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CULTURAL RESOURCES ASSESSMENT (PHASE IA) SURVEY OF THE
PROPOSED VEROGY NORTH HAVEN SOLAR TWO PROJECT IN
NORTH HAVEN, CONNECTICUT

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ABSTRACT

This report presents the results of a Phase IA Cultural Resources Assessment Survey for a proposed solar facility (the Project) in North Haven, Connecticut. Development of the area will include the construction of a solar array facility and associated infrastructure, including an access road. The Project parcel encompasses approximately 165.8 acres of land; however, the proposed project area will include only 10.8 acres of land. Heritage Consultants, LLC completed the Phase IA cultural resources assessment survey of the 10.8 acre project area on behalf of Vanasse Hangen Brustlin, Inc., in March of 2026. Pedestrian survey revealed that approximately 1.8 acres of the project area were characterized by wetlands, steep sloping topography, and/or located in areas of previous disturbances. These areas retain a no/low archaeological sensitivity and no further archaeological examination of them is recommended. The remaining 9.0 acres were determined to retain moderate/high archaeological sensitivity for intact archaeological deposits due to the presence of gently sloping topography, well drained soils, and proximity to freshwater sources. These areas were classified into two sensitivity areas. Heritage recommends that these area be subjected to Phase IB survey prior to construction.

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CHAPTER I

INTRODUCTION

This report presents the results of a Phase IA cultural resources assessment survey of a proposed solar facility, the Verogy North Haven Solar Two Project (the Project), in North Haven, Connecticut. Development of the area will include the construction of solar array facility and associated infrastructure, including an access road (Figure 1). The Project parcel encompasses approximately 165.8 acres of land; however, the proposed Project area) includes only 10.8 acres of the larger parcel. Vanasse Hangen Brustlin, Inc., (VHB) requested that Heritage Consultants, LLC (Heritage) complete the assessment survey as part of the planning process for the Project. Heritage completed this investigation in March of 2026. All work associated with this survey 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 proposed Project will consist of a solar array and associated infrastructure, including an access road. The Project parcel is situated at elevations ranging from 13 to 19 meters (42.7 to 62.3 feet) NGVD. It is situated to the north of Velvet Street in North Haven, Connecticut. The parcel is bound by All Saints Cemetery and residential development to the south, Muddy River and Mill Road to the west, forest and residential development to the north, and a combination of forest, farmland, residential development, and existing solar arrays to the east. The Phase IA cultural resources assessment survey of the Project area consisted of the completion of the following tasks: 1) a contextual overview of the region's precontact era, post-European Contact period, and natural settings (e.g., soils, ecology, hydrology, etc.); 2) a literature search to identify and discuss previously recorded cultural resources in the region encompassing the parcel; 3) a review of readily available maps and aerial imagery depicting the Project parcels 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 area in order to assess its archaeological sensitivity.

Project Results and Management Recommendations Overview

The review of maps and aerial images depicting the Project area and files maintained by the CT-SHPO resulted in the identification of two previously identified archaeological sites, one National Register of Historic Places property, and one State Register of Historic Places property located within 1.6 kilometers (1.0 mile) of the Project area. The presence of previously identified archaeological sites in the Project region combined with the area's gently sloping topography, well drained soils and proximity to freshwater sources suggest that portions of the Project area could have been the location of precontact era and/or post-European Contact period settlement and use.

The pedestrian survey of the Project area was completed in March of 2026. Despite thorough survey, no above-ground archaeological resources were identified within the Project area. Of the 10.8 acres examined, 1.8 acres were determined to possess no/low archaeological sensitivity because they were located in wetlands, on steep sloping topography, or in areas characterized by previous disturbances. The remaining 9.0 acres, which were characterized by low sloping topography and well drained soils in largely undisturbed areas, were determined to retain moderate/high archaeological sensitivity for intact archaeological resources. These moderate/high sensitivity zones included two sensitivity areas that were designated as Sensitivity Areas SA-1 and SA-2. Sensitivity Area SA-1 encompasses 5.8 acres of land

and Sensitivity Area SA 2 encompasses 3.2 acres. Heritage recommends that Sensitivity Areas SA-1 and SA-2 be subjected to Phase IB subsurface testing prior to construction.

Project Personnel

Key personnel who worked on this project included David R. George, M.A., RPA, (Principal Investigator); Eric M. Heffter, Ph.D., R.P.A (Senior Project Manager); Christopher Brouillette, B.A. (Project Archaeologist); William Yerxa, M.A. (Historian); and Kody Messier, B.A. (GIS Specialist).

CHAPTER II

NATURAL SETTING

Introduction

This chapter provides a brief overview of the natural setting of the region containing the proposed solar Project in North Haven, Connecticut. Previous archaeological research has documented that 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 present, degree of slopes, and soils situated within a given study area. The remainder of this chapter 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 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). The Project area exists in the Western Coastal ecoregion. A summary of this ecoregion is presented below. It is followed by a discussion of hydrology and soils found in and adjacent to the Project.

Western Coastal Ecoregion

The Western Coastal ecoregion consists of a hilly terrain that extends from Connecticut’s coastline to approximately 5 to 7 miles to the north of Long Island Sound (Dowhan and Craig 1976). It is characterized by “coastlands, including extensive tidal marshes, sand beaches, and estuaries, by relatively level but rolling near-shore lands, and by locally rugged and rocky protrusions of upland extending to the shoreline” (Dowhan and Craig 1976:38). Elevations in the Western Coastal ecoregion range from sea level to 152 m (500 ft) NGVD (Bell 1985). The bedrock of the area is primarily metamorphic in origin, and it is composed of schists and gneisses deposited during the Paleozoic (Bell 1985). Soils in the region have developed on top of glacial till in upland locales and on top of stratified deposits of silts and sands in the valleys. Soils along the coast are developed upon coastal and tidal deposits (Dowhan and Craig 1976). This ecoregion is also characterized by numerous ponds, rivers, streams, brooks, and wetland areas.

Hydrology of the Project Area

The Project area is located within close proximity of several streams and ponds. Major fresh water sources in this area include the Muddy River and Eightmile Brook. 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. These water sources also provided the impetus for the construction of water powered mill facilities during the eighteenth and nineteenth centuries.

Soils Comprising the Project Area

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 many 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 Project area. In contrast, acidic soils enhance the preservation of charred plant remains.

A total of three soil types were identified within the Project area: Branford (30B), Manchester (37C), and Udorthents – Pits Complex (305) (Figure 2). When well drained soils such as the Branford and Manchester series remain undisturbed and on less than eight percent slope, they are generally well correlated with precontact era and post-European Contact period site locations and are considered to have higher archaeological sensitivity. Udorthents-Pits Complex soils are considered stratigraphically disturbed and likewise are not well correlated with archaeological sites. Below is a summary of each specific soil type identified within the Project area.

Branford (30B)

The Branford series consists of very deep, well drained soils formed in loamy over sandy and gravelly outwash. They are nearly level to strongly sloping soils on outwash plains and terraces. Slope ranges from 0 to 15 percent. A typical profile associated with Branford soils is as follows: **Ap**--0 to 8 inches; dark reddish brown (5YR 3/3) silt loam, light reddish brown (5YR 6/3) dry; weak medium granular structure; friable; common very fine and fine roots; 10 percent gravel; moderately acid; clear smooth boundary. **Bw1**--8 to 18 inches; reddish brown (5YR 4/4) loam; weak medium subangular blocky structure; friable; few fine roots; common earthworm holes and worm casts; 10 percent gravel; strongly acid; gradual wavy boundary. **Bw2**--18 to 24 inches; reddish brown (5YR 4/4) loam; weak coarse subangular blocky structure; very friable; few fine roots; 14 percent gravel; strongly acid; clear wavy boundary. **2C**--24 to 65 inches; reddish brown (5YR 4/3) stratified sand and gravel; single grain; loose; 25 percent gravel; strongly acid.

Manchester (37C)

The Manchester series consists of very deep, excessively drained soils formed in sandy and gravelly glacial outwash and stratified drift. They are nearly level to steep soils on outwash plains, terraces, kames, deltas and eskers. Slope ranges from 0 to 45 percent. A typical soil profile 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.

Udorthents - Pits Complex (305)

The Udorthents-Pits complex consists of well drained to moderately well drained soils that have been altered by cutting, filling, or grading. The areas either have had two feet or more of the upper part of the original soil removed or have more than two feet of fill material on top of the original soil. Udorthents-Pits or Made Land soils can be found on any soil parent material but are typically fluvial on glacial till plains and outwash plains and stream terraces.

Summary

A review of mapping, geological data, ecological conditions, soils, slopes, and proximity to freshwater suggests that portions of the Project area appear to be amenable to both precontact era and post-European Contact period occupations. This includes areas of low to moderate slopes with well-drained soil located near freshwater sources. The types of precontact sites that may be contained in these areas include task specific, temporary, or seasonal base camps, which may include areas of lithic tool manufacturing, hearths, post-molds, and storage pits.

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 period 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 period 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 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 precontact 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 precontact period of Connecticut. The remainder of this chapter provides an overview of the precontact setting of the region encompassing the Project area.

Paleo-Indian Period (13,000 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 (Bellantoni 1995), 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) is in Washington, Connecticut and 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 most 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. 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 represented 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 (Leslie 2023). They include examples of a fluted point base, preforms, channel flakes, pièces esquillées, end scrapers, side scrapers, grinding stones, bifaces, utilized flakes, graters, and a drilled stone pendant fragment. 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. Botanicals recovered in hearth features included burned remains of cattail, pin cherry, strawberry, acorn, sumac, water lily, and dogwood (Leslie 2023). Approximately 15,000 artifacts were collected from the site.

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, the recovery of these projectile points has 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±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 as the collection of a wide range of plant foods (McBride 1984; Snow 1980:228).

The Narrow-Stemmed Tradition also marks one of the most prevalent manifestations of the archaeological record in southern New England, narrow-stemmed projectile points, often untyped, or typed as Lamoka, Wading River, or Squibnocket Stemmed forms. These are generally attributed to a form of projectile technology, but some (Boudreau 2008), have suggested that these tool forms might not be related to projectile technology, and may instead relate to graver or drill functions. Boudreau (2008) also drew important connections to the forms of these narrow-stemmed points with later Woodland era forms, such as Rossville points, which are nearly identical. Others (Lavin 2013; Zoto 2019) have similarly suggested a continuation of the Narrow-Stemmed Tradition into the Woodland era, with most of this evidence originating at coastal sites in southern New England. The vast majority of Narrow-Stemmed projectile points that are associated with cultural features suitable for radiocarbon dating, particularly Lamoka style projectile points, are associated with Late Archaic date ranges (Lavin 2013).

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 periods. 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 archaeologists. 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 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 indicate 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 Precontact Period

The precontact period 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 Project is located in the town of North Haven, in New Haven County, Connecticut. Originally part of New Haven Colony, the town of North Haven was incorporated in 1786. The town of North Haven began as an agrarian community, but it has developed into a suburban center with substantial commercial development. This chapter presents an overview history of New Haven County and the town of North Haven, as well as data more specific to the Project area.

New Haven County

New Haven was one of the four original counties established in 1666 following the merger of Connecticut Colony and New Haven Colony (Van Dusen 1961). Located in southern Connecticut, it is bounded in the south by Long Island Sound, east by Middlesex County, north by Hartford and Litchfield Counties, and west by Fairfield County and is the fifth-largest county in Connecticut by total area. Its landscape includes rich farmland, upland regions to the north, significant freshwater rivers, and an extended shoreline on Long Island Sound. Important waterways associated with New Haven County include the Hammonasset, East, West, Farm, Quinnipiac, Mill, Oyster, Indian, and Wepawaug Rivers (Rockey 1892). The shoreline also has many smaller rivers, harbors, islands, and inlets. The county's three largest cities are New Haven, Waterbury, and Meriden. Other important population centers are located at West Haven, Milford, and Ansonia (Connecticut 2021).

Woodland Period to Seventeenth Century

During the Woodland Period of northeastern North American history (about 3,000 to 500 years ago), the Indigenous peoples who resided in what is now Connecticut were part of the greater Algonquian culture of northeastern North America (Lavin 2013). They spoke local variations of Southern New England Algonquian (SNEA) 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 habitation, known as a *weetu* or *wigwam*, was 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. Native communities commonly traded among their immediate neighbors and often maintained long-distance networks as well (Lavin 2013). At the time of the arrival of Europeans, some of the prominent Native nations within the present-day bounds of New Haven County included the Paugussett, Quinnipiac, Tunxis, and Wangunk people. These groups were closely connected through kinship, culture, language, and trade. The area that is now North Haven was part of the Quinnipiac homeland, which ran along the shoreline from parts of West Haven to New Haven, East Haven, Branford, North Branford, Guilford, and

Madison but also included the towns of Wallingford, Hamden, Woodbridge, Bethany, and parts of Prospect and Cheshire (De Forest 1852; Lavin 2013).

As Native communities maintained oral tradition rather than a written record, most surviving information of the Indigenous people of present-day Connecticut was recorded by European observers, (Lavin 2013). The earliest Europeans known to have entered Long Island Sound, the Connecticut River, and the western Connecticut shoreline were the Dutch in ca., 1614 (Rockey 1892). The Dutch established trade relationships with Native people of the area, among which included the Pequot in what is now southeastern Connecticut and likely the Quinnipiac and Paugussett in present-day New Haven County. By 1624, the Dutch West India Company formally established the colony of New Netherland centered around Manhattan and the Hudson River, but its eastern bounds extended as far as Cape Cod, which included present-day New Haven County (Jacobs 2009). Through their relationship with the Dutch, the Pequot had steady access to a variety of European trade goods. They extended their dominance over the Connecticut shoreline, eastern Long Island, and the lower Connecticut River Valley, bringing all the Native nations in those areas, including the Quinnipiac, into a tributary relationship under their leadership (Hauptman & Wherry 2009; McBride 2013).

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, one epidemic spread through the region impacting the Pequot and may have affected the Quinnipiac as well. Tensions between Native and European groups laying claim to the Connecticut River resulted in the death of several English traders between 1634 and 1636, which colonists 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. 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). Numerous clashes took place until 1637, when English forces pursued Pequot refugees west through present-day New Haven County. In July 1637, the Pequot were defeated in present-day Fairfield and the war soon came to an end. After the war, the Connecticut English claimed Pequot territory as conquered lands for their newly established colony (Cave 1996).

Massachusetts Bay veterans of the Pequot War reported on the rich lands west of the Connecticut River and by September 1637, men were sent to survey the coast for settlement. Land near Quinnipiac Harbor and the nearby Quinnipiac River was selected as the site of a future colony. In April 1638, a company of 300 English settlers under the leadership of the Reverend John Davenport arrived at Quinnipiac. They negotiated with the Quinnipiac Sachem Momaugin for land upon which they could settle and soon after founded New Haven Colony. Lands were reserved on the east side of the river for the Quinnipiac. The settlement expanded rapidly as English planters acquired rights to land along the coast from other Quinnipiac and Paugussett Sachems (Rockey 1892). In the same year as the treaty between Momaugin and the settlers from Massachusetts, members of the New Haven Colony signed an agreement with Montowese, a Quinnipiac sachem from further north. This agreement transferred to the English an area called Totoket, which consisted of land located on both sides of the Quinnipiac River, as far east as what is now the town of Branford, as far north as the town of Cheshire, and as far west as the town of Woodbridge. In exchange, the Native population received some goods, a small reservation, and hunting rights to the Totoket area (Crofut 1937; De Forest 1852). This deed was renewed in 1645, and in 1681 Montowese's sister and others received an unspecified sum of money to clear the town's title to this tract (Davis 1870). Continued colonial encroachments forced the Indigenous population to relinquish more of their land. Some members of the Quinnipiac tribe moved north to what is now Waterbury and

Farmington as well as west to New York. Others continued to live in local villages or moved to cities (Grant-Costa 2021).

Eighteenth through Twenty-first Century

North Haven is bisected by the Quinnipiac River, which encouraged early settlement. North Haven's earliest settler arrived in 1640 and the town developed into a small farming community in New Haven called Northeast Village. By 1716, the community consisted of 40 households and 200 to 300 people, mostly farmers, and it was made into a parish that year. Northeast Village's waterways were the site of a number of mills, as well as being used to transport lumber south to New Haven (Thorpe 1892a). Much of this lumber was also used in shipbuilding as the Quinnipiac River was wide enough to support large ocean-going ships (Iverson 2023). Brickmaking became a prominent industry after 1720, when locals began using abundant clay deposits found along the riverbanks to supply brickyards (Thorpe 1892a). At that time, the Quinnipiac River continued to draw Indigenous people to the area seasonally for fishing and fowling along its banks (Barber 1836). Slavery existed in New Haven County since the seventeenth century and by the eighteenth century it was primarily practiced by wealthy families, merchants, and ministers in larger towns. The 1774 Connecticut colonial census recorded a white population of 25,896, a black population of 2,036, and 71 Native Americans in New Haven County, although it does not state the number of enslaved individuals (Hoadly 1887).

During the American Revolution (1775-1783), Connecticut played an important role in the process of recruiting soldiers, supplying food stores, and providing a variety of military goods for the war effort. The British occupation of New York City beginning in 1776 led Connecticut officials to fear attacks on the western shoreline, particularly New Haven, due to the proximity to the British. Artillery batteries were on the west side of New Haven harbor. Throughout the war, the Connecticut shoreline suffered from raids from Long Island-based Loyalists who would take cattle and sheep to sell in British New York. In 1779, several western Connecticut shoreline towns were invaded in what became known as "Tryon's Raid," when British troops looted and set fire to the towns before reembarking (Lambert 1838; Van Dusen 1961). After the Revolution, Connecticut recovered from wartime economic disruptions thanks to its robust agricultural production and maritime trade. That same year, 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). As the century progressed, Northeast Village grew and in 1786, the parish incorporated as the town of North Haven (Thorpe 1892a). As of 1790, North Haven had 1,236 residents (Table 1; Connecticut 2022a).

By the early nineteenth century, North Haven was producing a significant amount of goods for the New Haven market. These included vegetables, hay, and most of the four and a half million bricks the town produced annually (Barber 1836). The town was also home to several distilleries (Thorpe 1892b). The village of Clintonville, at the northeast corner of North Haven, hosted several industries, including Clintonville Agricultural Works, which produced corn shellers, horse rakes, and other farm implements (Hill 1918). The arrival of the railroad in 1839 connected North Haven to New York City, which helped to bolster these industries. North Haven, like many Connecticut towns, provided men and resources during the Civil War; from North Haven 102 men served in the Union army (Hines 2002). In the post-war era, transportation improvements continued and in 1870, a second rail line opened through the town and ran from New Haven to Middletown (Turner and Jacobus 1986). At the end of the century, North Haven's population had grown to 1,862 residents (Connecticut 2022b). While farming and brickmaking were still prominent industries, the town was also manufacturing paper cards, tin spoons, and carriage woodwork (Connecticut 1890).

Throughout the twentieth century, North Haven continued to steadily develop and became more suburbanized. Much of the early population growth was due to an influx of immigrants. North Haven saw a considerable number of arrivals from Italy, who presumably came to work on farms and in the brick industry (Iverson 2023). As of 1920, North Haven had 1,986 residents and in addition to agriculture, the town’s principal industries included brickmaking, carriage woodworking, and card printing (Connecticut 1920, 2022c; Table 1). By 1950, the town had 9,444 residents (Table 1; Connecticut 2022c). During the 1950s and 1960s, the population of North Haven increased dramatically due to the suburbanization trend facilitated by the rise of the automobile. The construction of highways also had an outsized effect on North Haven as Interstate 91 runs through the town, opening in 1966 (Oglesby 2014). North Haven’s population more than doubled over the 20 years since 1950, and by 1970 the town had 22,194 residents (Table 1; Connecticut 2022c, 2022d). As of the early twenty-first century, growth had stalled in North Haven and the population had mostly stabilized. The town was largely considered a suburban community with significant industrial and commercial zones. As of 2021, North Haven had 23,722 inhabitants. Manufacturing was the largest employment sector, followed by retail (AdvanceCT and CTData Collaborative 2021). Factories in town produced various items, including surgical equipment, paper boxes, tools, medical devices, steel, sporting goods, and printed circuit boards (Connecticut 2021). Though town officials encourage new commercial ventures, they intend to maintain the suburban character of North Haven (North Haven 2017).

Table 1. Population of North Haven, New Haven County, Connecticut 1790-2020 (Connecticut 2022b-d; USCB 2023)

Town	1790	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900
Town of North Haven, New Haven County, Connecticut	1,236	1,157	1,239	1,298	1,284	1,349	1,325	1,499	1,771	1,763	1,862	2,164
	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	2020
	2,254	1,968	3,730	5,326	9,444	15,935	22,194	22,080	22,247	23,035	24,093	24,253

History of the Project Area and Vicinity

Mapping from 1856 shows the Project area and vicinity in the nineteenth century (Figure 3). Middletown Avenue was present along the southeastern boundary of the Project parcel, while Rimmon Road was shown on the eastern boundary, Patten Road on the northern boundary, and Mill Road north of Roarke Road on the northwestern boundary. Old Velvet Road also passed through the Project parcel, and connected with Velvet Street at that time. Muddy River was mapped through the Project parcel as well, and it was labeled as Pine River on this map. The Project area did not contain any mapped features at that time; however, a tributary stream of Pine River passing through it. Multiple residences were also present in 1856; they may have been located within the Project parcel, but were situated outside the boundaries of the Project area. The residence of L. Todd appeared at that time on Middletown Avenue next to a toll gate, while a Mrs. W. Jacobs was shown between Middletown Avenue and Old Velvet Road, J. Foote was on Old Velvet Road, and S. Moulthrop was on Velvet Road. There were no residences shown within the Project area. By 1868, mapping of the area shows that the residence of L. Todd was listed as L. P. Todd, while the Mrs. W. Jacobs residence was owned by W. Todd (Figure 4). L. P. Todd likely refers to Lawrence P. Todd, who was listed as a farmer in the 1870 federal census (USCB 1870).

Aerial imagery from 1934 shows the Project area and vicinity as it appeared in the early twentieth century (Figure 5). At that time, almost the entire Project parcel was comprised of agricultural fields, aside from lightly forested land along the Muddy River in the north of the Project parcel. The Project area was located on agricultural land as well, with the western portion of the Project area containing some sparse secondary vegetation. Old Velvet Road was still connected across the Project parcel to

Velvet Road at that time, and the Project parcel appears to have been traversed with other smaller farm roads. The residences which were listed as L. P. Todd and W. Todd on the 1868 map appear in the 1934 aerial image outside the Project parcel, along with their associated outbuildings. The landscape appeared similar in a 1951 aerial photograph, although the forested land along the Muddy River became denser and the western portion of the Project area was cleared of vegetation (Figure 6). An additional two structures also appeared on Old Velvet Road at that time. Subsequent aerial imagery from 1970 shows All Saints Cemetery located just outside the Project parcel (Figure 7). All Saints is a Catholic cemetery that was established by the archdiocese of Hartford in 1961 to serve the wider New Haven area. The cemetery was the first one opened by the diocese since the creation of the Saint Lawrence Cemetery in West Haven in 1890. All Saints Cemetery in North Haven was initially a 55-acre development on a tract of land containing 300 acres which the Catholic Cemetery Association had purchased (The Catholic Transcript 1961). The main access roads of the cemetery were visible on the 1970 aerial image, which disconnected Old Velvet Road from Velvet Road to the west. The former residence of W. Todd on Old Velvet Road appears to have been demolished by this time, while only a house and barn of the Lawrence P. Todd property on Middletown Avenue remained. The Project areas remained on cleared land at that time, and the service building for the grounds had been constructed directly to the south of the western portion of the Project area.

By 1990, aerial photography shows increasing development of the cemetery, with an extension to the east of the service building on the south side of the eastern portion of the Project area (Figure 8). This newer part of the cemetery contains sections 21 and 22 of the cemetery plots. On the south side of this cemetery extension, a new retention pond was in place. In the southern portion of the Project parcel on the south of the entire cemetery, part of the present mausoleum had been constructed. In addition, the Lawrence P. Todd house on Middletown Avenue appears to have been demolished by this time. By 2004, aerial imagery shows that the Project area and the land to the east of the cemetery were still composed of agricultural land (Figure 9). Aerial photography from 2023 shows the Project area and vicinity in its essentially modern state (Figure 10). The southwest portion of the parcel and some of its center contains some of the grounds of All Saints large cemetery. The north of the Project parcel, particularly along Muddy River, is on forested land. Much of the formerly agricultural land to the east of the cemetery currently contains a solar field. The Project area remain on cleared fields, with the proposed access road between them crossing a small area of forestation over a tributary stream of Muddy Brook.

Conclusion

The documentary review indicates that the Project area is not likely to yield significant historical resources. Due to the past agricultural use of the area; however, there is the possibility of encountering remains outbuildings, stonewalls, or other evidence of farming within the Project area.

CHAPTER V

PREVIOUS INVESTIGATIONS

Introduction

This chapter presents an overview of previously identified cultural resources in the vicinity of the solar Project in North Haven, 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/districts (NRHP/SRHP) within 1.6 kilometers (1.0 mile) of the Project area. The discussions presented below are based on information currently on file at the Connecticut State Historic Preservation Office (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 and National/State Register of Historic Places Districts/Properties in the Vicinity of the Project Area

A review of data currently on file at the CT-SHPO, as well as the electronic files maintained by Heritage, resulted in the identification of two previously known archaeological sites within 1.6 kilometers (1.0 mile) of the proposed Project (Figure 11). In addition, one National Register of Historic Places property and one State Register of Historic Places property were identified within 1.6 kilometers (1.0 mile) of the Project area (Figure 12). These resources are discussed below.

Site 101-8

Site 101-8, which is also known as the Sackett Point site, is located on private land to the west of a railroad underpass on Sackett Point Road in North Haven, Connecticut. The site form describes the site as an Archaic period camp that represented a limited activity hunting site. Artifacts recovered during surface collection included 1 Snook Kill point, 1 narrow-stemmed quartz point (potentially a Squibnocket), and an unspecified amount of debitage. Site 101-8 has not been assessed for listing on the National Register of Historic Places applying the criteria for evaluation (36 CFR 60.4 [a-d]). It is located approximately 1,057 meters (0.66 miles) to the west of the Project area. It has been destroyed.

Site 99-18

Site 99-18 is located in the vicinity of 1028 Middletown Avenue (CT-17) in North Branford, Connecticut. This site represents a precontact era occupation dating from unknown time period and unspecified cultural affiliation. Current site file records do not indicate what archaeological material was recovered from the site area; however, the form does indicate that the site produced evidence of a "lithic scatter." This site has not been assessed applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [ad]). Site 99-18 is located approximately 0.70 kilometers (0.44 miles) away from the Project area and it will not be impacted by the proposed Project.

The Rising Sun Tavern

The Rising Sun Tavern is a National Register of Historic Places property located at the intersection of Middletown Avenue and Old Tavern Lane in North Haven, Connecticut. The building consists of a two-

story Colonial Style farmhouse that was constructed in the 1760s by a man named Caleb Hitchcock. The Rising Sun Tavern is in near-original condition with the exception of some nineteenth century additions, including a larger kitchen and a new chimney. Not long after construction, Hitchcock sold the property to Gideon Todd, who appears to have initially operated the tavern in a joint venture with Hitchcock. Under Todd's ownership, the tavern served travelers passing through North Haven along Middletown Avenue. The Rising Sun Tavern was nominated to the National Register of Historic Places in 1979. It is considered significant under both Criteria A and C of the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). The property is considered significant for its importance in transportation and travel, both locally and nationally. It is also significant as an intact example (the only one in North Haven) of eighteenth-century Colonial Style architecture. The tavern is located approximately 0.5 kilometers (0.31 miles) away from the Project area and will not be impacted by Project activities.

George Munson Blacksmith Shop

The George Munson Blacksmith Shop is a State Register of Historic Places property located at 21 North Hill Road in North Haven, Connecticut. The shop is a two-and-a-half story structure built in the vernacular style during the late-nineteenth century. The original owner of the property was George Munson, and the building functioned as a blacksmith shop until the 1940s. The George Munson Blacksmith Shop is considered significant due to its architectural importance. The structure is considered a rare building type in Connecticut, is still in its original location, and it retains its original framing and exterior characteristics. The George Munson Blacksmith Shop is located approximately 0.24 kilometers meters (0.1 miles) away from the Project area, and it will not be impacted by Project activities.

CHAPTER VI

METHODS

Introduction

This chapter describes the research design and field methods used to complete the Phase IA cultural resources assessment survey of the solar Project in North Haven, Connecticut. The following tasks were completed during this investigation: 1) study of the region's natural settings, precontact era, and post-European Contact period, as presented in Chapters II through IV; 2) a literature search to identify and discuss previously recorded cultural resources in the project region; 3) a review of historical maps, topographic quadrangles, and aerial imagery depicting the Project area in order to identify potential historical resources and/or areas of past disturbance; and 4) pedestrian survey and photo-documentation of the Project area in order to determine its archaeological sensitivity.

Research Design

The current Phase IA cultural resources reconnaissance survey was designed to identify all precontact era Native American and post-European Contact period cultural resources located within and near the Project area in North Haven, Connecticut. The undertaking was comprehensive in nature, and planning considered the distribution of previously recorded cultural resources located within the larger region, local soil conditions, and a visual assessment of the proposed Project area. The methods used to complete this investigation were designed to provide coverage of all portions of the Project area and considered both below and above ground resources. The fieldwork portion of this undertaking entailed pedestrian survey, photo-documentation, and mapping.

Archival Research & Literature Review

Background research for this survey included a review of a variety of maps depicting the proposed 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 and NRHP/SHRP properties/districts 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 proposed Project area. This information then was used to develop the archaeological context of the Facility area, and to assess its sensitivity with respect to the potential for producing intact cultural resources.

Finally, electronic databases and Geographic Information System files maintained by Heritage were employed during the course of this survey, and they provided valuable data related to the project region, as well as data concerning previously identified archaeological sites and NRHP/SHRP properties/districts within the general vicinity of the Project area.

Field Methodology and Data Synthesis

Heritage personnel performed pedestrian survey, photo-documentation, and mapping of the proposed Project area. During the pedestrian survey, Heritage staff members visually reconnoitered the Project area, and noted the locations of all above-ground cultural features, standing structures over 50 years old, previous disturbances, wetlands, topographic relief, and locations of freshwater sources. These natural and cultural landscape features were recorded on a survey base map. Any identified cultural resources were recorded using a GPS unit so that their locations could be transferred into the Project

GIS. The locations from which all photos were taken, as well as directional indications, were recorded on a base map of the Project area. The photo-documentation portion of the survey was completed using color digital media. The results of the pedestrian survey were used to stratify the Project area into zones of no/low and moderate/high archaeological sensitivity.

CHAPTER VII

RESULTS OF THE INVESTIGATION & MANAGEMENT RECOMMENDATIONS

Introduction

This chapter presents the results of the Phase IA cultural resources assessment survey associated with the proposed solar Project in North Haven, Connecticut. As stated in the introductory section of this report, the goals of the investigation included completion of the following tasks: 1) a contextual overview of the region's precontact era, post-European contact period, and natural settings (e.g., soils, ecology, hydrology, etc.); 2) a literature search to identify and discuss previously recorded cultural resources in the Project region; 3) a review of readily available maps and aerial imagery depicting the Project area 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 depositional integrity, historical associations, and archaeological sensitivity.

Determining Archaeological Sensitivity

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 maps, aerial images, and data regarding previously identified archaeological sites NRHP/SRHP properties/districts, and previously identified standing structures over 50 years old to stratify the Project area into zones of no/low and/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 archaeological sites, the Project area was divided into areas of no/low and/or moderate/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 m (1,000 ft) from a freshwater source and that contain slopes of less than 8 percent and well-drained soils possess a high potential for producing precontact archaeological deposits. Those areas located between 300 and 600 m (1,000 and 2,000 ft) from a freshwater source and well drained soils are considered moderate probability areas. This is in keeping with broadly based interpretations of precontact 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 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 precontact archaeological sites.

In addition, the potential for a given area to yield evidence of post-European Contact period archaeological deposits is based not only on 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, portions of a proposed Project area that are situated within 100 m (328 ft) of a previously identified post-European Contact period archaeological site or a National or State Register of Historic Places district/individually listed property also may be deemed to retain a moderate/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 post-European Contact period archaeological sensitivity.

Results of Phase IA Survey and Management Summary

As noted earlier in the report, the Project parcel encompasses an area of approximately 106.50 acres, while the Project area includes only 10.8 acres of land in the eastern portions of the parcel. The area is situated at elevations ranging from 13 to 19 meters (42.7 to 62.3 feet) NGVD. The desktop portion of the Phase IA survey revealed two previously identified archaeological sites, one National/State Register of Historic Places property, and one State Register of Historic Places property located within 1.6 kilometers (1.0 mile) of the Project area. In addition, the Project area's gently sloping topography, well drained soils and proximity to freshwater sources suggested that that it may retains the potential to yield intact archaeological deposits from either the precontact era or the post-European Contact period. Therefore, pedestrian survey of the Project area was completed, the results of which are discussed below.

Pedestrian survey of the Project area was completed in March of 2026 after the desktop research and it revealed that the area is characterized by level to moderately sloping topography, farmland, deciduous forest, and some wetlands (Figure 13; Photos 1-12). The wetlands are located mainly in the center of the Project area road near a tributary of the Muddy River (Photos 13 and 14). Areas of previous disturbance were also noted in this area (Photo 15). Of the 10.8 acres examined, 1.8 acres were determined to possess no/low archaeological sensitivity because they were located in wetlands, on steep sloping topography, or in areas characterized by previous disturbances. The remaining 9.0 acres, which were characterized by low sloping topography and well drained soils in largely undisturbed areas, were determined to retain moderate/high archaeological sensitivity for intact archaeological resources. These moderate/high sensitivity zones within the Project area were separated into two sensitivity areas designated as Sensitivity Areas SA-1 and SA 2. Sensitivity Area SA-1 encompasses 5.8 acres of land and Sensitivity Area SA-2 includes 3.2 acres. Based on the results of the desktop and pedestrian survey portions of the Phase IA cultural resources assessment survey, it is the professional opinion of Heritage that Sensitivity Areas SA-1 and SA-2 retain moderate/high archaeological sensitivity. As a result, Heritage recommends that Sensitivity Areas SA-1 and SA-2 be subjected to Phase IB subsurface testing prior to construction.

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APPENDIX A

FIGURES

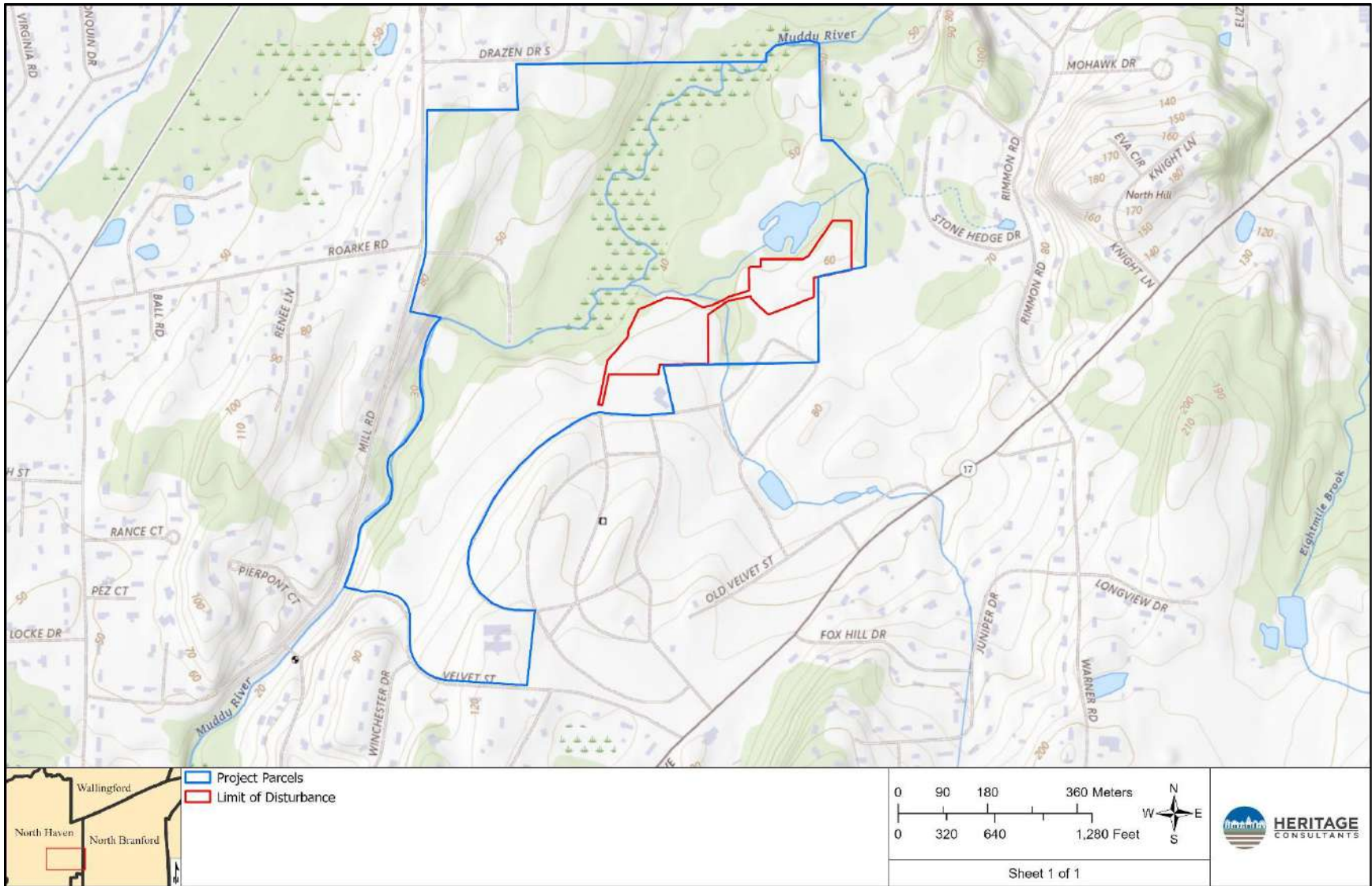


Figure 1. Excerpt from a USGS 7.5' series topographic quadrangle image showing the location of the proposed solar Project in North Haven, Connecticut.

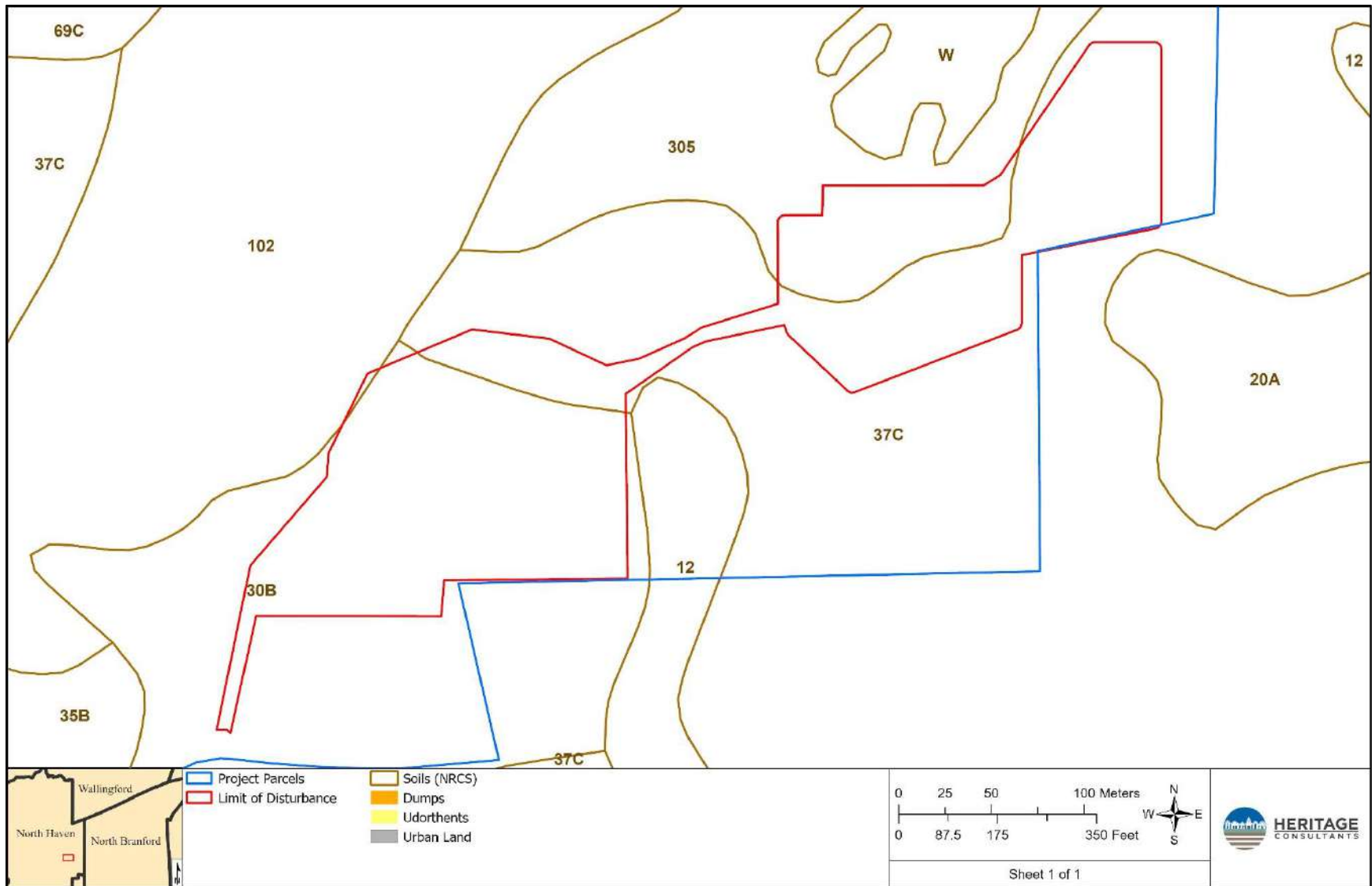


Figure 2. Digital map depicting the soil types present in the vicinity of the Project area in North Haven, Connecticut.

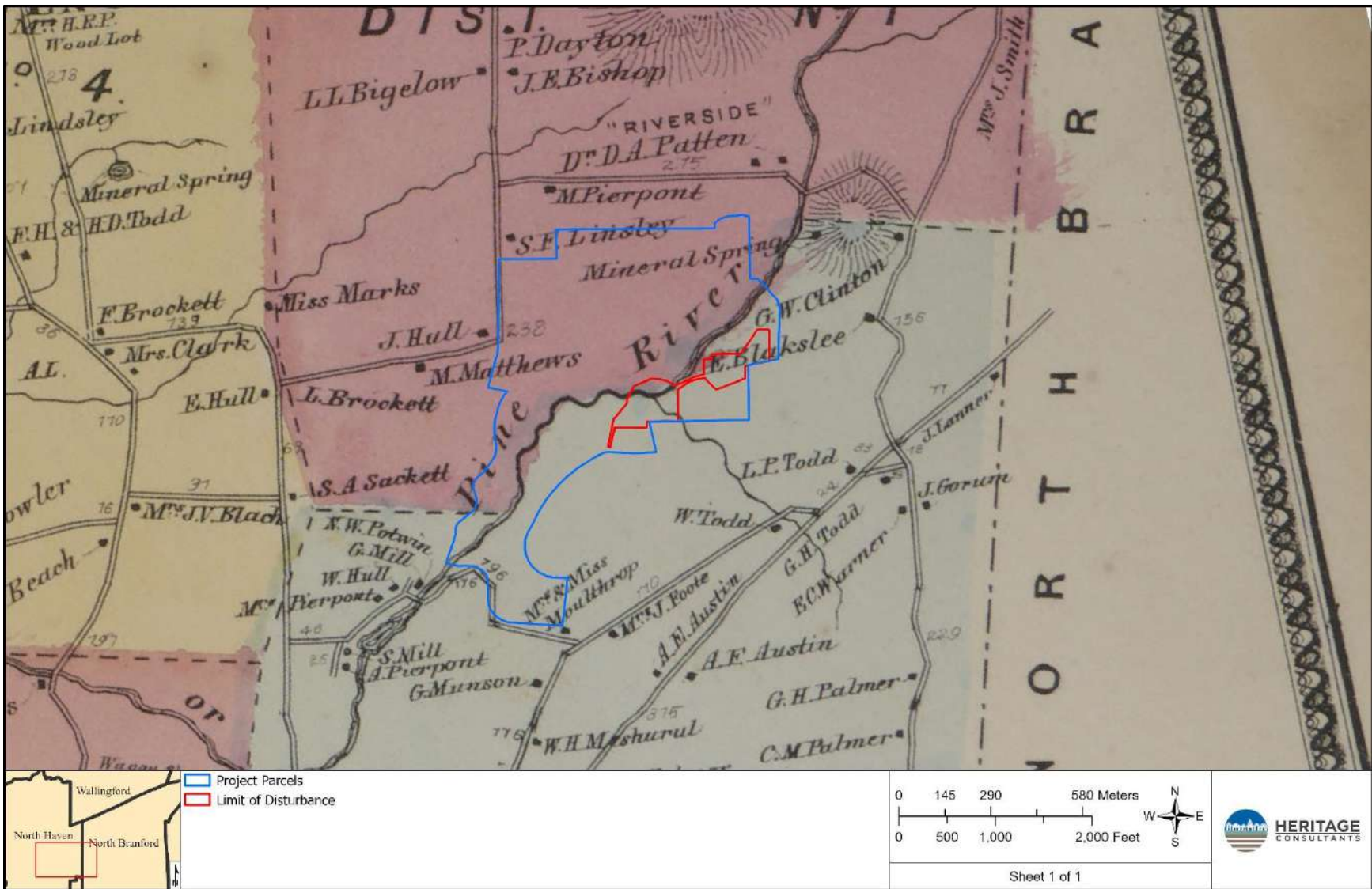


Figure 4. Excerpt from an 1868 map showing the location of the Project area in North Haven, Connecticut.

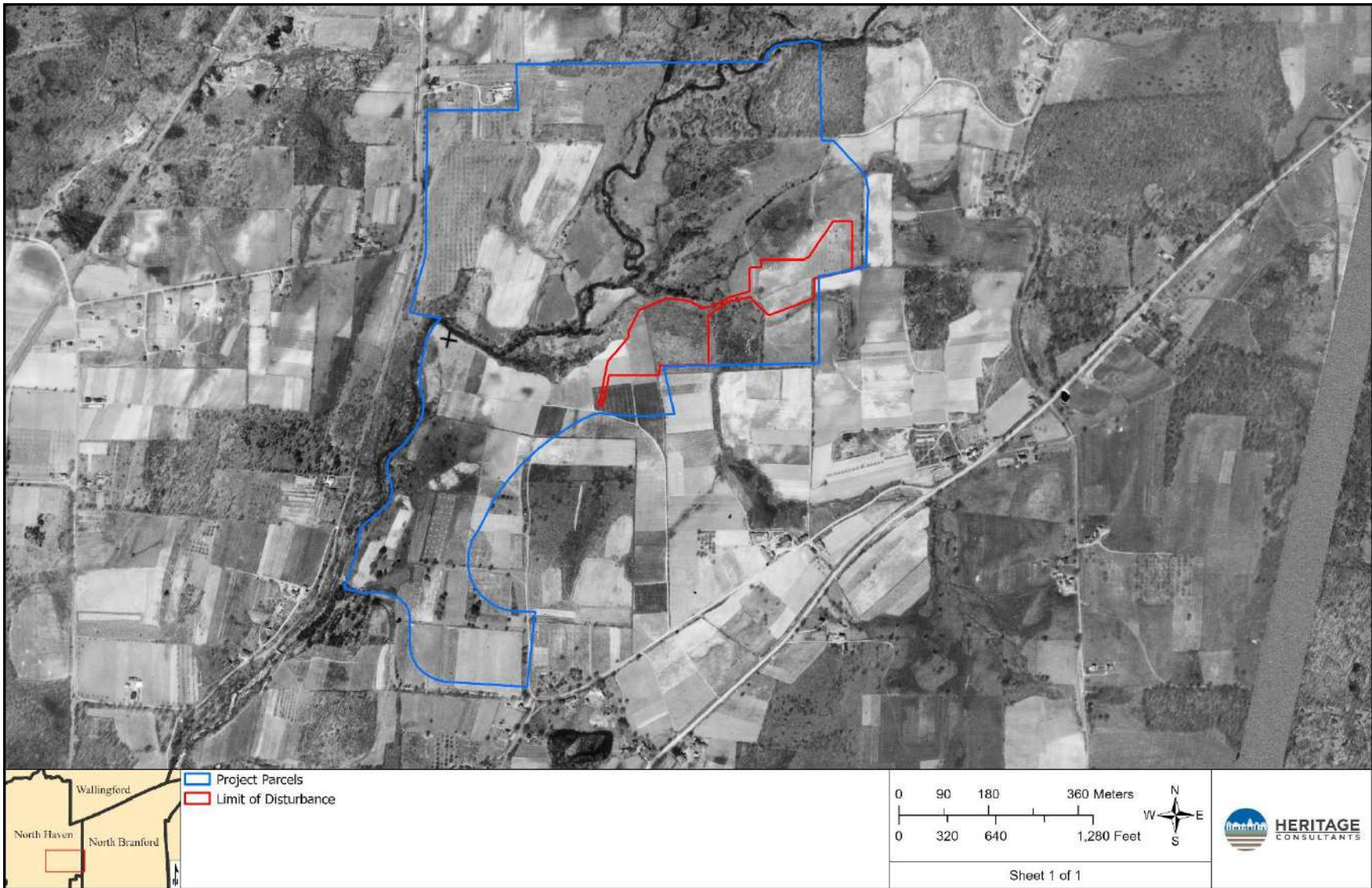


Figure 5. Excerpt from a 1934 aerial photograph showing the location of the Project area in North Haven, Connecticut.

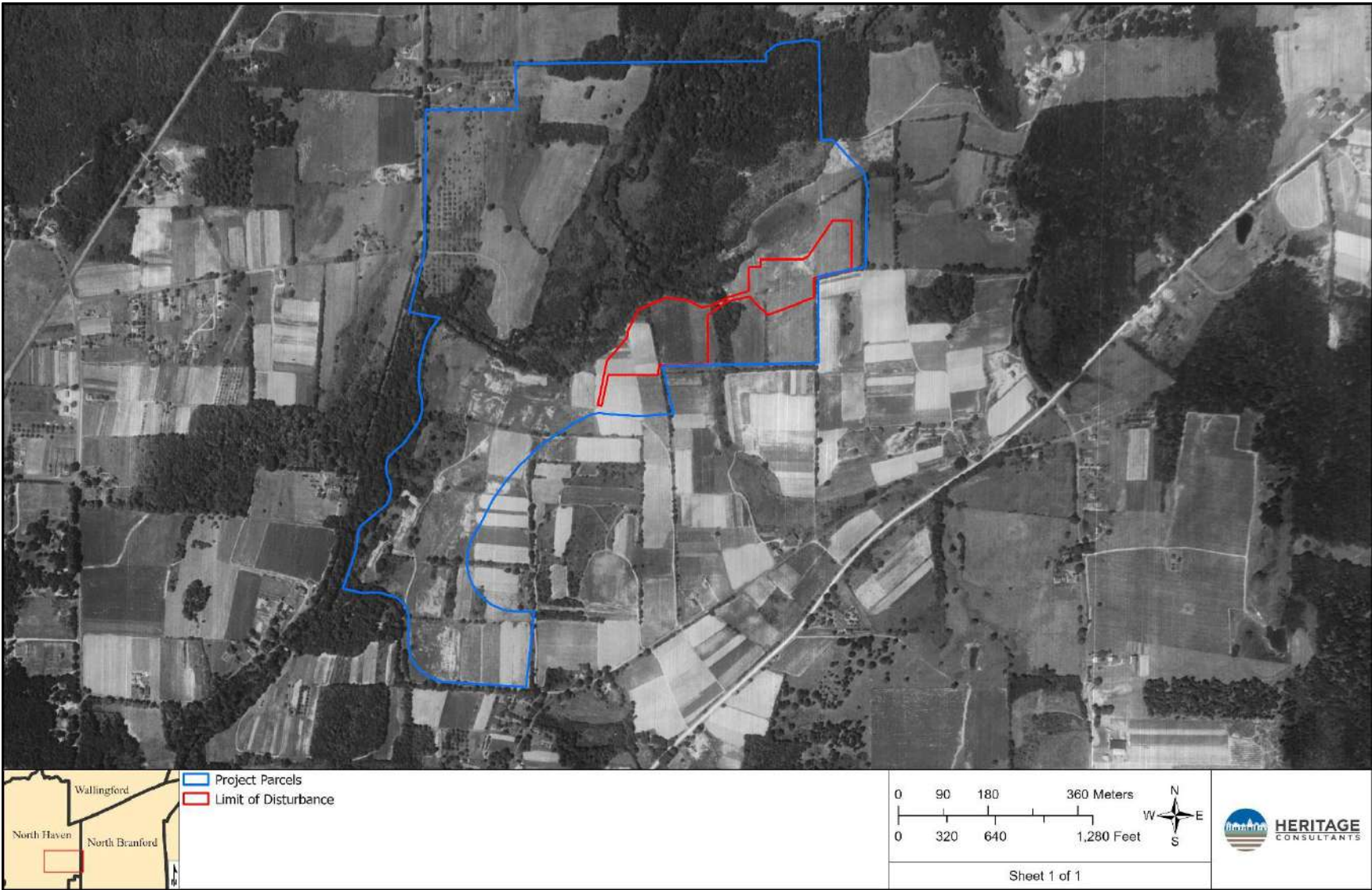


Figure 6. Excerpt from a 1951 aerial photograph showing the location of the Project area in North Haven, Connecticut.

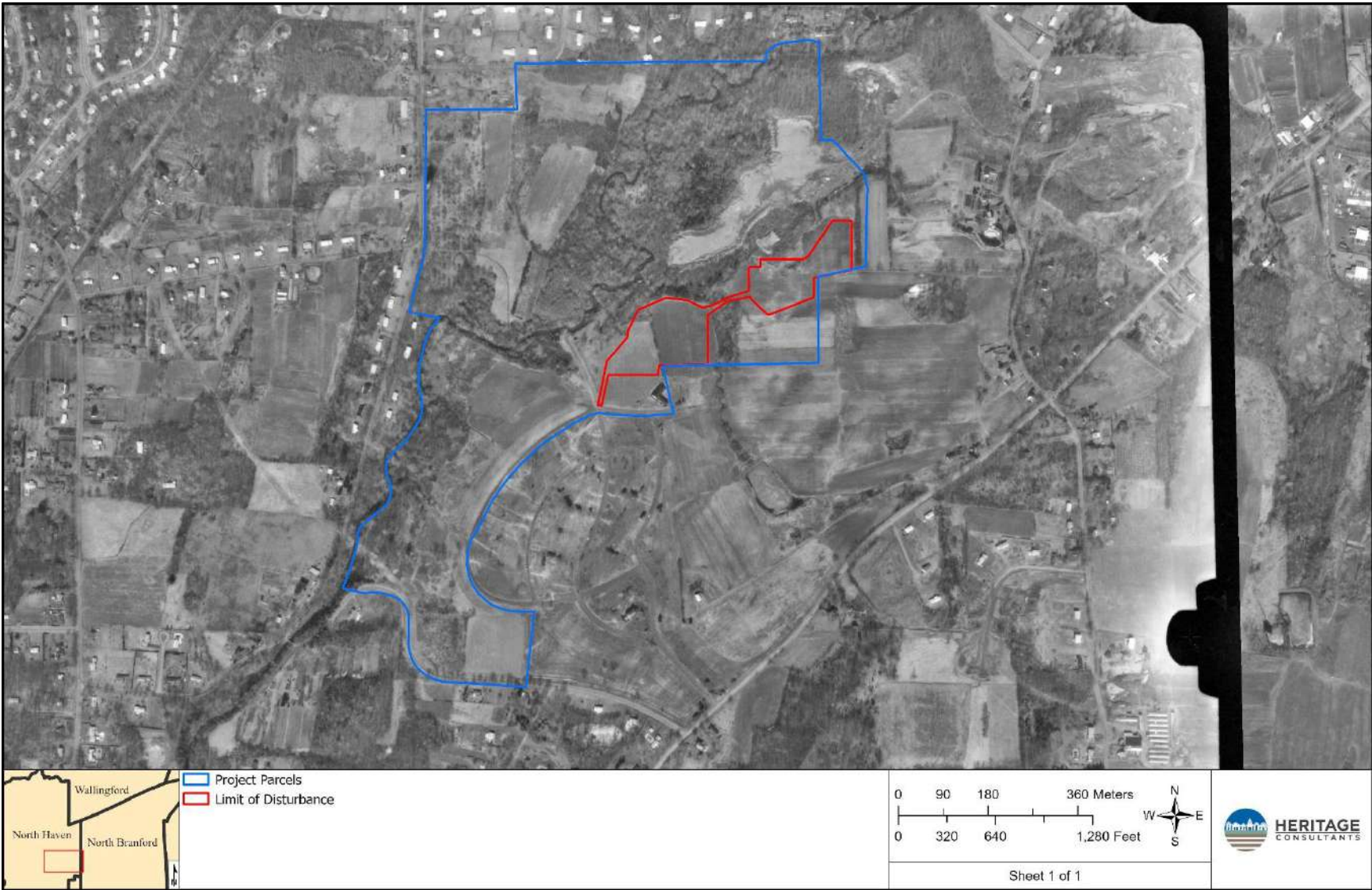


Figure 7. Excerpt from a 1970 aerial photograph showing the location of the Project area in North Haven, Connecticut.

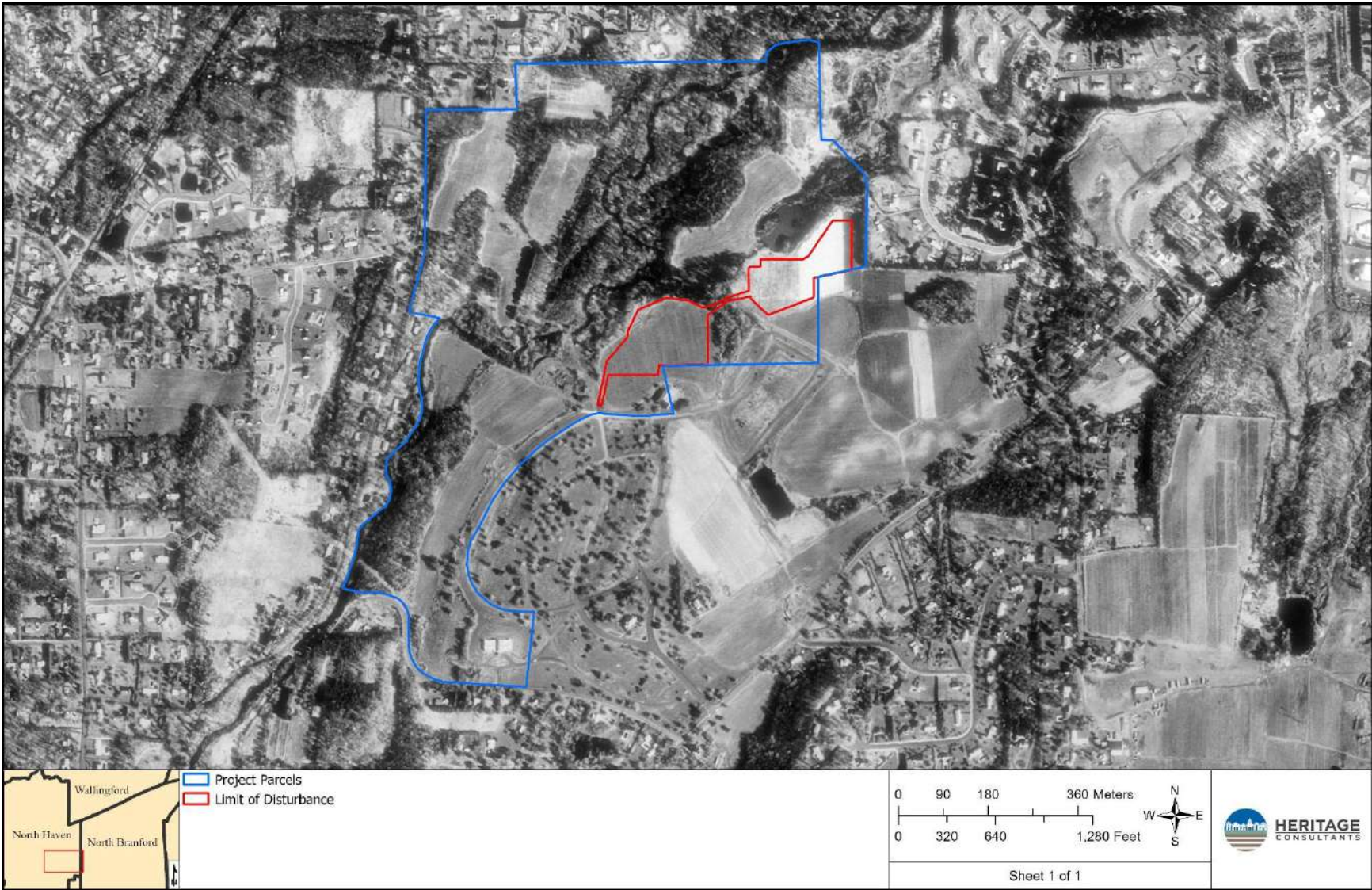


Figure 8. Excerpt from a 1990 aerial photograph showing the location of the Project area in North Haven, Connecticut.

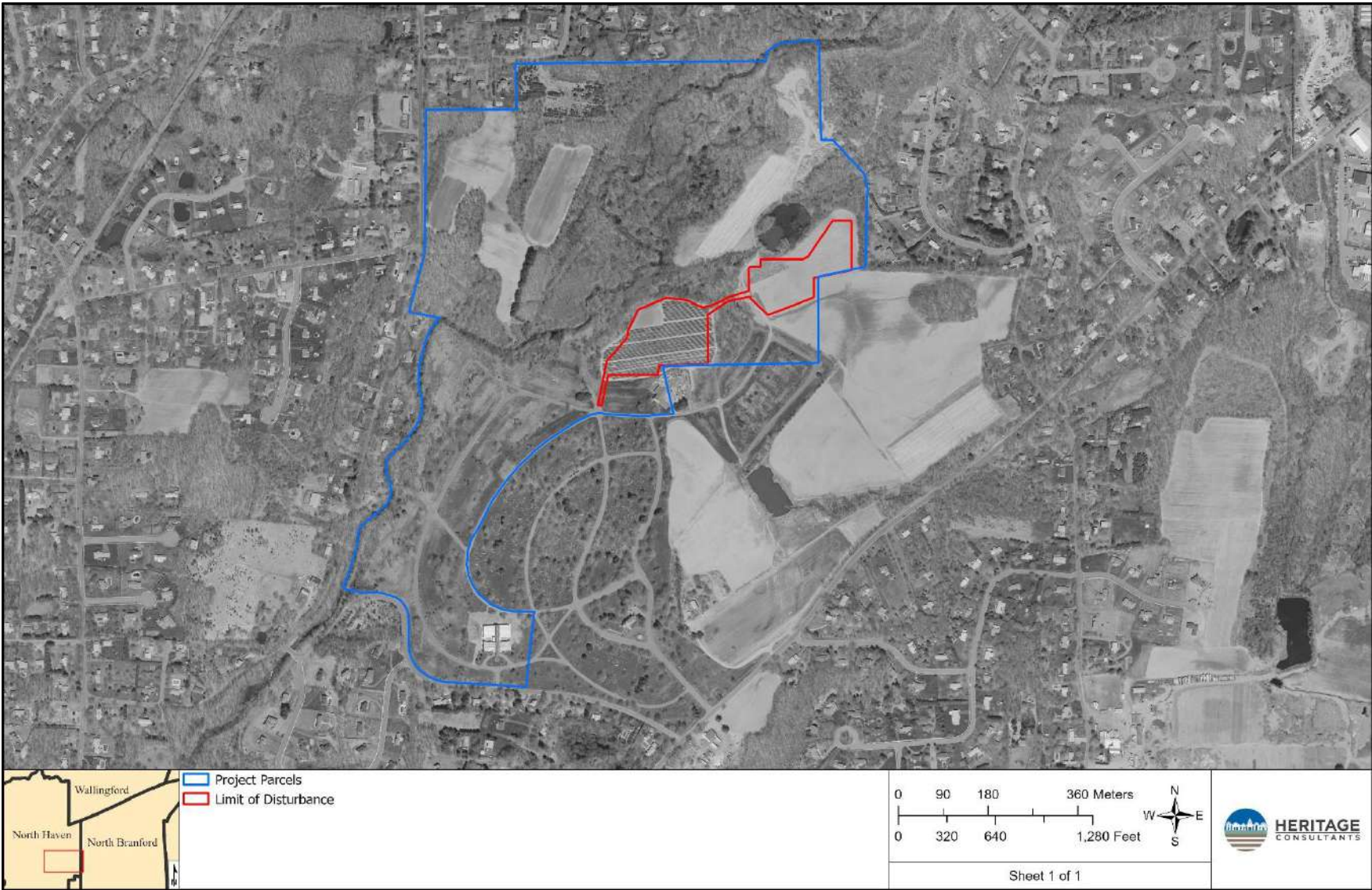


Figure 9. Excerpt from a 2004 aerial photograph showing the location of the Project area in North Haven, Connecticut.

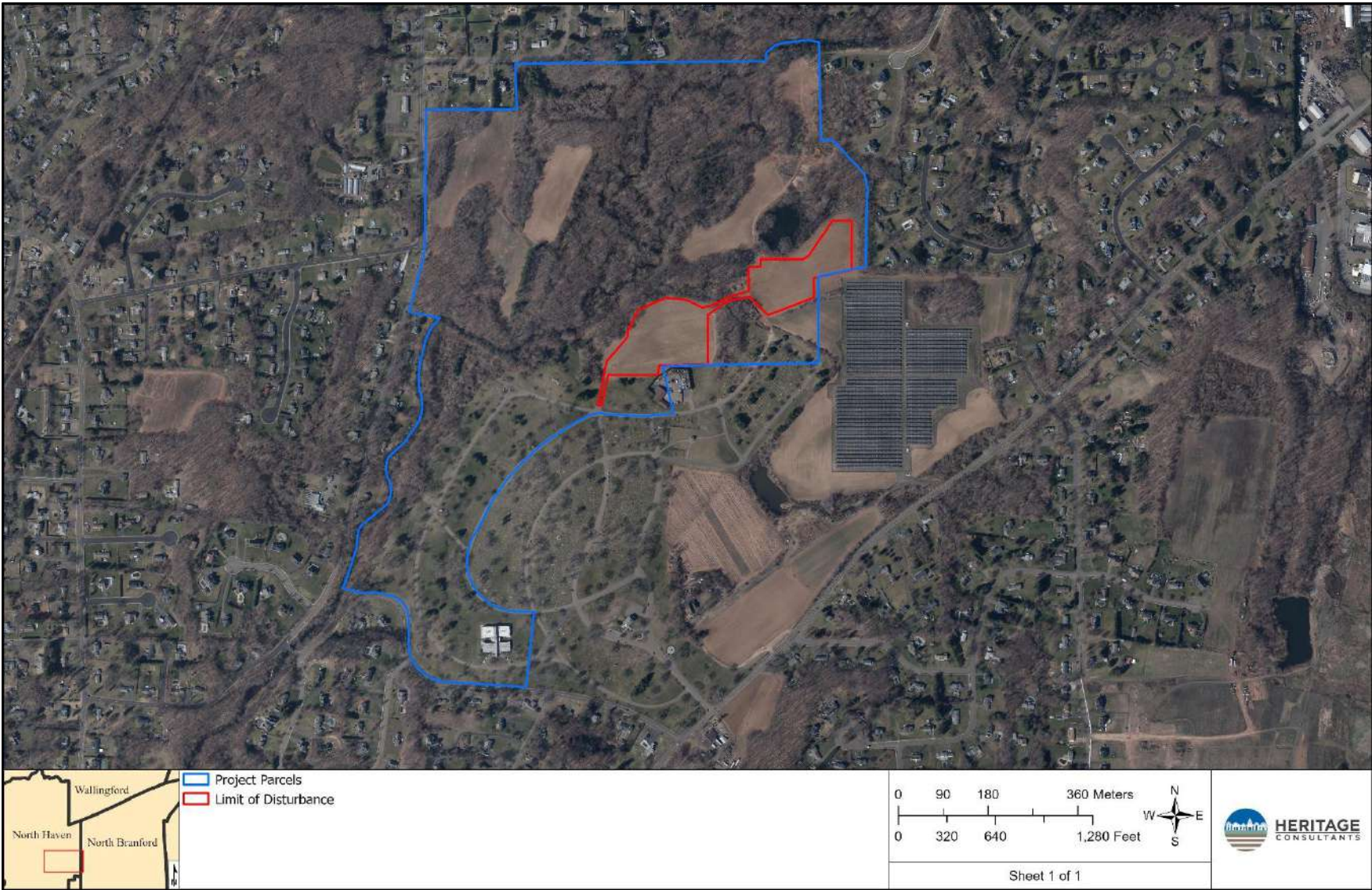


Figure 10. Excerpt from a 2023 aerial photograph showing the location of the Project area in North Haven, Connecticut.

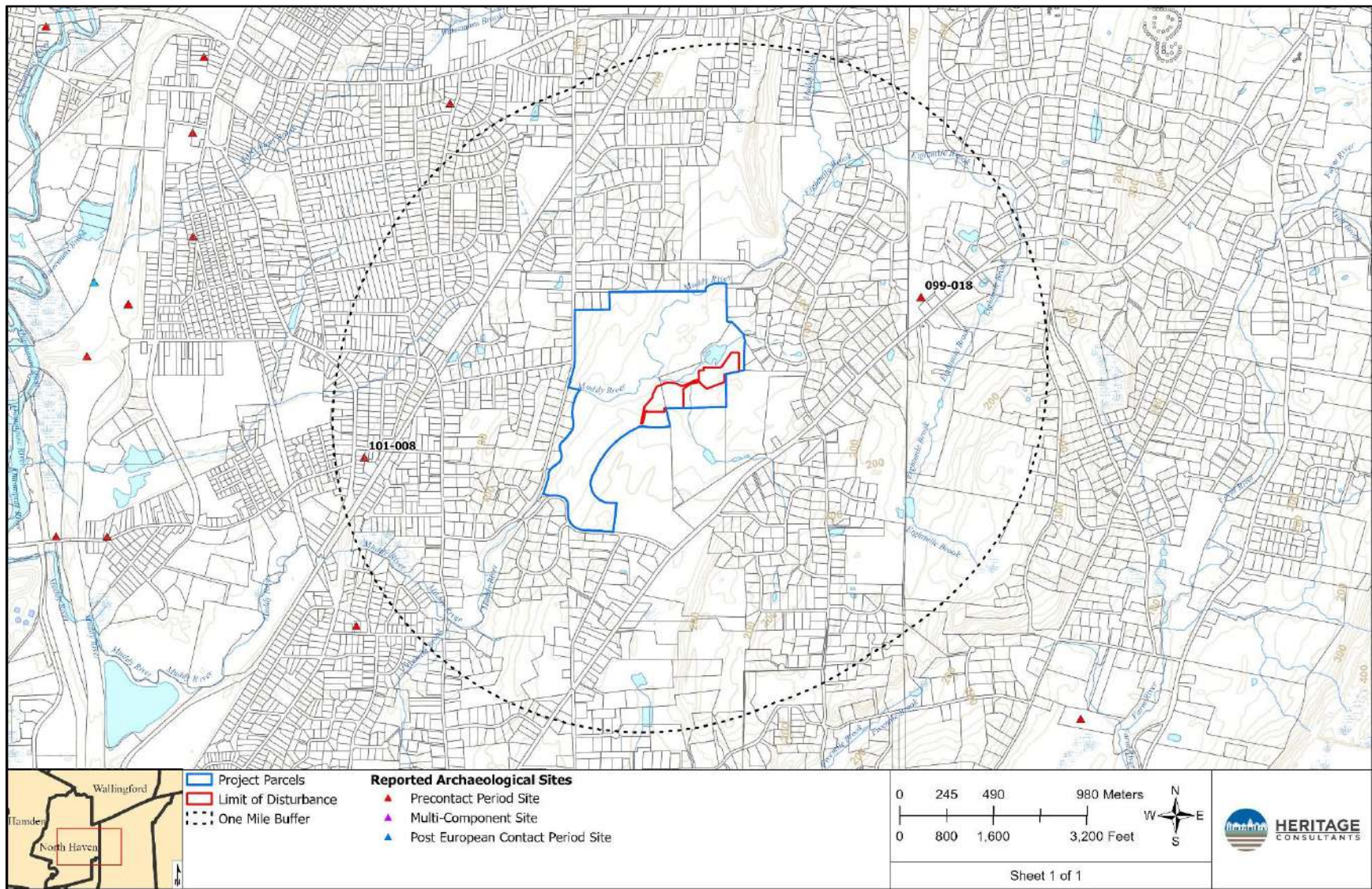


Figure 11. Digital map depicting the locations of the previously identified archaeological sites in the vicinity of the Project area in North Haven, Connecticut.

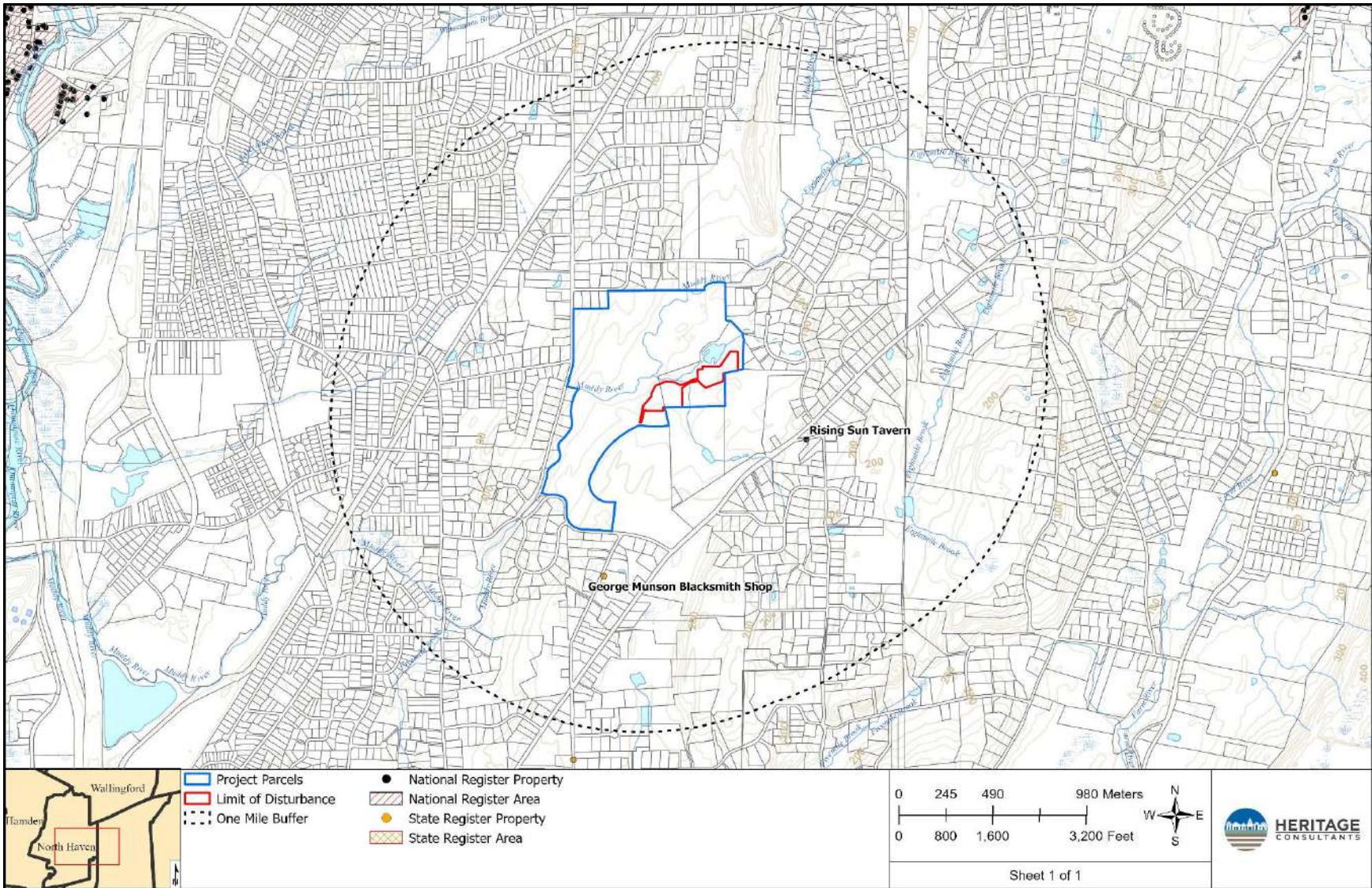


Figure 12. Digital map depicting the locations of the previously identified National Register of Historic Places and State Register of Historic Places properties in the vicinity of the Project area in North Haven, Connecticut.

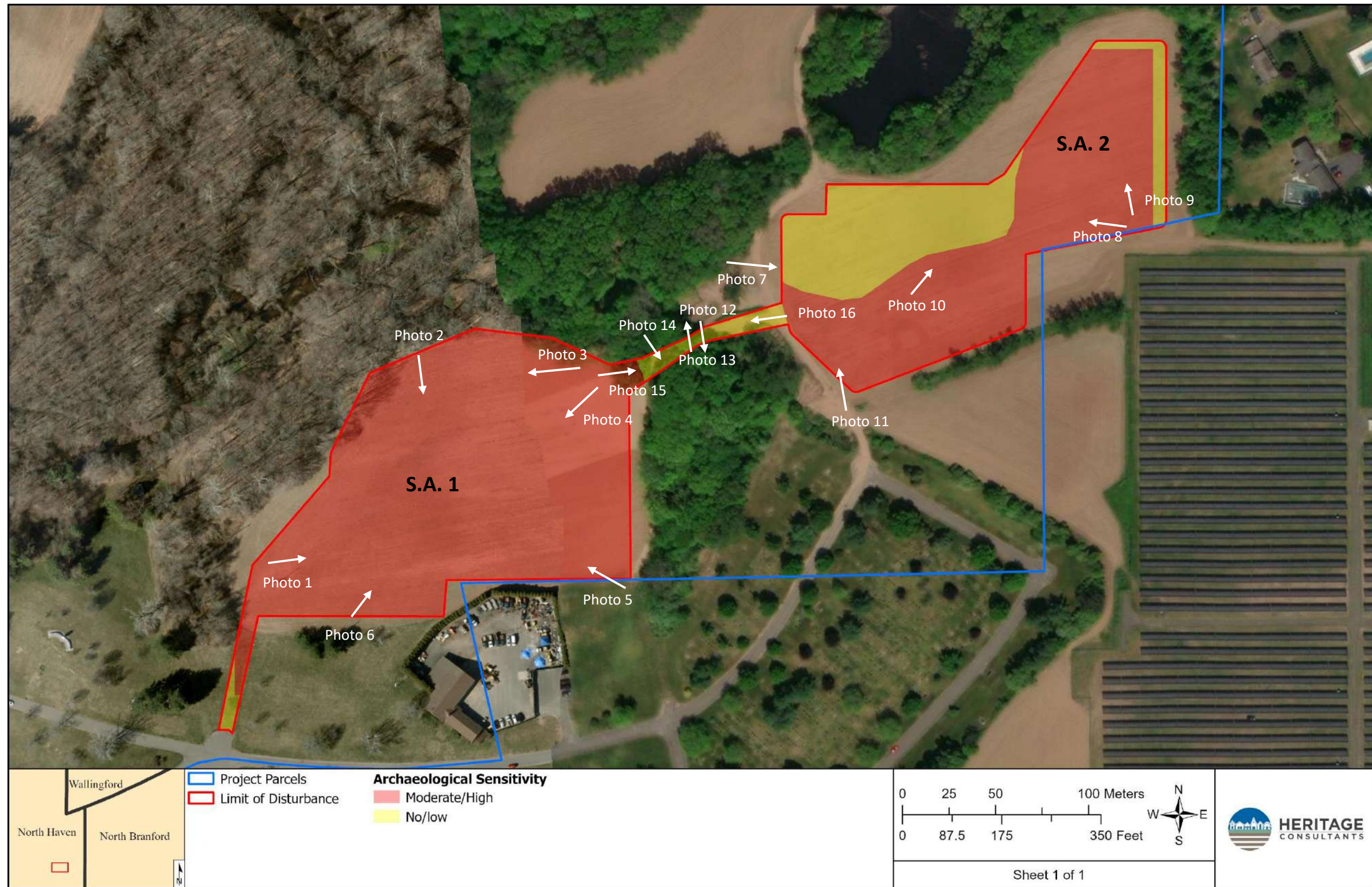


Figure 13. Digital map illustrating areas of finalized Moderate/High archaeological sensitivity (Red) and areas of No/Low Archaeological Sensitivity (Yellow) with directional arrows of photo points taken for the solar Project in North Haven, Connecticut.

APPENDIX B

PHOTOS



Photo 1. Overview of farmland within SA-1 of the Project area. Photo facing to the east.



Photo 2. Overview of farmland within SA-1 of the Project area. Photo facing to the south.



Photo 3. Overview of farmland within SA-1 of the Project area. Photo facing to the west.



Photo 4. Overview of farmland within SA-1 of the Project area. Photo facing to the southwest.



Photo 5. Overview of farmland within SA-1 of the Project area. Photo facing to the northwest.



Photo 6. Overview of farmland within SA-1 of the Project area. Photo facing to the northeast.



Photo 7. Overview of farmland within SA-2 of the Project area. Photo facing to the east.



Photo 8. Overview of farmland within SA-2 of the Project area. Photo facing to the west.



Photo 9. Overview of farmland within SA-2 of the Project area. Photo facing to the north.



Photo 10. Overview of farmland within SA-2 of the Project area. Photo facing to the northeast.



Photo 11. Overview of farmland within SA-2 of the Project area. Photo facing to the north.



Photo 12. Overview of wetland and stream between SA-1 and SA-2 within Project area. Note pink wetland delineation flags. Photo facing to the south.



Photo 13. Overview of wetland and stream between SA-1 and SA-2 within Project area. Note pink wetland delineation flags. Photo facing to the north.



Photo 14. Overview of disturbed area between SA-1 and SA-2 within Project area. Photo facing to the south.



Photo 15. Overview of access road between SA-1 and SA-2 within Project area. Photo facing to the east.



Photo 16. Overview of access road between SA-1 and SA-2 within Project area. Photo facing to the west.