they are not impacted during construction.

Project Personnel

Heritage Personnel who contributed to the project include David R. George, M.A., RPA, (Principal Investigator); Renee Petruzelli, M.A., RPA (Project Manager); Antonio Medina, B.A. (Field Operations Manager), Cole Peterson, B.A. (GIS Specialist), and David Naumec, PhD., (Historian).

CHAPTER II

NATURAL SETTING

Introduction

This chapter provides a brief overview of the natural setting of the region containing Facility in Durham, Connecticut. Previous archaeological research has documented that a few specific environmental factors can be associated with both precontact era and post-European Contact 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 area 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 very 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: Southeast Hills 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 area.

Southeast Hills Ecoregion

The Southeast Hills ecoregion consists of “coastal uplands, lying within 25 miles of Long Island Sound, characterized by low, rolling to locally rugged hills of moderate elevation, broad areas of upland, and local areas of steep and rugged topography” (Dowhan and Craig 1976). Elevations in the Southeast Hills ecoregion generally range from 75.7 to 227.2 m (250 to 750 ft) above sea level (Dowhan and Craig 1976). The bedrock of the region is composed of schists and gneisses deposited during the Paleozoic. Soils in the region have developed on top of glacial till in upland locales, and on top of stratified deposits of sand, gravel, and silt in the local valleys and upland areas (Dowhan and Craig 1976).

Hydrology in the Vicinity of the Project Area

The Facility locations is situated within close proximity to several sources of freshwater, including the Coginchaug River to the west, Sawmill Brook, and the Connecticut River to the east. Small, unnamed bodies of water are also nearby. Previously completed archaeological investigations in Connecticut have demonstrated that streams, rivers, and wetlands were focal points for precontact era occupations because

they provided access to transportation routes, sources of freshwater, and abundant faunal and floral resources.

Soils Comprising the Project Area

Soil formation is the direct result of the interaction of a number of variables, including climate, vegetation, parent material, time, and organisms present (Gerrard 1981). Once archaeological deposits are buried within the soil, they are subject to a number of 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 chemically and mechanically the 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 within the current project area. In contrast, acidic soils enhance the preservation of charred plant remains.

The project parcel is characterized by the presence of Cheshire, Wethersfield, and Yalesville soils (Figure 3), which are characterized as very deep well drained loamy soils. Where they are not disturbed, these types of soils are generally well correlated with both post-European Contact period and precontact era archaeological site locations. A descriptive profile for each soil type is presented below; they were gathered from the National Resources Conservation Service.

Cheshire Soils

The Cheshire series consists of very deep, well drained loamy soils formed in supraglacial till on uplands. They are nearly level through very steep soils on till plains and hills. Slope ranges from 0 to 60 percent. A typical soil profile is as follows: **Ap**--0 to 8 inches; dark brown (7.5YR 3/2) fine sandy loam, pinkish gray (7.5YR 6/2) dry; weak medium granular structure; friable; common fine roots; 5 percent gravel; strongly acid; **Bw1**--8 to 16 inches; reddish brown (5YR 4/4) fine sandy loam; weak medium subangular blocky structure; friable; few fine roots; 10 percent gravel; strongly acid; **Bw2**--16 to 26 inches; reddish brown (5YR 5/4) fine sandy loam; weak medium subangular blocky structure; very friable; few fine roots; 10 percent gravel; strongly acid; and **C**-- 26 to 65 inches; reddish brown (2.5YR 4/4) gravelly sandy loam; massive; very friable with firm lenses; 20 percent gravel and cobbles; strongly acid.

Wethersfield Soils

The Wethersfield series consists of very deep, well drained loamy soils formed in dense glacial till on uplands. The Wethersfield soils are moderately deep to dense basal till. They are nearly level to steep soils on till plains, low ridges, and drumlins. Slope ranges from 0 to 35 percent. A typical profile associated with Wethersfield soils is as follows: **Oe**--0 to 3 cm; black (10YR 2/1) moderately decomposed plant material; **A**--3 to 8 cm; dark brown (7.5YR 3/2) loam; moderate medium granular structure; friable; many fine and medium roots; 10 percent gravel; strongly acid; clear wavy boundary; **Bw1**--8 to 22 cm; reddish brown (5YR 4/4) loam; weak medium subangular blocky structure; friable; common fine and medium roots; 10 percent gravel; strongly acid; clear wavy boundary; **Bw2**--22 to 69 cm; dark reddish brown (5YR 3/3) gravelly loam; weak medium subangular blocky structure; friable; few medium roots; 15 percent gravel and cobbles; strongly acid; clear wavy boundary; and **Cd**--69 to 165 cm; reddish brown (2.5YR 4/4) gravelly loam; weak thick platy structure; very firm, brittle; few silt films and black coatings on some plates; 20 percent gravel and cobbles; strongly acid.

Yalesville Soils

The Yalesville series consists of moderately deep, well drained soils formed in a loamy till. They are nearly level to moderately steep soils on hills and ridges. Slope ranges from 0 to 50 percent. A typical

soil profile is as follows: **Ap**--0 to 20 cm; dark brown (7.5YR 3/2) fine sandy loam, pinkish gray (7.5YR 6/2) dry; weak medium granular structure; friable; common very fine, fine, and medium roots; 5 percent gravel; moderately acid; abrupt smooth boundary; **Bw1**--20 to 36 cm; reddish brown (5YR 4/4) fine sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; few very dark grayish brown earthworm casts; 5 percent gravel; moderately acid; gradual wavy boundary; **Bw2**--36 to 64 cm; reddish brown (5YR 4/4) loam; weak medium subangular blocky structure; friable; few fine roots; 5 percent gravel; moderately acid; gradual wavy boundary; **C**--64 to 91 cm; reddish brown (2.5YR 4/4) gravelly sandy loam; massive; firm; 12 percent gravel and 3 percent cobbles; moderately acid; abrupt wavy boundary; and **2R**--91 cm; reddish brown (2.5YR 4/4) hard sandstone bedrock.

Summary

The natural setting of the area containing the proposed Facility is common throughout the Southeast Hills ecoregion. The major river within this ecoregion is the Connecticut River, which has numerous smaller tributaries. Moderate slopes dominate the region, and the soils are silty and sandy loams. In general, the project region was well suited to Native American occupation throughout the precontact era. This portion of Durham was also used after Colonial settlement for agricultural land, as evidenced by the presence of agricultural fields throughout the region; thus, archaeological deposits dating from the precontact era and post-European Contact period era may be expected near or within the Facility area.

CHAPTER III

PRECONTACT ERA 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 precontact era occupation 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 precontact era occupation 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 precontact era Native Americans, while the coastal zone, i.e., the eastern and western coastal and the southeastern and southwestern hills ecoregions, was the focus of settlements and exploitation. 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 precontact period of Connecticut. The remainder of this chapter provides an overview of the precontact era setting of the region encompassing the Facility.

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 ca., 13,000 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 over 50 surface finds of Paleo-Indian projectile points throughout the State of Connecticut, only three sites, the Templeton Site (6-LF-21) in Washington, Connecticut, the Hidden Creek Site (72-163) in Ledyard, Connecticut, and the Brian D. Jones Site (4-10B) in Avon, Connecticut have been studied in detail and dated using the radiocarbon method (Jones 1997; Moeller 1980; Singer 2017a; Leslie et al., 2020).

The Templeton Site (6-LF-21) in Washington, Connecticut 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 graters, 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 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. More recently, the site has undergone re-investigation by Singer (2017a and 2017b), who has determined that the overwhelming majority of tools and debitage are exotic and were quarried directly from the Hudson River Valley. Recent research has focused on task-specific loci at the Templeton Site, particularly the production of numerous Michaud-Neponset projectile points, as identified through remnant channel flakes.

The Hidden Creek Site (72-163) is situated on the southeastern margin of the Great Cedar Swamp on the Mashantucket Pequot Reservation in Ledyard, Connecticut (Jones 1997). 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, graters, 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.

The Brian D. Jones Site (4-10B) was identified in a Pleistocene levee on the Farmington River in Avon, Connecticut; it was buried under 1.5 m (3.3 ft) of alluvium (Leslie et al., 2020). The Brian D. Jones Site was identified by Archaeological and Historical Services, Inc., in 2019 during a survey for the Connecticut Department of Transportation preceding a proposed bridge construction project. It is now the oldest known archaeological site in Connecticut at +12,500 years old. The site also provides a rare example of a Paleo-Indian site on a river rather than the more common upland areas or on the edges of wetlands. Ground-penetrating radar survey revealed overbank flooding and sedimentation that resulted in the creating of a stable ancient river levee with gentle, low-energy floods. Archaeological deposits on the levee were therefore protected.

Excavations at the Brian D. Jones Site revealed 44 soil anomalies, 27 of which were characterized as cultural features used as hearths and post holes, among other uses. Of these, one hearth has been dated thus far ($10,520 \pm 30$ 14C yr BP; charred Pinus; 2-sigma 12,568 to 12,410 CAL BP) (Leslie et al., 2020: 4). Further radiocarbon testing will be completed in the future. Artifact concentrations surrounded these features and were separated in two stratigraphic layers representing at least two temporally discrete Paleo-Indian occupations. The recovered lithic artifacts are fashioned from Normanskill chert, Hardyston jasper, Jefferson/Mount Jasper rhyolite, chalcedony, siltstone, and quartz. They include examples of a fluted point base, preforms, channel flakes, pièces esquillées, end scrapers, side scrapers, grinding stones, bifaces, utilized flakes, graters, and drilled stone pendant fragments. Lithic tools numbered over 100, while toolmaking debris was in the thousands. The channel flakes represent the production of spear points used in hunting. Scrapers, perforators, and grinding stones indicate animal butchering, plant food grinding, the production of wood and bone tools, and the processing of animal skins for clothing and tents. Other collected cultural materials included charred botanicals and calcined bone. Botanical specimens recovered in hearth features included burned remains of cattail, pin cherry, strawberry, acorn, sumac, water lily, and dogwood. Approximately 15,000 artifacts were collected in total.

The scarcity of identified Paleo-Indian sites suggests a low population density during this period. The small size of most Paleo-Indian sites, their likely inundation by rising sea levels, and the high degree of landscape disturbance over the past 10,000 years likely contribute to poor site visibility, although the presence of two deeply alluvially buried Paleo-Indian sites in Connecticut suggests that other sites may be located along stable rivers (Leslie et al. 2021).

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 very small and produce few artifacts, most of which are not temporally diagnostic. While Early Archaic sites in other portions of 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 on the basis of 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, are 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.

Another localized cultural tradition, the Gulf of Maine Archaic, which lasted from ca. 9,500 to 6,000 14C BP, is beginning to be recognized in Southern New England (Petersen and Putnam 1992). It is distinguished by its microlithic industry, which may be associated with the production of compound tools (Robinson and Peterson 1993). Assemblages from Maine (Petersen et al. 1986; Petersen 1991; Sanger et al. 1992), Massachusetts (Strauss 2017; Leslie et al. 2022), and Connecticut (Forrest 1999) reflect the selection of local, coarse-grained stones. Large choppers and hoe-like forms from southeastern Connecticut's Sandy Hill Site likely functioned as digging implements. Woodworking tools, including adzes, celts, and gull-channeled gouges recovered at the Brigham and Sharrow sites in Maine (Robinson and Petersen 1993: 68), may have been used for dugout canoe manufacture. The deeply stratified Sandy Hill (Forrest 1999; Jones and Forrest 2003) and Sharrow sites (Petersen 1991), with their overlapping lenses of "black sand" floor deposits, suggest intensive site re-occupations according to an adaptation that relied, in part, on seasonally available wetland resources. Thus far, sites from this tradition have only been identified within coastal and near-coastal territories along the Gulf of Maine, in southeastern Connecticut, and in Massachusetts.

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

By the onset of the Middle Archaic Period modern deciduous forests had developed in the region (Davis 1969). Increased numbers and types of sites associated with this period are noted in Connecticut (McBride 1984). The most well-known Middle Archaic site in New England is the Neville Site in Manchester, New Hampshire studied by Dincauze (1976). Careful analysis of the Neville Site indicated that the Middle Archaic occupation dated from between 7,700 and 6,000 years ago. In fact, Dincauze obtained several radiocarbon dates from the Middle Archaic component of the Neville Site associated with the then-newly named Neville type projectile point, ranging from 7,740 \pm 280 and 7,015 \pm 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 \pm 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 m² (5,383 ft²). 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).

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

The Terminal Archaic, 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 precontact period. 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 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 of 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 was still 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.

Early Woodland Period (ca., 2,700 to 2,000 B.P.)

The Early Woodland Period of the northeastern United States dates from ca., 2,700 to 2,000 B.P., and it was 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. Archaeological investigations of Early Woodland sites in southern New England 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 that are indicative of the Middle Woodland Period include 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 stylistically diverse 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's Precontact Era

The precontact era of Connecticut spans from ca. 13,000 to 350 B.P., and it is characterized by numerous changes in tool types, subsistence patterns, and land use strategies. Much of this era is characterized by local Native American groups who practiced a subsistence pattern based on a mixed

economy of hunting and gathering 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 precontact period 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 that includes the proposed project area, a variety of precontact site types may be expected, ranging from seasonal camps utilized by Paleo-Indian and Archaic populations to temporary and task-specific sites of the Woodland era.

CHAPTER IV

POST EUROPEAN CONTACT

PERIOD OVERVIEW

Introduction

The proposed Facility is located along Middlefield Road in the Town of Durham, which is located in Middlesex County, Connecticut. This chapter provides a brief overview of Middlesex County followed by a history of Durham with a focus on the project area. Most Connecticut towns, including Durham, originated as Indigenous settlements and later became English colonial villages. Originally known as “Coginchaug” by the areas Native American people it was incorporated by English colonists as the Town of Durham in 1708 and developed as an agricultural community with close ties to the neighboring cities of Middletown and Meriden. Throughout the nineteenth century Durham remained an agricultural hub with some traces of manufacturing. During the twentieth century, the town maintained its agricultural practices but also developed as a suburban area due to its proximity to several nearby cities. In the twenty-first century, the Town of Durham has become a residential community which retains significant elements of its natural landscape and agricultural past.

Middlesex County

Middlesex County was incorporated in 1785 from land taken from Hartford County and New London County (Beers 1884). Located in south-central Connecticut, Middlesex County is bounded to the north by Hartford and New London Counties, to the west by New Haven County, to the east by New London County, and to the south by Long Island Sound. Bisected by the Connecticut River, Middlesex County is also the location of Middletown, incorporated in 1651, named in 1653, and incorporated as a city in 1784 (Beers 1884). Other important population centers in Middlesex County include Portland and Cromwell (Connecticut 2021). The landscape varies from coastal lowlands and river basins to higher elevations in the interior. Important bodies of water associated with Middlesex County include the Salmon River, Coginchaug River, Mattabasset River, Millers Pond, and Pocotopaug Lake. Its shoreline also has many smaller unnamed rivers, harbors, islands, and inlets. The Town of Durham is situated in the central, western part of the county bounded north by Durham and Middletown, east by Haddam, south by Killingworth, Madison, Guilford, as well as North Branford and to the west by Wallingford. The Metacomet Ridge runs along the western edge of the town while important waterways include the Coginchaug River, Allyn Brook, Sawmill Brook, Sumner Brook, and Millers Pond, as well as numerous unnamed streams and rivulets.

Woodland Period to Seventeenth Century

During the Woodland Period of northeastern North American history (c., 3000 to 500 years ago) the Indigenous peoples who resided in the project region were part of the greater Algonquian culture of northeastern North America (Lavin 2013). They spoke local variations of Southern New England Algonquian languages and resided in extended kinship groups on lands they maintained for a variety of horticultural and resource extraction purposes (Goddard 1978). Native people in the region practiced subsistence activities including hunting, fowling, and fishing, along with the cultivation of various crops, the most important of which were maize, squash, and beans. They supplemented these foods seasonally by collecting shellfish, fruits, and plants during warmer periods, and gathering nuts, roots, and tubers during colder times (Lavin 2013). In addition, these communities came together in large groups to hunt deer in the fall and winter. Indigenous peoples lived with their immediate or extended families in large settlements often concentrated along rivers and/or wetlands. Some villages were fortified by wooden

palisades. Their habitations, known as a *weetu* or *wigwam*, were generally constructed of a tree sapling frame and covered in reed matting during warm months and tree bark throughout the winter. These varied in size from a small, individual dwelling to an expansive “long house” which could accommodate several families. Indigenous communities commonly traded among both their immediate neighbors and often maintained long-distance networks as well (Lavin 2013). The Native people who resided in present-day Durham were known as Mattabessett, or more specifically, the Wangunk. Their neighbors to the south were the Quinnipiac Hammonasset and the Podunk and Suckiaug to the north (De Forest 1852).

Seventeenth to Eighteenth Century

As Native communities maintained oral tradition rather than a written record, most surviving information of the indigenous people of present-day Durham was recorded by European observers (Lavin 2013). The earliest Europeans known to have entered Long Island Sound and the Connecticut River along present-day Middlesex County were the Dutch. During his 1614 voyage, Captain Adrian Block created a figurative map of the region that depicted the shoreline, the Connecticut River, and identified Native nations in the region including the “Sequins,” known today as the Wangunk, around the area of present-day Durham. The Dutch established trade relationships with Native people of the area including the Middletown and by the early 1620’s they entered an agreement with the Pequot of present-day southeastern Connecticut who provided wampum and furs for European goods. Through this relationship the Pequot accessed a variety of valuable European trade goods they distributed to tributaries and/or trade with others in the region. The Pequot extended their dominance over the Connecticut shoreline, eastern Long Island, and the lower Connecticut River Valley bringing all the Native nations in those areas into a tributary relationship under their leadership (Hauptman and Wherry 2009; McBride 2013).

To break from the Pequot, several Connecticut River sachems invited the English to the valley; they arrived in Windsor in 1633, Wethersfield in 1634, and both Hartford and Saybrook by 1635 (Van Dusen 1961). Increased European interaction resulted in exposure to diseases and epidemics Indigenous people had never encountered and to which they had no natural immunity. Illnesses such as smallpox, measles, tuberculosis, and cholera devastated Native communities. In 1633, an epidemic spread through the region impacting the Pequot and people further west (Lavin 2013). Tensions between Native and European groups in the Connecticut River Valley resulted in the death of English traders between 1634 and 1636 which were blamed on the Pequot. In retaliation, English forces from Massachusetts Bay destroyed Pequot and Niantic villages on the Pequot (Thames) River in August 1636 which began the Pequot War. The Pequot laid siege to Saybrook Fort at the mouth of the Connecticut River during the winter of 1636-1637 and attacked Wethersfield in April 1637 further upriver. Connecticut Colony declared war on the Pequot and were joined by Native warriors from the Connecticut River and Mohegans under the Sachem Uncas (Oberg 2006). In May 1637, English allied forces destroyed the fortified Pequot village at Mistick and pursued Pequot refugees west towards present-day Fairfield (Cave 1996). After the war, the Connecticut English claimed Pequot lands as conquered lands for their growing colony. In January of 1639, the “fundamental orders” were adopted which outlined the framework for Connecticut Colony, a self-governed colony separate from Massachusetts Bay or Plimoth (Trumbull 1886).

The colonization of Middletown began in the 1650s when settlers from Hartford and Wethersfield migrated down the Connecticut River. Lands further south were known as Coginchaug, or “long swamp” by the Wangunk who utilized the land for hunting grounds. In 1672, land was granted in Coginchaug to several English proprietors although the earliest settlers would not arrive to 1699 from Guilford (Fowler 1866; Beers 1884). The Wangunk community continued to reside in their homelands which were being colonized by the English and in 1675 the General Assembly laid out reservation lands for the Wangunk in Middletown on both sides of the Connecticut River (DeForest 1852).

By 1700, early English settlement began in present-day Durham and the area slowly developed as a farming community. In 1703, a town plot was established where the Village of Durham now stands and in 1707 three highways were laid out across Coginchaug Swamp to better connect the growing community. The following year, in 1708, the General Assembly incorporated the Town of Durham and soon after both a church and school were established (Fowler 1866; Beers 1884). Early on efforts were made to drain parts of Coginchaug Swamp which resulted in much of the southern end of the wetlands being converted to valuable meadow lands. Durham developed into a robust agricultural community and several grist mills, sawmills, and tanneries were constructed early on (Beers 1884). During the Inter-Colonial Wars men from town served on campaigns against the French including Durham native Major General Phinehas Lyman who commanded Connecticut Troops during the French and Indian War (1754-1763) (Fowler 1866). The 1756 Connecticut colonial census reported 765 “Whites” and 34 “Negroes” living in Durham although it was not noted who was enslaved or indentured (Trumbull 1756). Slavery likely existed in Durham and the 1774 Connecticut colonial census recorded a “White” population of 1,031 and “Black” population of 44, and 1 “Indian” in Durham; however, it did not distinguish between free and enslaved people (Hoadly 1887).

During the colonial era, Durham was a typical inland colonial Connecticut town and the individuals who lived there focused on subsistence farming and sold any available surplus to nearby markets, some as far as Boston and the West Indies (Fowler 1866). During the American Revolution (1775-1783), Durham played an important role in recruiting soldiers, offering food stores, and providing a variety of military goods for the war effort. General James Wadsworth was a lawyer from Durham who achieved the rank of major general of Connecticut military in 1777 (Fowler 1866). After the Revolution, Durham recovered from wartime economic disruptions thanks to its robust agricultural production and maritime trade. In 1784, the State passed a gradual manumission law, but slavery was not fully abolished until 1848 (Normen 2013). On January 9, 1788, Connecticut ratified the U.S. Constitution to become the fifth state (Van Dusen 1961).

Nineteenth Century through the Twenty-first Century

As of 1800, the Town of Durham reported 1,029 individuals living in town with most families involved in the agricultural economy (Connecticut 2023a). In 1819, the *Gazetteer of the States of Connecticut and Rhode-Island* reported that Durham’s main products were rye, corn, and flax, while numerous households produced shoes that were sold to the southern states. The town’s modest population supported three different churches while its agrarian economy was reflected in the presence of tanneries, grain mills, sawmills, a wool-carding machine, and a cider distillery but no factories (Pease & Niles 1819). A later 1837 description of the town noted that Durham was well-known for its cattle (Barber 1837). Despite its small population, in the 1820’s the town had four turnpikes which were maintained by private corporations passing through it although within a few decades these companies failed due to competition from the railroads, even though Durham did not have a railroad station (Beers 1884).

Quarrying became a prominent industry in the nineteenth century, with various sites providing stone used for foundations, buildings, and gravestones. A quarry in Haddam Quarter supplied stone that was used for projects in Cromwell and New Haven, including a building at Yale University. It became such an important industry that the area in town where it occurred became known as the “Quarry District” (Fowler 1866; Beers 1884). Other industries also took hold in Durham, most notably the Merriam Manufacturing Company (1851) which made tinware items and became a significant employer in town. That same year there was a factory established to produce a skin cream known as “Pond’s Extract”

(Beers 1884). These factories resulted in a brief increase in population by 1860 with 1,130 people living in town but overall, they did not result in an influx of people residents (Connecticut 2023b; Table 1).

During the Civil War (1861-1865) Durham recruited 95 men who served in the Union Army in 17 different regiments (Fowler 1866; Hines 2002). Following the war, the town’s population slowly declined through the end of the century. The industrializing trend of many Connecticut towns did not develop in Durham and the town remained largely agricultural and by 1890, Durham had a population of 856 residents (Connecticut 2023b; Table 1).

At the turn of the twentieth century, the town had lost a significant amount of its population, possibly due to factory closures. As of 1900, 845 residents remained in town, which increased slightly to 1,002 by 1910 (Connecticut 2023c; Table 1). In 1916, the town began a tradition of holding the Durham Fair, a multi-day event that has occurred annually since (Durham Fair 2016). The town remained relied mainly on its agricultural economy although the Merriam Manufacturing Company remained in important industry and in 1932 the State Register reported that Durham’s principal industries were “agriculture and the manufacture of cash boxes, safe deposit boxes and various kinds of metal boxes” (Connecticut 1932).

By the mid-twentieth century, the trend toward post-war suburban living brought more permanent residents to industrial towns and cities, further boosting the regional population. This suburban trend was facilitated by the widespread adoption of the automobile by the American middleclass and new highway construction. In 1953, Route 9 was proposed as an intrastate expressway linking the Hartford area with the shoreline which paralleled the Connecticut River to the east and bisected Middlesex Country, providing greater transportation connectivity throughout the state and increased growth to the city of Durham (DeLuca 2020). To the west, Interstate 91 was built through Meriden in 1965, a short distance from Durham which allowed quick access to New Haven and Hartford (DeLuca 2020). As a result, the town experienced a substantial increase in population from 1,804 residents in 1950 to 3,096 in 1960 (Connecticut 2023c; Table 1).

The town managed to balance suburban growth with its agricultural economy as well as some industry into the twenty-first century. In the year 2000 Durham’s population totaled 6,627 residents and by 2010 the town counted 7,388 residents (Connecticut 2023d; Table 1). Although Durham maintained a modest population for decades, and retained a strong employment base, town planners focused on balancing economic and residential development, with a strong emphasis on tourism (Durham 2017). As of 2021, the town’s largest employers were manufacturers and local government while the town’s population rose to 7,221 residents (AdvanceCT 2021). Despite its suburban population growth and modest industrialization, Durham retains much of its rural landscape interspersed with residential housing (Durham 2016).

Table 1: Population of Durham, Connecticut 1870-2020 (Connecticut 2023a-d, Connecticut 2021)

Town	1870	1880	1890	1900	1910	1920	1930	1940
Durham, Middlesex County, Connecticut	1,086	990	856	884	997	959	1,044	1,098
	1950	1960	1970	1980	1990	2000	2010	2020
	1,804	3,096	4,489	5,143	5,732	6,627	7,388	7,152

History of the Project Area

The proposed project area is located along Middlefield Road in the Town of Durham. According to Walling's 1859 map of Middlesex County, it is in what was the northern portion of Durham at that time. As of 1859, there was a dwelling house on the project parcel owned by "J. Thayer." The remainder of the project area appears undeveloped as of 1859 and likely under agricultural cultivation associated with dwelling. Abutting the property to the north was a dwelling owned by a "J. W. Miller" and another to the south owned by "T. W. & F. Lyman." The village of Durham is visible to the south as is the Coginchaug River and swamp to the west (Figure 4; 1859 Map). The Beers 1874 Middlesex County map little has changed in the vicinity of the project parcel upon which stands a dwelling house owned by "E. Thayer" and the rest of the property remains undeveloped, likely under agricultural cultivation. The dwelling house to the north of the project parcel was then owned by a "Chas Miller," whereas the dwelling to the south was owned by a "G. H. Lyman" (Figure 5; 1874 Map).

During the twentieth century the land near the proposed Facility remained cleared and under agricultural cultivation as demonstrated by a 1934 aerial photograph in which several field systems are evident and a dwelling house with associated outbuildings is situated in the western portion of the property on Middlefield Road. The Coginchaug River and what remains of the swamp was evident to the west of the project parcel and Route 17 was visible to the east. A small stream ran along the southeastern bounds of the property and passed under Middlefield Road and met the Coginchaug River. Nearly all of the surrounding land was cleared and being utilized for agricultural purposes as of 1934 (Figure 6; 1934 Aerial).

Little appears to have changed on the landscape over the years according to 1951 and 1970 aerial photographs, both of which show the project parcel as still cleared and under agricultural cultivation, perhaps being utilized as hay lots. A dwelling house and associated structure are visible along the western border of the property on the east side of Middlefield Road in the 1970 aerial photograph. To the north of the project parcel stands another residential structure, as well as another to the south. There also appears to be a new structure standing across Middlefield Road almost directly across from the dwelling house located on the project parcel, although it is unclear if it is a dwelling or outbuilding such as a barn. To the east of the proposed project area and east of the brook stand several new commercial and/or industrial buildings. The Coginchaug River and swamp are visible to the west while the surrounding landscape remains largely clear and under agricultural cultivation (Figures 7 and 8; 1951 Aerial and 1970 Aerial).

A color aerial image taken nearly 50 years later in 2019 reveals a landscape that remained relatively unchanged in the vicinity of the project area. The project parcel itself remains undeveloped and is no longer used for agricultural cultivation as the open lots have reverted to woodland. Some suburban residential development occurred along the western side of Middlefield Road and additional housing is visible further west along Route 17. Several commercial and industrial buildings are located to the east of the project parcel. Abutting the northwestern edge project parcel is a dwelling house and associated gardens that belonged to Gastler Farm, a self-described farm, flower garden, and event space (Gastler 2023). There are two newly constructed homes north of the Gastler Farm and the project parcel, as well while another residential home located about 50 meters (164 feet) south of the project area (Figure 9; 2019 Aerial).

Conclusions

The documentary review of the proposed project parcel located indicates that it was used throughout its history as farmland and an outlying parcel. Based on the past use of the land for agriculture, there is

the possibility of encountering remains of farmhouses, outbuildings, stonewalls, or other evidence of post European Contact era farming.

CHAPTER V

PREVIOUS INVESTIGATIONS

Introduction

This chapter presents an overview of previous cultural resources research completed within the vicinity of the project area in Durham, Connecticut. This discussion provides the comparative data necessary for assessing the results of the current Phase IA cultural resources assessment survey, and it ensures that the potential impacts to all previously recorded cultural resources located within and adjacent to the project area are taken into consideration. Specifically, this chapter reviews previously identified archaeological sites, and National/State Register of Historic Places properties situated in the project region (Figures 11 and 12). 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 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, National/State Register of Historic Places Properties/District, and Inventoried Historic Standing Structure in the Vicinity of the Project Area

A review of data currently on file at the CT-SHPO, as well as the electronic site files maintained by Heritage, resulted in the identification of two previously identified archaeological sites located within 1.6 km (1 mi) of the project area (Table 2 and Figure 10). In addition, the Fairchild Merwin House and the John Swathel House, two Connecticut State Register of Historic Places properties, and the Main Street Historic District and the Thomas Lyman House, National Register of Historic places properties/districts, were also identified within 1.6 km (1 mi) of the project area (Figure 11). The identified cultural resources are described below.

Site 38-2

Site 38-2, which is also known as the Gastler Site, was recorded in April of 1979 by staff of the Connecticut Archaeological Society (CAS) (Figure 10). It is located on private land along Route 157 near the junction of Route 17 in Durham, Connecticut. The Archaic period camp site was surface collected by Hicks and Gastler, and the artifacts recovered included a single flint side-notched projectile point, quartz scrapers, and untyped flint projectile points. CAS staff noted that the presence of both flint and quartz tools would allow for a comparative study of the tool making process, as well as utilization of the raw materials. Site 38-2 has not been assessed applying the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]), however it is located within the boundaries of the current project area and may be impacted by the proposed construction.

Greenbackers Farm

The Greenbackers Farm Site is located on private land in Durham, Connecticut (Figure 10). It is unknown when the site was recorded or by whom, however it was characterized as a Paleoindian camp site, a rare site type on Connecticut. The site was surface collected, however the types of artifacts collected are unknown. The Greenbacker's Farm Site has not been assessed applying the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). It is located well enough away that the site will not be impacted by the proposed construction.

Fairchild Merwin House

The Fairchild Merwin House is located in a residential area along Haddam Quarter Road in Durham, Connecticut (Figure 11). It is situated approximately 800 meters (2,625 feet) to the southeast of the

proposed project parcel. This Lean-to/Saltbox style structure, which was constructed in ca., 1727, was recorded by H. C. Darbee and listed on the State Register of Historic Places on October 23, 1968. At the time of its listing, the house was described as appearing “newly painted and well maintained.” The house has a chimney of field stones that had been reconstructed. Original clapboards and handwrought nails were still present; however, it was noted that the windows had likely been replaced and were not original to the structure. The Fairchild Merwin House is located well enough away from the project area that it will not be directly impacted by the proposed construction.

John Swathel House

The John Swathel House is situated in a residential area along Maple Avenue in Deep River, Connecticut (Figure 11). The Colonial style structure was constructed in ca., 1780 by John Swathel Sr. The house was listed on the State Register of Historic Places in 1974. The house was described as having a central door that opens into a large hall with a wide staircase. A parlor is situated to the right and a sitting room to the left. At the end of the hall is a “keeping-room” with a large fireplace. To the right of the keeping-room is a “borning-room” which was common in Colonial houses of the time. The John Swathel House is a contributing element to the Main Street Historic District which is discussed below. The residence is well enough away from the project area that it will not be directly impacted by the proposed construction.

Thomas Lyman House

The Thomas Lyman House is located at 105 Middlefield Road in Durham, Connecticut (Figure 11). The Colonial style house is a two-and-a-half story, five bay, clapboard house with an overhang above the first floor. The front door has a five-paned light above it, and a small classical Doric porch shelters the door. The house was constructed in the late eighteenth century; however, it is unique in that it is covered with a truncated hip roof with two chimneys and two dormers. The residence was listed on the NRHP on November 20, 1975. It is located within the bounds of the Main Street Historic District, and it is located well enough away that it will not be impacted by the proposed construction.

Main Street Historic District

A Historic District Ordinance Referendum was passed in Durham by electors on June 25, 1973. The referendum created a Historic District and a Historic District Commission for the Town of Durham and became effective on July 17, 1973. The Main Street Historic District was then listed on the National Register of Historic Places in 1986 (Figure 11). As its name suggests, Main Street is the principal street in the district; however, several parallel streets located on the other side of Main Street also lie within the historic district. These include Brick Lane and Cherry Lane on the east and Maple Avenue and Town House Road on the west. The latter street borders the Town Green in the southern portion of the district. Portions of several cross streets, including Talcott Lane, Maiden Lane, Wallingford Road, and Fowler Avenue, are also included within the district. According to the National Register of Historic Places nomination form, this area contains 135 buildings, of which 112 and were built between 1708-1935. The remaining 23 buildings were built after 1935 and are non-contributing elements.

The District contains numerous examples of eighteenth century colonial period houses and public buildings erected in the Greek Revival style also represent the development of the town through its more than 200-year history. Also notable is the cross section of social classes and occupations represented in the Historic District. These include the more elaborate homes built by the descendants of the original European settlers, but also includes the more-simple dwellings of craftsmen, farmers, and housing built to accommodate laborers in the town’s various industries. Also included are examples of stores, shops, hotels, and taverns. The Main Street Historic District is considered significant because it

displays an exceptional degree of architectural integrity and craftsmanship. “Of particular note is the unusual number of well-preserved eighteenth-century houses, as well as the quality of the public buildings erected in the Greek Revival style.” The Main Street Historic District is located approximately 600 meters (1,969 feet) to the south of the project parcel; it is unlikely to be impacted by the proposed construction due to intervening vegetation.

Summary and Interpretations

The review of previously completed research in the vicinity of the project area and the analysis of cultural resources recorded nearby, indicates that the larger project region contains precontact Native American deposits. Archaeological sites occupied within the study region date from as early as the Late Archaic Period (ca., 4,500 years ago), suggesting that additional archaeological sites may be situated within the vicinity of the project area. In addition, post-European Contact period residences from the Colonial Period and later also exist in the project region. Therefore, additional post-European Contact period cultural resources may be located in the project area.

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 parcel in Durham, Connecticut. The following tasks were completed during this investigation: 1) study of the region's precontact era, post-European Contact period, and natural settings; 2) a literature search to identify and discuss previously recorded cultural resources in the area encompassing the project parcel; 3) a review of historical maps, topographic quadrangles, and aerial imagery depicting the project parcel in order to identify potential post-European Contact period resources and/or areas of past disturbance; and 4) pedestrian survey and photo-documentation of the project parcel in order to determine its archaeological sensitivity. These methods are in keeping with those required by the Connecticut State Historic Preservation Office 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 identify and assess the archaeological sensitivity of the project area, as well as to visually examine the area and record any previously unidentified cultural resources during pedestrian survey. The undertaking was comprehensive in nature, and project planning took into consideration the distribution of previously recorded cultural resources located within the project region, as well as the visual assessment of the project area. The methods used to complete this investigation were designed to provide coverage of all portions of the project area. The fieldwork portion of this undertaking entailed pedestrian survey, photo-documentation, and mapping (see below).

Archival Research & Literature Review

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

Field Methodology and Data Synthesis

Heritage performed fieldwork for the Phase IA cultural resources assessment survey of the project area with the proposed solar project in Durham, Connecticut in August of 2023. This included pedestrian survey, photo-documentation, and mapping. During the completion of the pedestrian survey, representatives from Heritage photo-documented all potential areas of impact using digital media.

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 area in Durham, Connecticut, as well as management recommendations for the proposed Facility. As stated in the introductory section of this report, the investigation involved the following tasks: 1) a contextual overview of the region's precontact, post European contact, and natural settings (e.g., soils, ecology, hydrology, etc.); 2) a literature search to identify and discuss previously recorded archaeological and cultural resources in the project region; 3) a review of readily available maps and aerial imagery depicting the project area in order to identify potential post-European Contact period resources and/or areas of past disturbance; 4) pedestrian survey and photo-documentation of the facility area to determine its archaeological sensitivity; and 5) preparation of the current Phase IA cultural resources assessment survey report.

Overall Sensitivity of the Proposed Facility

The field data associated with soils, slopes, aspect, distance to water, and previous disturbance collected during the pedestrian survey and presented above was used in conjunction with the analysis of historical maps, aerial images, and data regarding previously identified archaeological sites and National and State Register of Historic Places properties, and inventoried historical standing structures to stratify the Facility area into zones of no/low or moderate/high archaeological sensitivity. In general, post-European Contact period archaeological sites 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 precontact 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 precontact era archaeological sites, the project area was divided into areas of no/low, moderate, and/or high archaeological potential by analyzing the landform types, slope, aspect, soils contained within them, and their distance to water. In general, areas located less than 300 meters (1,000 feet) from a freshwater source and that contain slopes of less than 8 percent and well-drained soils possess a high potential for producing precontact era archaeological deposits. Those areas located between 300 and 600 meters (1,000 and 2,000 feet) from a freshwater source and well drained soils are considered moderate probability areas. This is in keeping with broadly based interpretations of precontact era settlement and subsistence models that are supported by decades of previous archaeological research throughout the region. It is also expected that there may be variability of precontact site types found in the moderate/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 meters (1,000 feet) but less than 600 meters (2,000 feet) 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 precontact era archaeological sites.

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

Results of Phase IA Survey and Management Recommendations

Heritage personnel conducted a pedestrian survey of the proposed project area in August of 2023. The pedestrian survey was supplemented by mapping and photo-documentation (Figure 12 and Photos 1 through 10). Elevations in the area range from 60 to 113 m (197 to 371 ft) NGVD. The predominant soil types located noted throughout the project parcel are Cheshire, Wethersfield, and Yalesville soils, which are well-drained loamy soils. The project area currently consists of undeveloped land that was used during the post-European Contact period as agricultural fields.

The results of the pedestrian survey indicate that the entirety of the Facility area contains low slopes, well-drained soils, and is located in close proximity to the Coginchaug River to the west, Sawmill Brook, and the Connecticut River to the east. In addition, there are two previously identified archaeological sites within 1.6 km (1 m) of the project area. The Archaic period Gastler Site (38-2), which was identified in 1979, is situated within the southern boundary of the southern section of the project area. Based on this combined information, the project area is deemed to possess moderate/high archaeological sensitivity for intact archaeological deposits, and it is recommended that it be subjected to Phase IB cultural resources survey prior to the construction of the proposed solar center.

Finally, two single dry laid stonewalls (Figure 12 and Photos 11 and 12) were identified along the eastern boundary of the southern portion of the project parcel during the pedestrian survey. It is recommended that, to the extent practicable, these stonewalls be left in place and that they be included on construction maps and marked with high visibility fencing in the field so that they are not impacted during construction.

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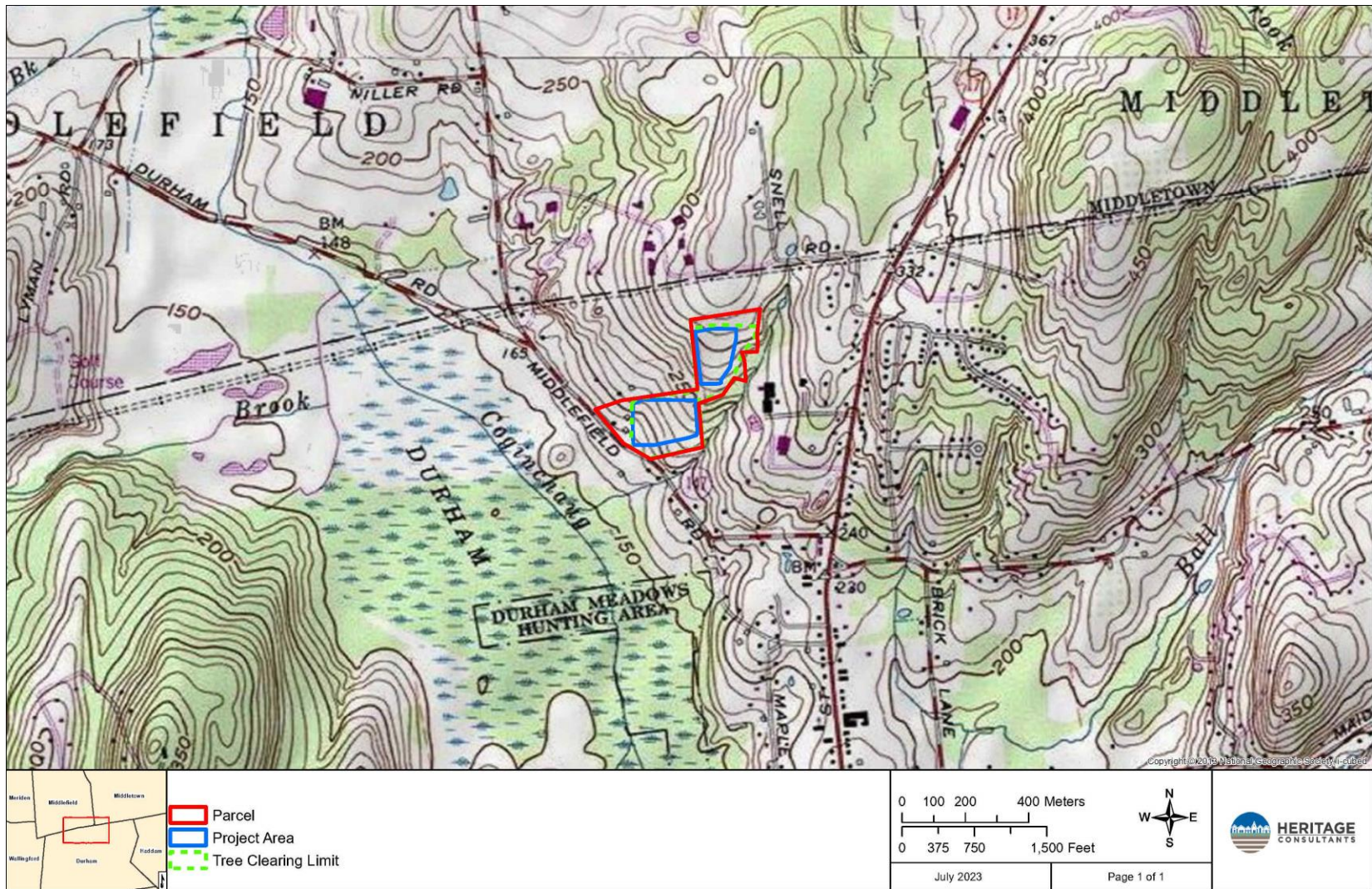


Figure 1. Excerpt from a USGS 7.5' series topographic quadrangle image showing the location of the project parcel in Durham, Connecticut.

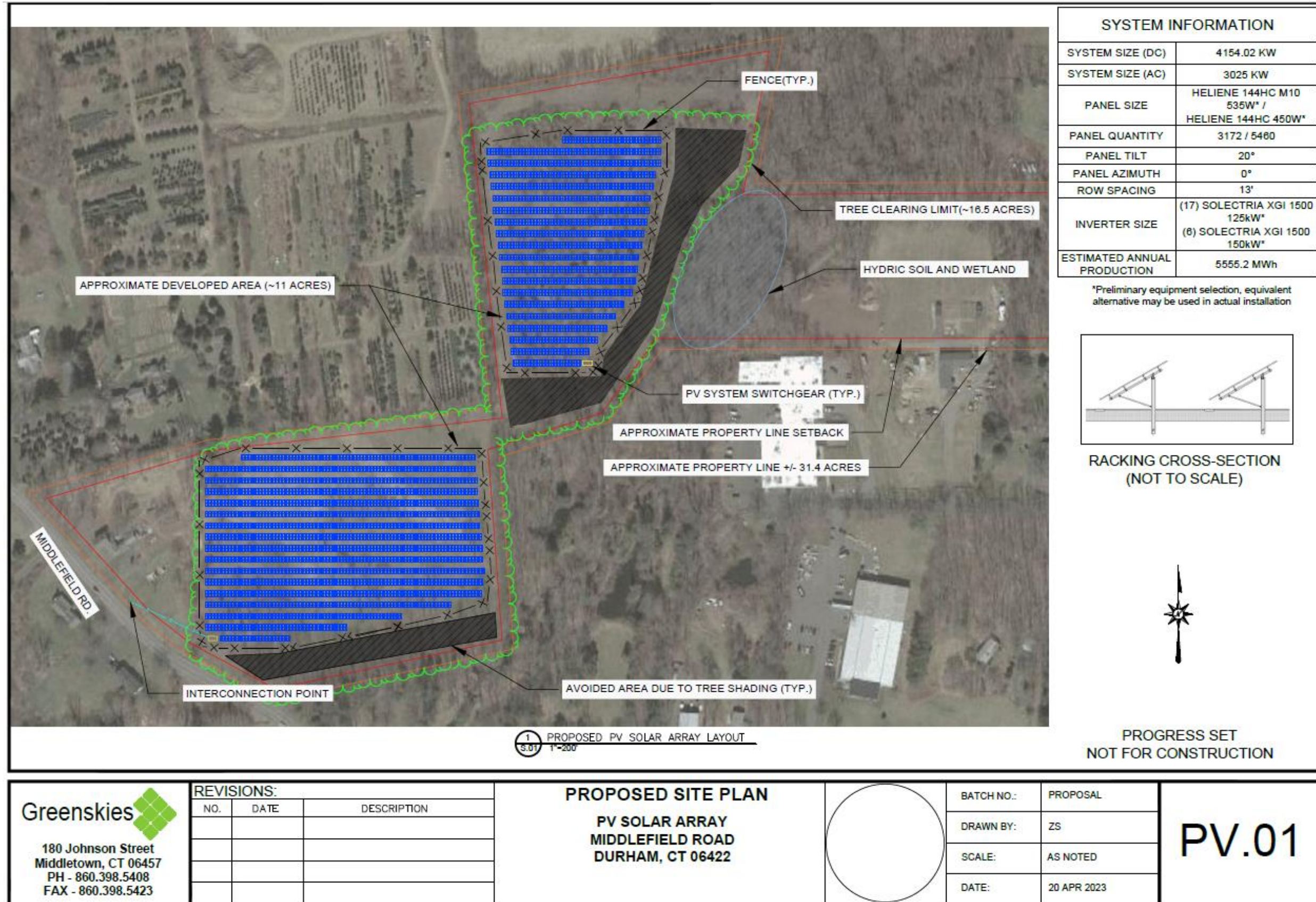


Figure 2. Proposed project plans for the solar along Middlefield Road in Durham, Connecticut.

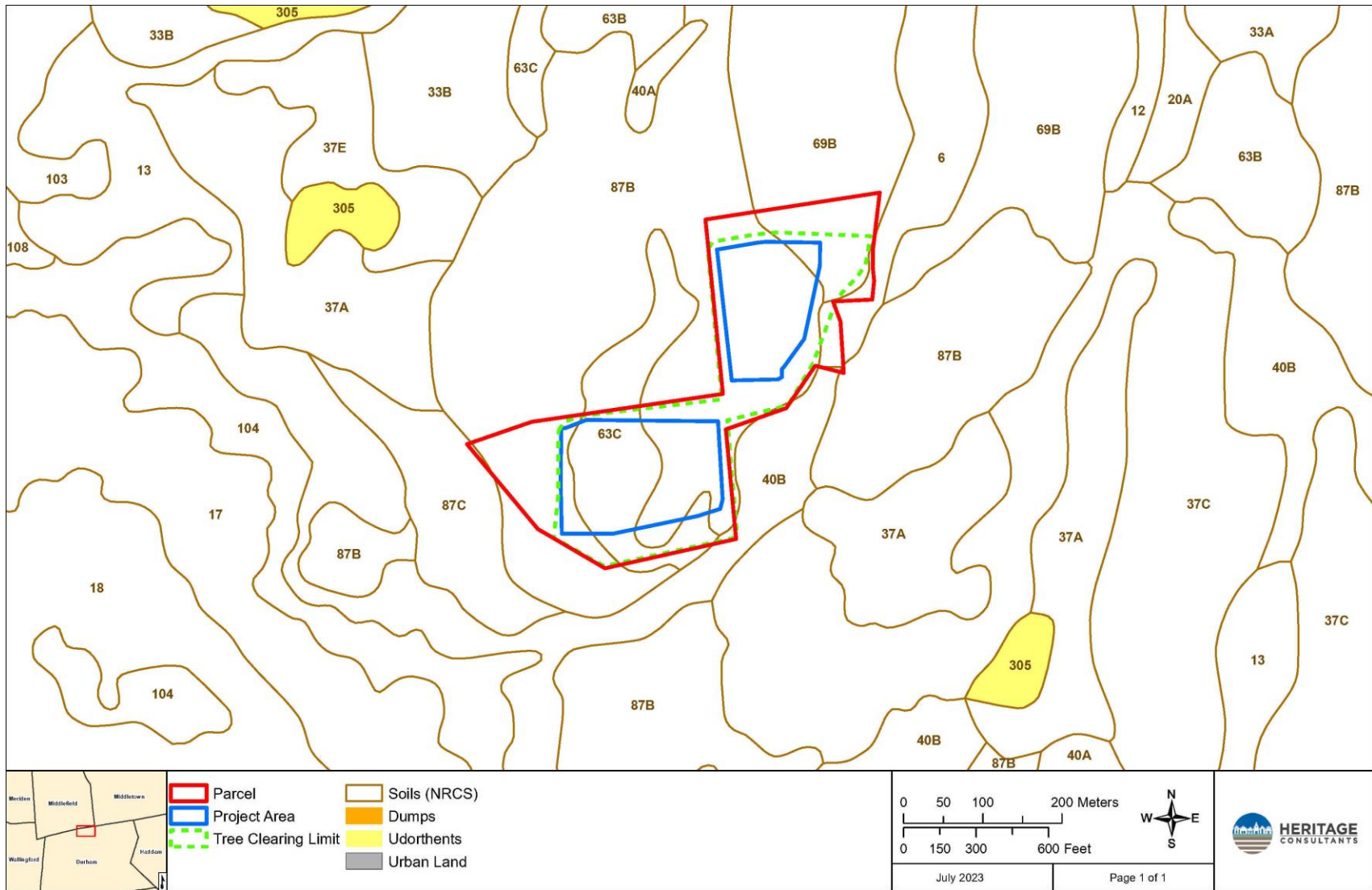


Figure 3. Digital map depicting the soil types present in the vicinity of the project parcel in Durham, Connecticut.

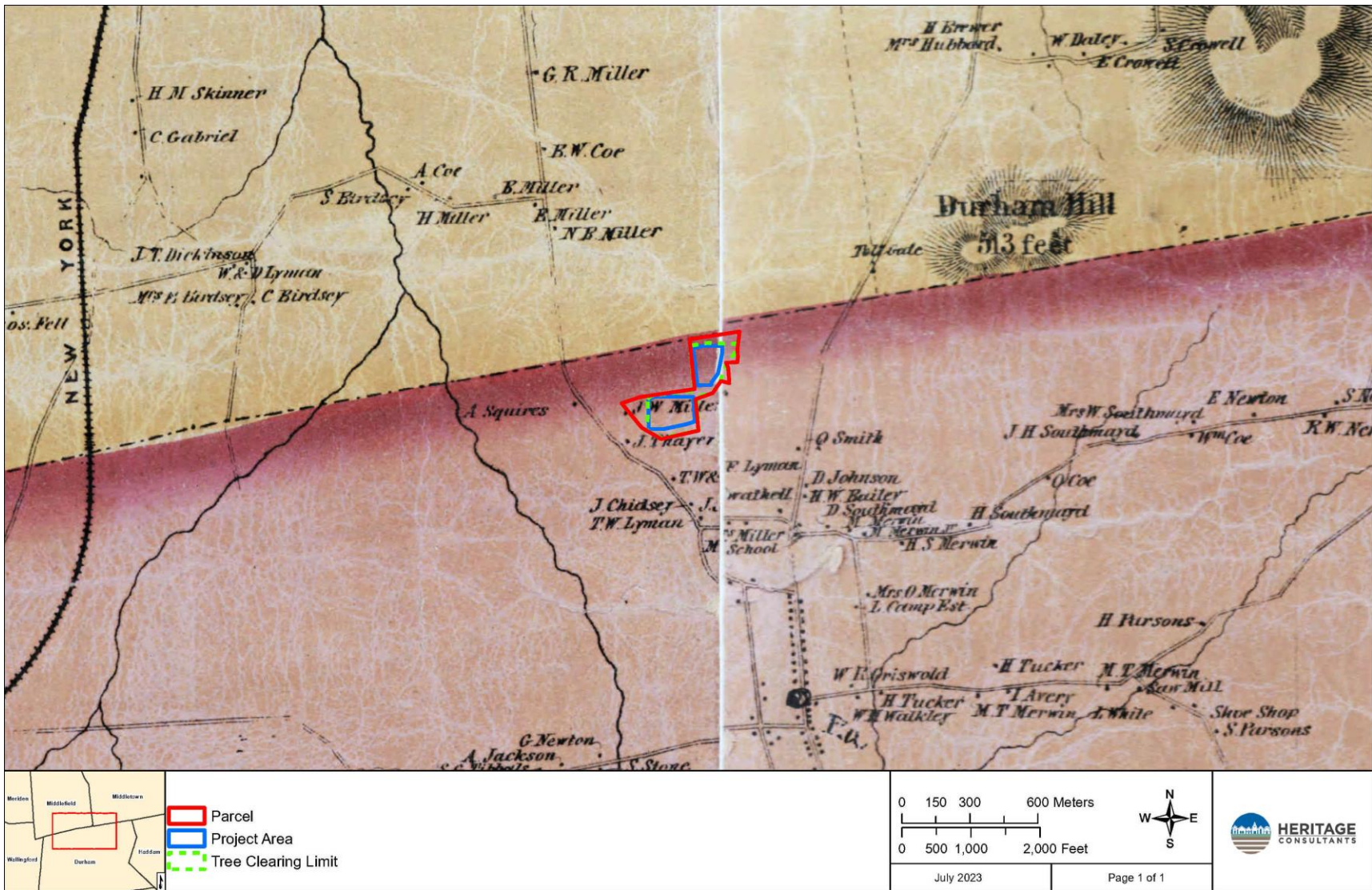


Figure 4. Excerpt from an 1859 map showing the location of the project parcel in Durham, Connecticut.

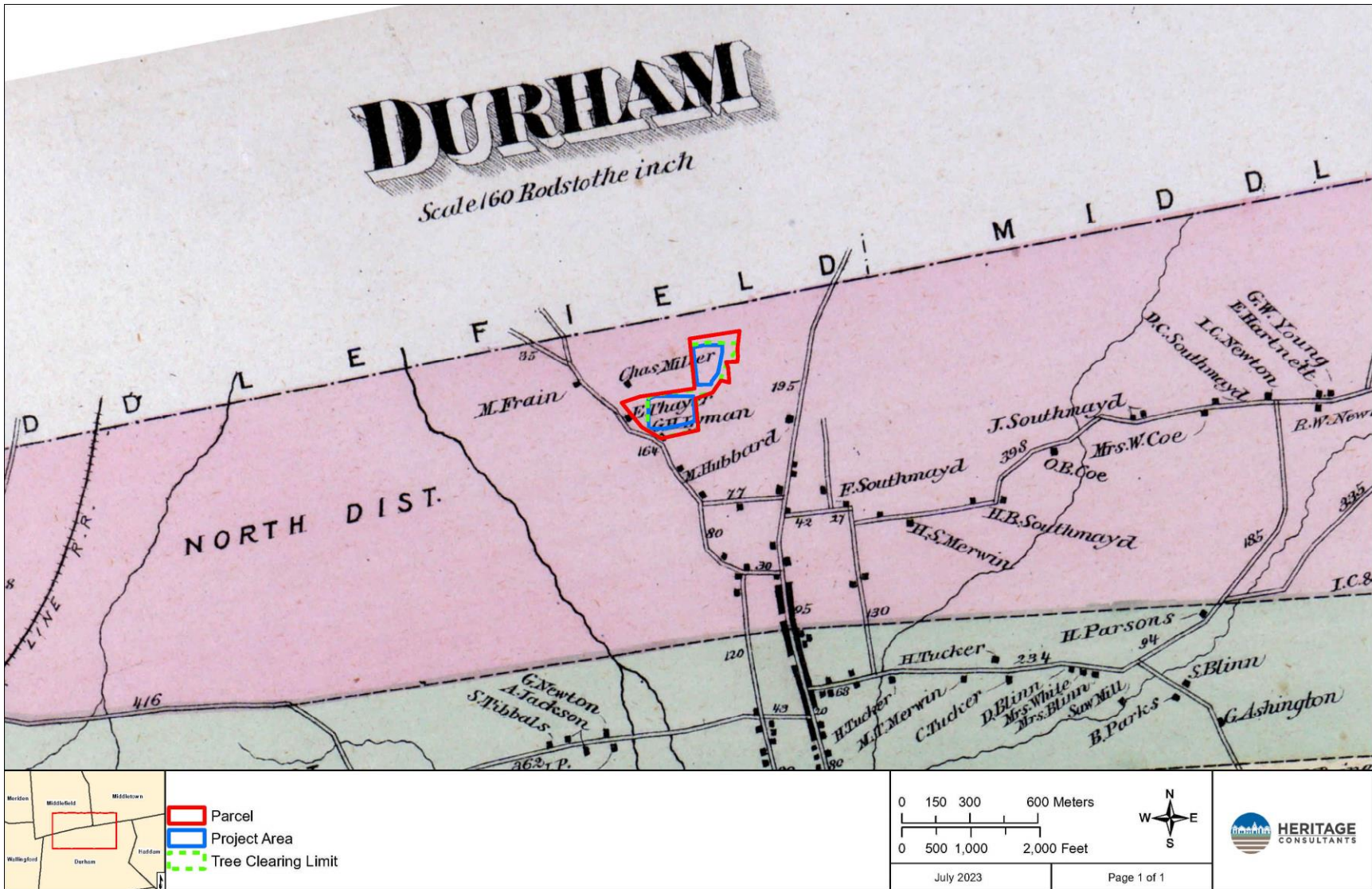


Figure 5. Excerpt from an 1874 map showing the location of the project parcel in Durham, Connecticut.

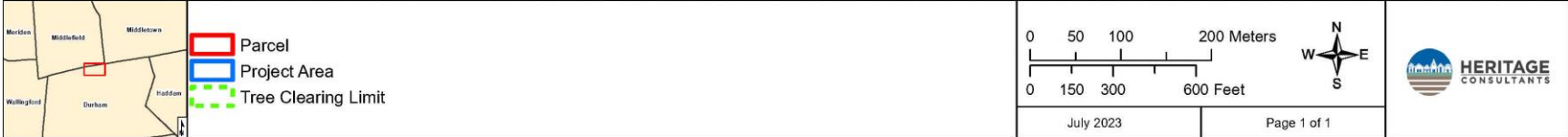


Figure 6. Excerpt from a 1934 aerial photograph showing the location of the project parcel in Durham, Connecticut.



Figure 7. Excerpt from a 1951 aerial photograph showing the location of the project parcel in Durham, Connecticut.

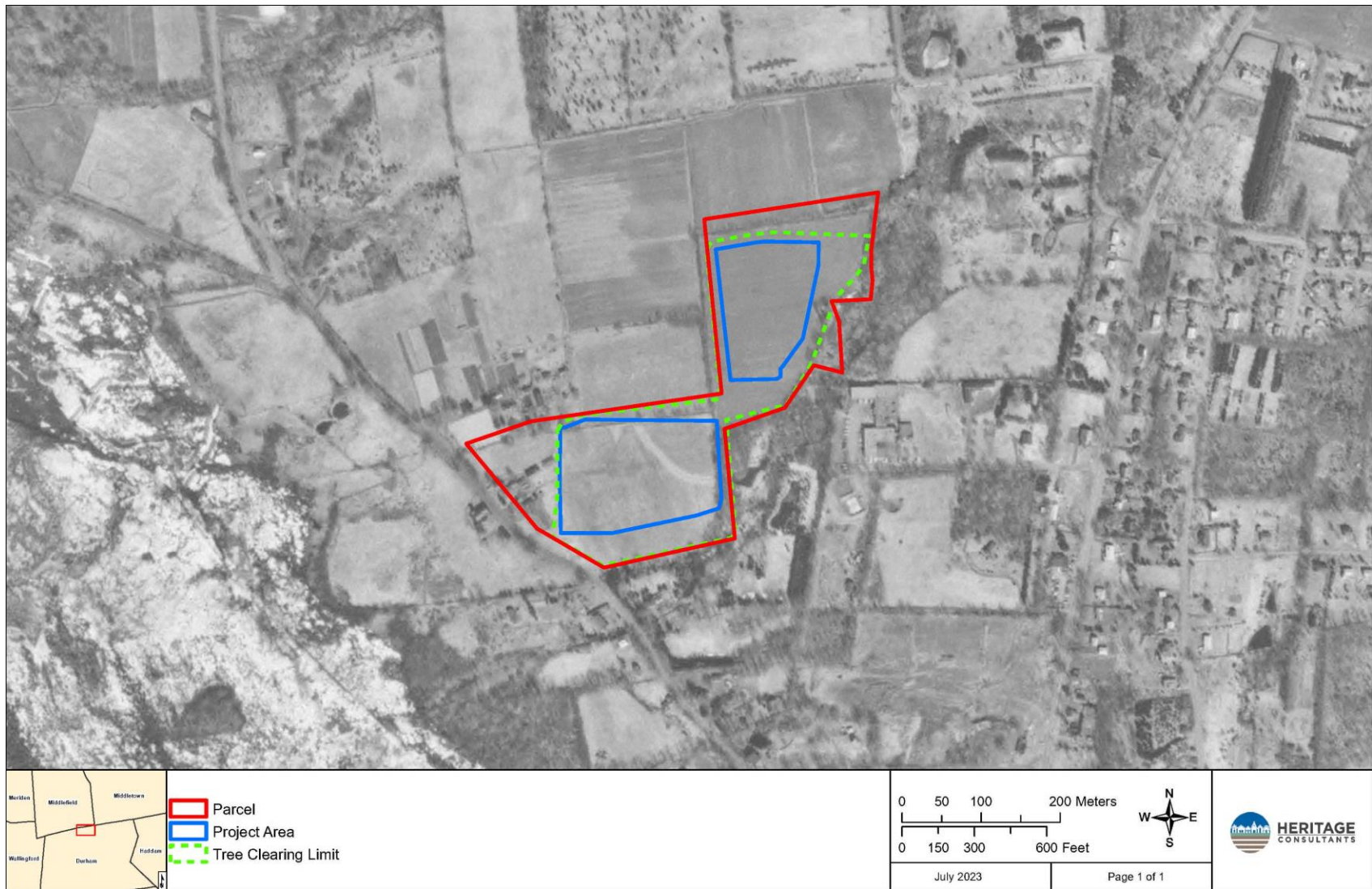


Figure 8. Excerpt of a 1970 aerial photograph showing the location of the project parcel in Durham, Connecticut.

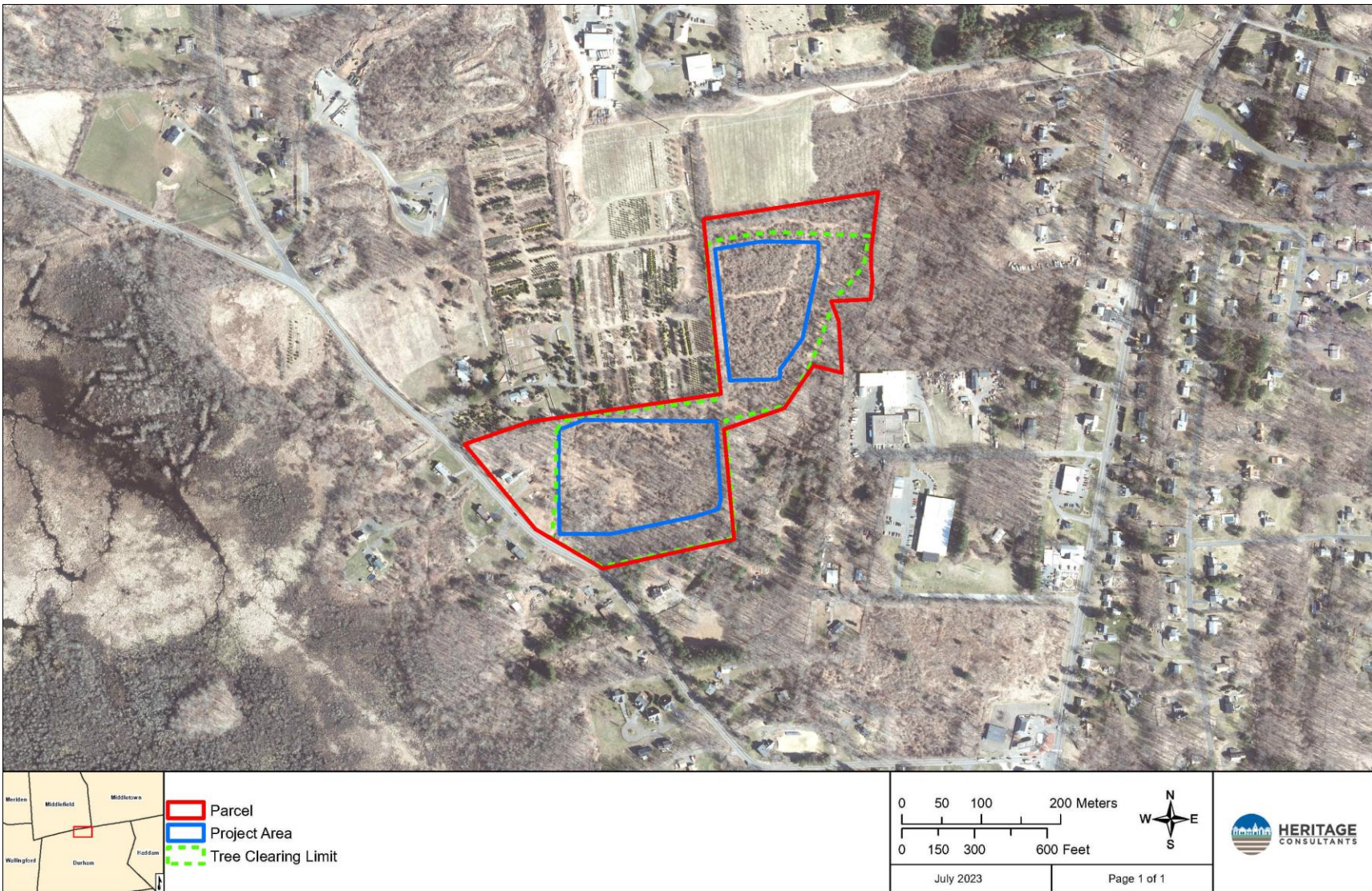


Figure 9. Excerpt of a 2019 aerial photograph showing the location of the project parcel in Durham, Connecticut.

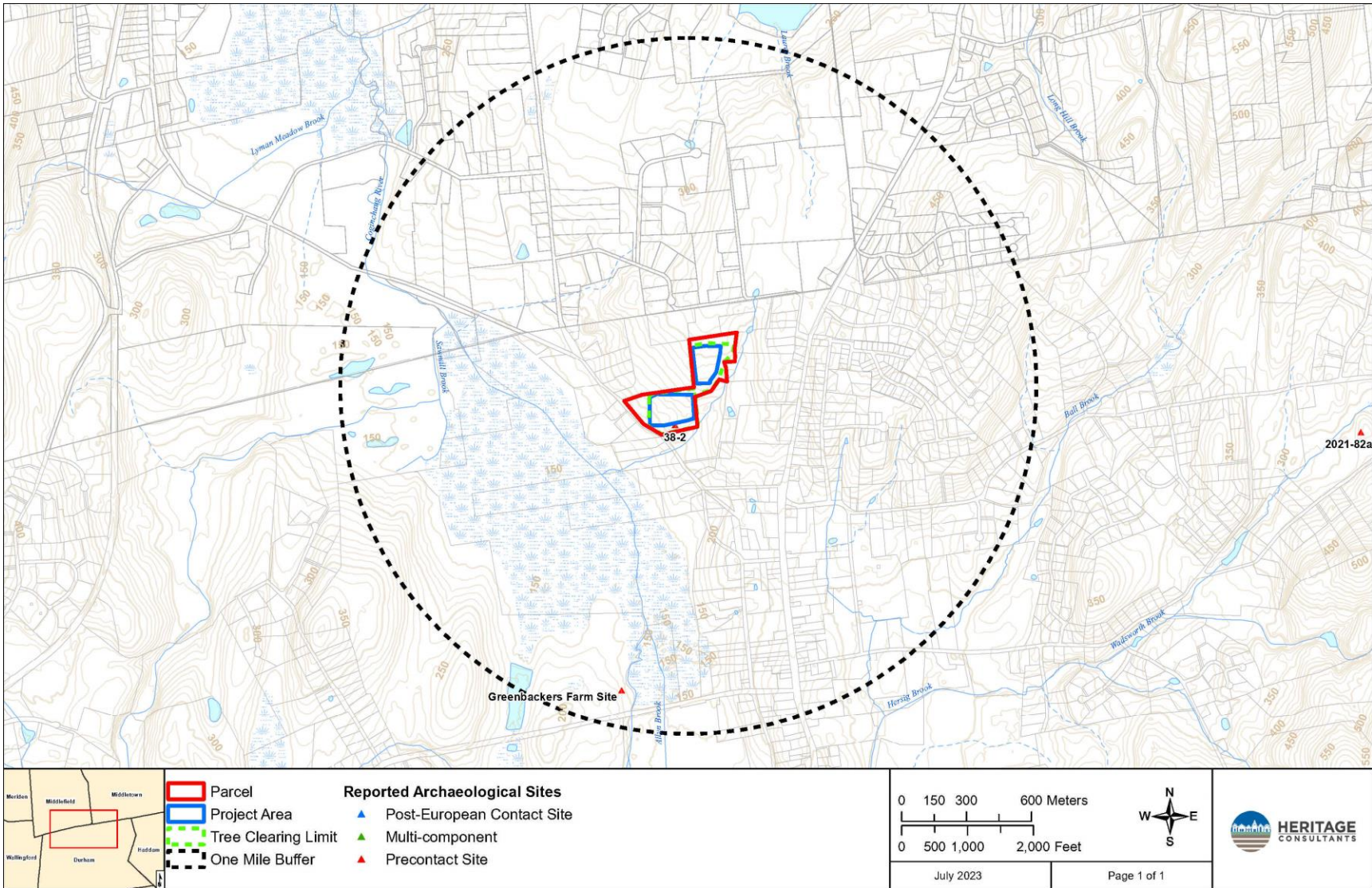


Figure 10. Digital map depicting the locations of the previously identified archaeological sites in the vicinity of the project parcel in Durham, Connecticut.

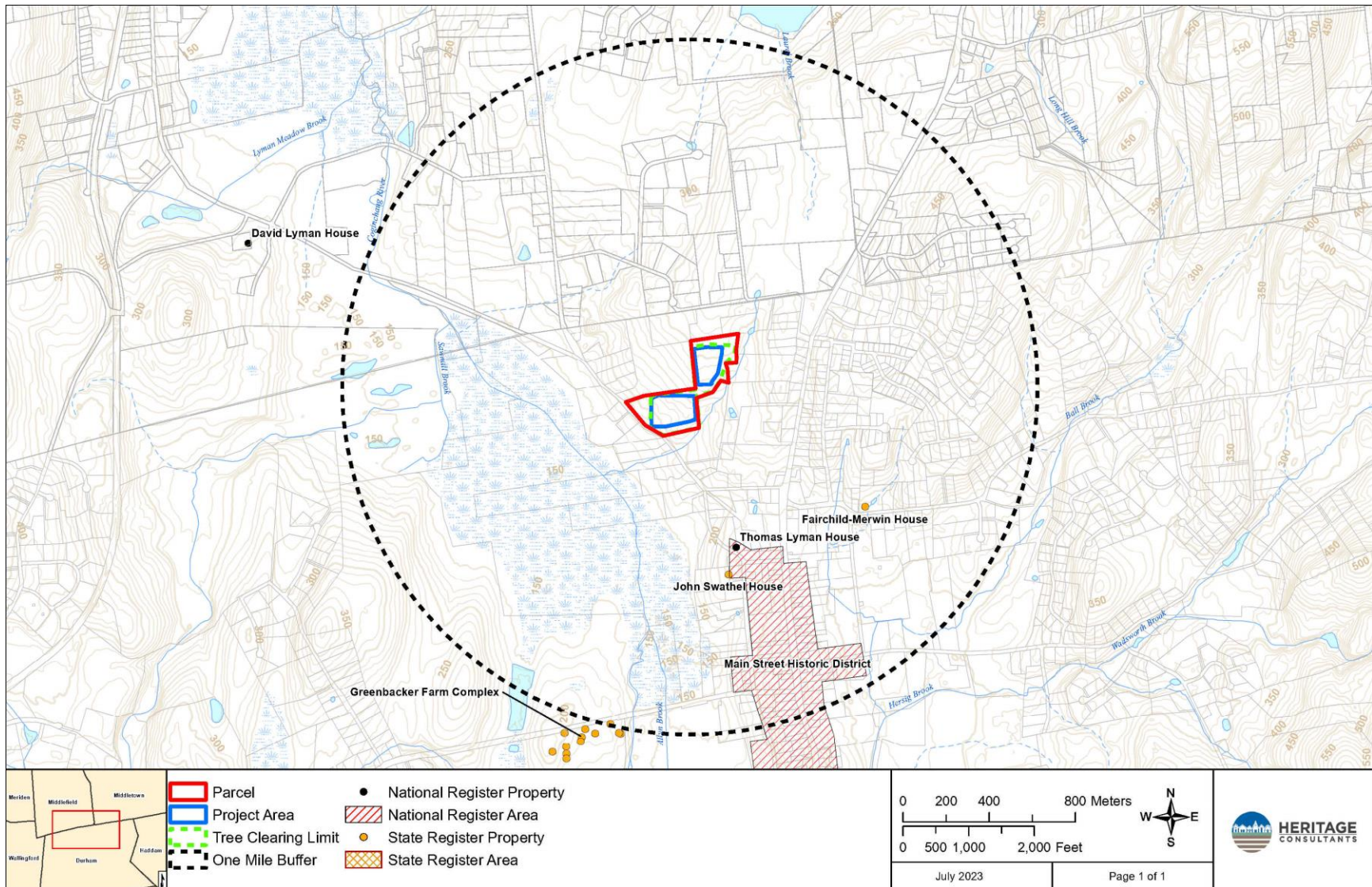


Figure 11. Digital map depicting the locations of the previously identified National Register of Historic Places and State Register of Historic Places properties in the vicinity of the project parcel in Durham, Connecticut.

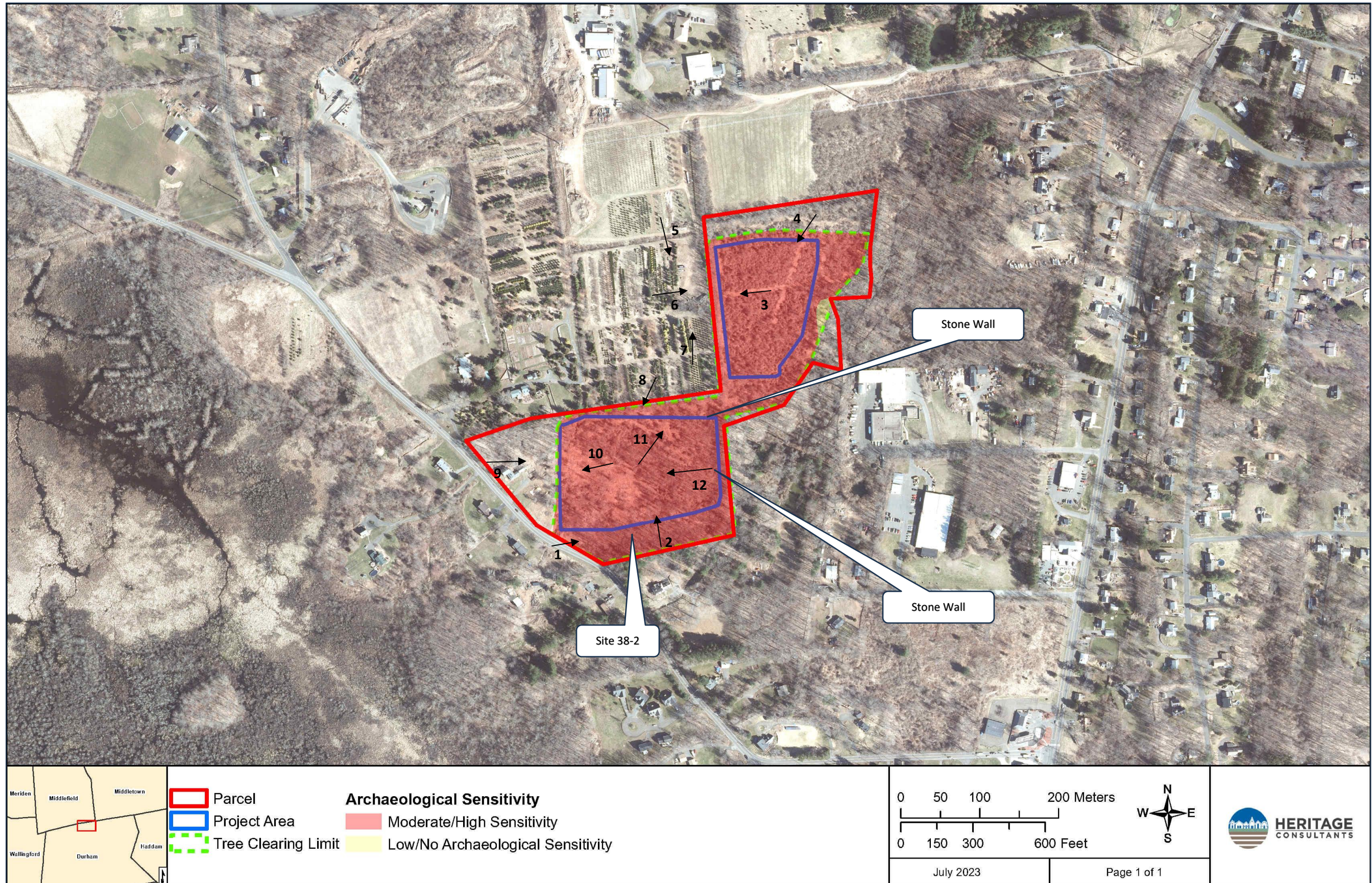


Figure 12. Excerpt from a 2019 aerial photograph showing areas of Moderate/High and No/Low Archaeological Sensitivity with directional arrows of photos taken for the proposed solar facility along Middlefield Road in Durham, Connecticut.



Photo 1. Overview photo from southern portion of project parcel. Photo taken facing east.



Photo 2. Overview photo from southeast corner of southern portion of project parcel. Photo taken facing north.



Photo 3. Overview photo from eastern boundary of northern section of project parcel. Photo taken facing west.



Photo 4. Overview photo from northeast corner of northern section of project parcel. Photo taken facing southwest.



Photo 5. Overview photo from northwest corner of northern of project parcel. Photo taken facing south.



Photo 6. Overview photo from western boundary of northern section of project parcel. Photo taken facing east.



Photo 7. Overview photo from western boundary of northern section of project parcel. Photo taken facing north.



Photo 8. Overview photo from northeast corner of southern section of project parcel. Photo taken facing southwest.



Photo 9. Overview photo from western boundary of southern section of project parcel. Photo taken facing east.



Photo 10. Overview photo from center of southern section of project parcel. Photo taken facing west.



Photo 11. Overview photo of stone wall in the northeast corner of southern section of project parcel. Photo taken facing northeast.



Photo 12. Overview photo of stone wall along eastern boundary of southern section of project parcel. Photo taken facing north.