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PHASE IA CULTURAL RESOURCES ASSESSMENT SURVEY OF THE PROPOSED ELLINGTON WEST SOLAR CENTER AT SCHOOL HOUSE ROAD IN ELLINGTON, CONNECTICUT

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ABSTRACT

This report presents the results of a Phase IA Cultural Resources Assessment Survey for a proposed solar project along School House Road in Ellington, Connecticut. Development of the area will include the construction of a solar array and associated infrastructure on a 74.47 acre parcel. Heritage Consultants, LLC completed the Phase IA cultural resources assessment survey of the project parcel and development area on behalf of Verdantas, in July of 2025. The investigation consisted of: 1) preparation of an overview of the region's precontact era Native American, 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 project parcel and development area to identify potential cultural resources and/or areas of past disturbance; and 4) a pedestrian survey and photo-documentation of the project parcel and development area to their archaeological sensitivity. The pedestrian survey revealed that 14.47 acres of the Project parcel are characterized by wetlands and a pond. As a result, these areas were assessed to retain a no/low archaeological sensitivity. No additional archaeological examination of them is recommended. In contrast, the remaining 60 acres of land were characterized by gently to moderately sloping topography, well drained soils, and close proximity to freshwater sources. These areas were designated as retaining the potential to yield intact archaeological deposits from either the precontact era or post-European Contact period. This included 20.3 acres of the development area. It is recommended that the moderate to high archaeological sensitivity zones within that intersect with the development area be subjected to Phase IB cultural reconnaissance survey prior to construction.

TABLE OF CONTENTS

LIST OF FIGURES

List of Photos

CHAPTER I
INTRODUCTION

This report presents the results of a Phase IA cultural resources assessment survey of a proposed solar project located along School House Road in Ellington, Connecticut (the Project). The proposed Project will be built within a portion of a 74.47 acre parcel that is located 1.85 kilometers (1.14 miles) to the west of Crystal Lake and immediately to the south of Martins Brook (Figure 1). Verdantas requested that Heritage Consultants, LLC (Heritage) complete the Phase IA assessment survey of the area as part of the planning process for the proposed Project. Heritage completed this investigation in July of 2025. 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 (Figure 2). The Project parcel is situated at elevations ranging from 225 to 255 meters (738.2 to 836.6 feet) NGVD. It is located to the northeast of School House Road and to the south of Martins Brook in Ellington. The Project parcel and development area contains an orchard, deciduous forest, ponds, wetlands, and streams. The Phase IA cultural resources assessment survey 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 Project parcel and development area; 3) a review of readily available maps and aerial imagery depicting the Project parcel and development 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 Project parcel and development area in order to assess their archaeological sensitivity.

Project Results and Management Recommendations Overview

The review of maps and aerial images depicting the Project parcel and development area, as well as files maintained by the CT-SHPO, did not result in the identification of any resources on the National or State Register of Historic Places within 1.6 kilometers (1 mile) of the Project parcel and development area. However, the literature review did result in the notation of two previously identified precontact era archaeological sites located within 1.6 kilometers (1 mile) of the Project parcel and development area. They are Sites 48-02 and 48-12, and they are discussed in detail in Chapter V of this report. Neither site is situated in close proximity to the Project parcel or the development area, and they will not be impacted as a result of construction.

The pedestrian survey also revealed that the Project parcel and development area contains an active orchard that is situated on a rounded hilltop overlooking Martins Brook to the north. Visual examination indicated that the central portion of the orchard features minor disturbance in the form of gravel access roads, irrigation improvements, and some small modern sheds. In addition, two forested areas were identified within the northeastern and northwestern portion of the Project parcel. The forested areas are defined by a gentle north facing slope that extends down to Martins Brook and wetlands. While the planting of the trees within orchard represents impacts to the landscape, areas in between the rows and around the orchard retain level to low sloping topography, well drained soils, and proximity to freshwater sources. This includes 60 acres of the large Project parcel and 20.3 acres of the development area. The latter were assessed as retaining a moderate potential to yield intact archaeological deposits. It is recommended that they be subjected to a Phase IB cultural resources reconnaissance survey prior to project development.

Project Personnel

Key personnel who worked on this survey included David R. George, M.A., RPA, (Principal Investigator); Dave Trubey, M.A., RPA, (Project Manager); Sam Spitzschuh, 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 Project in Ellington, 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 freshwater 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 parcel and development area, as well as 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 ecoregion germane to the current investigation is the Northeast Hills ecoregion. A 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.

The Northeast Hills ecoregion consists of a hilly upland terrain located between approximately 40.2 and 88.5 km (25 and 55 mi) to the north of Long Island Sound (Dowhan and Craig 1976). It is characterized by streamlined hills bordered on either side by local ridge systems, as well as broad lowland areas situated near large rivers and tributaries. Physiography in this region is composed of a series of north-trending ridge systems, the western-most of which is referred to as the Bolton Range and the eastern-most as the Mohegan Range (Bell 1985:45). Elevations in the Northeast Hills range from 121.9 to 243.8 m (400 to 800 ft) above sea level, reaching a maximum of nearly 304.8 m (1,000 ft) above sea level near the Massachusetts border (Bell 1985). The bedrock of the region is composed of schist and gneiss created during the Paleozoic as well as gneiss and granite created during the Precambrian period (Bell 1985). Soils in upland areas have been deposited on top of glacial till, and in the valley they consist of stratified deposits of sand, gravel, and silt (Dowhan and Craig 1976).

Hydrology of the Study Region

The Project parcel and development area are located within close proximity of several streams, ponds and wetlands. The major fresh water sources in proximity to the Project area include Martin's Brook, Charter's Brook, Crystal Lake, and several unnamed small streams and associated wetlands. 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 Parcel

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 parcel. In contrast, acidic soils enhance the preservation of charred plant remains.

A total of five soil types were identified within the Project parcel (Figure 3). The west side of the Project parcel contains Sutton and Ridgebury, Leicester, and Whitman soils while the center contains Canton-Charlton and Woodbridge soils, and the eastern edge contains Paxton-Montauk soils. When well drained soils such as Canton and Charlton 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. In contrast, Ridgebury, Leicester, and Whitman soils are considered poorly drained and are correlated with low archaeological sensitivity. Below is a summary of each specific soil type identified within the Project parcel.

<u>Woodbridge Soils</u>

The Woodbridge series consists of moderately well drained loamy soils formed in lodgment till. They are very deep to bedrock and moderately deep to a densic contact. They are nearly level to moderately steep soils on hills, drumlins, till plains, and ground moraines. Slope ranges from 0 to 25 percent. A typical profile associated with Woodbridge soils is as follows: **Ap**--0 to 18 cm; very dark grayish brown (10YR 3/2) fine sandy loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; many fine and medium roots; few very dark brown (10YR 2/2) earthworm casts; 5 percent gravel; moderately acid; abrupt wavy boundary; **Bw1**--18 to 46 cm; dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure; friable; common fine roots; few very dark brown (10YR 2/2) earthworm casts; 10 percent gravel; moderately acid; gradual wavy boundary; **Bw2**--46 to 66 cm; dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure; friable; common fine roots; few very dark brown (10YR 2/2) earthworm casts; 10 percent gravel; few medium prominent strong brown (7.5YR 5/6) masses of iron accumulation and light brownish gray (10YR 6/2) areas of iron depletion; moderately acid; gradual wavy boundary; **Bw3**--66 to 76 cm; light olive brown (2.5Y 5/4) fine sandy loam; weak medium subangular blocky structure; friable; few fine roots; 10 percent gravel; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation and light brownish gray (10YR 6/2) areas of iron depletion; moderately acid; clear wavy boundary; **Cd1**--76 to 109 cm; light olive brown (2.5Y 5/4) gravelly fine sandy loam; weak thick plates of geogenic origin; very firm, brittle; 20 percent gravel; many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation and light brownish gray (10YR 6/2) areas of iron depletion; moderately acid; gradual wavy boundary; and **Cd2**--109 to 165 cm; light olive brown (2.5Y 5/4) gravelly fine sandy loam; weak thick plates of geogenic origin; very firm, brittle; few fine prominent very dark brown (10YR 2/2) coatings on plates; 25 percent gravel; common fine prominent strong brown (7.5YR 5/8) masses of iron accumulation; moderately acid.

Paxton and Montauk Soils

The Paxton series consists of well drained loamy soils formed in lodgment till. The soils are very deep to bedrock and moderately deep to a densic contact. They are found on nearly level to steep soils on hills, drumlins, till plains, and ground moraines. Slope associated with these soils range from 0 to 45 percent. A typical profile associated with Paxton soils is as follows: **Ap**--0 to 20 cm; dark brown (10YR 3/3) fine sandy loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; many fine roots; 5 percent gravel; strongly acid; abrupt smooth boundary; **Bw1**--20 to 38 cm; dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure; friable; common fine roots; 5 percent gravel; few earthworm casts; strongly acid; gradual wavy boundary; **Bw2**--38 to 66 cm; olive brown (2.5Y 4/4) fine sandy loam; weak medium subangular blocky structure; friable; few fine roots; 10 percent gravel; strongly acid; clear wavy boundary; and **Cd**--66 to 165 cm; olive (5Y 5/3) gravelly fine sandy loam; medium plate-like divisions; massive; very firm, brittle; 25 percent gravel; many dark coatings on plates; strongly acid.

The Montauk series consists of well drained soils formed in lodgment or flow till derived primarily from granitic materials with lesser amounts of gneiss and schist. The soils are very deep to bedrock and moderately deep to a densic contact. These soils are on upland hills and moraines. Slopes associated with these soils ranges from 0 to 35 percent. A typical profile associated with Montauk soils is as follows: **Ap**--0 to 10 cm; very dark gray (10YR 3/1) loam; moderate fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 2 percent gravel, 1 percent cobbles, and 1 percent stones; extremely acid (pH 4.1); clear smooth boundary.; **BA**--10 to 34 cm; brown (10YR 4/3) loam; moderate medium and coarse subangular blocky structure; friable; many fine, medium, and coarse roots; many fine and medium pores; 4 percent gravel, 1 percent cobbles, and 1 percent stones; extremely acid (pH 4.3); clear wavy boundary; **Bw1**--34 to 65 cm; dark yellowish brown (10YR 4/6) loam; moderate coarse subangular blocky structure; friable; many fine, medium, and coarse roots; many fine and medium pores; 6 percent gravel, 1 percent cobbles, and 1 percent stones; extremely acid (pH 4.3); clear wavy boundary; **Bw2**--65 to 87 cm; yellowish brown (10YR 5/6) sandy loam; moderate medium and coarse subangular blocky structure; friable; many very fine, fine, and coarse roots; many fine and medium pores; 5 percent gravel and 1 percent cobbles; extremely acid (pH 4.3); clear smooth boundary; **2Cd1**--87 to 101 cm; strong brown (7.5YR 5/6) gravelly loamy sand; moderate medium plates; firm; few fine roots; many fine pores; 10 percent gravel, 5 percent cobbles, and 1 percent stones; very strongly acid (pH 4.7); clear wavy boundary; and **2Cd2**--101 to 184 cm; dark yellowish brown (10YR 4/6) gravelly loamy sand; moderate medium plates; firm; many fine pores; 10 percent gravel, 5 percent cobbles, and 1 percent stones; strongly acid (pH 5.1).

Ridgebury, Leicester, and Whitman Series

The Ridgebury series consists of very deep, somewhat poorly drained soils formed in lodgment till derived mainly from granite, gneiss and/or schist. They are commonly shallow to a densic contact. They are nearly level to gently sloping soils in depressions in uplands. They also occur in drainageways in uplands, in toeslope positions of hills, drumlins, and ground moraines, and in till plains. Slope ranges from 0 to 15 percent. A typical profile associated with Ridgebury soils is as follows: **A**--0 to 13 cm; black (N 2/0) fine sandy loam; weak medium and coarse granular structure; friable; many very fine, fine and medium tree roots; 5 percent gravel and 5 percent cobbles; very strongly acid; abrupt smooth boundary; **Bw**--13 to 23 cm; brown (10YR 4/3) sandy loam; weak medium subangular blocky structure; friable; few fine tree roots; 5 percent gravel and 5 percent cobbles; very strongly acid; abrupt wavy boundary; **Bg**--23 to 46 cm; dark gray (10YR 4/1) gravelly sandy loam; massive; friable; 10 percent gravel and 5 percent cobbles; common fine prominent yellowish brown (10YR 5/6) and common medium distinct reddish brown (5YR 4/4) masses of iron accumulation; very strongly acid; gradual wavy boundary; and **Cd**--46 to 165 cm; gray (5Y 5/1) gravelly sandy loam; massive; firm; 10 percent gravel and 5 percent cobbles; common fine prominent reddish yellow (7.5YR 6/8) masses of iron accumulation; very strongly acid.

The Leicester series consists of very deep, poorly drained soils formed in coarse-loamy till. They are nearly level or gently sloping soils in drainageways and low-lying positions on hills. Slope ranges from 0 to 8 percent. A typical profile associated with Leicester soils is as follows: **Oe**--0 to 3 cm; black (10YR 2/1) moderately decomposed plant material; **A**--3 to 18 cm; black (10YR 2/1) fine sandy loam; moderate medium granular structure; friable; common fine and medium roots; 10 percent gravel and cobbles; strongly acid; clear wavy boundary; **Bg1**--18 to 25 cm; grayish brown (2.5Y 5/2) fine sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; 10 percent gravel and cobbles; common medium prominent yellowish red (5YR 5/6) masses of iron accumulation; strongly acid; gradual wavy boundary; **Bg2**--25 to 46 cm; light brownish gray (2.5Y 6/2) fine sandy loam; weak medium subangular blocky structure; friable; few fine and medium roots; 10 percent gravel and cobbles; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation; strongly acid; gradual wavy boundary; **BC**--46 to 61 cm; pale brown (10YR 6/3) fine sandy loam; massive; friable; few fine roots; 10 percent gravel and cobbles; many medium distinct yellowish brown (10YR 5/6) and yellowish red (5YR 4/6) masses of iron accumulation; strongly acid; clear wavy boundary; **C1**--61 to 84 cm; dark yellowish brown (10YR 4/4) gravelly fine sandy loam; massive; friable; 15 percent gravel and cobbles; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and prominent pinkish gray (7.5YR 6/2) iron depletions; strongly acid; gradual wavy boundary; and **C2**--84 to 155 cm; dark yellowish brown (10YR 4/4) gravelly fine sandy loam; massive; friable; 15 percent gravel and cobbles; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; strongly acid.

The Whitman series consists of very deep, very poorly drained soils formed in lodgment till derived mainly from granite, gneiss, and schist. They are shallow to a densic contact. These soils are nearly level or gently sloping soils in depressions and drainageways on uplands. A typical profile associated with Whitman soils is as follows: **Ap**--0 to 25 cm; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak medium granular structure; friable; 10 percent rock fragments; common medium distinct red (2.5YR 4/8) masses of iron accumulation lining pores; moderately acid; abrupt wavy boundary; **Bg**--25 to 46 cm; gray (5Y 5/1) fine sandy loam; massive; friable; 10 percent rock fragments, few medium distinct pale olive (5Y 6/4) and light olive brown (2.5Y 5/4) masses of iron accumulation; strongly acid; abrupt wavy boundary; **Cdg**--46 to 79 cm; gray (5Y 6/1) fine sandy loam; moderate medium plates; firm; 10 percent rock fragments; many medium distinct light olive brown (2.5Y 5/4) masses of iron accumulation; moderately acid; clear wavy boundary; **Cd1**--79 to 122 cm; olive (5Y 4/3) fine sandy loam; massive; firm; 10 percent rock fragments; few medium prominent dark reddish brown (2.5YR 3/4) masses of iron accumulation; moderately acid; gradual wavy boundary; and **Cd2**--122 to 165 cm; olive (5Y 5/3) fine sandy loam; massive; firm; 10 percent rock fragments; moderately acid.

Canton and Charlton Soils

The Canton series consists of very deep, well drained soils formed in a loamy mantle underlain by sandy till. They are on nearly level to very steep moraines, hills, and ridges. Slope ranges from 0 to 45 percent. A typical profile associated with Canton soils is as follows: **Oi**--0 to 5 cm; slightly decomposed plant material; **A**--5 to 13 cm; very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; friable; common fine roots; 5 percent gravel; very strongly acid (pH 4.6); abrupt smooth boundary; **Bw1**--13 to 30 cm; yellowish brown (10YR 5/6) fine sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; 5 percent gravel; very strongly acid (pH 4.6); clear smooth boundary; **Bw2**--30 to 41 cm; yellowish brown (10YR 5/4) fine sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; 5 percent gravel; strongly acid (pH 5.1); clear smooth boundary; **Bw3**--41 to 56 cm; yellowish brown (10YR 5/4) gravelly fine sandy loam; weak medium subangular blocky; friable; common fine and medium roots; 15 percent gravel; strongly acid (pH 5.1); abrupt smooth boundary; and **2C**--56 to 170 cm; grayish brown (2.5Y 5/2) gravelly loamy sand; massive; friable; 25 percent gravel; moderately acid (pH 5.6).

The Charlton series consists of very deep, well drained soils formed in loamy melt-out till. They are nearly level to very steep soils on moraines, hills, and ridges. Slope ranges from 0 to 60 percent. A typical profile associated with Charlton soils is as follows: **Oe**--0 to 4 cm; black (10YR 2/1) moderately decomposed forest plant material; **A**--4 to 10 cm; dark brown (10YR 3/3) fine sandy loam; weak fine granular structure; very friable; many fine roots; 5 percent gravel; very strongly acid; abrupt smooth boundary; **Bw1**--10 to 18 cm; brown (7.5YR 4/4) fine sandy loam; weak coarse granular structure; very friable; many fine and medium roots; 5 percent gravel; very strongly acid; clear wavy boundary; **Bw2**--18 to 48 cm; yellowish brown (10YR 5/6) fine sandy loam; weak medium subangular blocky structure; very friable; common fine and medium roots; 10 percent gravel and cobbles; very strongly acid; clear wavy boundary; **Bw3**--48 to 69 cm; light olive brown (2.5Y 5/4) gravelly fine sandy loam; massive; very friable; few medium roots; 15 percent gravel and cobbles; very strongly acid; abrupt wavy boundary; and **C**--69 to 165 cm; grayish brown (2.5Y 5/2) gravelly fine sandy loam with thin lenses of loamy sand; massive; friable, some lenses firm; few medium roots; 25 percent gravel and cobbles; strongly acid.

<u>Charlton-Chatfield Soils</u>

The Charlton series consists of very deep, well drained soils formed in loamy melt-out till. They are nearly level to very steep soils on moraines, hills, and ridges. Slope ranges from 0 to 60 percent. A typical profile associated with Charlton soils is as follows: **Oe**--0 to 4 cm; black (10YR 2/1) moderately decomposed forest plant material; **A**--4 to 10 cm; dark brown (10YR 3/3) fine sandy loam; weak fine granular structure; very friable; many fine roots; 5 percent gravel; very strongly acid; abrupt smooth boundary; **Bw1**--10 to 18 cm; brown (7.5YR 4/4) fine sandy loam; weak coarse granular structure; very friable; many fine and medium roots; 5 percent gravel; very strongly acid; clear wavy boundary; **Bw2**--18 to 48 cm; yellowish brown (10YR 5/6) fine sandy loam; weak medium subangular blocky structure; very friable; common fine and medium roots; 10 percent gravel and cobbles; very strongly acid; clear wavy boundary; **Bw3**--48 to 69 cm; light olive brown (2.5Y 5/4) gravelly fine sandy loam; massive; very friable; few medium roots; 15 percent gravel and cobbles; very strongly acid; abrupt wavy boundary; and **C**--69 to 165 cm; grayish brown (2.5Y 5/2) gravelly fine sandy loam with thin lenses of loamy sand; massive; friable, some lenses firm; few medium roots; 25 percent gravel and cobbles; strongly acid.

The Chatfield series consists of well drained soils formed in loamy melt-out till. They are moderately deep to bedrock. They are nearly level to very steep soils on bedrock-controlled hills and ridges. Slope ranges from 0 to 70 percent. A typical profile associated with Chatfield soils is as follows: **Oi**--0 to 3 cm, slightly decomposed leaf, needle, and twig litter; extremely acid, pH 4.2; **A**--3 to 5 cm, very dark gray (10YR 3/1) fine sandy loam, gray (10YR 5/1), dry; weak fine subangular blocky structure; friable; many fine and medium roots throughout; 5 percent mixed gravel and cobbles; very strongly acid, pH 4.5; abrupt smooth boundary; **Bw1**--5 to 33 cm, strong brown (7.5YR 5/6) gravelly fine sandy loam; weak fine subangular blocky structure; friable; common fine roots throughout and common medium roots throughout; 15 percent mixed gravel and cobbles; very strongly acid, pH 4.5; abrupt wavy boundary.; **Bw2**--33 to 76 cm, strong brown (7.5YR 5/6) gravelly fine sandy loam; moderate medium subangular blocky structure; friable; few fine roots throughout; 20 percent mixed rock fragments; very strongly acid, pH 4.5; abrupt irregular boundary; and **2R**--76 cm; fractured slightly-weathered schist bedrock.

Sutton Series

The Sutton series consists of very deep, moderately well drained loamy soils formed in melt-out till. They are nearly level to strongly sloping soils on hills, low ridges, and ground moraines, typically on footslopes, lower backslopes and in slight depressions. Slope ranges from 0 to 15 percent. A typical profile associated with Sutton soils is as follows: **Oe**--0 to 2 cm; black (10YR 2/1) moderately decomposed forest plant material; **A**--2 to 15 cm; very dark brown (10YR 2/2) fine sandy loam; weak medium granular structure; very friable; common fine and medium roots; 5 percent gravel; strongly acid; clear wavy boundary; **Bw1**--15 to 30 cm; brown (7.5YR 4/4) fine sandy loam; weak fine and medium subangular blocky structure; friable; common fine and medium roots; 10 percent gravel and cobbles; moderately acid; gradual wavy boundary; **Bw2**--30 to 61 cm; yellowish brown (10YR 5/6) fine sandy loam; weak medium subangular blocky structure; friable; few medium roots; 10 percent gravel and cobbles; common fine and medium prominent light brownish gray (2.5Y 6/2) iron depletions and yellowish red (5YR 5/6) masses of iron accumulation; moderately acid; gradual wavy boundary; **Bw3**--61 to 71 cm; yellowish brown (10YR 5/4) fine sandy loam; weak medium subangular blocky structure; friable; 10 percent gravel and cobbles; common medium prominent light brownish gray (2.5Y 6/2) iron depletions and reddish brown (5YR 4/4) and strong brown (7.5YR 5/6) masses of iron accumulation; moderately acid; gradual wavy boundary; **C1**--71 to 91 cm; brown (10YR 5/3) gravelly fine sandy loam; weak thick platy structure; firm; 15 percent gravel and cobbles; common medium distinct light brownish gray (2.5Y 6/2) iron depletions and common medium prominent strong brown (7.5YR 5/6) masses of iron concentrations; moderately acid; gradual wavy boundary; **C2**--91 to 165 cm; light olive brown (2.5Y 5/4) gravelly sandy loam; massive; friable; 25 percent gravel and cobbles; moderately acid.

Summary

A review of mapping, geological data, ecological conditions, soils, slopes, and proximity to freshwater suggests that portions of the Project parcel and development 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 parcel.

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 (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 gravers, drills, core fragments, scrapers, and channel flakes, which indicates that the full range of stone tool production and maintenance took place at the site (Moeller 1980). Moreover, the use of both local and non-local raw materials was documented in the recovered tool assemblage, suggesting that not only did the site's occupants spend 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, gravers, and end-scrapers. Based on the types and number of tools present, Jones (1997:77) has hypothesized that the Hidden Creek Site represented a short-term occupation, and that separate stone tool reduction and rejuvenation areas were present.

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 ± 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, gravers, 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±280 and 7,015±160 B.P. (Dincauze 1976).

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

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

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

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

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

The 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 2016) 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 Facility 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 solar array Project is located along Schoolhouse Road in Ellington, Connecticut. This chapter provide an overview of Tolland County and the Town of Ellington, as well as details related to the Project parcel and development area. As is the case with most Connecticut towns, present-day Ellington originated as Native American settlements and later became an English colonial village. Through the nineteenth and twentieth centuries, most Tolland County towns functioned as agricultural hubs with manufacturing powered by local waterways as was the case with Ellington. Due to the absence of any major city, port, or waterway near the town, its farmers relied on markets in nearby towns such as Hartford, Windsor, and Manchester. The automobile culture of the twentieth century along with the development of improved roads and highways in the twenty-first century connected the Town of Ellington to nearby cities, yet it largely remained rural with areas of residential and commercial development.

Tolland County

Tolland County was organized by the Connecticut General Assembly in 1785 and was created from portions of eastern Hartford County and western Windham County. The county is located entirely in Connecticut's eastern upland region, extending from the Massachusetts state border on the north to New London County on the south, and is bounded to the west by Hartford County and to the east by Windham County. Important waterways associated with Tolland County include the Hop River, Middle River, Mount Hope River, Natchaug River, and Willimantic River as well as Bolton Lake, Shenipsit Lake, Mansfield Hollow Lake, and Wangumbaug Lake (Cole 1888; Beers 1903). Its largest watercourse is the Willimantic River, which, along with some of its tributaries, provided important sources of waterpower. As part of the upland region, Tolland County was colonized later than the coastal and Connecticut River Valley regions, generally after 1700. During the industrializing period, its towns' development varied depending on the extent to which their inhabitants were able to take advantage of waterpower sites. None, however, were able to develop large cities, although a few substantial industrial villages appeared. As a result of this lack of urbanization, most of the county was too distant from Connecticut's large urban areas to be strongly affected by the suburbanization trend. Even the construction of Interstate 84 during the latter part of the twentieth century could not overcome the problem of distance in most towns. The county's three largest towns are Vernon, Mansfield, and Ellington while other important population centers are located at Tolland, Coventry, and Stafford (Connecticut 2023).

Woodland Period to Seventeenth Century

During the Woodland Period of American history (ca. 3,000 to 500 years ago), Indigenous peoples who resided in present-day Connecticut were part of the Algonquian culture of northeastern North America (Lavin 2013). They spoke variations of Algonquian languages and resided in extended kinship groups on lands maintained for a variety of horticultural and resource extraction purposes (Goddard 1978). These communities practiced subsistence activities including hunting, fowling, and fishing, along with the cultivation of crops such as maize, squash, and beans. They seasonally harvested shellfish, fruits, and plants during warmer periods, and gathered nuts, roots, and tubers during colder times (Lavin 2013). During the winter, these communities came together to conduct deer hunts. Native people resided in settlements concentrated along rivers or wetlands, with villages fortified by wooden palisades at times. Habitations, known as a *weetu* or wigwam, consisted of a tree sapling frame covered in reed matting during warm months and tree bark in the winter. These varied in size from small, individual dwellings to expansive “long house” structures (Lavin 2013). The Native people who resided at present-day Ellington were affiliated with the Nipmuc, Podunk, and Agawam communities (De Forest 1852; Lavin 2013).

Seventeenth Century through Eighteenth Century

As Native communities maintained oral tradition rather than a written record, most surviving information of the Indigenous people of Connecticut was recorded by European observers (Lavin 2013). In ca., 1614, Dutch traders sailing under Captain Adrian Block were the earliest Europeans known to have sailed along Long Island Sound and up the Connecticut River where they initiated contact and trade with the Indigenous people of the Connecticut River Valley (De Forest 1852; Lavin 2013). Following that voyage, Block created a figurative map of the region that depicted the Connecticut River, which the Dutch named the *Versche Rivier* (Fresh River) due to it being a freshwater river. By 1620, the Dutch partnered with the Pequot of southeastern Connecticut to trade wampum and furs for European goods. In 1624, they founded New Netherland Colony around Manhattan and the Hudson River and built a fort at present-day Hartford in 1633 (Jacobs 2009). The Pequot extended their dominance over the Long Island Sound and the lower Connecticut River Valley bringing groups there into a tributary relationship under their leadership, including the Mohegan (Hauptman & Wherry 2009; McBride 2013). To break from the Pequot, conquered Native leaders invited the English to the valley who settled the towns of Windsor (1633), Wethersfield (1634), Hartford (1635), and Saybrook (1635) (Van Dusen 1961). Tensions grew following the death of English traders, which were blamed on the Pequot, and in retaliation Massachusetts soldiers destroyed one of their villages in August 1636, which began the Pequot War. In May 1637, Connecticut forces, which included some Mohegans and the Sachem Uncas, destroyed a Pequot village at Mistick. The Pequot fled west where the final battle of war was fought at present-day Fairfield in July 1637 (Cave 1996). Pequot territory was considered conquered land claimed by Connecticut Colony while Massachusetts Bay settlers formed New Haven Colony at Quinnipiac in late 1638. In 1652, the Dutch lost the Huys de Hoop at Hartford during the First Anglo-Dutch War (Trumbull 1886). In January of 1639, the Connecticut River towns adopted the “fundamental orders” which outlined the framework for Connecticut Colony, a self-governed colony separate from Massachusetts Bay or Plimoth (Trumbull 1886).

In the aftermath of the Pequot War, the Sachem Uncas claimed much of northeastern Connecticut colony, the lands of former Pequot tributaries, as Mohegan lands through both right of conquest and hereditary claims (Oberg 2006). This included lands that would become the Town of Ellington. During the upheaval of King Philip’s War (1675-1676), much of present-day Tolland and Windham counties were depopulated of Nipmuc communities or they fell in with the Mohegan who claimed most of those lands as their own (Oberg 2006). Connecticut Colony recognized Mohegan land claims in present-day New London and Windham Counties, but other than present-day Hebron, Columbia, and Andover, few other Mohegan claims to present-day Tolland County were allowed (Oberg 2006). The area now known as Ellington was obtained by the town of Windsor from Native leaders loosely known as “River Indians,” which likely refers to Podunk or Agawam communities in this case. In 1671, an individual named Nearowanocke signed a deed for a large part of the original Windsor settlement located to the east of the Connecticut River, including what are now Ellington and the southwest part of Somers (Stiles 1891). In 1678, a trio of Native Americans named Wequagun, Wawapaw, and Waquompo confirmed an earlier 1675 sale of the part of Enfield lying north of Freshwater River. The affiliations of these natives are also unknown, though it is possible that they were members of the Agawam tribe, whose territory encompassed that area, although the exact borders of these land grants are uncertain (Wright 1905).

The territory that Windsor encompassed was expansive and originally included the modern-day towns of East Windsor, South Windsor, Ellington, Windsor Locks, and part of Bloomfield, as well as small parts of other neighboring towns (Van Dusen 1961). The area that is now Ellington was initially known as "Weaxskashuck" and was not settled until the early eighteenth century, when English colonist Samuel Pinney arrived in about 1717 (Stiles 1891). Early settlers in Connecticut were primarily farmers who raised various types of grain as well as tobacco. Later, some farmers turned to grazing and raised livestock. By 1735, there were enough inhabitants to establish Ellington Parish within Windsor. Early forms of industry appeared as gristmills, sawmills, and fulling mills which became common (Van Dusen 1961). By the time of the first census in Connecticut in 1756, the population of Windsor (which still included Ellington) had reached 4,220 residents (Connecticut 2024a). In 1768, the town of East Windsor separated from Windsor, which encompassed all the territory on the eastern side of the Connecticut River, including modern-day Ellington (Cole 1888). During the American Revolution (1775-1783), Ellington recruited soldiers for the war effort (Stiles 1891). After the Revolution, the town recovered from wartime economic disruptions thanks to its robust agricultural production. Although it is unclear how many people in town were free or enslaved prior to 1790, slavery likely existed in Ellington, practiced by a few wealthy families, merchants, and ministers. The State passed a gradual manumission law in 1784, but slavery was not fully abolished until 1848 (Normen 2013). In 1786, Ellington was incorporated as a town and by 1790, it had 1,056 residents, two of which were enslaved, and 15 were free people of color (US Census 1908; Barry 1985; Connecticut 2024a). 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

In the early nineteenth century, Ellington was firmly a small agricultural settlement. Unlike neighboring towns, Ellington did not experience early industrialization along its waterways. As the century progressed, the town's population was slow to grow, and it did not develop any particular industries despite the arrival of the railroad. The town was described in 1814 as having "twenty dwelling houses, two stores, three taverns, a blacksmith, a shoemaker, two cider-brandy stills and a gin still" (Cole 1888). Distilling gin became an increasingly important economic activity in town and by 1820, an estimated quarter of agricultural land produced rye for this industry (Cole 1888). Liquor and spirit production began to decline around 1840 as tobacco cultivation grew in popularity. The main village in Ellington became the site of the training ground for the 22nd Regiment Connecticut Militia. In 1844, the Hartford & Springfield Railroad was built through Ellington and to the west of Somers through Enfield on its way to the Massachusetts border (Turner and Jacobus 1989). In contrast to many other municipalities in Connecticut, access to the railroad did not provide a significant economic boost. In 1860, Ellington maintained a population of 1,510 residents and during the Civil War (1861-1865) 143 men were credited to the town and served in the Union military (Hines 2002). By the end of the century the principal industry in Ellington remained agriculture, supplemented by a woolen mill (Connecticut 1890). In Ellington, the area around Crystal Lake in the eastern portion of town began to gain popularity as a resort area, with several prominent families residing by the lake. This led to some population fluctuations and by 1890 Ellington maintained 1,539 residents (Connecticut 2024b).

Table 1: Population of Ellington, Tolland County, Connecticut 1790-2020 (Connecticut 2024a-d; AdvanceCT and CTData Collaborative 2023)

Town	1790	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900
Ellington, Tolland County	1,056	1,209	1,344	1,196	1,455	1,356	1,399	1,510	1,452	1,569	1,539	1,829
	1910	**1920**	**1930**	**1940**	**1950**	**1960**	**1970**	**1980**	**1990**	**2000**	**2010**	**2020**
	1,999	2,127	2,253	2,479	3,099	5,580	7,703	9,711	11,197	12,921	15,602	16,426

During the twentieth century, the Town of Ellington transitioned from an agricultural center to a rural residential community, and by 1910 it had a population of 1,999 residents (Connecticut 2024c). At that time, the principal industries in town were agriculture and wool manufacturing (Connecticut 1910). By 1920, shade tobacco comprised a significant portion of the crops cultivated in town, and it became extremely profitable. Despite the cultivation of this lucrative crop, Ellington continued to develop slowly until approximately the 1950s. During the middle of the century, Connecticut experienced growth reflecting the postwar adoption of the automobile and the subsequent suburban residential development trend, as well as the construction of highways. Because of this suburbanization trend, the population jumped. In 1950, Ellington had 3,099 residents and by 1970, its population more than doubled to 7,703 inhabitants (Connecticut 2024c-d). As of 2021, Ellington had a population of 16,170 and an economy firmly based in agriculture with the town's largest employer being Oakridge Dairy, which is the largest dairy farm in the state (Connecticut 2020, AdvanceCT and CTData Collaborative 2023). Today, town officials describe Ellington as a rural residential community, and the town is characterized by minimal commercial and industrial development (Ellington 2019).

History of the Project Area

The proposed Project is located on the northeast side of Schoolhouse Road in the Town of Ellington, Connecticut. The 1857 Tolland County map of the Town of Ellington depicts the Project parcel and development area as undeveloped land, presumably used for agricultural purposes, near the border of Stafford (Figure 4). The roads which were in place nearest to the Project parcel at that time included Schoolhouse Road and East Porter Road in Ellington, Boyer Road in Stafford, and a discontinued road which formerly connected between Grennan Road in Stafford and Newell Hill Road in Ellington. A school was recorded on this map on the southwest side of Schoolhouse Road to the west of the Project parcel and development area, and the nearest residence belonged to O. L. Carpenter on the northern side of this road and to the west of the Project parcel and development area. The 1869 Beers Atlas of Ellington depicts the Project parcel and development area in a similar state, with few changes in the vicinity (Figure 5).

Photographs from a 1934 aerial survey document the project area as forested land, with the Project parcel and development area also forested in addition to two small clearings in the south of the parcel. The surrounding environment was also mostly forested, with agricultural fields to the southwest of the parcel (Figure 6). Similarly, aerial photos taken in 1951 document the Project parcel and development area as almost entirely forested, with only one of the two clearings in the south of the parcel remaining (Figure 7). In 1970, aerial photography showed that the entire Project parcel was characterized by tree cover, and many of the small fields in the vicinity were forested. A few new structures were also present on Schoolhouse Road (Figure 8).

Subsequent aerial imagery from 1990 shows that the southern portion of the Project parcel and the southern border of the proposed development area had been cleared into fields (Figure 9). By 2004, the cleared land had expanded through most of the Project parcel and all of the proposed solar array area (Figure 10). The land in the Project parcel and development area was in use as an orchard at that time, and only the northwest and northeast corners of the parcel remained forested. Evidence of ground disturbance was also present in the parcel around the middle of its eastern boundary, to the east of the proposed solar array area. In addition, more houses had been built by 2004 on Schoolhouse Road to the east and west of the Project parcel. Aerial imagery from 2023 shows the Project region in its essentially modern state (Figure 11). The entire proposed solar array area is in use as an orchard, including most of the Project parcel except for the forested northeast and northwest corners. The environment in the vicinity of the parcel is primarily forested with some new residential development. A number of small outbuildings appear within the Project area near the southern end and the northwestern corner, while a gravel parking lot and access roads are present in the southwest.

Conclusions

The post-European Contact period investigation of the proposed solar Project indicates that the Project area has limited potential to be associated with cultural resources. As of the earliest available aerial images in 1934, almost all of the area was forested. While the land may have been used for agricultural purposes in the nineteenth century, the area has been subjected to disturbance by the recent creation of an orchard, reducing the likelihood of intact evidence of post-European Contact period farming activities from an earlier period.

CHAPTER V
PREVIOUS INVESTIGATIONS

Introduction

This chapter presents an overview of previously identified cultural resources in the vicinity of the solar Project in Ellington, 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 Parcel

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 mile) of the proposed Project (Figure 12). In addition, there are no National/State Register of Historic Places properties/districts identified within 1.6 kilometers (1 mile) of the Project area (Figure 13). These resources are discussed below.

<u>Site 48-2</u>

Site 48-2, which is also known as the Newell Hill Rockshelter, is a precontact era archaeological site located in Ellington, Connecticut. The site is characterized as a rockshelter dating from the Middle Woodland period. The site was recorded by Public Archaeology Survey Team, Inc., (PAST) at an unspecified date, based on an avocational collection of artifacts. These artifacts consisted of dentate stamped ceramics and narrow-stemmed projectile points. The site has not been subjected to subsurface testing. Site 48-2 has not been assessed for listing on the National Register of Historic Places applying the criteria for evaluation (36 CR 60.4 [a-d]). It is located over 1 kilometer (0.62 miles) to the southeast of the Project parcel and will not be impacted by the proposed project.

<u>Site 48-12</u>

Site 48-12, which is also known as Willis Farm #18, is a precontact era archaeological site located in Ellington, Connecticut. The site is characterized as a camp and potential hunting ground dating from an unknown period. The site was recorded by Bicknell in 1988 following surface collection. Recovered artifacts consisted of broken projectile points, 1 quartz flake, and 1 “broad point of flint”. The site has not been subjected to testing. Site 48-12 has not been assessed for listing on the National Register of Historic Places applying the criteria for evaluation (36 CR 60.4 [a-d]). It is located over 1 kilometer (0.62 miles) to the southeast of the Project parcel and will not be impacted by the proposed Project.

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 Project parcel in Ellington, Connecticut. The following tasks were completed during this investigation: 1) study of the region's precontact era, post-European Contact period, and natural settings, 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 parcel in order to identify potential historical resources and/or areas of past disturbance; and 4) pedestrian survey and photo-documentation of the Project parcel in order to determine their 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 the Project parcel in Willington, 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 parcel development area, and considered both below and above ground resources. The fieldwork portion of this undertaking entailed pedestrian survey, photo-documentation, mapping, and GPS recordation.

Archival Research & Literature Review
Background research for this survey included a review of a variety of maps depicting the proposed Project parcel; an examination of USGS 7.5' series topographic quadrangles; an examination of aerial images dating from 1934 through 2024; and a review of all archaeological sites and NRHP/SHRP properties/districts, and previously identified standing structures over 50 years old 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 parcel and development area, and to provide a natural and cultural context for the region. This information then was used to develop the archaeological context of the Project parcel and development area, and to assess their sensitivity with respect to the potential for producing intact cultural resources.

Background research materials, including maps, aerial imagery, and information related to previous archaeological investigations, were gathered from the CT-SHPO. 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 region, as well as data concerning previously identified archaeological sites, NRHP/SHRP properties/districts, and previously identified standing structures over 50 years old within the general vicinity of the Project parcel and development area.

Field Methodology and Data Synthesis
Heritage personnel performed pedestrian survey, photo-documentation, and mapping of the proposed Project parcel and development area. During the pedestrian survey, Heritage staff members visually reconnoitered the Project parcel and development 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. In addition, during the pedestrian survey, the field crew photo-documented the proposed Project parcel and development area, and the locations from which all photos were taken, as well as directional indications, were recorded on a base map of the Project parcel and development 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 parcel and development 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 Project on along School House Road in Ellington, Connecticut (Figure 14 and Photos 1 through 11). 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 parcel and development 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 parcel and development area to determine their 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 parcel 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 parcel and development area were 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 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 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 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 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 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 Summary

As noted above, the proposed Project parcel encompasses approximately 74.47 acres of land located along School House Road in Ellington, Connecticut. The Project parcel is positioned 1.85 kilometers (1.14 miles) west of Crystal Lake. Martins Brook runs across the north end of the Project parcel. It is situated at elevations ranging from 225 to 255 meters (738.2 to 836.6 feet) NGVD. The desktop portion of the Phase IA survey indicated that two previously identified precontact era archaeological sites (48-2 and 48-12,) were within 1.6 kilometers (1 mile) of the Project parcel; however, these sites will not be affected, either directly or indirectly, by the Project. There were no State Register of Historic Places properties or National Register of Historic Places properties within 1.6 km (1 mile).

In addition, a review of United Stated Department of Agriculture and United State Geological Survey, information, also suggested that the Project parcel and development area contains well drained soils and gently sloping terrain. The review of aerial images of the Project parcel and development area suggest Project parcel and development area may have retained archaeological sensitivity. Therefore, pedestrian survey of the Project parcel was completed, the results of which are discussed below.

Pedestrian survey of the Project parcel was completed in July 2025 and confirmed the findings of the desktop portion of the Phase IA survey (Figure 14; Photos 1 through 11). The survey revealed that the southwest portion of the Project parcel contains a pond and wetlands that were designated low/no sensitivity areas, and that the northeast portion of the Project parcel similarly contains a wetland. These areas, amount to 14.47 acres of land, we designated as no/low archaeological sensitivity. No additional archaeological examination of them is recommended prior to construction.

The pedestrian survey also revealed that the Project parcel and development area contains an active orchard that is situated on a rounded hilltop overlooking Martins Brook to the north. Visual examination indicated that the central portion of the orchard features minor disturbance in the form of gravel access roads, irrigation improvements, and some small modern sheds. In addition, two forested areas were identified within the northeastern and northwestern portion of the Project parcel. The forested areas are defined by a gentle north facing slope that extends down to Martins Brook and wetlands. While the planting of the trees within orchard represent impacts to the landscape, areas in between the rows and around the orchard retain level to low sloping topography, well drained soils, and proximity to freshwater sources. This includes 60 acres of the large Project parcel and 20.3 acres of the development area. The latter were assessed as retaining a moderate potential to yield intact archaeological deposits. It is recommended that they be subjected to a Phase IB cultural resources reconnaissance survey prior to project development.

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APPENDIX A

FIGURES

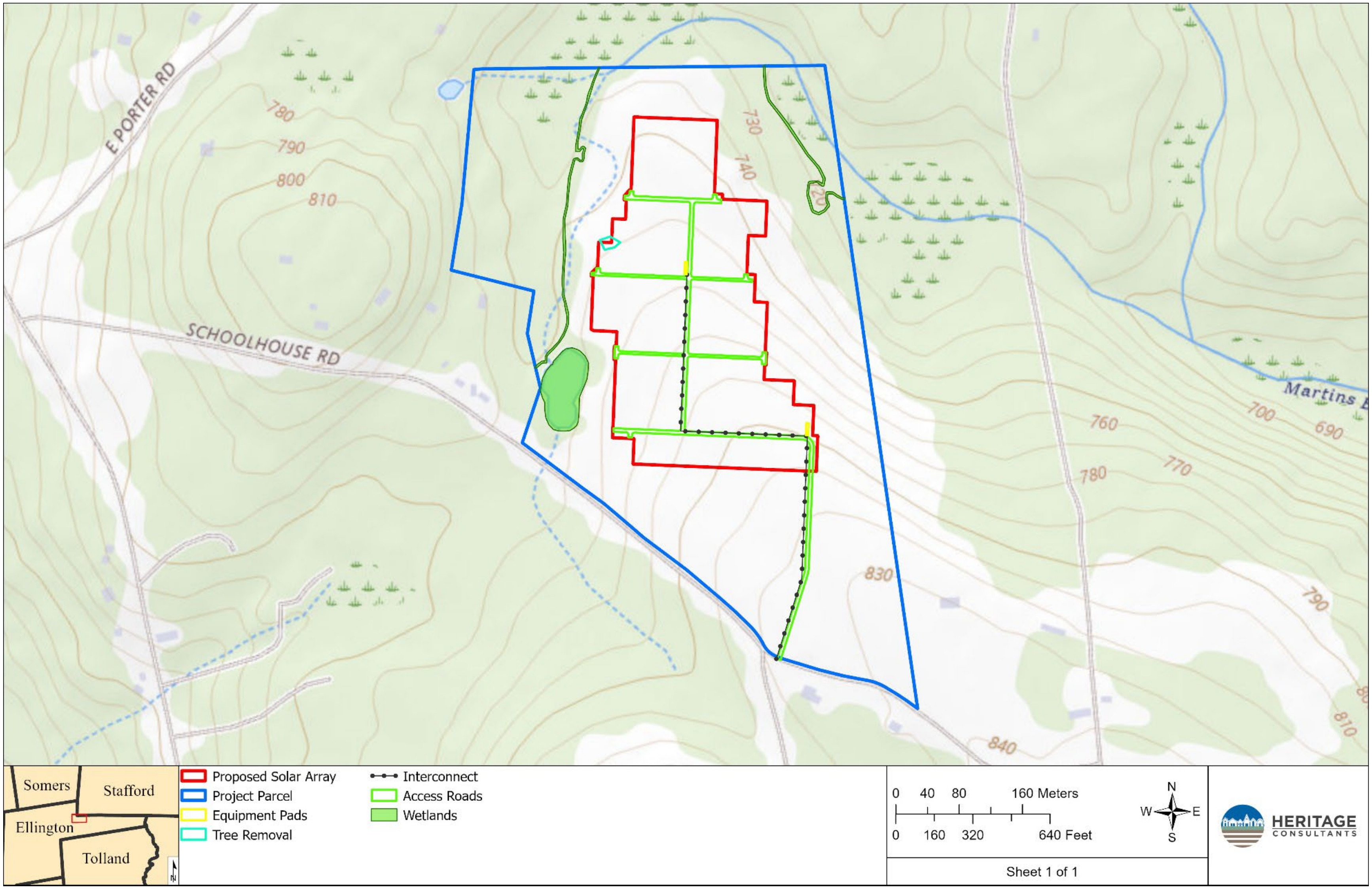

Figure 1. Excerpt from a USGS 7.5' series topographic quadrangle image showing the location of the Project area in Ellington, Connecticut.

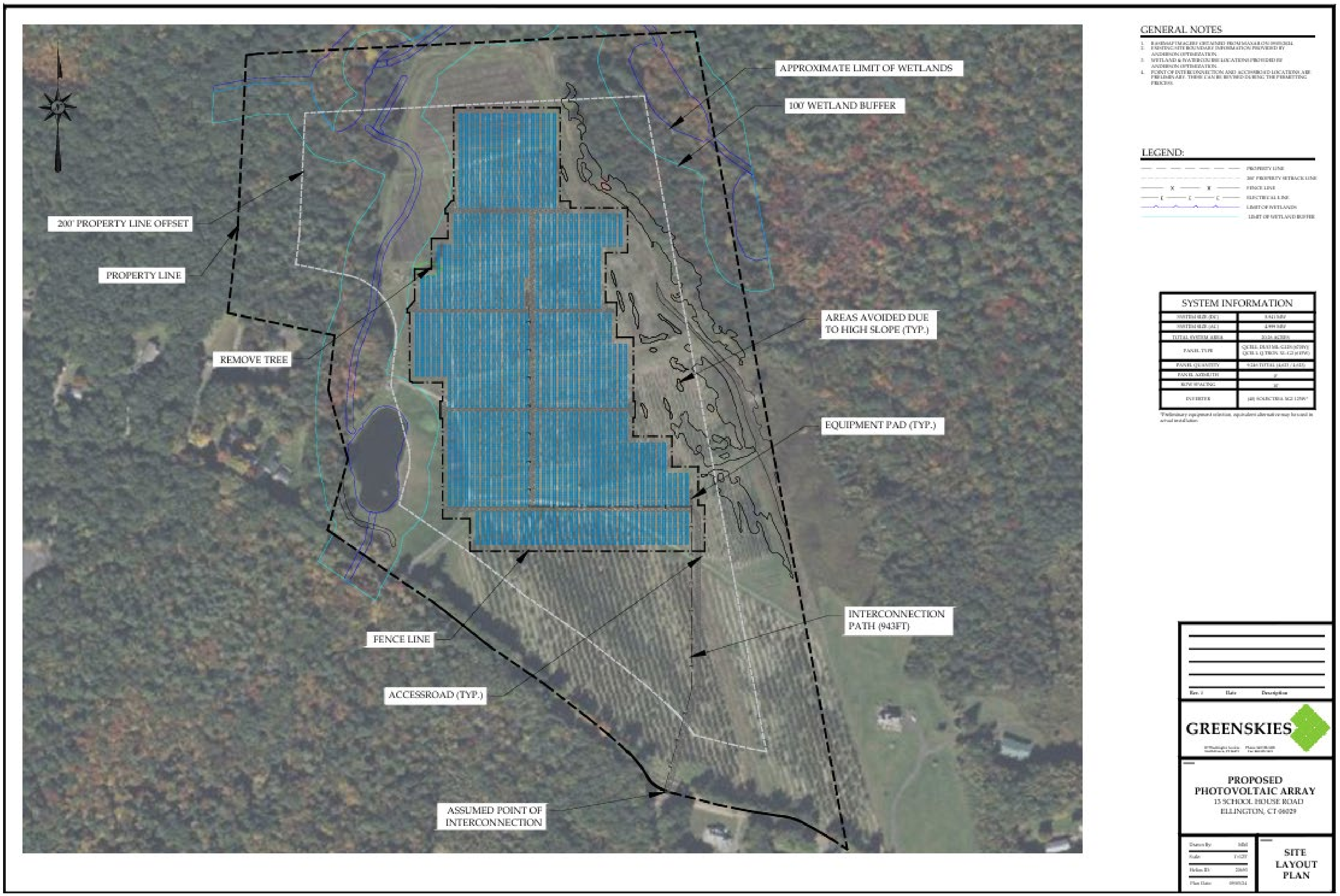

Figure 2. Client provided Project plans for the solar array in Ellington, Connecticut.

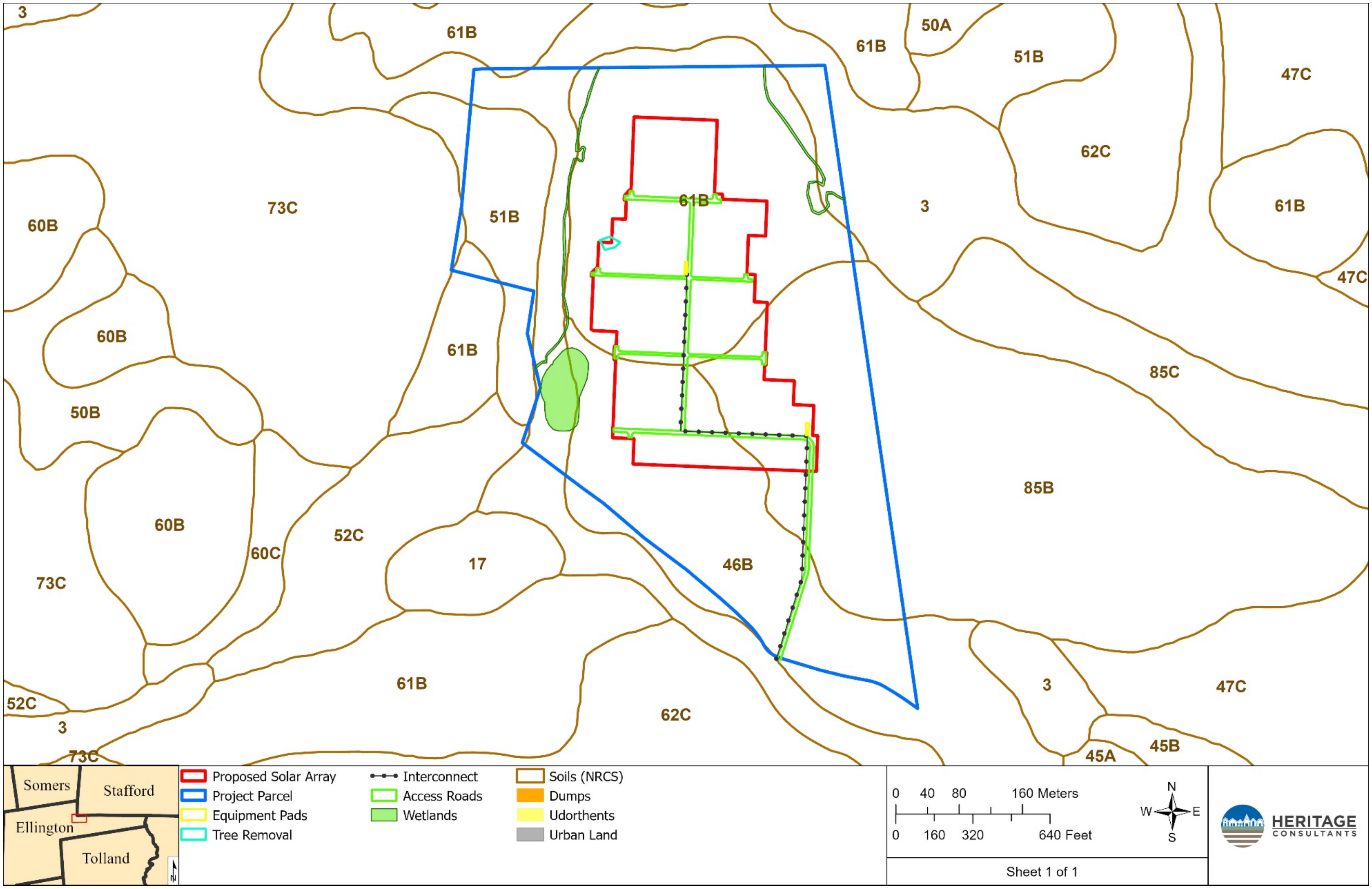

Figure 3. Digital map depicting the soil types present in the vicinity of the Project area in Ellington, Connecticut.

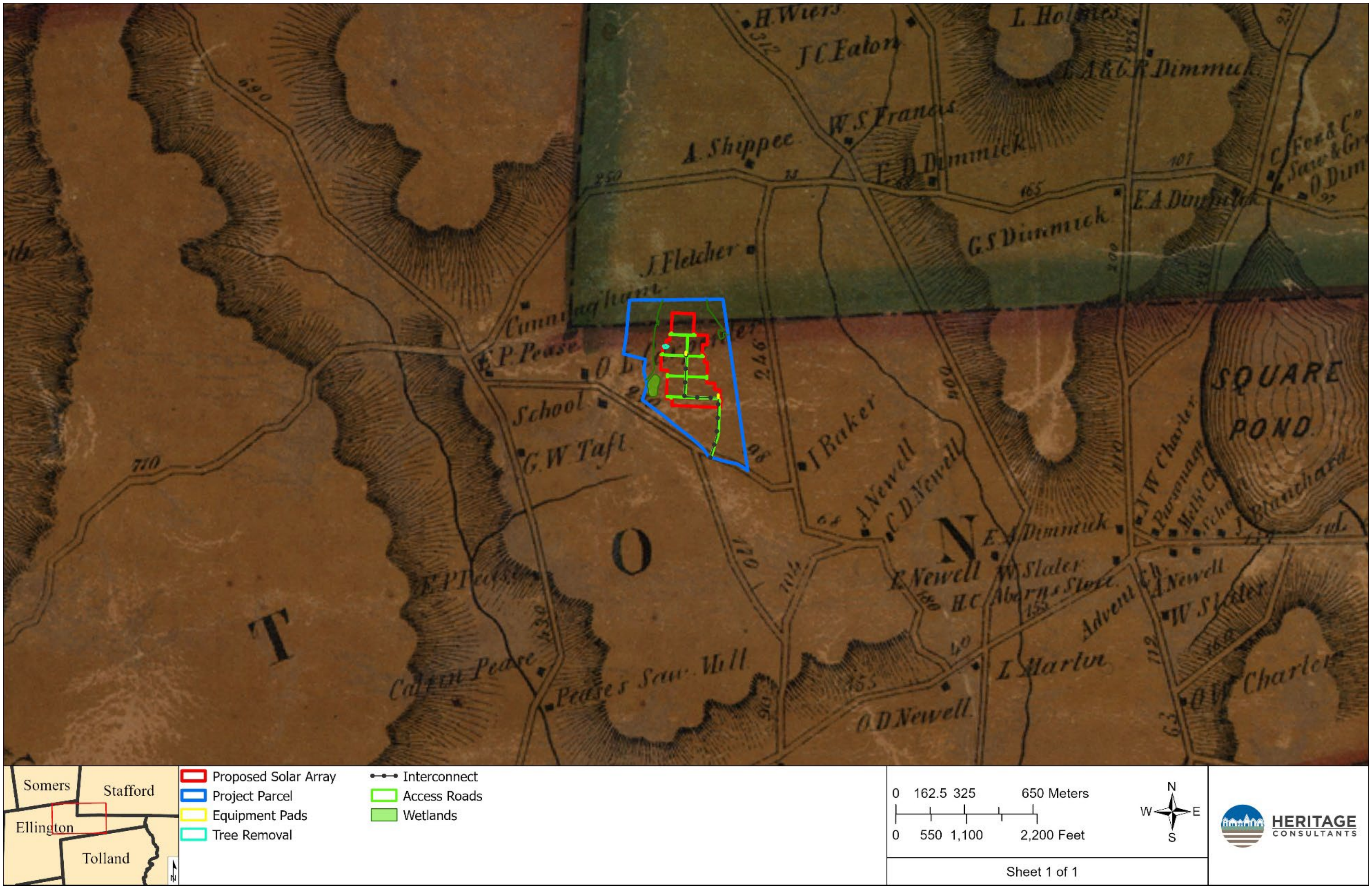

Figure 4. Excerpt from an 1857 map depicting the proposed Project area in Ellington, Connecticut.

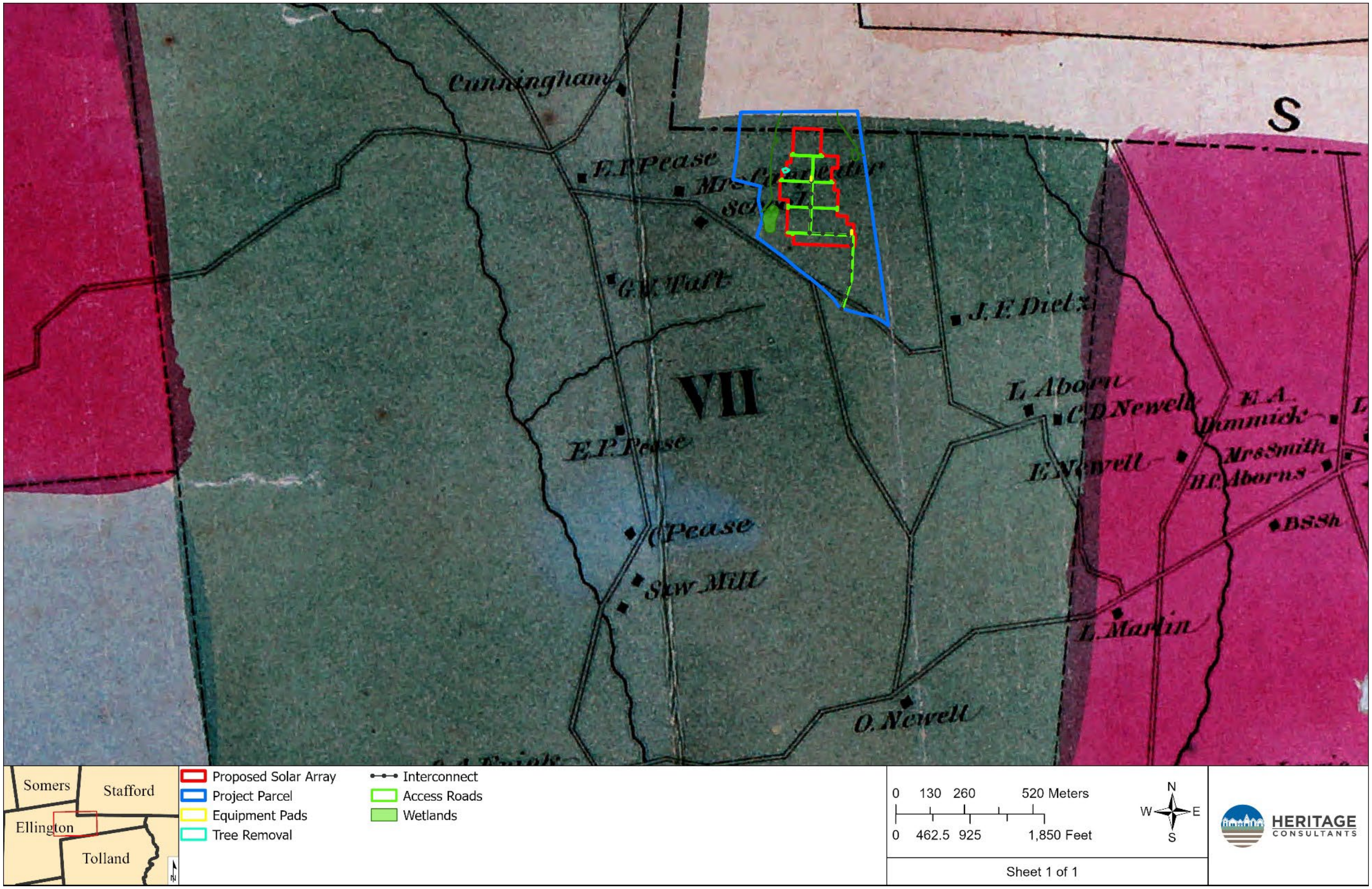

Figure 5. Excerpt from an 1869 map depicting the proposed Project area in Ellington, Connecticut.

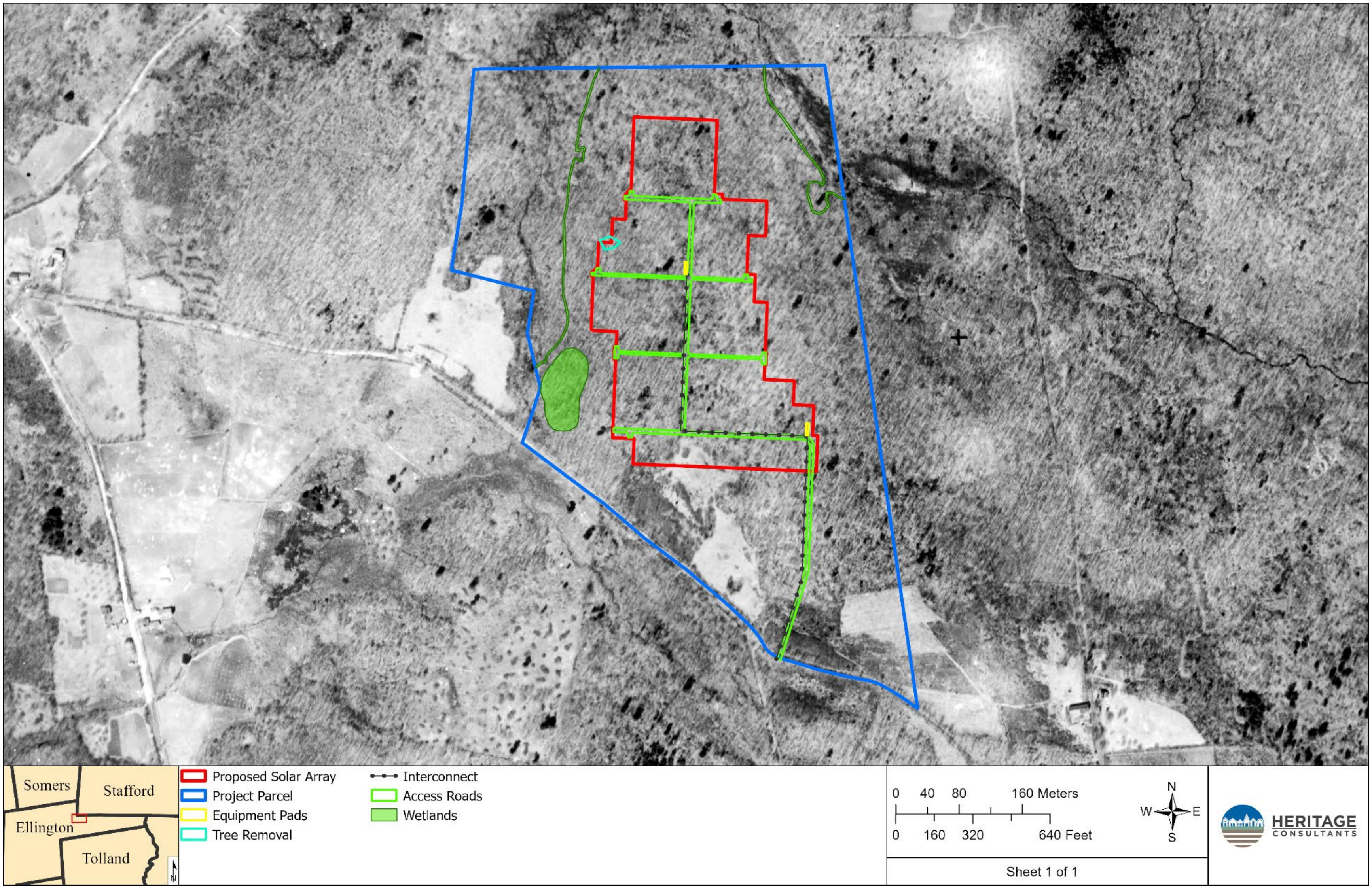

Figure 6. Excerpt from a 1934 aerial image depicting the location of the proposed Project area in Ellington, Connecticut.

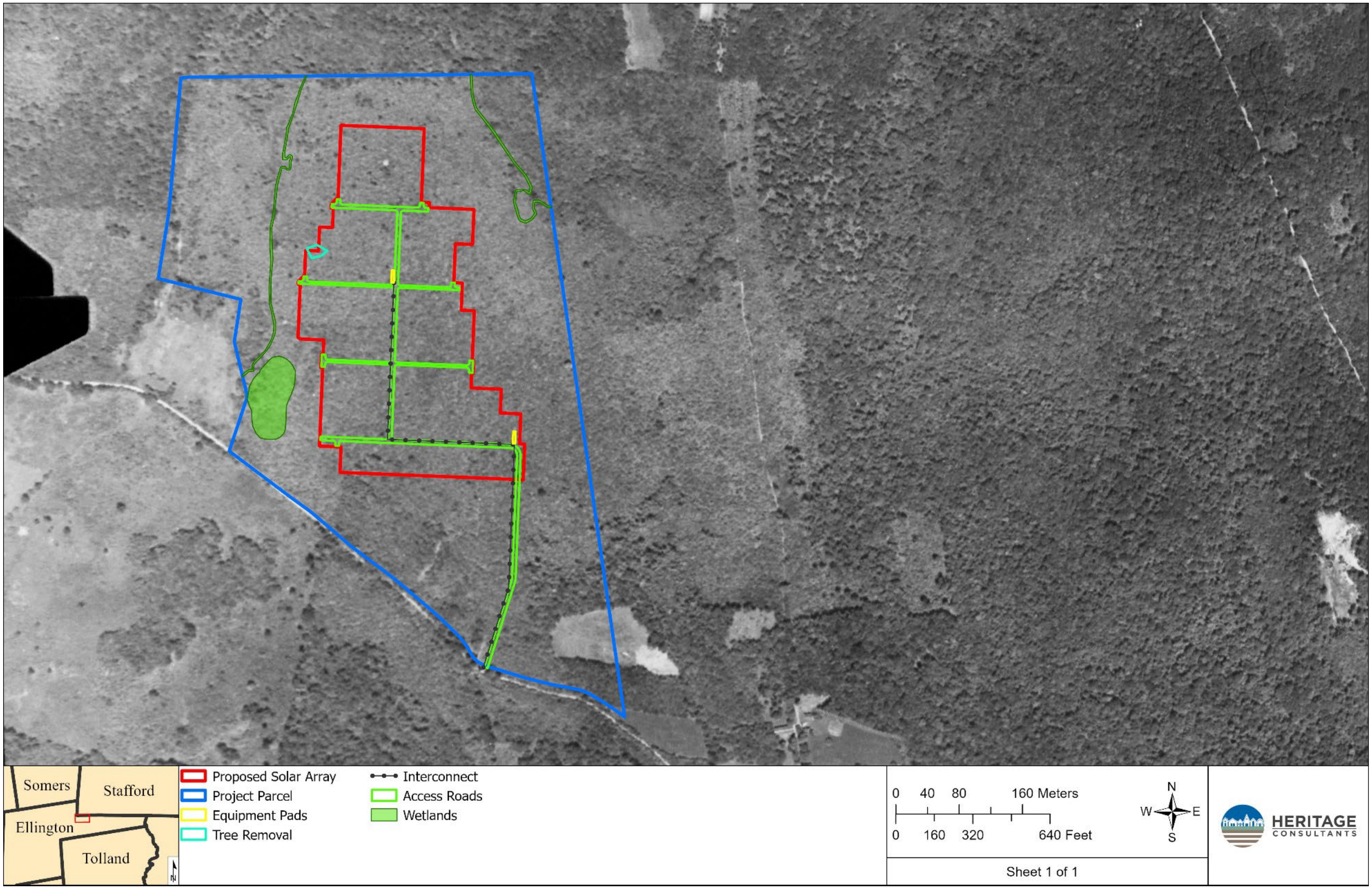

Figure 7. Excerpt from a 1951 aerial image depicting the location of the proposed Project area in Ellington, Connecticut.

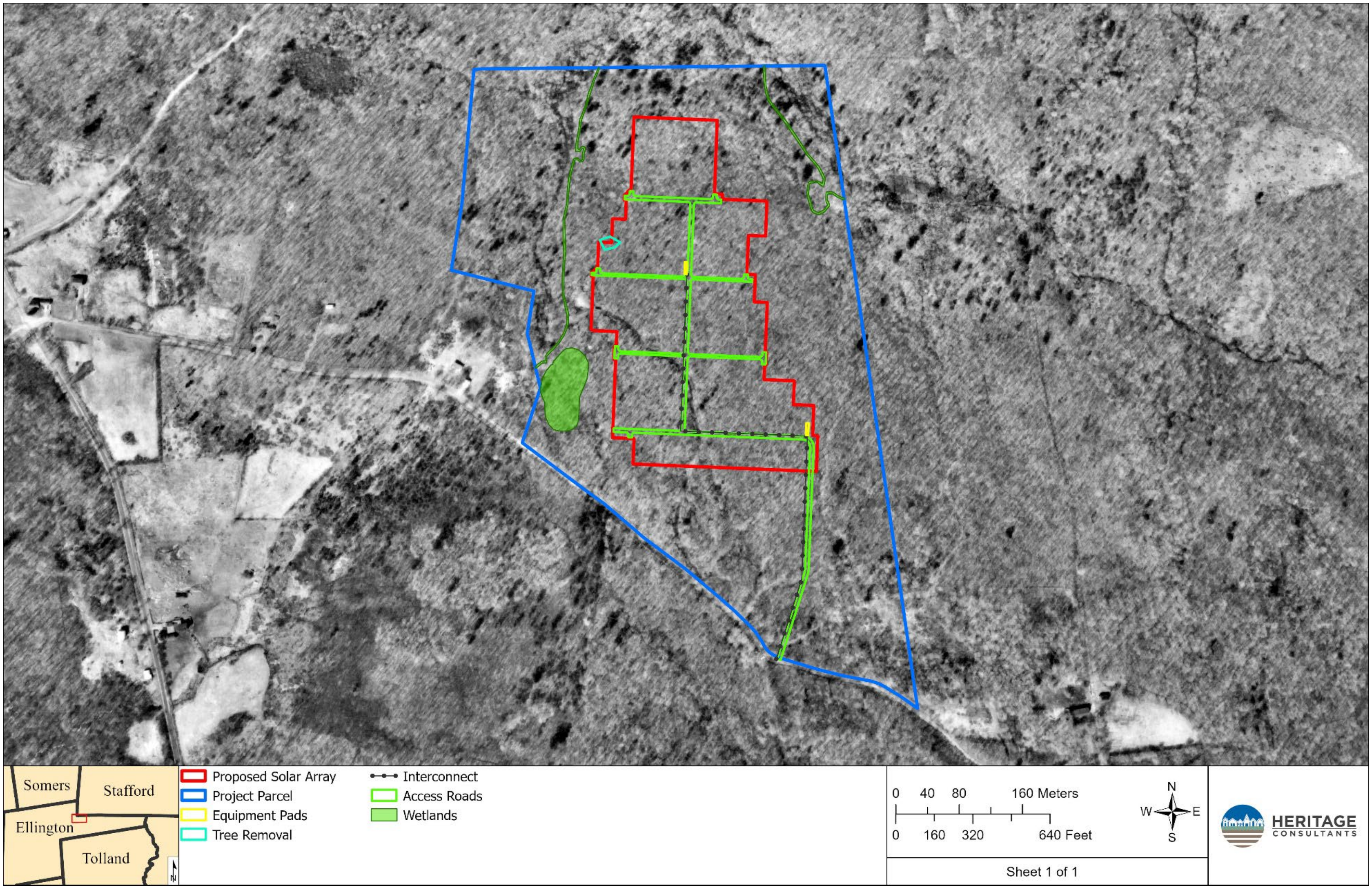

Figure 8. Excerpt from a 1970 aerial image depicting the location of the proposed Project area in Ellington, Connecticut.

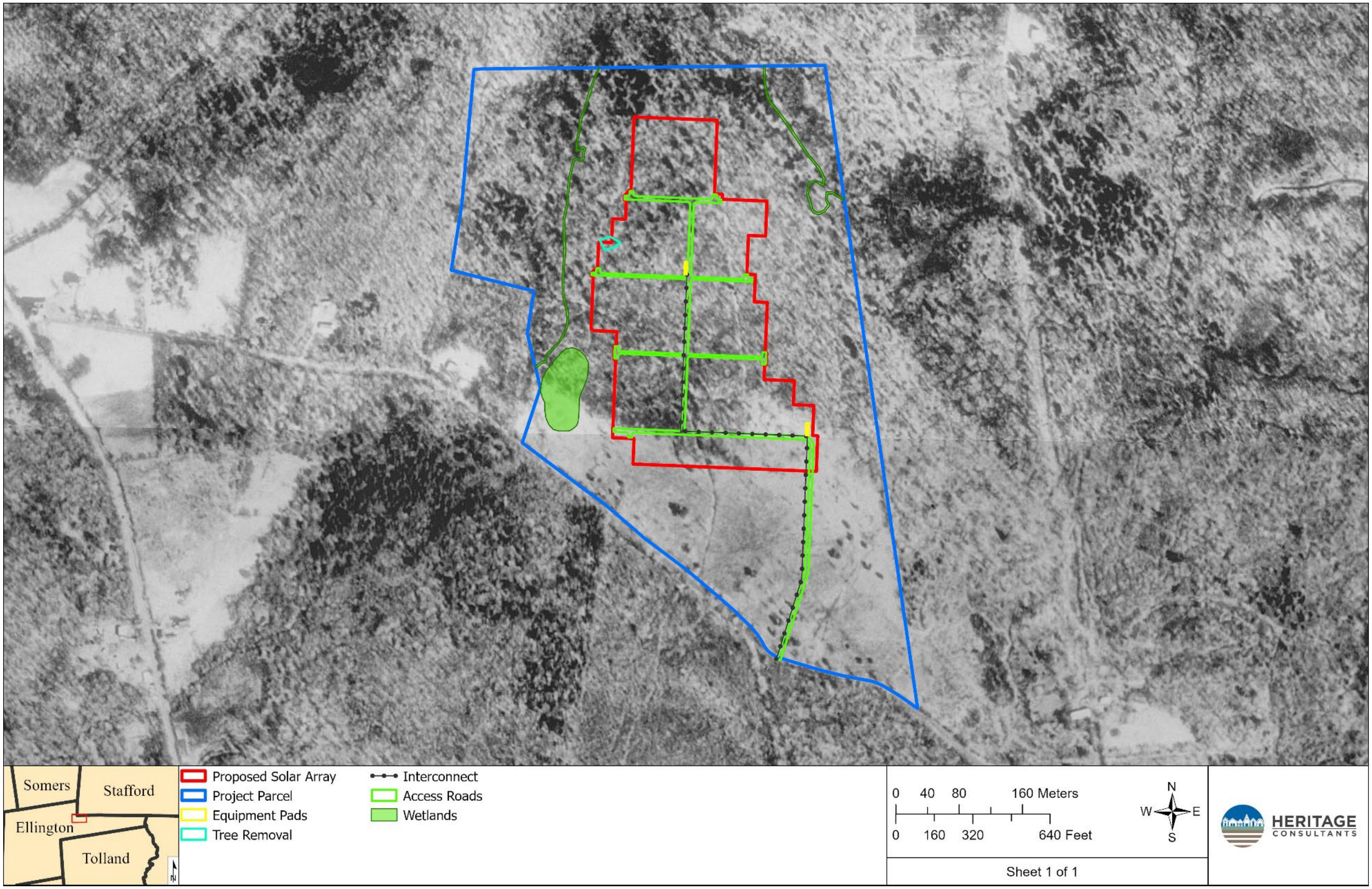

Figure 9. Excerpt from a 1990 aerial image depicting the location of the proposed Project area in Ellington, Connecticut.

Figure 10. Excerpt from a 2004 aerial image depicting the location of the proposed Project area in Ellington, Connecticut.

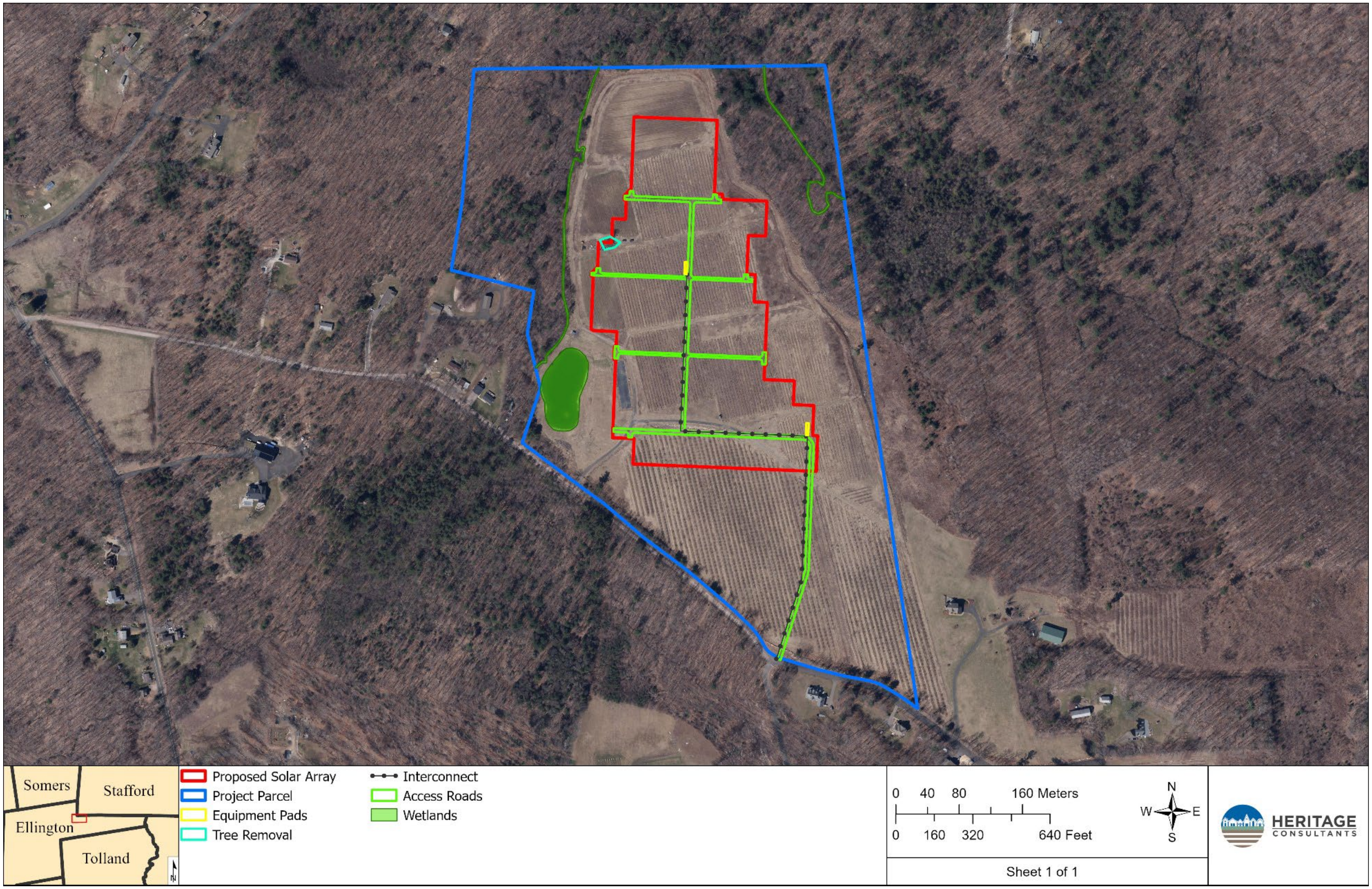

Figure 11. Excerpt from a 2023 aerial image depicting the location of the proposed Project area in Ellington, Connecticut.

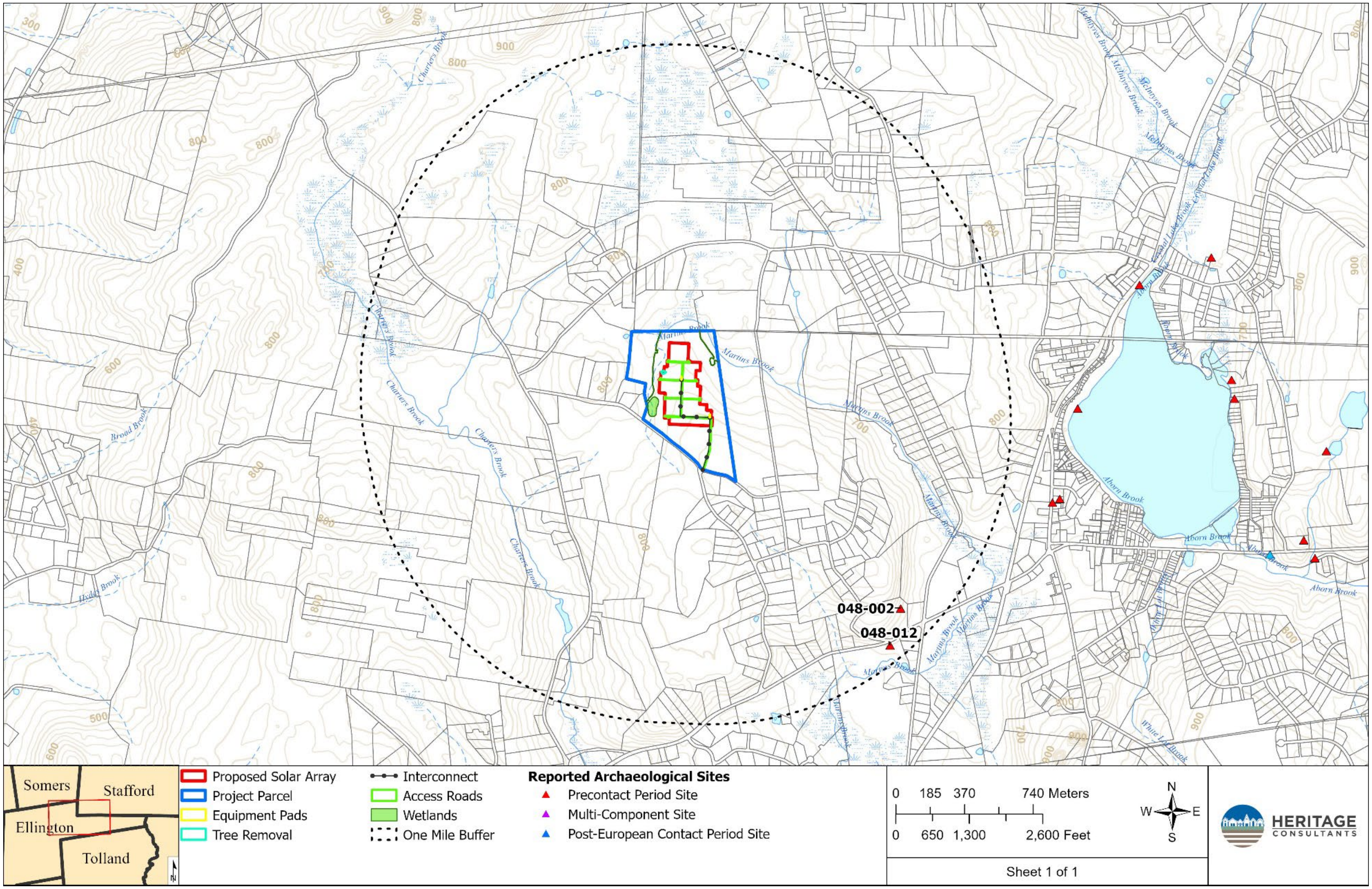

Figure 12. Digital map depicting the locations of previously identified archaeological sites in the vicinity of the proposed Project area in Ellington, Connecticut.

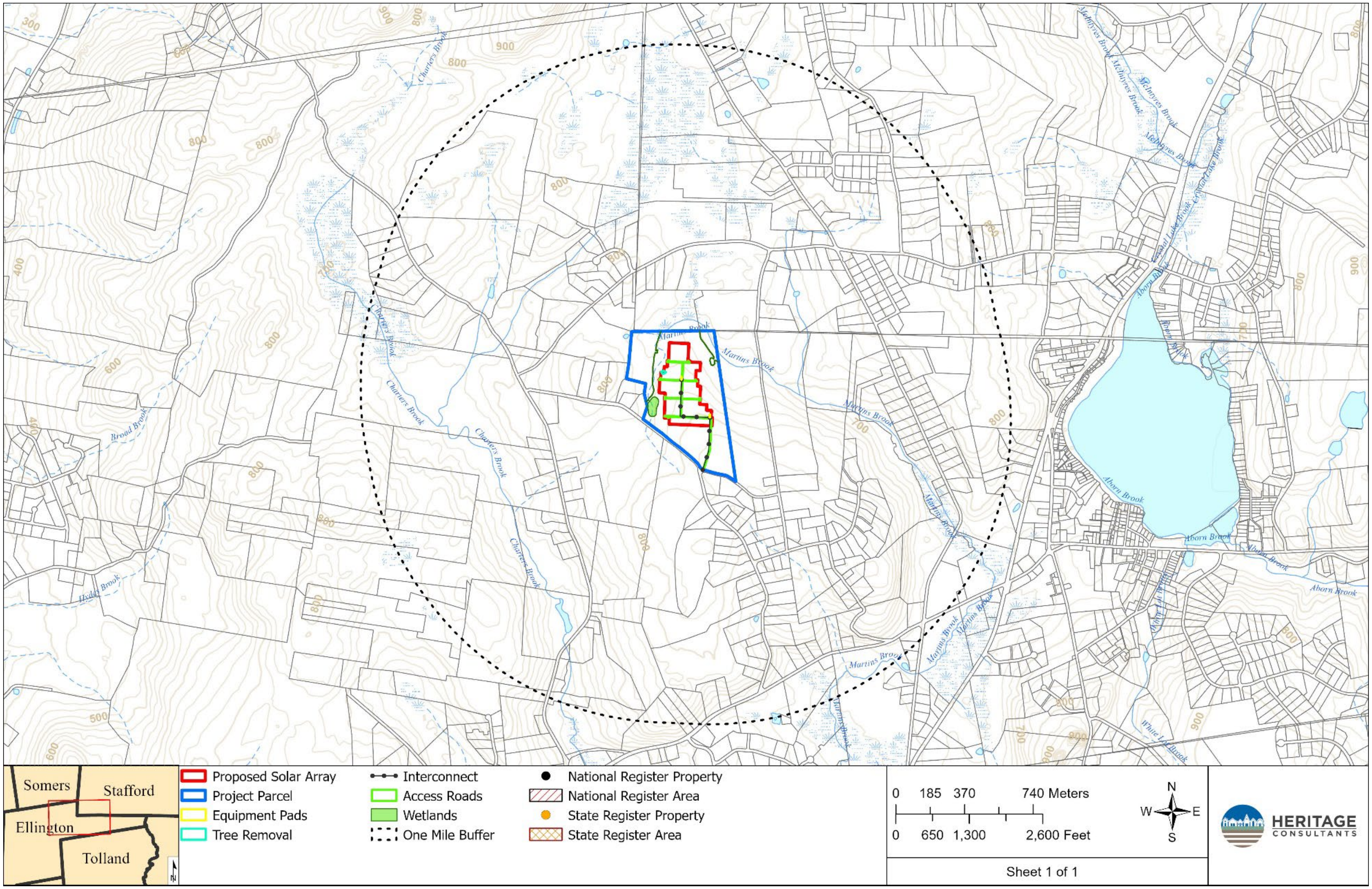

Figure 13. Digital map depicting the locations of the previously identified National Register of Historic Places and State Register of Historic Places in the vicinity of the Project parcel in Ellington, Connecticut.

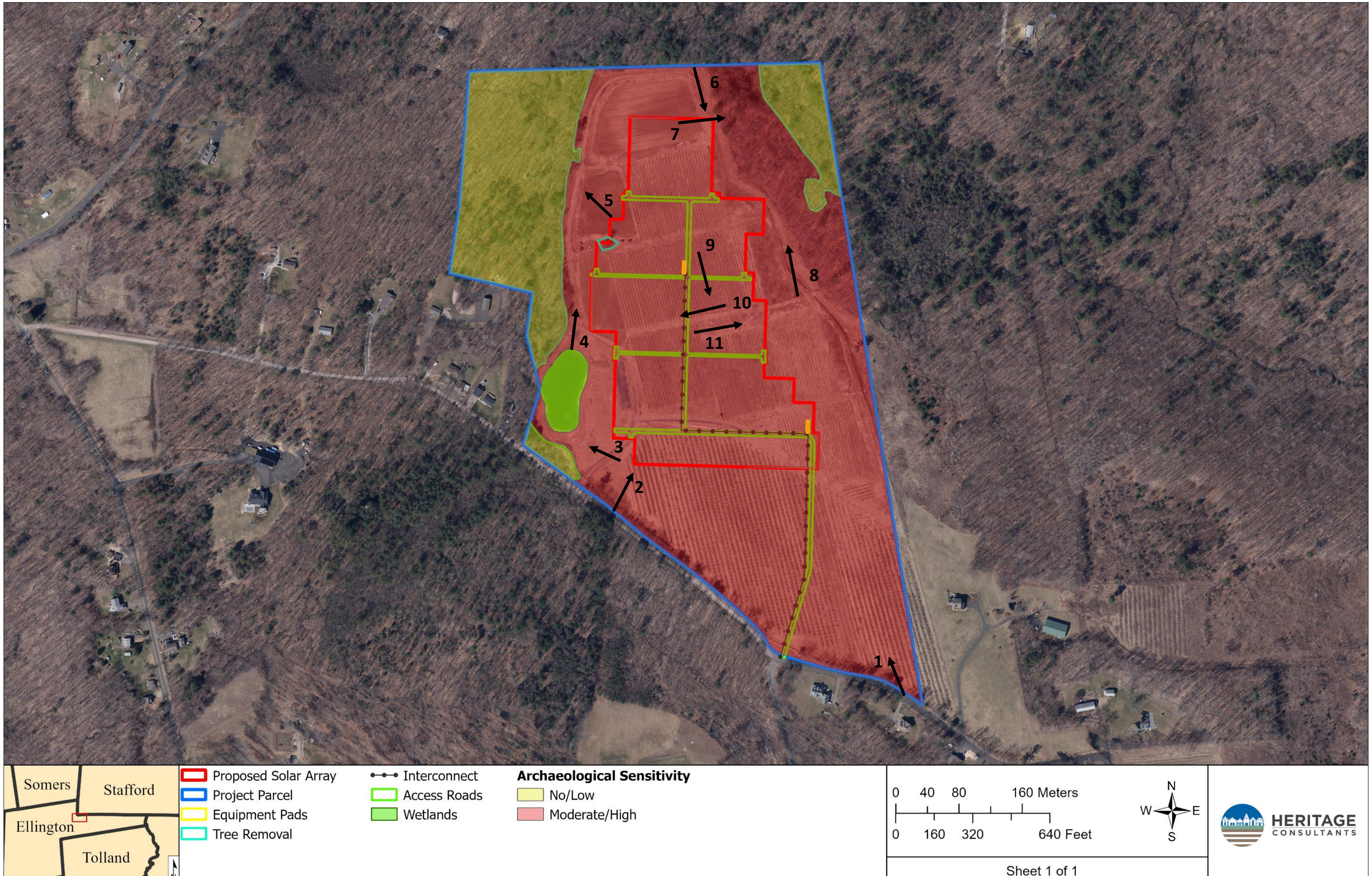

Figure 14. Digital map depicting photo locations and direction as well as no/low and moderate/high sensitivity areas within the Project parcel in Ellington, Connecticut.

APPENDIX B:

PHOTOS

Photo 1. Overview photo taken from southeast corner of Project parcel showing orchard. Photo taken facing north.

Photo 2. Overview photo taken from southwest corner of Project parcel showing orchard. Photo taken facing north.

Photo 3. Overview photo taken from southwest corner of Project parcel showing pond. Photo taken facing west.

Photo 4. Overview photo taken north of pond showing western tree line. Photo taken facing west.

Photo 5. Overview photo taken on west end of Project parcel. Photo taken facing west.

Photo 6. Overview photo taken from north end of Project parcel. Photo taken facing south.

Photo 7. Overview photo showing forested section in northwest corner of Project parcel. Photo taken facing south.

Photo 8. Overview photo showing forested section in northwest corner of Project parcel. Photo taken facing north.

Photo 9. Overview photo showing orchard from center of Project parcel. Photo taken facing south.

Photo 10. Overview photo showing orchard from center of Project parcel Photo taken facing west.

Photo 11. Overview photo showing orchard from center of Project parcel. Photo taken facing east.

AUGUST 2025

PHASE IB CULTURAL RESOURCES RECONNAISSANCE SURVEY OF THE PROPOSED ELLINGTON WEST SOLAR CENTER, SCHOOL HOUSE ROAD IN ELLINGTON, CONNECTICUT

PREPARED FOR:

verdantas

4 HEMISPHERE WAY,
BEDFORD, OHIO 44146

PREPARED BY:

HERITAGE CONSULTANTS

830 BERLIN TURNPIKE
BERLIN, CONNECTICUT 06037

ABSTRACT

This report presents the results of a Phase IB cultural resources reconnaissance survey of a proposed solar project along School House Road in Ellington, Connecticut. Development of the area will include the construction of a solar array and associated infrastructure within a 20.28 acre Project area, as well as a 247.9 meter (790 foot) long access road/interconnection. Heritage Consultants, LLC completed a previous Phase IA cultural resources assessment survey of the larger Project parcel and determined that the Project area fell entirely within a moderate/high sensitivity zone. The Phase IB reconnaissance survey was completed in August of 2025. It resulted in the recovery of 37 post-European Contact Period artifacts and a single precontact era lithic artifact. The post-European Contact period artifacts consisted of 32 pieces of brick and 5 glass shards recovered from disturbed fill and Ap-Horizon (plowzone). They had a general date range of nineteenth through twentieth century. Due to the recovery of the artifacts in low densities and from soils without depositional integrity, as well as the lack of associated above or below ground features, it was determined that the Post European Contact era artifact assemblage does not possess research potential and is not eligible for listing on the National Register of Historic Places applying the criteria for evaluation (36 CFR 60.4 [a-d]). In addition, a single precontact era quartz flake was recovered from fill soil horizons in association with post-European Contact period artifacts. The mixed context indicated that the isolated precontact era find has been redeposited during events of agricultural plowing. As a result, the isolated find was assesses as not eligible for listing on the National Register of Historic Places applying the criteria for evaluation (36 CFR 60.4 [a-d]). No additional archaeological examination of it or the remainder of the Project area is recommended prior to construction.

Table of Contents

List of Figures

LIST OF PHOTOS

CHAPTER I
INTRODUCTION

This report presents the results of a Phase IB cultural resources reconnaissance survey of a proposed solar Project (the Project) along School House Road in Ellington, Connecticut (Figure 1). The Project area, which encompasses 20.28 acres of land, was subjected to Phase IA cultural resources assessment survey by Heritage Consultants, LLC (Heritage) in July of 2025. Pedestrian survey revealed that all 20.28 acres of the Project area retained a moderate/high sensitivity for archaeological deposits. Consequently, Vanasse Hangen Brustlin, Inc., (VHB) requested that Heritage complete a Phase IB cultural resources reconnaissance survey of Project area prior to construction in August of 2025. All work associated with the Phase IB 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, an access road/interconnection, and associated infrastructure (Figure 2). The Project area is situated at elevations ranging between 225 to 255 meters (738.2 to 836.6 feet) NGVD. It is located to the north of School House Road, the survey area is bound on all sides by deciduous forest with Martins Brook to the north. The area is currently used as an orchard.

The Project area was subjected to Phase IB cultural resources reconnaissance survey utilizing pedestrian survey, photo-documentation, GPS recordation, and systematic shovel testing. The pedestrian survey included visual reconnaissance of all areas scheduled for impacts within the moderate/high sensitivity zones. The subsurface examination was completed through the excavation of shovel tests at 20 meter (65.6 feet) intervals along survey transects positioned 20 meters (65.6 feet) apart. Each shovel test measured 50 x 50 centimeter (19.7 x 19.7 inch) in size, and each was excavated until glacially derived C-Horizon or immovable object (e.g., boulders, large tree roots) were encountered. Each shovel test was excavated in 10 centimeter (3.9 inches) arbitrary levels within natural strata, and the fill from each level was screened separately. All shovel test fill was screened through 0.635-centimeter (0.25 inch) hardware cloth. Soil characteristics were recorded in the field using Munsell Soil Color Charts and standard soils nomenclature. Each shovel test was backfilled after it was fully documented.

Phase IB Survey results and Management Recommendations

A total of 206 of 209 (99 percent) planned shovel tests were excavated throughout the Project area. The subsurface investigation resulted in the recovery of 37 artifacts dating from the post-European Contact period and a single precontact lithic artifact. The recovered post-European Contact period artifacts consisted of 32 brick fragments and 5 glass shards. They were recovered from disturbed fill and Ap-Horizon (plowzone) soils and had a general date range of nineteenth through twentieth century. Due to the recovery of the artifacts in low densities from soils that lack depositional integrity, as well as an absence of associated above or below ground features, the post-European Contact period artifact assemblage was classified as unassociated field scatter. As a result, these materials lack research potential and the qualities of significance for listing on the National Register of Historic Places applying the criteria for evaluation (36 CFR 60.4 [a-d]). No additional archaeological examination of the post-European Contact period artifact scatter is recommended prior to construction.

In addition, a single Pre-European Contact Era artifact was recovered during the Phase IB survey. It was identified as a quartz flake and was recovered from a disturbed Fill Horizon along with 24 brick fragments and 1 glass shard. The quartz flake was the only precontact era artifact recovered from the Project area. The location in which the quartz flake was recovered was designated as an isolated find spot and labeled ISO-1. The recovery of the artifact from disturbed soils and in mixed context suggests that it was redeposited during agricultural plowing. Due to the isolated nature and disturbed context of the find, the precontact era artifact does not retain research potential or qualities of significance for listing to the National Register of Historic Places applying the criteria for evaluation (36 CFR 60.4[a-d]). No additional archaeological examination of the precontact era findspot is recommended prior to construction.

Project Personnel
Key personnel who worked on this project included David R. George, M.A., RPA, (Principal Investigator); Brenna Pisanelli, M.A. (Senior Project Manager); Samuel Spitzschuh, B.A. (Project Archaeologist); William Yerxa, M.A. (Historian); Susy Goeters, B.A. (Laboratory Specialist); 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 Project in Ellington, 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 freshwater 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 parcel and development area, as well as 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 ecoregion germane to the current investigation is the Northeast Hills ecoregion. A 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.

The Northeast Hills ecoregion consists of a hilly upland terrain located between approximately 40.2 and 88.5 km (25 and 55 mi) to the north of Long Island Sound (Dowhan and Craig 1976). It is characterized by streamlined hills bordered on either side by local ridge systems, as well as broad lowland areas situated near large rivers and tributaries. Physiography in this region is composed of a series of north-trending ridge systems, the western-most of which is referred to as the Bolton Range and the eastern-most as the Mohegan Range (Bell 1985:45). Elevations in the Northeast Hills range from 121.9 to 243.8 m (400 to 800 ft) above sea level, reaching a maximum of nearly 304.8 m (1,000 ft) above sea level near the Massachusetts border (Bell 1985). The bedrock of the region is composed of schist and gneiss created during the Paleozoic as well as gneiss and granite created during the Precambrian period (Bell 1985). Soils in upland areas have been deposited on top of glacial till, and in the valley they consist of stratified deposits of sand, gravel, and silt (Dowhan and Craig 1976).

Hydrology of the Study Region
The Project area is located within close proximity of several streams, ponds and wetlands. The major fresh water sources in proximity to the Project area include Martin's Brook, Charter's Brook, Crystal Lake, and several unnamed small streams and associated wetlands. 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 Parcel
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 parcel. In contrast, acidic soils enhance the preservation of charred plant remains.

A total of five soil types were identified within the Project parcel (Figure 3). The west side of the Project parcel contains Sutton and Ridgebury, Leicester, and Whitman soils while the center contains Canton-Charlton and Woodbridge soils, and the eastern edge contains Paxton-Montauk soils. When well drained soils such as Canton and Charlton 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. In contrast, Ridgebury, Leicester, and Whitman soils are considered poorly drained and are correlated with low archaeological sensitivity. Below is a summary of each specific soil type identified within the Project parcel.

<u>Woodbridge Soils</u>
The Woodbridge series consists of moderately well drained loamy soils formed in lodgment till. They are very deep to bedrock and moderately deep to a densic contact. They are nearly level to moderately steep soils on hills, drumlins, till plains, and ground moraines. Slope ranges from 0 to 25 percent. A typical profile associated with Woodbridge soils is as follows: **Ap**--0 to 18 cm; very dark grayish brown (10YR 3/2) fine sandy loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; many fine and medium roots; few very dark brown (10YR 2/2) earthworm casts; 5 percent gravel; moderately acid; abrupt wavy boundary; **Bw1**--18 to 46 cm; dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure; friable; common fine roots; few very dark brown (10YR 2/2) earthworm casts; 10 percent gravel; moderately acid; gradual wavy boundary; **Bw2**--46 to 66 cm; dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure; friable; common fine roots; few very dark brown (10YR 2/2) earthworm casts; 10 percent gravel; few medium prominent strong brown (7.5YR 5/6) masses of iron accumulation and light brownish gray (10YR 6/2) areas of iron depletion; moderately acid; gradual wavy boundary; **Bw3**--66 to 76 cm; light olive brown (2.5Y 5/4) fine sandy loam; weak medium subangular blocky structure; friable; few fine roots; 10 percent gravel; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation and light brownish gray (10YR 6/2) areas of iron depletion; moderately acid; clear wavy boundary; **Cd1**--76 to 109 cm; light olive brown (2.5Y 5/4) gravelly fine sandy loam; weak thick plates of geogenic origin; very firm, brittle; 20 percent gravel; many medium prominent strong brown (7.5YR 5/8)

masses of iron accumulation and light brownish gray (10YR 6/2) areas of iron depletion; moderately acid; gradual wavy boundary; and **Cd2**--109 to 165 cm; light olive brown (2.5Y 5/4) gravelly fine sandy loam; weak thick plates of geogenic origin; very firm, brittle; few fine prominent very dark brown (10YR 2/2) coatings on plates; 25 percent gravel; common fine prominent strong brown (7.5YR 5/8) masses of iron accumulation; moderately acid.

<u>Paxton and Montauk Soils</u>
The Paxton series consists of well drained loamy soils formed in lodgment till. The soils are very deep to bedrock and moderately deep to a densic contact. They are found on nearly level to steep soils on hills, drumlins, till plains, and ground moraines. Slope associated with these soils range from 0 to 45 percent. A typical profile associated with Paxton soils is as follows: **Ap**--0 to 20 cm; dark brown (10YR 3/3) fine sandy loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; many fine roots; 5 percent gravel; strongly acid; abrupt smooth boundary; **Bw1**--20 to 38 cm; dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure; friable; common fine roots; 5 percent gravel; few earthworm casts; strongly acid; gradual wavy boundary; **Bw2**--38 to 66 cm; olive brown (2.5Y 4/4) fine sandy loam; weak medium subangular blocky structure; friable; few fine roots; 10 percent gravel; strongly acid; clear wavy boundary; and **Cd**--66 to 165 cm; olive (5Y 5/3) gravelly fine sandy loam; medium plate-like divisions; massive; very firm, brittle; 25 percent gravel; many dark coatings on plates; strongly acid.

The Montauk series consists of well drained soils formed in lodgment or flow till derived primarily from granitic materials with lesser amounts of gneiss and schist. The soils are very deep to bedrock and moderately deep to a densic contact. These soils are on upland hills and moraines. Slopes associated with these soils ranges from 0 to 35 percent. A typical profile associated with Montauk soils is as follows: **Ap**--0 to 10 cm; very dark gray (10YR 3/1) loam; moderate fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 2 percent gravel, 1 percent cobbles, and 1 percent stones; extremely acid (pH 4.1); clear smooth boundary.; **BA**--10 to 34 cm; brown (10YR 4/3) loam; moderate medium and coarse subangular blocky structure; friable; many fine, medium, and coarse roots; many fine and medium pores; 4 percent gravel, 1 percent cobbles, and 1 percent stones; extremely acid (pH 4.3); clear wavy boundary; **Bw1**--34 to 65 cm; dark yellowish brown (10YR 4/6) loam; moderate coarse subangular blocky structure; friable; many fine, medium, and coarse roots; many fine and medium pores; 6 percent gravel, 1 percent cobbles, and 1 percent stones; extremely acid (pH 4.3); clear wavy boundary; **Bw2**--65 to 87 cm; yellowish brown (10YR 5/6) sandy loam; moderate medium and coarse subangular blocky structure; friable; many very fine, fine, and coarse roots; many fine and medium pores; 5 percent gravel and 1 percent cobbles; extremely acid (pH 4.3); clear smooth boundary; **2Cd1**--87 to 101 cm; strong brown (7.5YR 5/6) gravelly loamy sand; moderate medium plates; firm; few fine roots; many fine pores; 10 percent gravel, 5 percent cobbles, and 1 percent stones; very strongly acid (pH 4.7); clear wavy boundary; and **2Cd2**--101 to 184 cm; dark yellowish brown (10YR 4/6) gravelly loamy sand; moderate medium plates; firm; many fine pores; 10 percent gravel, 5 percent cobbles, and 1 percent stones; strongly acid (pH 5.1).

<u>Ridgebury, Leicester, and Whitman Series</u>
The Ridgebury series consists of very deep, somewhat poorly drained soils formed in lodgment till derived mainly from granite, gneiss and/or schist. They are commonly shallow to a densic contact. They are nearly level to gently sloping soils in depressions in uplands. They also occur in drainageways in uplands, in toeslope positions of hills, drumlins, and ground moraines, and in till plains. Slope ranges from 0 to 15 percent. A typical profile associated with Ridgebury soils is as follows: **A**--0 to 13 cm; black (N 2/0) fine sandy loam; weak medium and coarse granular structure; friable; many very fine, fine and

medium tree roots; 5 percent gravel and 5 percent cobbles; very strongly acid; abrupt smooth boundary; **Bw**--13 to 23 cm; brown (10YR 4/3) sandy loam; weak medium subangular blocky structure; friable; few fine tree roots; 5 percent gravel and 5 percent cobbles; very strongly acid; abrupt wavy boundary; **Bg**--23 to 46 cm; dark gray (10YR 4/1) gravelly sandy loam; massive; friable; 10 percent gravel and 5 percent cobbles; common fine prominent yellowish brown (10YR 5/6) and common medium distinct reddish brown (5YR 4/4) masses of iron accumulation; very strongly acid; gradual wavy boundary; and **Cd**--46 to 165 cm; gray (5Y 5/1) gravelly sandy loam; massive; firm; 10 percent gravel and 5 percent cobbles; common fine prominent reddish yellow (7.5YR 6/8) masses of iron accumulation; very strongly acid.

The Leicester series consists of very deep, poorly drained soils formed in coarse-loamy till. They are nearly level or gently sloping soils in drainageways and low-lying positions on hills. Slope ranges from 0 to 8 percent. A typical profile associated with Leicester soils is as follows: **Oe**--0 to 3 cm; black (10YR 2/1) moderately decomposed plant material; **A**--3 to 18 cm; black (10YR 2/1) fine sandy loam; moderate medium granular structure; friable; common fine and medium roots; 10 percent gravel and cobbles; strongly acid; clear wavy boundary; **Bg1**--18 to 25 cm; grayish brown (2.5Y 5/2) fine sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; 10 percent gravel and cobbles; common medium prominent yellowish red (5YR 5/6) masses of iron accumulation; strongly acid; gradual wavy boundary; **Bg2**--25 to 46 cm; light brownish gray (2.5Y 6/2) fine sandy loam; weak medium subangular blocky structure; friable; few fine and medium roots; 10 percent gravel and cobbles; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation; strongly acid; gradual wavy boundary; **BC**--46 to 61 cm; pale brown (10YR 6/3) fine sandy loam; massive; friable; few fine roots; 10 percent gravel and cobbles; many medium distinct yellowish brown (10YR 5/6) and yellowish red (5YR 4/6) masses of iron accumulation; strongly acid; clear wavy boundary; **C1**--61 to 84 cm; dark yellowish brown (10YR 4/4) gravelly fine sandy loam; massive; friable; 15 percent gravel and cobbles; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and prominent pinkish gray (7.5YR 6/2) iron depletions; strongly acid; gradual wavy boundary; and **C2**--84 to 155 cm; dark yellowish brown (10YR 4/4) gravelly fine sandy loam; massive; friable; 15 percent gravel and cobbles; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; strongly acid.

The Whitman series consists of very deep, very poorly drained soils formed in lodgment till derived mainly from granite, gneiss, and schist. They are shallow to a densic contact. These soils are nearly level or gently sloping soils in depressions and drainageways on uplands. A typical profile associated with Whitman soils is as follows: **Ap**--0 to 25 cm; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak medium granular structure; friable; 10 percent rock fragments; common medium distinct red (2.5YR 4/8) masses of iron accumulation lining pores; moderately acid; abrupt wavy boundary; **Bg**--25 to 46 cm; gray (5Y 5/1) fine sandy loam; massive; friable; 10 percent rock fragments, few medium distinct pale olive (5Y 6/4) and light olive brown (2.5Y 5/4) masses of iron accumulation; strongly acid; abrupt wavy boundary; **Cdg**--46 to 79 cm; gray (5Y 6/1) fine sandy loam; moderate medium plates; firm; 10 percent rock fragments; many medium distinct light olive brown (2.5Y 5/4) masses of iron accumulation; moderately acid; clear wavy boundary; **Cd1**--79 to 122 cm; olive (5Y 4/3) fine sandy loam; massive; firm; 10 percent rock fragments; few medium prominent dark reddish brown (2.5YR 3/4) masses of iron accumulation; moderately acid; gradual wavy boundary; and **Cd2**--122 to 165 cm; olive (5Y 5/3) fine sandy loam; massive; firm; 10 percent rock fragments; moderately acid.

Canton and Charlton Soils

The Canton series consists of very deep, well drained soils formed in a loamy mantle underlain by sandy till. They are on nearly level to very steep moraines, hills, and ridges. Slope ranges from 0 to 45 percent. A typical profile associated with Canton soils is as follows: **Oi**--0 to 5 cm; slightly decomposed plant material; **A**--5 to 13 cm; very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; friable; common fine roots; 5 percent gravel; very strongly acid (pH 4.6); abrupt smooth boundary; **Bw1**--13 to 30 cm; yellowish brown (10YR 5/6) fine sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; 5 percent gravel; very strongly acid (pH 4.6); clear smooth boundary; **Bw2**--30 to 41 cm; yellowish brown (10YR 5/4) fine sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; 5 percent gravel; strongly acid (pH 5.1); clear smooth boundary; **Bw3**--41 to 56 cm; yellowish brown (10YR 5/4) gravelly fine sandy loam; weak medium subangular blocky; friable; common fine and medium roots; 15 percent gravel; strongly acid (pH 5.1); abrupt smooth boundary; and **2C**--56 to 170 cm; grayish brown (2.5Y 5/2) gravelly loamy sand; massive; friable; 25 percent gravel; moderately acid (pH 5.6).

The Charlton series consists of very deep, well drained soils formed in loamy melt-out till. They are nearly level to very steep soils on moraines, hills, and ridges. Slope ranges from 0 to 60 percent. A typical profile associated with Charlton soils is as follows: **Oe**--0 to 4 cm; black (10YR 2/1) moderately decomposed forest plant material; **A**--4 to 10 cm; dark brown (10YR 3/3) fine sandy loam; weak fine granular structure; very friable; many fine roots; 5 percent gravel; very strongly acid; abrupt smooth boundary; **Bw1**--10 to 18 cm; brown (7.5YR 4/4) fine sandy loam; weak coarse granular structure; very friable; many fine and medium roots; 5 percent gravel; very strongly acid; clear wavy boundary; **Bw2**--18 to 48 cm; yellowish brown (10YR 5/6) fine sandy loam; weak medium subangular blocky structure; very friable; common fine and medium roots; 10 percent gravel and cobbles; very strongly acid; clear wavy boundary; **Bw3**--48 to 69 cm; light olive brown (2.5Y 5/4) gravelly fine sandy loam; massive; very friable; few medium roots; 15 percent gravel and cobbles; very strongly acid; abrupt wavy boundary; and **C**--69 to 165 cm; grayish brown (2.5Y 5/2) gravelly fine sandy loam with thin lenses of loamy sand; massive; friable, some lenses firm; few medium roots; 25 percent gravel and cobbles; strongly acid.

<u>Charlton-Chatfield Soils</u>

The Charlton series consists of very deep, well drained soils formed in loamy melt-out till. They are nearly level to very steep soils on moraines, hills, and ridges. Slope ranges from 0 to 60 percent. A typical profile associated with Charlton soils is as follows: **Oe**--0 to 4 cm; black (10YR 2/1) moderately decomposed forest plant material; **A**--4 to 10 cm; dark brown (10YR 3/3) fine sandy loam; weak fine granular structure; very friable; many fine roots; 5 percent gravel; very strongly acid; abrupt smooth boundary; **Bw1**--10 to 18 cm; brown (7.5YR 4/4) fine sandy loam; weak coarse granular structure; very friable; many fine and medium roots; 5 percent gravel; very strongly acid; clear wavy boundary; **Bw2**--18 to 48 cm; yellowish brown (10YR 5/6) fine sandy loam; weak medium subangular blocky structure; very friable; common fine and medium roots; 10 percent gravel and cobbles; very strongly acid; clear wavy boundary; **Bw3**--48 to 69 cm; light olive brown (2.5Y 5/4) gravelly fine sandy loam; massive; very friable; few medium roots; 15 percent gravel and cobbles; very strongly acid; abrupt wavy boundary; and **C**--69 to 165 cm; grayish brown (2.5Y 5/2) gravelly fine sandy loam with thin lenses of loamy sand; massive; friable, some lenses firm; few medium roots; 25 percent gravel and cobbles; strongly acid.

The Chatfield series consists of well drained soils formed in loamy melt-out till. They are moderately deep to bedrock. They are nearly level to very steep soils on bedrock-controlled hills and ridges. Slope ranges from 0 to 70 percent. A typical profile associated with Chatfield soils is as follows: **Oi**--0 to 3 cm, slightly decomposed leaf, needle, and twig litter; extremely acid, pH 4.2; **A**--3 to 5 cm, very dark gray (10YR 3/1) fine sandy loam, gray (10YR 5/1), dry; weak fine subangular blocky structure; friable; many fine and medium roots throughout; 5 percent mixed gravel and cobbles; very strongly acid, pH 4.5; abrupt smooth boundary; **Bw1**--5 to 33 cm, strong brown (7.5YR 5/6) gravelly fine sandy loam; weak fine subangular blocky structure; friable; common fine roots throughout and common medium roots throughout; 15 percent mixed gravel and cobbles; very strongly acid, pH 4.5; abrupt wavy boundary.; **Bw2**--33 to 76 cm, strong brown (7.5YR 5/6) gravelly fine sandy loam; moderate medium subangular blocky structure; friable; few fine roots throughout; 20 percent mixed rock fragments; very strongly acid, pH 4.5; abrupt irregular boundary; and **2R**--76 cm; fractured slightly-weathered schist bedrock.

Sutton Series:

The Sutton series consists of very deep, moderately well drained loamy soils formed in melt-out till. They are nearly level to strongly sloping soils on hills, low ridges, and ground moraines, typically on footslopes, lower backslopes and in slight depressions. Slope ranges from 0 to 15 percent. A typical profile associated with Sutton soils is as follows: **Oe**--0 to 2 cm; black (10YR 2/1) moderately decomposed forest plant material; **A**--2 to 15 cm; very dark brown (10YR 2/2) fine sandy loam; weak medium granular structure; very friable; common fine and medium roots; 5 percent gravel; strongly acid; clear wavy boundary; **Bw1**--15 to 30 cm; brown (7.5YR 4/4) fine sandy loam; weak fine and medium subangular blocky structure; friable; common fine and medium roots; 10 percent gravel and cobbles; moderately acid; gradual wavy boundary; **Bw2**--30 to 61 cm; yellowish brown (10YR 5/6) fine sandy loam; weak medium subangular blocky structure; friable; few medium roots; 10 percent gravel and cobbles; common fine and medium prominent light brownish gray (2.5Y 6/2) iron depletions and yellowish red (5YR 5/6) masses of iron accumulation; moderately acid; gradual wavy boundary; **Bw3**--61 to 71 cm; yellowish brown (10YR 5/4) fine sandy loam; weak medium subangular blocky structure; friable; 10 percent gravel and cobbles; common medium prominent light brownish gray (2.5Y 6/2) iron depletions and reddish brown (5YR 4/4) and strong brown (7.5YR 5/6) masses of iron accumulation; moderately acid; gradual wavy boundary; **C1**--71 to 91 cm; brown (10YR 5/3) gravelly fine sandy loam; weak thick platy structure; firm; 15 percent gravel and cobbles; common medium distinct light brownish gray (2.5Y 6/2) iron depletions and common medium prominent strong brown (7.5YR 5/6) masses of iron concentrations; moderately acid; gradual wavy boundary; **C2**--91 to 165 cm; light olive brown (2.5Y 5/4) gravelly sandy loam; massive; friable; 25 percent gravel and cobbles; moderately acid.

Summary

A review of mapping, geological data, ecological conditions, soils, slopes, and proximity to freshwater suggests that portions of the Project parcel and the whole 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 parcel.

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 (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 gravers, drills, core fragments, scrapers, and channel flakes, which indicates that the full range of stone tool production and maintenance took place at the site (Moeller 1980). Moreover, the use of both local and non-local raw materials was documented in the recovered tool assemblage, suggesting that not only did the site's occupants spend 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, gravers, and end-scrapers. Based on the types and number of tools present, Jones (1997:77) has hypothesized that the Hidden Creek Site represented a short-term occupation, and that separate stone tool reduction and rejuvenation areas were present.

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 ± 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, gravers, 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±280 and 7,015±160 B.P. (Dincauze 1976).

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

Late Archaic Period (6,000 to 3,700 B.P.)
The Late Archaic Period in southern New England is divided into two major cultural traditions that appear to have coexisted. They include the Laurentian and Narrow-Stemmed Traditions (Funk 1976; McBride 1984; Ritchie 1969a and b). Artifacts assigned to the Laurentian Tradition include ground stone axes, adzes, gouges, ulus (semi-lunar knives), pestles, atlatl weights, and scrapers. The diagnostic projectile point forms of this time period in southern New England include the Brewerton Eared-Notched, Brewerton Eared and Brewerton Side-Notched varieties (McBride 1984; Ritchie 1969a; Thompson 1969). In general, the stone tool assemblage of the Laurentian Tradition is characterized by flint, felsite, rhyolite, and quartzite, while quartz was largely avoided for stone tool production.

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

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

The 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 2016) 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 Facility 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 solar array Project is located along Schoolhouse Road in Ellington, Connecticut. This chapter provide an overview of Tolland County and the Town of Ellington, as well as details related to the Project parcel and development area. As is the case with most Connecticut towns, present-day Ellington originated as Native American settlements and later became an English colonial village. Through the nineteenth and twentieth centuries, most Tolland County towns functioned as agricultural hubs with manufacturing powered by local waterways as was the case with Ellington. Due to the absence of any major city, port, or waterway near the town, its farmers relied on markets in nearby towns such as Hartford, Windsor, and Manchester. The automobile culture of the twentieth century along with the development of improved roads and highways in the twenty-first century connected the Town of Ellington to nearby cities, yet it largely remained rural with areas of residential and commercial development.

Tolland County

Tolland County was organized by the Connecticut General Assembly in 1785 and was created from portions of eastern Hartford County and western Windham County. The county is located entirely in Connecticut's eastern upland region, extending from the Massachusetts state border on the north to New London County on the south, and is bounded to the west by Hartford County and to the east by Windham County. Important waterways associated with Tolland County include the Hop River, Middle River, Mount Hope River, Natchaug River, and Willimantic River as well as Bolton Lake, Shenipsit Lake, Mansfield Hollow Lake, and Wangumbaug Lake (Cole 1888; Beers 1903). Its largest watercourse is the Willimantic River, which, along with some of its tributaries, provided important sources of waterpower. As part of the upland region, Tolland County was colonized later than the coastal and Connecticut River Valley regions, generally after 1700. During the industrializing period, its towns' development varied depending on the extent to which their inhabitants were able to take advantage of waterpower sites. None, however, were able to develop large cities, although a few substantial industrial villages appeared. As a result of this lack of urbanization, most of the county was too distant from Connecticut's large urban areas to be strongly affected by the suburbanization trend. Even the construction of Interstate 84 during the latter part of the twentieth century could not overcome the problem of distance in most towns. The county's three largest towns are Vernon, Mansfield, and Ellington while other important population centers are located at Tolland, Coventry, and Stafford (Connecticut 2023).

Woodland Period to Seventeenth Century

During the Woodland Period of American history (ca. 3,000 to 500 years ago), Indigenous peoples who resided in present-day Connecticut were part of the Algonquian culture of northeastern North America (Lavin 2013). They spoke variations of Algonquian languages and resided in extended kinship groups on lands maintained for a variety of horticultural and resource extraction purposes (Goddard 1978). These communities practiced subsistence activities including hunting, fowling, and fishing, along with the cultivation of crops such as maize, squash, and beans. They seasonally harvested shellfish, fruits, and plants during warmer periods, and gathered nuts, roots, and tubers during colder times (Lavin 2013). During the winter, these communities came together to conduct deer hunts. Native people resided in settlements concentrated along rivers or wetlands, with villages fortified by wooden palisades at times. Habitations, known as a *weetu* or wigwam, consisted of a tree sapling frame covered in reed matting during warm months and tree bark in the winter. These varied in size from small, individual dwellings to expansive "long house" structures (Lavin 2013). The Native people who resided at present-day Ellington were affiliated with the Nipmuc, Podunk, and Agawam communities (De Forest 1852; Lavin 2013).

Seventeenth Century through Eighteenth Century

As Native communities maintained oral tradition rather than a written record, most surviving information of the Indigenous people of Connecticut was recorded by European observers (Lavin 2013). In ca., 1614, Dutch traders sailing under Captain Adrian Block were the earliest Europeans known to have sailed along Long Island Sound and up the Connecticut River where they initiated contact and trade with the Indigenous people of the Connecticut River Valley (De Forest 1852; Lavin 2013). Following that voyage, Block created a figurative map of the region that depicted the Connecticut River, which the Dutch named the *Versche Rivier* (Fresh River) due to it being a freshwater river. By 1620, the Dutch partnered with the Pequot of southeastern Connecticut to trade wampum and furs for European goods. In 1624, they founded New Netherland Colony around Manhattan and the Hudson River and built a fort at present-day Hartford in 1633 (Jacobs 2009). The Pequot extended their dominance over the Long Island Sound and the lower Connecticut River Valley bringing groups there into a tributary relationship under their leadership, including the Mohegan (Hauptman & Wherry 2009; McBride 2013). To break from the Pequot, conquered Native leaders invited the English to the valley who settled the towns of Windsor (1633), Wethersfield (1634), Hartford (1635), and Saybrook (1635) (Van Dusen 1961). Tensions grew following the death of English traders, which were blamed on the Pequot, and in retaliation Massachusetts soldiers destroyed one of their villages in August 1636, which began the Pequot War. In May 1637, Connecticut forces, which included some Mohegans and the Sachem Uncas, destroyed a Pequot village at Mistick. The Pequot fled west where the final battle of war was fought at present-day Fairfield in July 1637 (Cave 1996). Pequot territory was considered conquered land claimed by Connecticut Colony while Massachusetts Bay settlers formed New Haven Colony at Quinnipiac in late 1638. In 1652, the Dutch lost the Huys de Hoop at Hartford during the First Anglo-Dutch War (Trumbull 1886). In January of 1639, the Connecticut River towns adopted the "fundamental orders" which outlined the framework for Connecticut Colony, a self-governed colony separate from Massachusetts Bay or Plimoth (Trumbull 1886).

In the aftermath of the Pequot War, the Sachem Uncas claimed much of northeastern Connecticut colony, the lands of former Pequot tributaries, as Mohegan lands through both right of conquest and hereditary claims (Oberg 2006). This included lands that would become the Town of Ellington. During the upheaval of King Philip's War (1675-1676), much of present-day Tolland and Windham counties were depopulated of Nipmuc communities or they fell in with the Mohegan who claimed most of those lands as their own (Oberg 2006). Connecticut Colony recognized Mohegan land claims in present-day New London and Windham Counties, but other than present-day Hebron, Columbia, and Andover, few other Mohegan claims to present-day Tolland County were allowed (Oberg 2006). The area now known as Ellington was obtained by the town of Windsor from Native leaders loosely known as "River Indians," which likely refers to Podunk or Agawam communities in this case. In 1671, an individual named Nearowanocke signed a deed for a large part of the original Windsor settlement located to the east of the Connecticut River, including what are now Ellington and the southwest part of Somers (Stiles 1891). In 1678, a trio of Native Americans named Wequagun, Wawapaw, and Waquompo confirmed an earlier 1675 sale of the part of Enfield lying north of Freshwater River. The affiliations of these natives are also unknown, though it is possible that they were members of the Agawam tribe, whose territory encompassed that area, although the exact borders of these land grants are uncertain (Wright 1905).

The territory that Windsor encompassed was expansive and originally included the modern-day towns of East Windsor, South Windsor, Ellington, Windsor Locks, and part of Bloomfield, as well as small parts of other neighboring towns (Van Dusen 1961). The area that is now Ellington was initially known as "Weaxskashuck" and was not settled until the early eighteenth century, when English colonist Samuel Pinney arrived in about 1717 (Stiles 1891). Early settlers in Connecticut were primarily farmers who raised various types of grain as well as tobacco. Later, some farmers turned to grazing and raised livestock. By 1735, there were enough inhabitants to establish Ellington Parish within Windsor. Early forms of industry appeared as gristmills, sawmills, and fulling mills which became common (Van Dusen 1961). By the time of the first census in Connecticut in 1756, the population of Windsor (which still included Ellington) had reached 4,220 residents (Connecticut 2024a). In 1768, the town of East Windsor separated from Windsor, which encompassed all the territory on the eastern side of the Connecticut River, including modern-day Ellington (Cole 1888). During the American Revolution (1775-1783), Ellington recruited soldiers for the war effort (Stiles 1891). After the Revolution, the town recovered from wartime economic disruptions thanks to its robust agricultural production. Although it is unclear how many people in town were free or enslaved prior to 1790, slavery likely existed in Ellington, practiced by a few wealthy families, merchants, and ministers. The State passed a gradual manumission law in 1784, but slavery was not fully abolished until 1848 (Normen 2013). In 1786, Ellington was incorporated as a town and by 1790, it had 1,056 residents, two of which were enslaved, and 15 were free people of color (US Census 1908; Barry 1985; Connecticut 2024a). 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

In the early nineteenth century, Ellington was firmly a small agricultural settlement. Unlike neighboring towns, Ellington did not experience early industrialization along its waterways. As the century progressed, the town's population was slow to grow, and it did not develop any particular industries despite the arrival of the railroad. The town was described in 1814 as having "twenty dwelling houses, two stores, three taverns, a blacksmith, a shoemaker, two cider-brandy stills and a gin still" (Cole 1888). Distilling gin became an increasingly important economic activity in town and by 1820, an estimated quarter of agricultural land produced rye for this industry (Cole 1888). Liquor and spirit production began to decline around 1840 as tobacco cultivation grew in popularity. The main village in Ellington became the site of the training ground for the 22nd Regiment Connecticut Militia. In 1844, the Hartford & Springfield Railroad was built through Ellington and to the west of Somers through Enfield on its way to the Massachusetts border (Turner and Jacobus 1989). In contrast to many other municipalities in Connecticut, access to the railroad did not provide a significant economic boost. In 1860, Ellington maintained a population of 1,510 residents and during the Civil War (1861-1865) 143 men were credited to the town and served in the Union military (Hines 2002). By the end of the century the principal industry in Ellington remained agriculture, supplemented by a woolen mill (Connecticut 1890). In Ellington, the area around Crystal Lake in the eastern portion of town began to gain popularity as a resort area, with several prominent families residing by the lake. This led to some population fluctuations and by 1890 Ellington maintained 1,539 residents (Connecticut 2024b).

Table 1: Population of Ellington, Tolland County, Connecticut 1790-2020 (Connecticut 2024a-d; AdvanceCT and CTData Collaborative 2023)

Town	1790	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900
Ellington, Tolland County	1,056	1,209	1,344	1,196	1,455	1,356	1,399	1,510	1,452	1,569	1,539	1,829
	1910	**1920**	**1930**	**1940**	**1950**	**1960**	**1970**	**1980**	**1990**	**2000**	**2010**	**2020**
	1,999	2,127	2,253	2,479	3,099	5,580	7,703	9,711	11,197	12,921	15,602	16,426

During the twentieth century, the Town of Ellington transitioned from an agricultural center to a rural residential community, and by 1910 it had a population of 1,999 residents (Connecticut 2024c). At that time, the principal industries in town were agriculture and wool manufacturing (Connecticut 1910). By 1920, shade tobacco comprised a significant portion of the crops cultivated in town, and it became extremely profitable. Despite the cultivation of this lucrative crop, Ellington continued to develop slowly until approximately the 1950s. During the middle of the century, Connecticut experienced growth reflecting the postwar adoption of the automobile and the subsequent suburban residential development trend, as well as the construction of highways. Because of this suburbanization trend, the population jumped. In 1950, Ellington had 3,099 residents and by 1970, its population more than doubled to 7,703 inhabitants (Connecticut 2024c-d). As of 2021, Ellington had a population of 16,170 and an economy firmly based in agriculture with the town's largest employer being Oakridge Dairy, which is the largest dairy farm in the state (Connecticut 2020, AdvanceCT and CTData Collaborative 2023). Today, town officials describe Ellington as a rural residential community, and the town is characterized by minimal commercial and industrial development (Ellington 2019).

History of the Project Area

The proposed Project is located on the northeast side of Schoolhouse Road in the Town of Ellington, Connecticut. The 1857 Tolland County map of the Town of Ellington depicts the Project parcel and development area as undeveloped land, presumably used for agricultural purposes, near the border of Stafford (Figure 4). The roads which were in place nearest to the Project parcel at that time included Schoolhouse Road and East Porter Road in Ellington, Boyer Road in Stafford, and a discontinued road which formerly connected between Grennan Road in Stafford and Newell Hill Road in Ellington. A school was recorded on this map on the southwest side of Schoolhouse Road to the west of the Project parcel and development area, and the nearest residence belonged to O. L. Carpenter on the northern side of this road and to the west of the Project parcel and development area. The 1869 Beers Atlas of Ellington depicts the Project parcel and development area in a similar state, with few changes in the vicinity (Figure 5).

Photographs from a 1934 aerial survey document the project area as forested land, with the Project parcel and development area also forested in addition to two small clearings in the south of the parcel. The surrounding environment was also mostly forested, with agricultural fields to the southwest of the parcel (Figure 6). Similarly, aerial photos taken in 1951 document the Project parcel and development area as almost entirely forested, with only one of the two clearings in the south of the parcel remaining (Figure 7). In 1970, aerial photography showed that the entire Project parcel was characterized by tree cover, and many of the small fields in the vicinity were forested. A few new structures were also present on Schoolhouse Road (Figure 8).

Subsequent aerial imagery from 1990 shows that the southern portion of the Project parcel and the southern border of the proposed development area had been cleared into fields (Figure 9). By 2004, the cleared land had expanded through most of the Project parcel and all of the proposed solar array area (Figure 10). The land in the Project parcel and development area was in use as an orchard at that time, and only the northwest and northeast corners of the parcel remained forested. Evidence of ground disturbance was also present in the parcel around the middle of its eastern boundary, to the east of the proposed solar array area. In addition, more houses had been built by 2004 on Schoolhouse Road to the east and west of the Project parcel. Aerial imagery from 2023 shows the Project region in its essentially modern state (Figure 11). The entire proposed solar array area is in use as an orchard, including most of the Project parcel except for the forested northeast and northwest corners. The environment in the vicinity of the parcel is primarily forested with some new residential development. A number of small outbuildings appear within the Project area near the southern end and the northwestern corner, while a gravel parking lot and access roads are present in the southwest.

Conclusions

The post-European Contact period investigation of the proposed solar Project indicates that the Project area has limited potential to be associated with cultural resources. As of the earliest available aerial images in 1934, almost all of the area was forested. While the land may have been used for agricultural purposes in the nineteenth century, the area has been subjected to disturbance by the recent creation of an orchard, reducing the likelihood of intact evidence of post-European Contact period farming activities from an earlier period.

CHAPTER V
PREVIOUS INVESTIGATIONS

Introduction

This chapter presents an overview of previously identified cultural resources in the vicinity of the solar Project in Ellington, 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 Parcel

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 mile) of the proposed Project (Figure 12). In addition, there are no National/State Register of Historic Places properties/districts identified within 1.6 kilometers (1 mile) of the Project area (Figure 13). These resources are discussed below.

<u>Site 48-2</u>

Site 48-2, which is also known as the Newell Hill Rockshelter, is a precontact era archaeological site located in Ellington, Connecticut. The site is characterized as a rockshelter dating from the Middle Woodland period. The site was recorded by Public Archaeology Survey Team, Inc., (PAST) at an unspecified date, based on an avocational collection of artifacts. These artifacts consisted of dentate stamped ceramics and narrow-stemmed projectile points. The site has not been subjected to subsurface testing. Site 48-2 has not been assessed for listing on the National Register of Historic Places applying the criteria for evaluation (36 CR 60.4 [a-d]). It is located over 1 kilometer (0.62 miles) to the southeast of the Project parcel and will not be impacted by the proposed project.

<u>Site 48-12</u>

Site 48-12, which is also known as Willis Farm #18, is a precontact era archaeological site located in Ellington, Connecticut. The site is characterized as a camp and potential hunting ground dating from an unknown period. The site was recorded by Bicknell in 1988 following surface collection. Recovered artifacts consisted of broken projectile points, 1 quartz flake, and 1 "broad point of flint". The site has not been subjected to testing. Site 48-12 has not been assessed for listing on the National Register of Historic Places applying the criteria for evaluation (36 CR 60.4 [a-d]). It is located over 1 kilometer (0.62 miles) to the southeast of the Project parcel and will not be impacted by the proposed Project.

CHAPTER VI
METHODS

Introduction
This chapter describes the research design and field methods used to complete the Phase IB cultural survey of the Project area in Ellington, Connecticut. In addition, the location and point-of-contact for the facility at which all cultural material, drawings, maps, photographs, and field notes generated during survey will be curated are provided below.

Research Design
The current Phase IB cultural resources reconnaissance survey was designed to identify all precontact era and post-European contact period cultural resources located within the previously identified moderate/high sensitivity areas associated with the Project. Fieldwork for the Phase IB survey was comprehensive and planning considered the distribution of previously recorded archaeological sites located near the development area, as well as an assessment of the natural qualities of the Project parcel. The methods used to complete this investigation were designed to provide complete and thorough coverage of all portions of the development area. This undertaking entailed pedestrian survey, systematic subsurface testing, detailed mapping, and photo-documentation.

Field Methods
Following the completion of all background research, the development area was subjected to a Phase IB cultural resources reconnaissance survey utilizing pedestrian survey, photo-documentation, GPS recordation, and systematic shovel testing. The field strategy was designed such that the entirety of the moderate/high sensitivity areas) was examined visually and photographed. The pedestrian survey portion of this investigation included visual reconnaissance of the development area. The subsurface examination was completed through the excavation of shovel tests at 20 meter (65.6 foot) intervals along survey transects positioned 20 meters (65.6 feet) apart. Each shovel test measured 50 x 50 centimeter (19.7 x 19.7 inch) in size, and each was excavated until glacially derived C-Horizon or immovable object (e.g., boulders, large tree roots) were encountered. Each shovel test was excavated in 10 centimeter (3.9 inch) arbitrary levels within natural strata, and the fill from each level was screened separately. All shovel test fill was screened through 0.64 centimeter (0.25 inch) hardware cloth. Soil characteristics were recorded in the field using Munsell Soil Color Charts and standard soils nomenclature. Each shovel test was backfilled after it was fully documented.

Curation
Following the completion and acceptance of the Final Report of Investigations, all cultural material, drawings, maps, photographs, and field notes will be curated with: Dr. Sarah Sportman, Office of Connecticut State Archaeology, Box U-1023, University of Connecticut, Storrs, Connecticut 06269

CHAPTER VII
RESULTS & MANAGEMENT RECOMMENDATIONS

Introduction
As described above, the goals of the Phase IB investigation included completion of the following tasks: 1) preparation of a contextual overview of the regions' 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 Project area; 3) a review of readily available maps and aerial imagery depicting the Project and the archaeologically sensitive areas; 4) pedestrian survey and photo-documentation of the archaeologically sensitive areas; and 5) subsurface examination of the archaeologically sensitive areas for evidence of intact cultural deposits. The results of the investigation are presented below.

Results of Phase IB Cultural Resources Reconnaissance Survey
As stated earlier in this report, the proposed Project consists of a solar array that will encompass approximately 20.28 acres of land, as well as a 247.9 meter (790 foot) long access road/interconnection along School House Road in Ellington, Connecticut. The entire Project area was designated as moderate/high sensitivity area after pedestrian survey during a Phase IA cultural resources assessment survey completed by Heritage personnel in July of 2025. Elevations within the moderate/high sensitivity areas range from 225 to 255 meters (738.2 to 836.6 feet) NGVD. At the time of the survey, the Project area was characterized by an actively tended orchard with accompanying access roads, sheds, and irrigation (Photos 1 through 11). The results of the Phase IB survey are discussed below.

During the Phase IB survey, 206 of 209 (99 percent) planned shovel tests were excavated throughout the moderate/high sensitivity Project area (Figure 14). Shovel Test 6, Transect 3 exemplifies the stratigraphy seen in a typical shovel test (Figure 15; Photo 7). The uppermost soil horizon was characterized by a Fill horizon that extended from the ground surface to 35 cmbs (0 to 13.8 inbs); it consisted of a layer of yellowish brown (10YR 5/4) silty loam mixed with gravel. The underlying B-Horizon (subsoil) reached from 35 to 55 cmbs (13.8 to 21.7 inbs) and was defined by an intact deposit of yellowish brown (10YR 5/6) loamy sand mixed with gravel and cobbles. Finally, the glacially derived C-Horizon ranged in depth from 55 to 65 cmbs (21.7 to 25.6 inbs) and was described as a layer of light olive brown (2.5Y 5/4) fine to medium sand with gravel, cobbles, and oxidation.

The subsurface testing of the Project area resulted in the recovery of 37 post-European Contact period artifacts (Photo 12; Table 2). The assemblage included pieces of brick (n=32) and glass vessel shards (n=5). Laboratory analysis revealed that two pieces of the brick fragments were extruded with die skin finish, a technique first used in 1810. A single glass shard found during excavation was identified as having a manganese dioxide decolorizing agent, a manufacturing technique that was first seen in the 1880s and was phased out by the 1920s. The remaining artifacts were not diagnostic in nature and had a general date range of nineteenth through twentieth century. All of the post-European Contact period artifacts were recovered from disturbed soil horizons. As seen in Table 2 below, the 86 percent (n=32) of the artifacts were collected from fill soils with the remaining 14 percent (n=5) originating from Ap-Horizon (plowzone).

Table 2. Post-European Contact Era Artifacts Recovered from the Project Area.

Soil Horizon	Artifact Type	Artifact Class	Description	Total
Ap	Ceramic	Brick	Fragment	1
	Glass	Contact Molded	Indeterminate Bottle Shard	**3**
		Machine Made	Jar Shard	1
Ap Total				**5**
Fill 1	Ceramic	Brick	Fragment	31
	Glass	Pressed	Container Shard	1
Fill 1 Total				**32**
Post European Contact Era Project Total				**37**

As seen in Figure 14, the post-European Contact period artifacts were collected from various locations across the Project area and were recovered in low densities from soils that lack depositional integrity; they were not found in association with any above or below ground features. As a result, they were classified as unassociated field scatter and determined to lack research potential and the qualities of significance for listing on the National Register of Historic Places applying the criteria for evaluation (36 CFR 60.4 [a-d]). No additional archaeological examination of the post-European Contact period artifact scatter is recommended prior to construction.

In addition to the post-European Contact period artifacts, a single precontact era lithic was recovered during the Phase IB survey from Shovel Test 2 along Transect 12 (Figure 14; Photo 13 and 14). This findspot was designated a ISO-1. The lithic artifact was identified as a quartz flake recovered from a disturbed Fill Horizon along with 24 pieces of brick and a glass shard. The recovery of the quartz flake from disturbed soils and in mixed context with post-European Contact period items suggests that it is an isolated find that has been redeposited by plowing. Due to the isolated nature and disturbed context of the find, the precontact era artifact does not retain research potential or qualities of significance for listing to the National Register of Historic Places applying the criteria for evaluation (36 CFR 60.4[a-d]). No additional archaeological examination of the precontact era findspot or the remainder of the Project area is recommended prior to construction.

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APPENDIX A

FIGURES

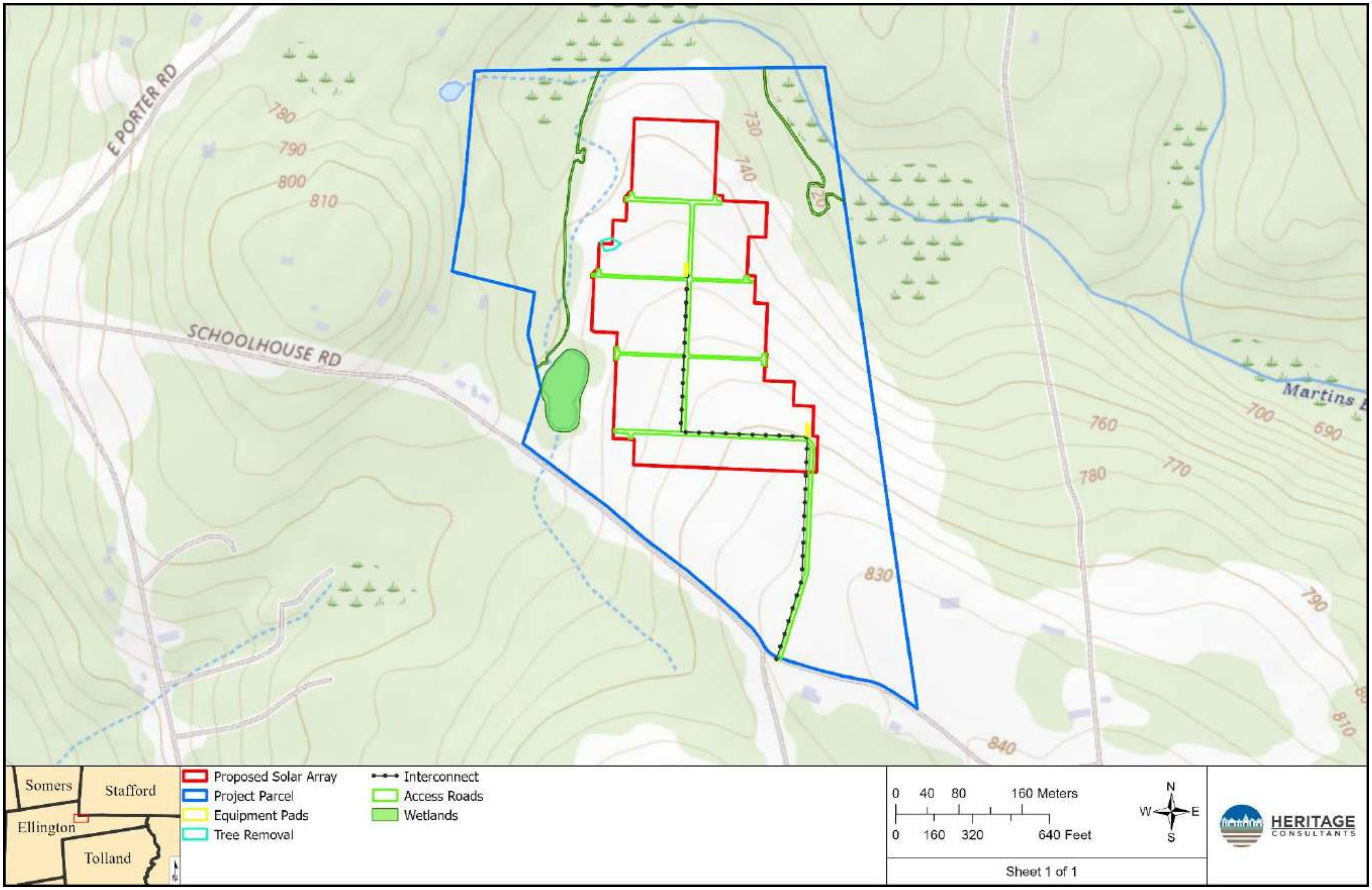

Figure 1. Excerpt from a USGS 7.5' series topographic quadrangle image showing the location of the Project area in Ellington, Connecticut.

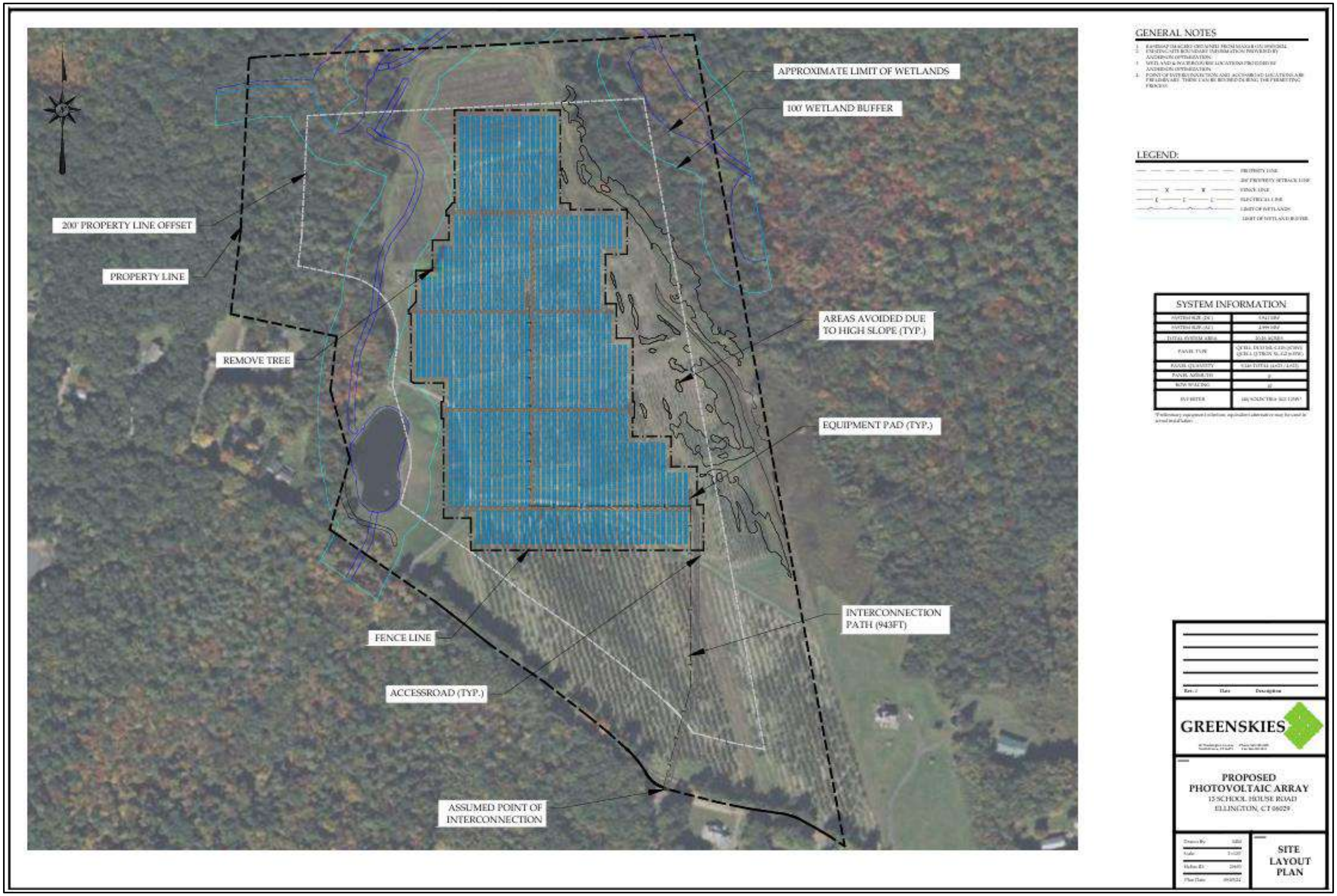

Figure 2. Client provided Project plans for the solar array in Ellington, Connecticut.

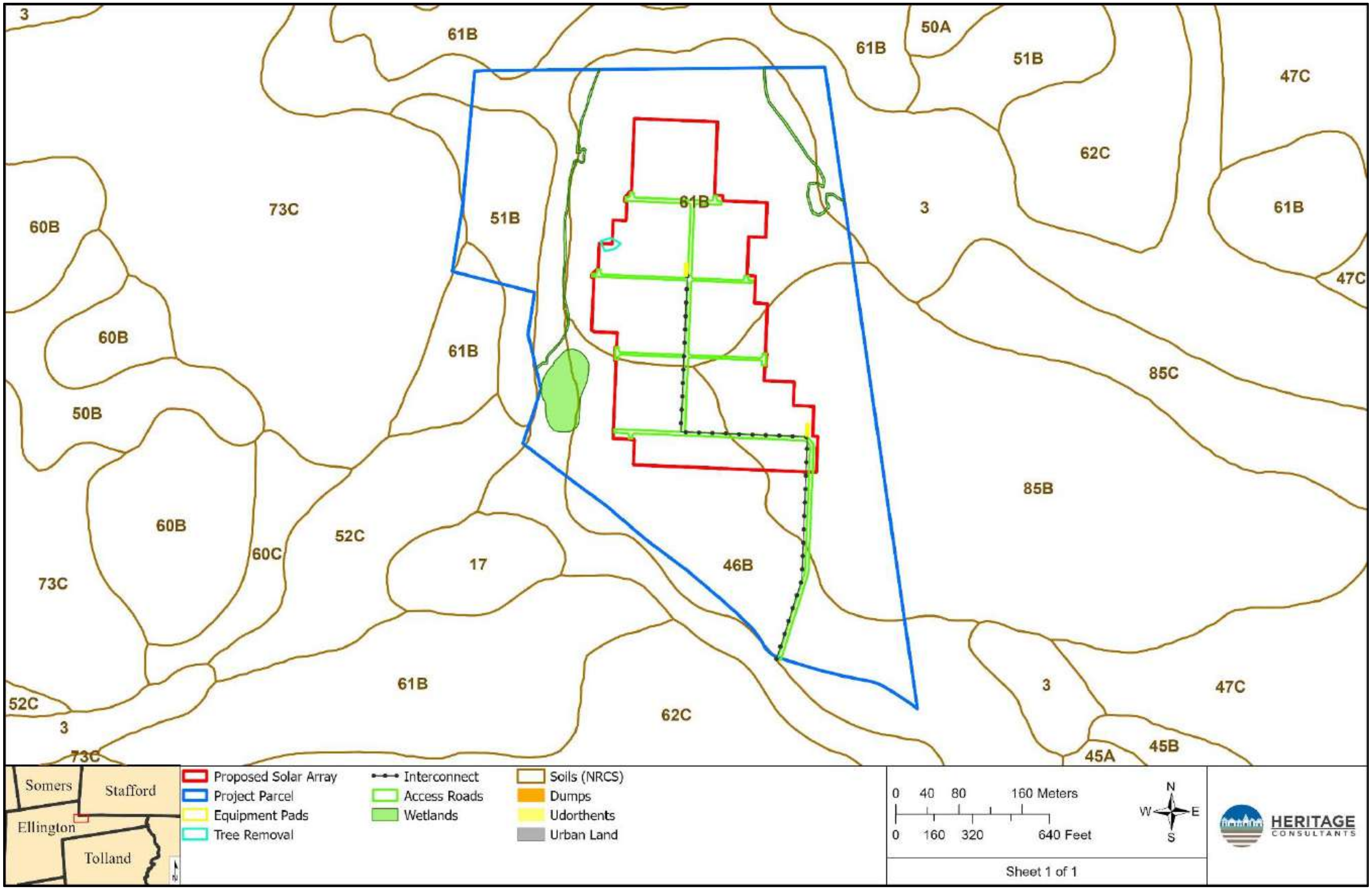

Figure 3. Digital map depicting the soil types present in the vicinity of the Project area in Ellington, Connecticut.

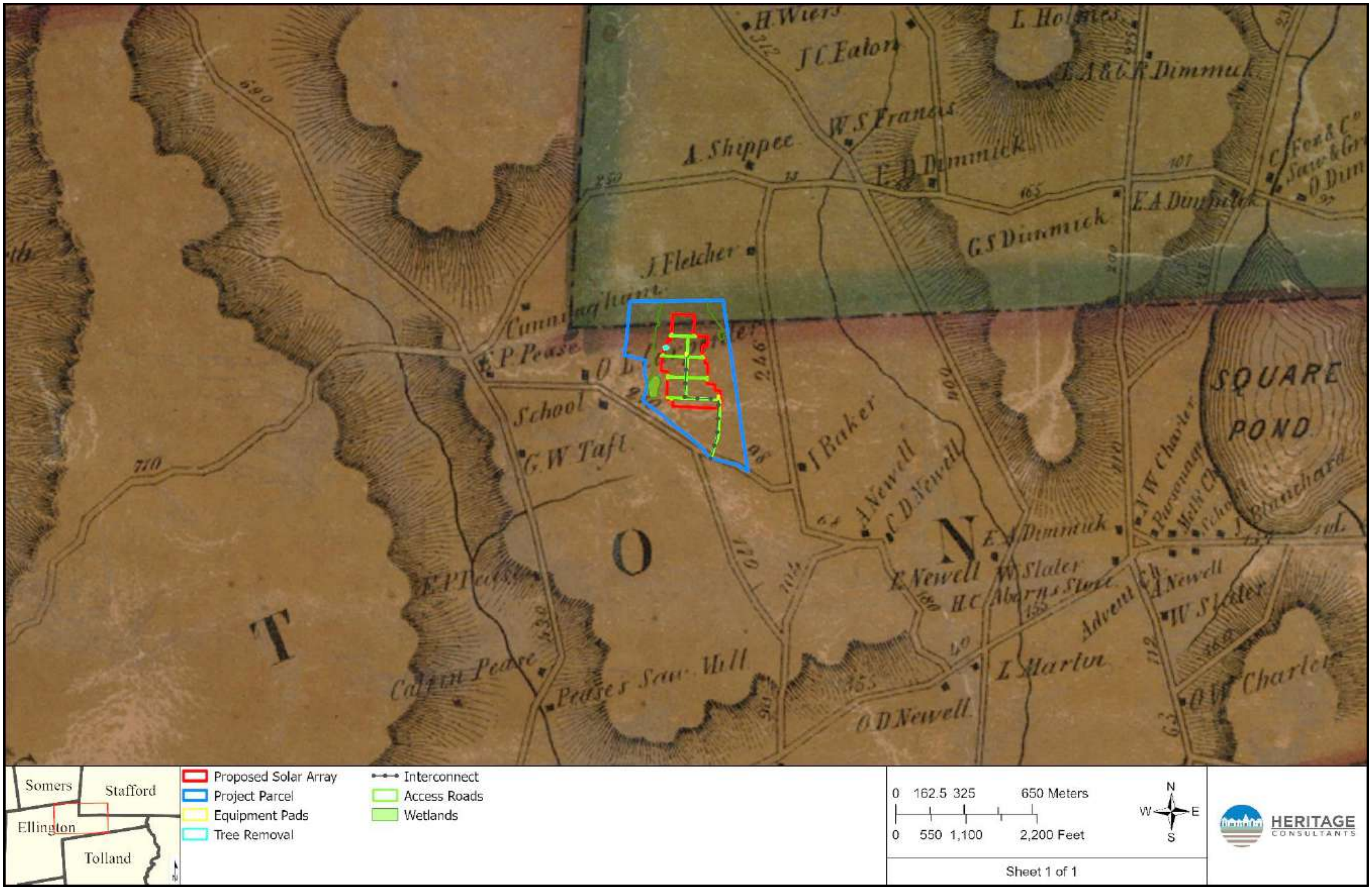

Figure 4. Excerpt from an 1857 map depicting the proposed Project area in Ellington, Connecticut.

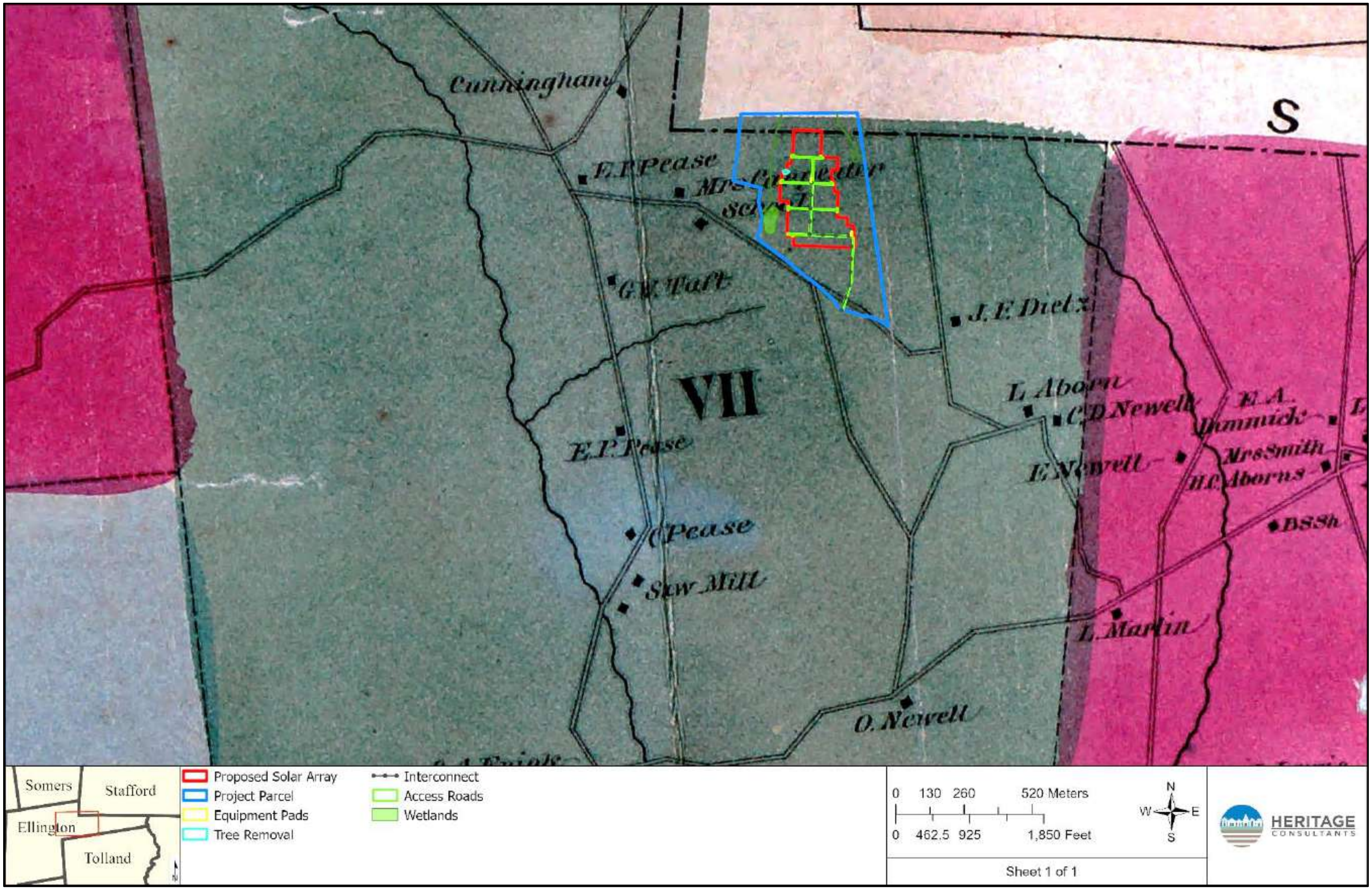

Figure 5. Excerpt from an 1869 map depicting the proposed Project area in Ellington, Connecticut.

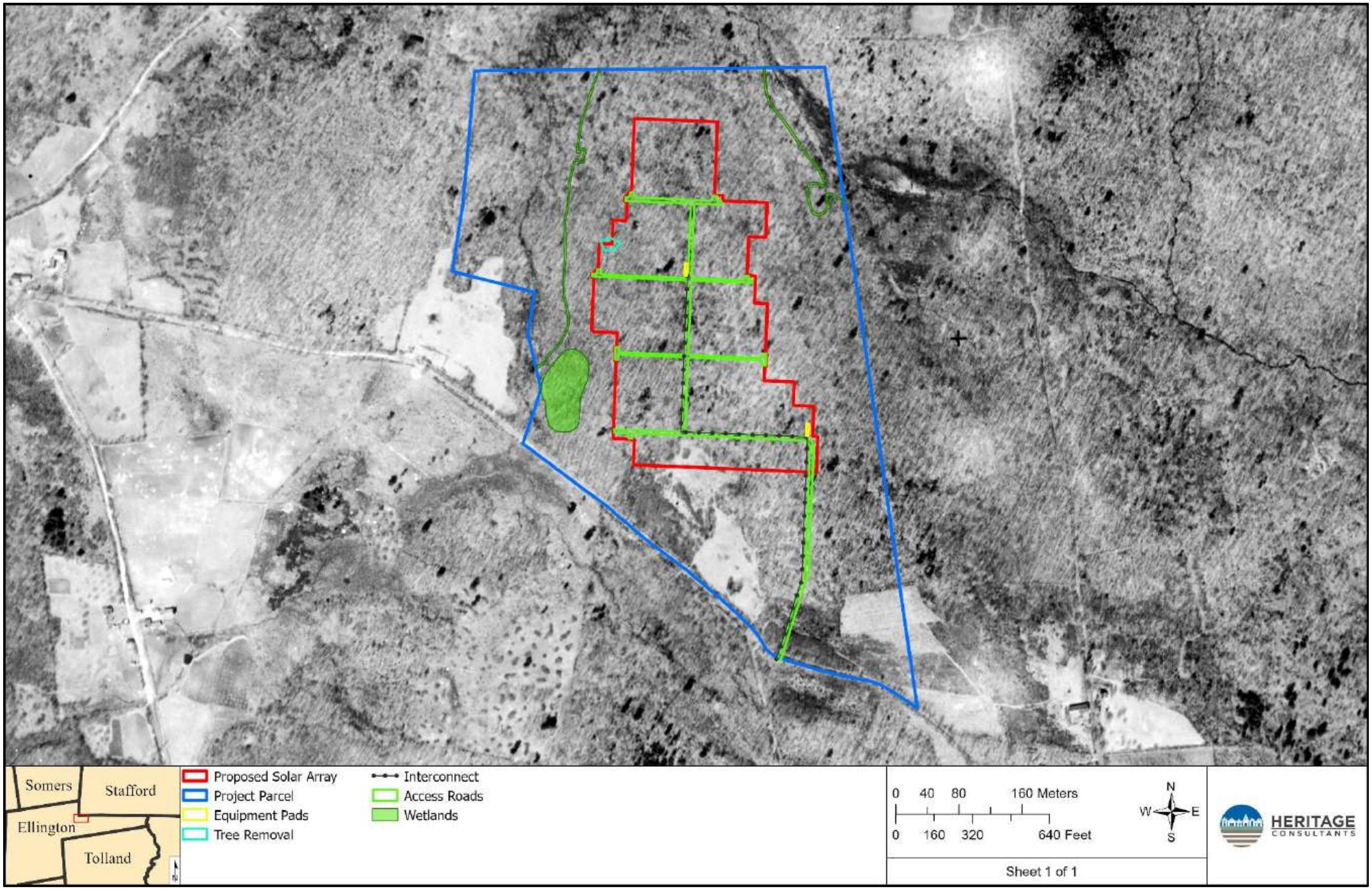

Figure 6. Excerpt from a 1934 aerial image depicting the location of the proposed Project area in Ellington, Connecticut.

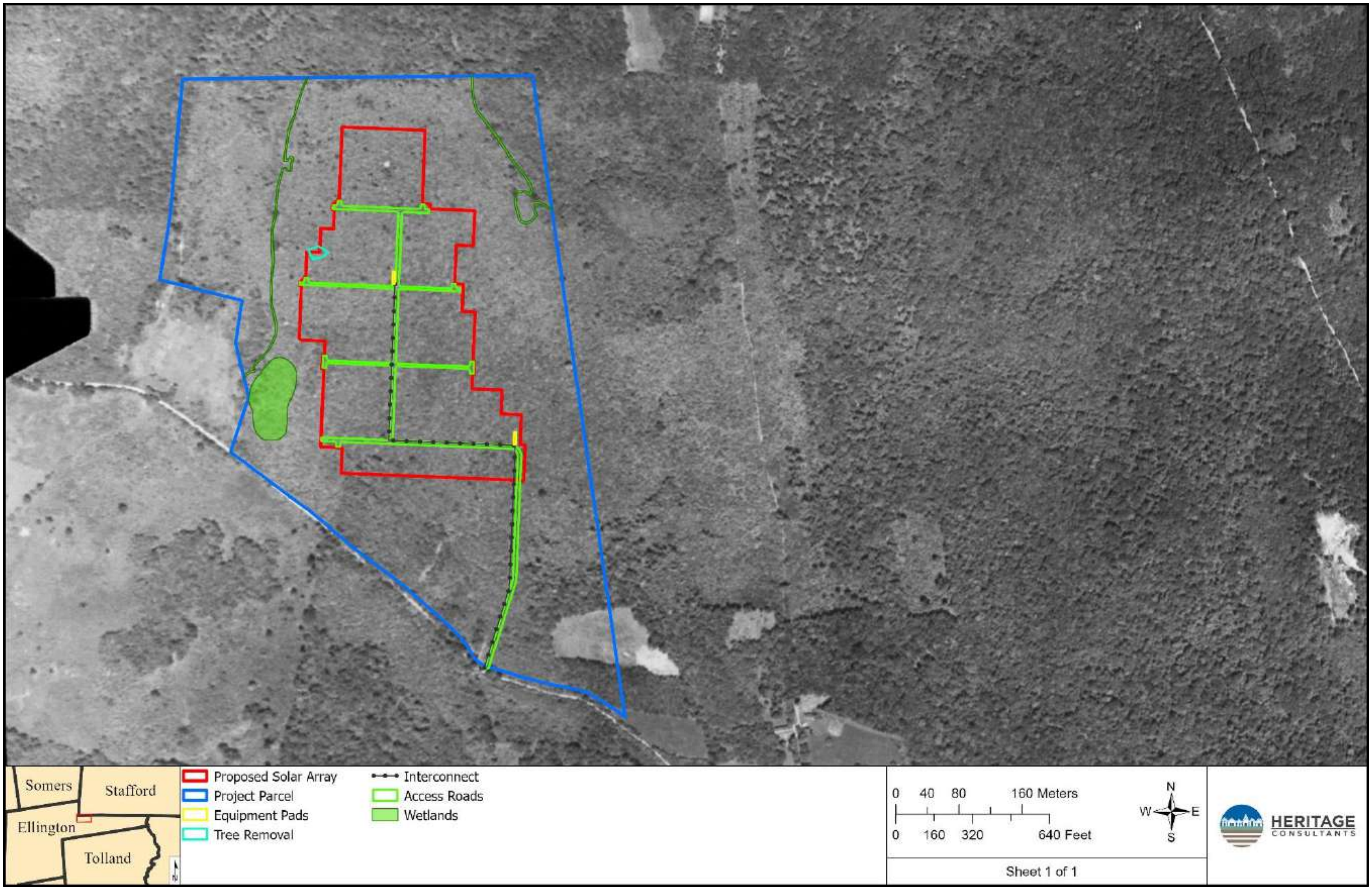

Figure 7. Excerpt from a 1951 aerial image depicting the location of the proposed Project area in Ellington, Connecticut.

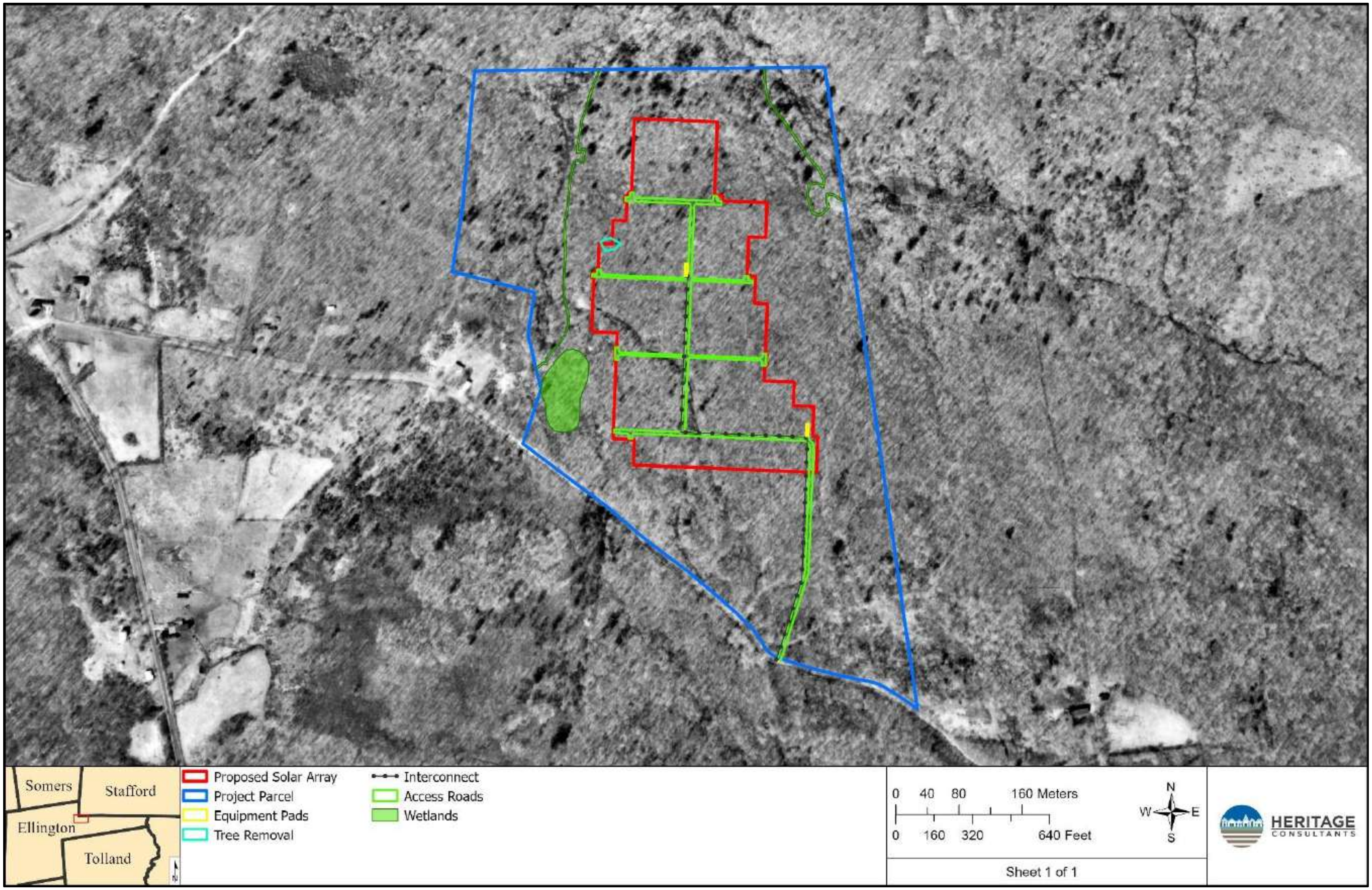

Figure 8. Excerpt from a 1970 aerial image depicting the location of the proposed Project area in Ellington, Connecticut.

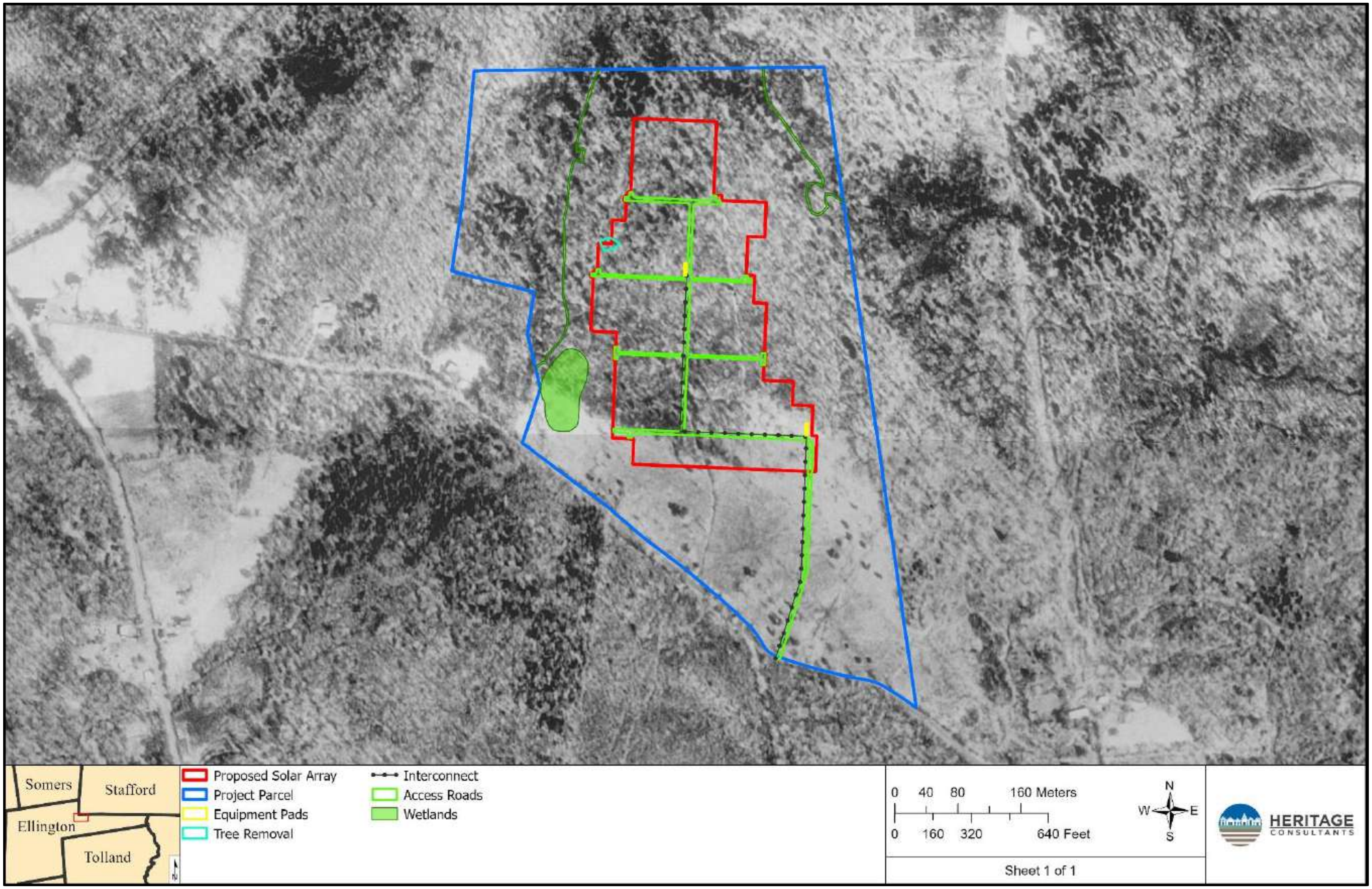

Figure 9. Excerpt from a 1990 aerial image depicting the location of the proposed Project area in Ellington, Connecticut.

Figure 10. Excerpt from a 2004 aerial image depicting the location of the proposed Project area in Ellington, Connecticut.

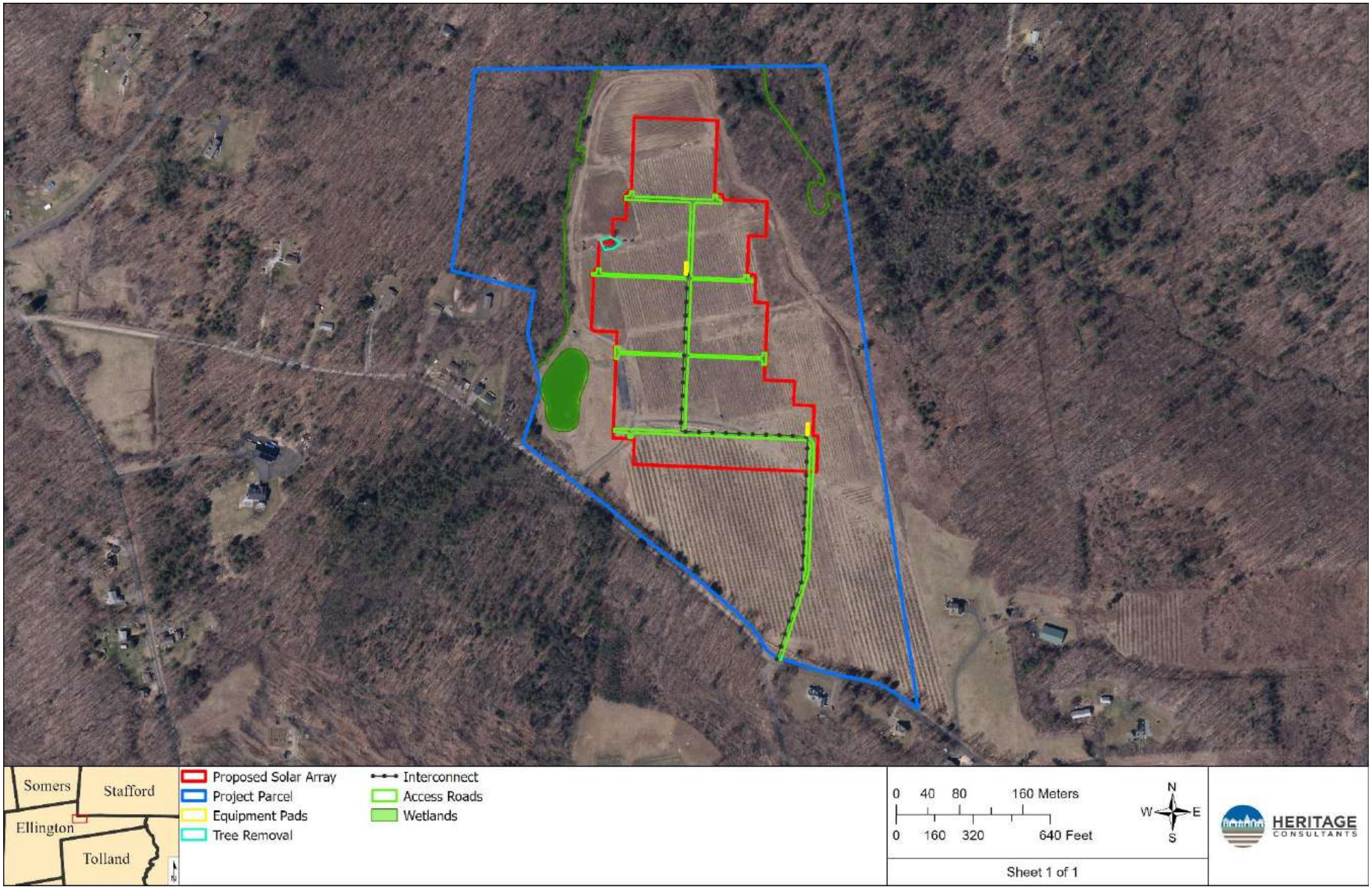

Figure 11. Excerpt from a 2023 aerial image depicting the location of the proposed Project area in Ellington, Connecticut.

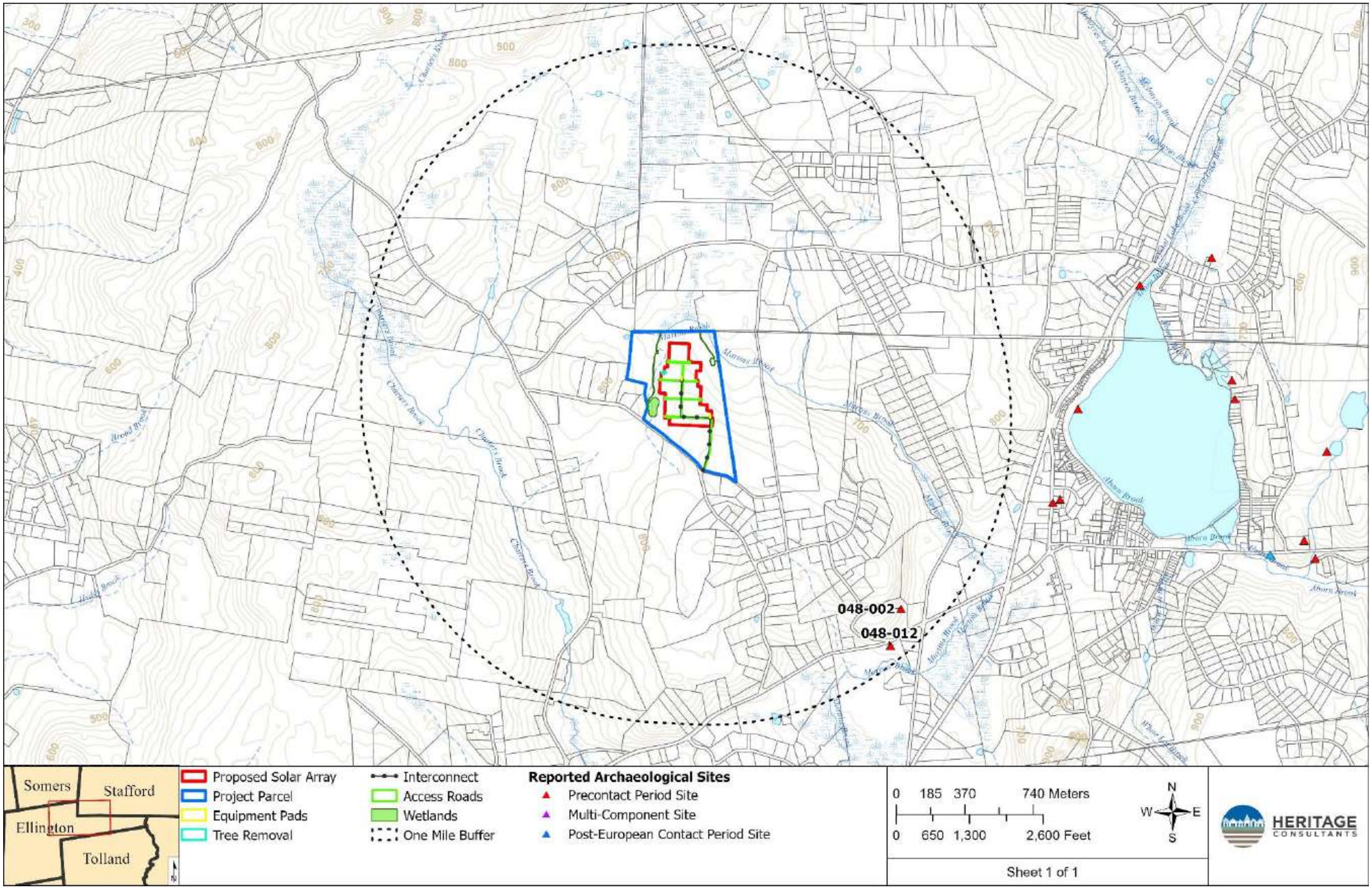

Figure 12. Digital map depicting the locations of previously identified archaeological sites in the vicinity of the proposed Project area in Ellington, Connecticut.

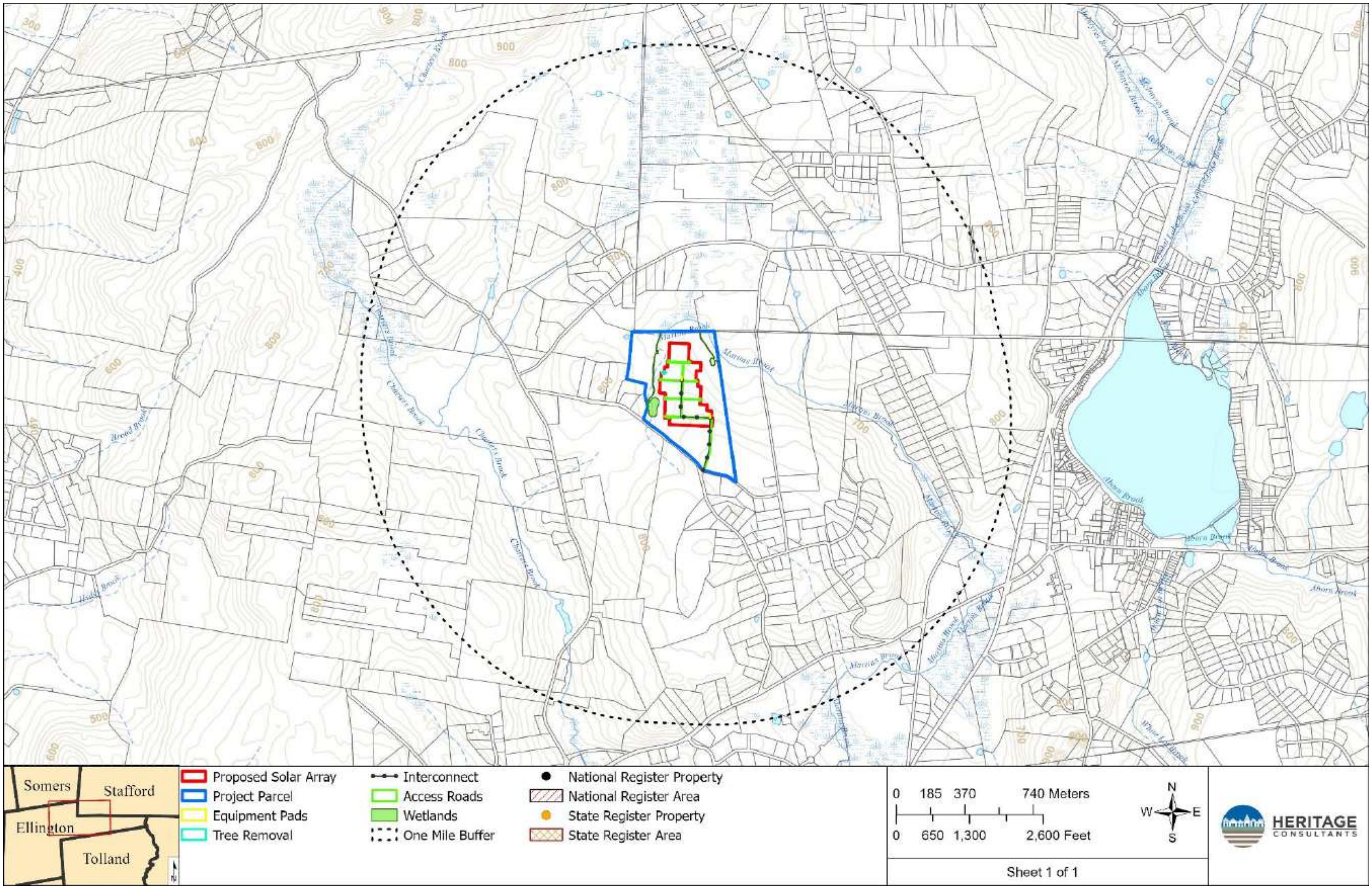

Figure 13. Digital map depicting the locations of the previously identified National Register of Historic Places and State Register of Historic Places in the vicinity of the Project parcel in Ellington, Connecticut.

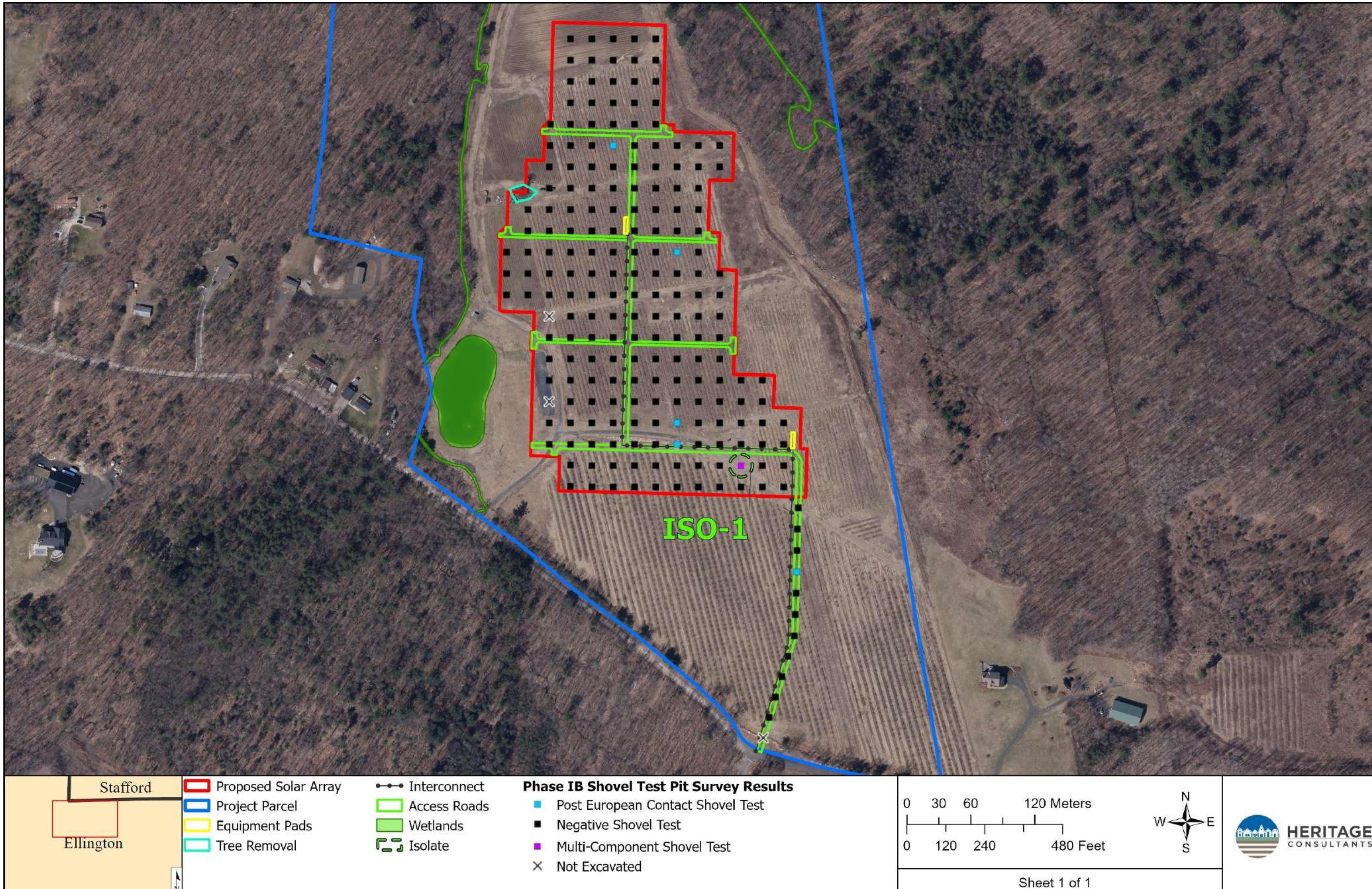

Figure 14; Sheet 1. Digital map depicting the results of the Phase IB survey of the solar Project with photo locations in Ellington, Connecticut

Figure 14; Sheet 2. Digital map depicting the results of the Phase IB survey of the solar Project in Ellington, Connecticut.

Figure 14; Sheet 3. Digital map depicting the results of the Phase IB survey of the solar Project in Ellington, Connecticut.

Figure 14; Sheet 4. Digital map depicting the results of the Phase IB survey of the solar Project in Ellington, Connecticut.

Figure 14; Sheet 5. Digital map depicting the results of the Phase IB survey of the solar Project in Ellington, Connecticut.

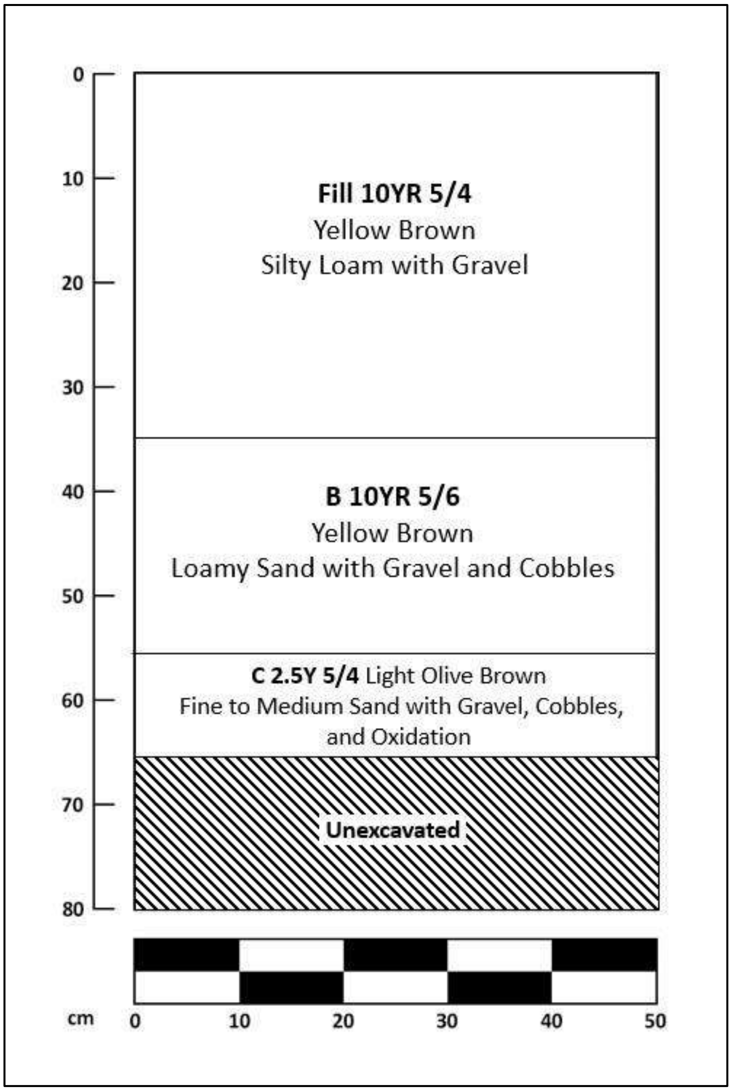

Figure 15. Digital profile of Transect 3 Shovel Test 6 within the Project area in Ellington, Connecticut.

APPENDIX B:

PHOTOS

Photo 1. Overview of Project area taken from west side. Photo taken facing east.

Photo 2. Overview of Project area taken from north side. Photo taken facing south.

Photo 4. Overview of access road/interconnection taken from southeast corner of Project area. Photo taken facing south.

Photo 4. Overview of access road/interconnection taken from southeast corner of Project area. Photo taken facing south.

Photo 5. Overview of access road/interconnection taken from southern end. Photo taken facing north.

Photo 6. Overview of Project area taken from south side. Photo taken facing north.

Photo 7. Soil profile typical of the Project area exemplified in Shovel Test 6 of Transect 6.

Photo 8. Overview of Project area taken from center. Photo taken facing north.

Photo 9. Overview of Project area taken from center. Photo taken facing south.

Photo 10. Overview of Project area taken from center. Photo taken facing east.

Photo 11. Overview of Project area taken from center. Photo taken facing west.

Photo 12. Left to right; two solarized contact molded bottle shards, a machine made jar shard, a pressed, embossed container shard, a contact molded bottle shard, an extruded brick fragment.

Photo 13. A quartz flake fragment recovered from ISO-1. Side A.

Photo 14. A quartz flake fragment recovered from ISO-1. Side B.

State Historic Preservation Office
Department of Economic and Community Development

CONNECTICUT

September 8, 2025

David George
Heritage Consultants, LLC
830 Berlin Turnpike
Berlin, CT 06037
(sent only via email to dgeorge@heritage-consultants.com)

Subject: Archaeological Reconnaissance Survey of a Proposed Solar Development
13 School House Road
Ellington, Connecticut

Dear David George,

The State Historic Preservation Office (SHPO) has reviewed the technical report titled *Phase IB Cultural Resources Reconnaissance Survey of the Proposed Ellington West Solar Center, School House Road in Ellington, Connecticut* prepared by Heritage Consultants, LLC (Heritage), dated August 2025. The submitted technical report meets the standards set forth in the *Environmental Review Primer for Connecticut's Archaeological Resources*. SHPO understands that the proposed project entails the construction of a solar array with associated infrastructure at the referenced address. The project will require a stormwater discharge permit issued by the Connecticut Department of Energy and Environmental Protection through the authority of the Environmental Protection Agency; therefore, it is subject to review by this office pursuant to Section 106 of the National Historic Preservation Act.

A cultural resources reconnaissance survey of the Area of Potential Effect (APE) for the project was completed by Heritage in August of 2025. The investigation included comprehensive background research that examined historic maps and aerial imagery as well as previously identified cultural resources located in proximity to the APE. The review failed to identify any properties listed on the National Register of Historic Places (NRHP) in the vicinity of the APE. Two previously reported archaeological sites were recorded within a mile of the APE. The report concluded that there will be no impact to either site by the undertaking.

During survey, 206 of 209 planned shovel tests were excavated at 20-meter intervals along transects placed 20 meters apart throughout the APE. The three planned but unexcavated shovel tests were located in areas containing prior disturbances. The effort resulted in the identification of 37 Postcontact Period artifacts and a single Precontact Period artifact from fill and plowzone contexts across 10 shovel tests. Recovered Postcontact materials included 32 brick fragments and five bottle glass shards. The lone Precontact artifact consisted of a single quartz flake recovered from fill deposits. As noted in the provided report, the single positive shovel tests were located in an area of significant disturbance as indicated in readily available historic aerial imagery. As a result, no further examination was undertaken. No evidence of cultural features was recorded. The report concluded that the identified deposits were not eligible for listing on the NRHP and recommended no further examination prior to construction. Based on the information submitted to this office, it is the opinion of SHPO that <u>no historic properties will be affected</u> by the project and no additional archaeological investigation is warranted. Comments are conditional upon the submission of two bound copies of the final report; one will be kept for use in the office and the other will be transferred to the Thomas J. Dodd Research Center at the University of Connecticut (Storrs) for permanent archiving and public accessibility.

State Historic Preservation Office
Department of Economic and Community Development

CONNECTICUT

This office appreciates the opportunity to review and comment upon this project. Do not hesitate to contact Cory Atkinson, Staff Archaeologist and Environmental Reviewer, for additional information at (860) 500-2458 or cory.atkinson@ct.gov.

Sincerely,

Jonathan Kinney
State Historic Preservation Officer

450 Columbus Boulevard, Suite 5
Hartford, CT 06103
860-500-2300