



February 8, 2024

Mr. Mark Cook
Tobin, Carberry, O'Malley, Riley & Selinger, P.C.
43 Broad Street, P.O. Box 58
New London, CT 06320

RE: Preliminary Archaeological Assessment of a Proposed Battery Storage Facility at 40 Norwich Road in Waterford, Connecticut

Mr. Cook:

Heritage Consultants, LLC (Heritage) is pleased to have this opportunity to provide Tobin, Carberry, O'Malley, Riley & Selinger P.C. (TCORS) with the following preliminary archaeological assessment of a proposed battery storage facility in Waterford, Connecticut (Figure 1). The project will include the construction of a series of batteries for electricity storage, inverters, and an access road (Figure 2). The current project entails completion of a cultural resources summary based on the examination of data obtained from the Connecticut State Historic Preservation Office (CT-SHPO), as well as geospatial data, including historical mapping, aerial photographs, and topographic quadrangles, maintained by Heritage. This investigation is based upon project location information provided to Heritage by the client. The objectives of this study were to gather and present data regarding previously identified cultural resources situated within 1.6 km (1 mi) of the proposed battery storage facility and to investigate the proposed project area in terms of its natural and historical characteristics so that the need for completing additional cultural resources investigations could be evaluated.

Environmental Context

As seen in Figure 1, the proposed project area is located in an area of low to gently sloping topographic relief. The area is characterized by elevations that range from 143 to 148 ft NGVD and currently consists of a mixture of paved and open areas. Soils located through the proposed battery storage facility and along the associated access road belong to the Agawam Series, Narragansett Series, and Urban Land Series. (Figure 3). The Urban Land soil type is considered to be highly disturbed and retains no/low archaeological sensitivity. A typical profile for these soil types is included below.

Agawam Soils

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

massive; very friable; strongly acid; abrupt smooth boundary. **2C3**--55 to 65 inches; olive (5Y 5/3) loamy sand; single grain; loose; strongly acid.

Narragansett Soils

The Narragansett series consists of very deep, well drained loamy soils formed in a mantle of medium-textured deposits overlying till. They are nearly level to moderately steep soils on till plains, low ridges and hills. Slope ranges from 0 to 25 percent. A typical profile associated with Narragansett soils is as follows: **Ap**--0 to 6 inches; dark brown (10YR 3/3) silt loam; weak medium granular structure; very friable; common medium roots; very strongly acid; clear wavy boundary. (4 to 10 inches thick) **Bw1**--6 to 15 inches; dark yellowish brown (10YR 4/6) silt loam; weak medium subangular blocky structure; very friable; common medium roots; very strongly acid; gradual wavy boundary. **Bw2**--15 to 24 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; very friable; common medium roots; strongly acid; clear wavy boundary. **Bw3**--24 to 28 inches; yellowish brown (10YR 5/6) gravelly silt loam; weak medium subangular blocky structure; very friable; few fine roots; 15 percent gravel; strongly acid; clear wavy boundary. **2C**--28 to 60 inches; light olive brown (2.5Y 5/4) very gravelly loamy coarse sand; single grain; loose; 45 percent gravel and cobbles; strongly acid.

Urban Land Series

Urban Land soils consist of very deep, somewhat excessively drained soils formed in outwash that have been disturbed by cutting or filling, and areas that are covered by buildings and pavement. The Urban Land soils do not retain archaeological sensitivity.

(https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/office/ssr12/?cid=nrcs144p2_016612).

Previously Identified Cultural Resources

A review of previously recorded cultural resources on file with the CT-SHPO revealed that there are no archaeological sites located within 0.8 km (0.5 mi) of the proposed battery storage facility (Figure 4). This review also revealed that there are no National Register of Historic Places (NRHP) properties/districts and no State Register of Historic Places (SRHP) properties/districts. However, there are five inventoried standing structures and two cemeteries within 0.5 km (0.8 mi) of the proposed project area (Figure 5). These resources are reviewed below.

Table 1. Previously Inventoried Historic Standing Structures within 0.8 km (0.5 mi) of the Facility Area

Name	Address	Type	Year Built	Style	NR Eligibility
Charles Comstock House	95 Route 32, Montville	Residence	c .1850	Vernacular	Not Assessed
-	67 Lathrop Road	Residence	Early 20 th century	Dutch Colonial Revival	Not Assessed
Norman Lathrop House	54 Lathrop Road	Residence	1918	Colonial Revival	Not Assessed
-	57 Lathrop Road	Commercial	ca., 1927	Commercial Vernacular	Not Assessed
J. Frederick Baker House	11 Lathrop Road	Residence	1913	Vernacular	Not Assessed

Summary of Standing Structures Older than 50 years

A review of inventoried standing structures within 0.8 km (0.5 mi) of the facility area revealed five buildings older than 50 years (Figure 5; Table 1). Of these buildings, four were constructed as residential buildings while one is characterized as commercial. Most of the buildings date from the early twentieth century, except for the Charles Comstock House, which was constructed around the year 1850. Three of the buildings were constructed in a vernacular style, while two were built in the Colonial Revival style. These two are the Norman Lathrop House and another unnamed building which represents the Dutch Colonial Revival style. None of these five buildings have been assessed applying the NRHP criteria for evaluation. All inventoried standing structures are between 0.24 km (0.15 mi) and 0.7 km (0.43 mi) from the facility area and will not be impacted by construction.

Historical Context

Figure 6, which is a map excerpt dating from 1854, shows that the region containing the proposed battery storage area was largely developed as of the middle of the nineteenth century, with much of the current road network in place by that time. Residences located in the general vicinity of the project area as of 1854 included those belonging to J. Comstock, B. Jerome and E. Morgan. A railroad that runs along the river can be seen to the east of the project area. A subsequent historic map dating from 1868 shows further development of the road network as well as the addition of a cemetery immediately to the east of the project parcel (Figure 7).

The earliest readily available aerial image of the region containing the proposed battery storage facility dates from 1934 (Figure 8). This image confirms that the land surrounding the parcel was largely wooded and agrarian, and that the area within the parcel consisted of an open field. In addition, this photo shows Union Cemetery immediately across from the Facility parcel on the eastern side of Norwich Road. A subsequent 1951 aerial photograph of the region shows increased forested areas, as well as sparse residential development to the north and east of the project parcel (Figure 9). A residential structure appears in the eastern portion of the parcel itself (Figure 9). A 1970 aerial image of the project region shows increased industrial activity and residential infrastructure. Otherwise, there appears to be minimal change to the landscape, with the parcel itself appearing unaltered since 1951 (Figure 10). An aerial image dating from 2004 shows significant industrial activity, with several industrial structures surrounding the project area (Figure 11). The landscape remains in a similar state to that of 1970, however, many of the previously open fields have been filled in with infrastructure. Two large structures can be seen to the north and south of the project parcel. In addition, the eastern portion of the parcel appears to have been paved for a parking lot and contains a gas station. A 2019 aerial image shows the project area in its essentially modern state (Figure 12). The project parcel consists of disturbed land, with surrounding land use being residential and commercial. The current parcel contains a building and parking lot, as well as in the northwest corner, with the remainder containing open land and deciduous trees lining the southern edge.

Archaeological Sensitivity Assessment

In general, areas located less than 300 m (1,000 ft) and no more than 600 m (2,000 ft) from water and that contain slopes of eight percent or less and well-drained soil types were deemed to retain a moderate/high potential for producing precontact era archaeological deposits. This is in keeping with broadly based interpretations of precontact era settlement and subsistence models that are supported by previous archaeological research. It is also expected that there will be variability of precontact era

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. Smaller temporary or task specific sites may be expected on level areas with well-drained soils that are situated more than 300 m (1,000 ft) but less than 600 m (2,000 ft) from a water source. Finally, steeply sloping areas, poorly drained soils, or areas of previous disturbance are deemed to retain a no/low archaeological sensitivity. The subtle nuances of precontact era settlement and subsistence patterns are beyond the scope of research needed for the current investigation, but the methods of stratification discussed above are suitable for analyzing the proposed area.

The Facility area also was assessed on the potential for yielding post-European Contact period archaeological sites. In this case, areas are situated adjacent to or within 152.4 m (500 ft) of a previously identified post-European Contact period archaeological site or a National Register of Historic Places district/individually listed property were deemed to retain a moderate/high post-European Contact period archaeological sensitivity. In contrast, those areas situated over 152.4 m (500 ft) from any of the above-referenced properties were considered to retain a no/low post-European Contact period archaeological sensitivity.

Based on the desktop data shown in Figures 1 through 12, those areas containing Urban Land soils have been designated as no/low potential areas in terms of their likelihood to produce intact archaeological deposits; it encompasses 0.31 acres of land on the eastern side of the parcel. The remaining 0.48 acres were assessed as retaining high/moderate archaeological sensitivity because it contained well drained soils, had a low slope and was within close proximity to previously identified archaeological sites and buildings over 50 years in age. In order to determine the veracity of the desktop data, Heritage personnel visited the Project area and conducted pedestrian survey, the results of which are discussed below.

Pedestrian Survey

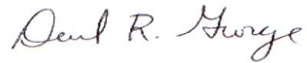
Pedestrian survey of the Facility area, including the parcel that will house the battery storage facility, was completed in January of 2024 (Figure 13; Photos 1 through 7). The pedestrian survey revealed that the proposed storage area has been highly disturbed in the past. The eastern section of the parcel is on urban land and has been disturbed by the construction of a gas station and parking lot (photos 1 and 2). This has been identified as an area of no/low sensitivity in terms of producing evidence of intact archaeological deposits from either the precontact era or the post-European Contact period. In addition, the grass field behind the structure on the west side of the parcel shows evidence of thorough disturbance. These disturbances include manholes and pits filled with concrete (Photos 3 through 7). These indicate the presence of buried tanks or other utilities likely associated with the gas station. While the lot may contain post-European Contact period artifacts, there is little, if any chance, that such cultural deposits would be undisturbed and/or retain any research potential.

Based on the above referenced historical data, cultural resources information, and environmental factors, it appears that the entire project parcel has been subjected to disturbances associated with the urbanization and industrialization of the area. It was determined that the project area retains a no/low sensitivity to produce intact cultural deposits. (Figure 13). No additional archaeological examination of the project area is recommended prior to construction.

Mr. Mark Cook
February 8, 2024
Page 5

If you have any questions regarding this Technical Memorandum, or if we may be of additional assistance with this or any other projects you may have, please do not hesitate to call us at 860-299-6328 or email us info@heritage-consultants.com. We are at your service.

Sincerely,

A handwritten signature in cursive script that reads "David R. George".

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

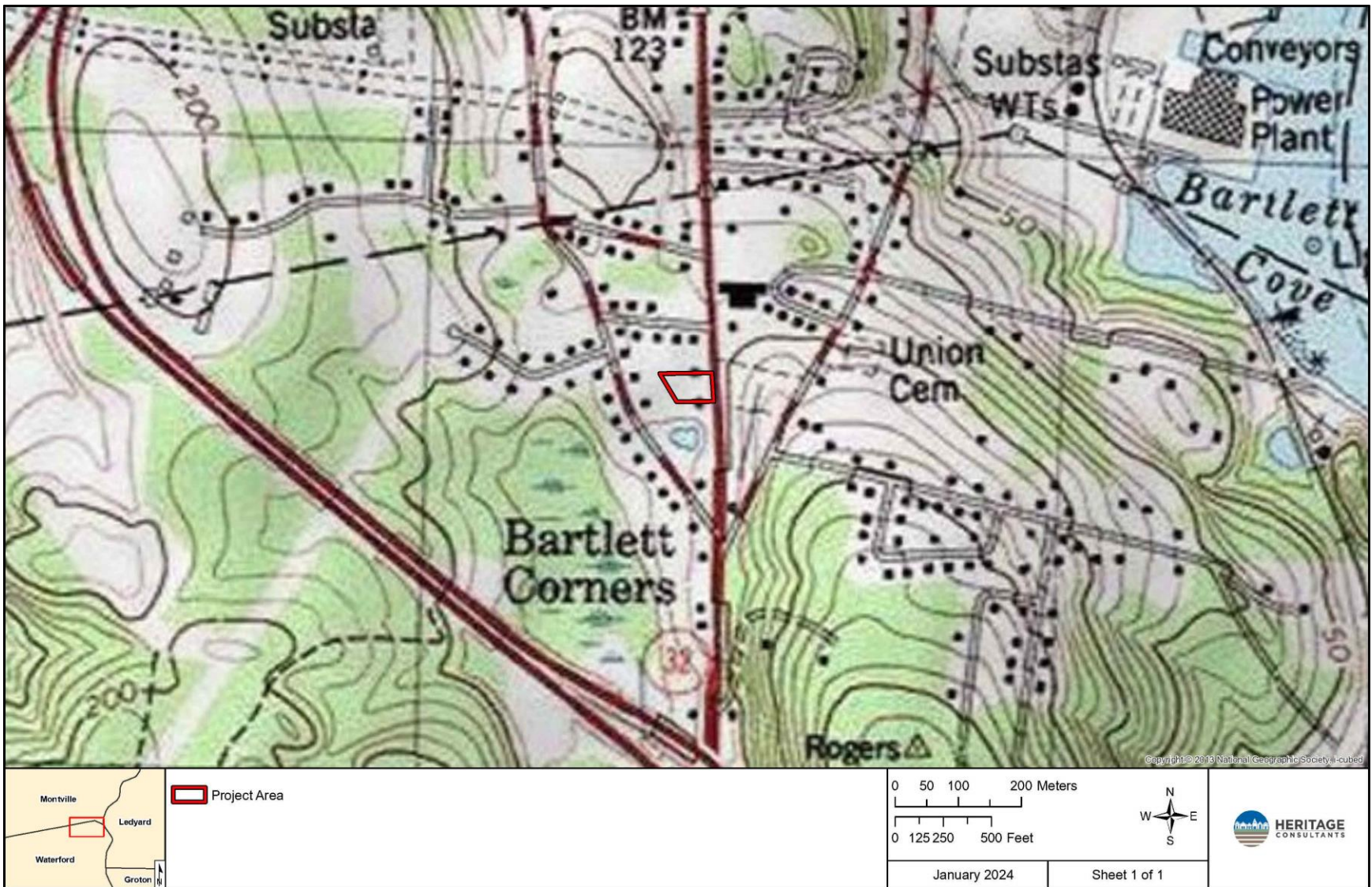
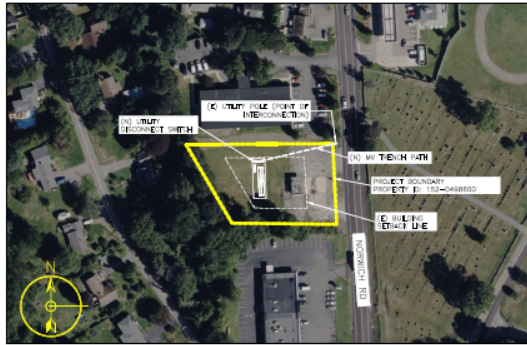


Figure 1. Excerpt from a USGS 7.5' series topographic quadrangle image showing the location of the proposed project area in Waterford, Connecticut.

Q CELLS – 40 NORWICH RD
 40 NORWICH RD, WATERFORD CT 06375
 4,000KW/11,008KWH BESS

REGIONAL MAP



SYSTEM SPECIFICATION

BESS POWER CONVERTER SYSTEM (PCS)

SUNGROW SC4000UD-MV-US
 [BESS CONVERTER + MV XFMR]
 MAX POWER 4000KVA @ 45°C

TOTAL NUMBER OF CONVERTERS-#1

BESS CONTAINER

SUNGROW BATTERY CONTAINERS
 ST2752UX-US
 LIQUID COOLING ENERGY STORAGE
 CAPACITY = 2752KWH

TOTAL NUMBER OF CONTAINERS-#4

TEMPERATURE CONSIDERATIONS	
STD TEMPERATURE [°C]	25
ASHRAE 2% HIGH AMBIENT TEMPERATURE [°C]	27
ASHRAE EXTREME MIN. LOW AMBIENT TEMPERATURE [°C]	-14

APPLICABLE CODES:

- 2020 NATIONAL ELECTRIC CODE (NEC)
- 2021 INTERNATIONAL BUILDING CODE (IBC)
- 2021 INTERNATIONAL FIRE CODE (IFC)

DESIGN CRITERIA:

- COLD DESIGN TEMPERATURE: -3°C
- HOT DESIGN TEMPERATURE: 36°C

DRAWING INDEX

Sheet Number	Sheet Title
E.000	TITLE PAGE
E.100	SITE PLAN
E.200	SLD
E.400	SPECS 01
E.500	SITE VICINITY MAP
E.501	ENVIRONMENTAL RESOURCES
E.502	ENVIRONMENTAL RESOURCES 02
E.503	ENVIRONMENTAL RESOURCES 3
E.504	ENVIRONMENTAL RESOURCES 4
E.505	ENVIRONMENTAL RESOURCES 5

PROJECT TEAM

PV ENGINEER:
 HENRY HOLBROOK HYDE III
 HYDE RENEWABLES, INC.
 4735 WALNUT STREET, SUITE #110
 BOULDER, CO 80301
 WWW.HYDERENEWABLES.COM
 P: (720) 900-1009

SCOPE OF WORK

INSTALLATION OF A NEW 4000KW BATTERY STORAGE SYSTEM AND ASSOCIATED EQUIPMENT.



THESE DRAWINGS AND SPECIFICATIONS HAVE BEEN PREPARED BY HYDE RENEWABLES, INC. FOR THEIR EXCLUSIVE USE IN ACCORD WITH TITLE 20 SEC. 20-300-10 OF THE CONNECTICUT ADMINISTRATIVE CODE.



SCALE: AS NOTED
 (PRINT ON 36"x24")

TV	30%	07/26/23
BY	REVISION/ISSUE	DATE

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PROJECT NAME AND ADDRESS
 Q CELLS – 40 NORWICH RD
 40 NORWICH RD, WATERFORD CT 06375

SHEET TITLE
 TITLE PAGE

DRAWN BY TV	SHEET # E.000
DATE 05/11/2023	
CHECKED BY TRIPP HYDE	

Figure 2. Project plans provided by the client.

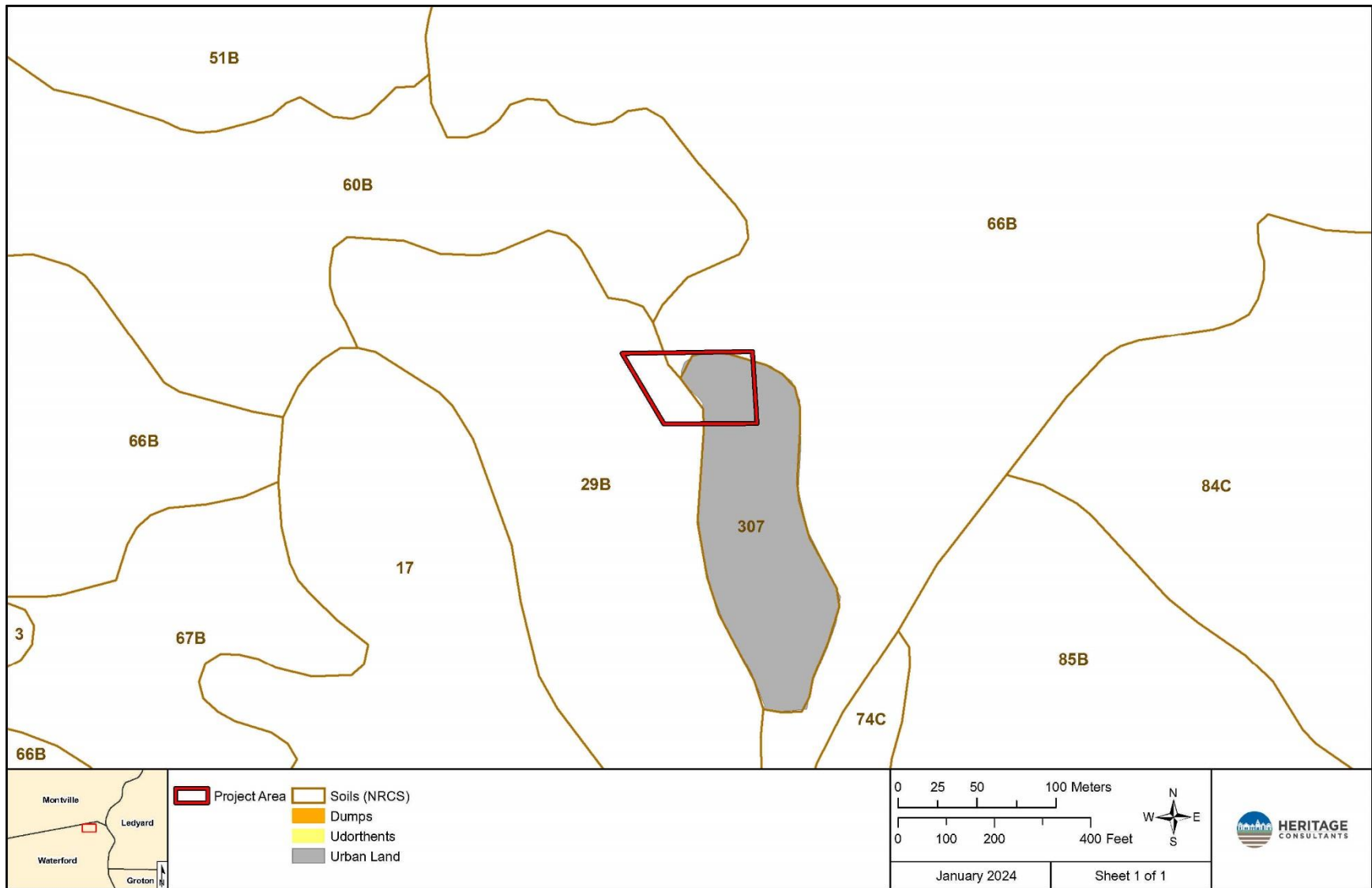


Figure 3. Digital map depicting the soil types present in the vicinity of the project area in Waterford, Connecticut.

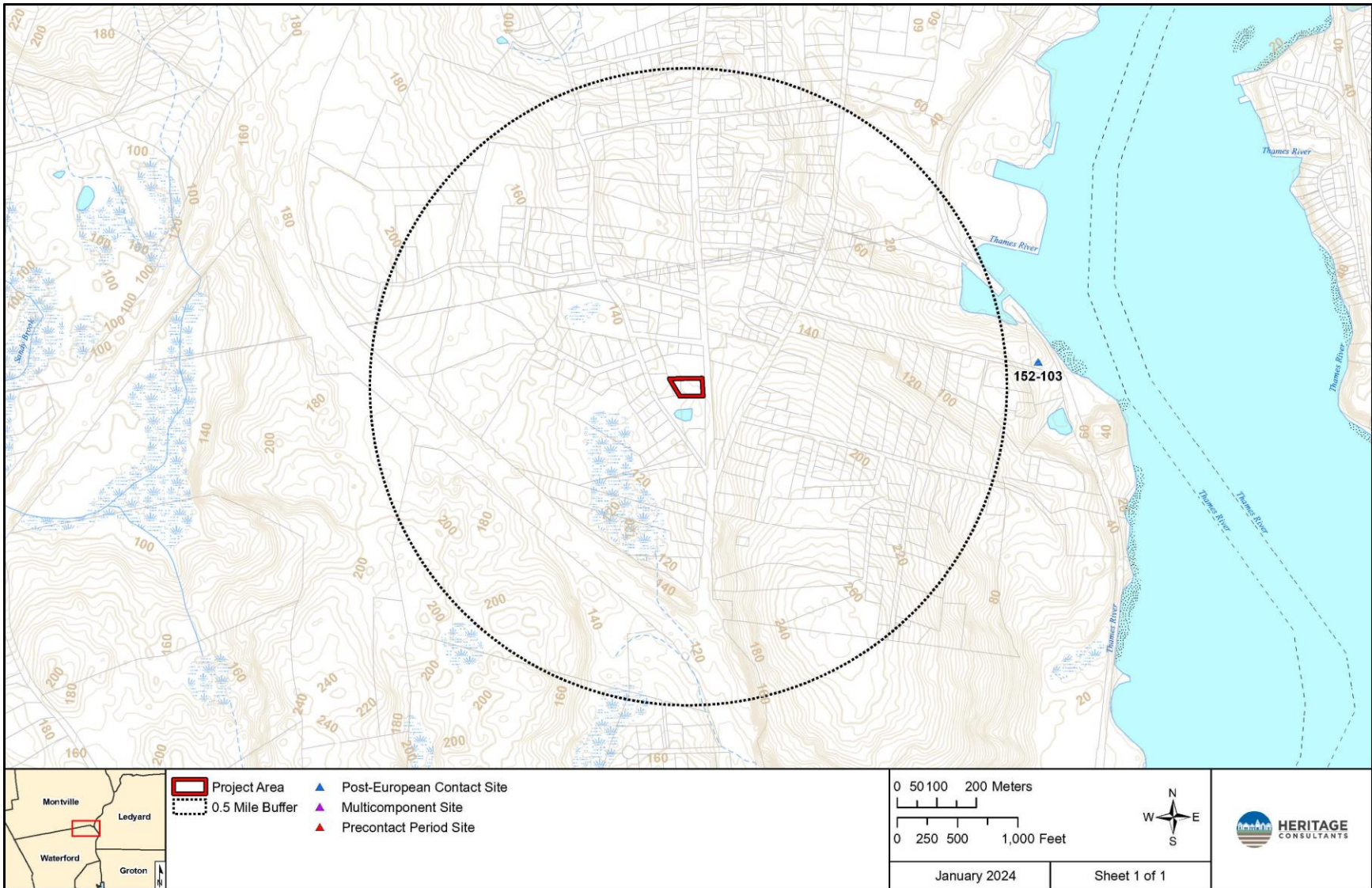


Figure 4. Digital map depicting the locations of the previously identified archaeological sites in the vicinity of the proposed project area in Waterford, Connecticut.

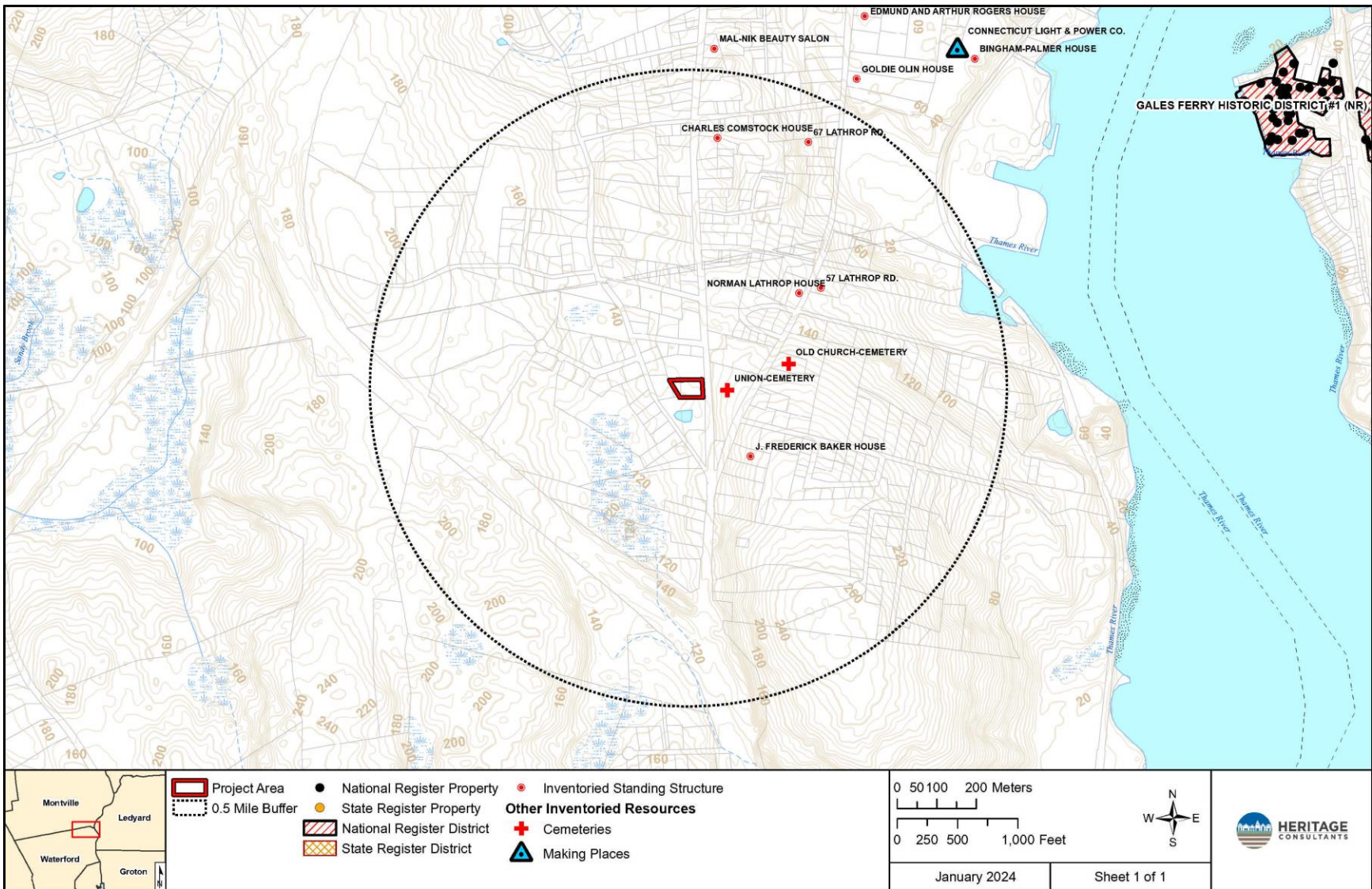


Figure 5. Digital map depicting the locations of the previously identified National Register of Historic Places and State Register of Historic places properties in the vicinity of the proposed project area in Waterford, Connecticut.



Figure 6. Excerpt from an 1854 map showing the location of the proposed project area in Waterford, Connecticut.

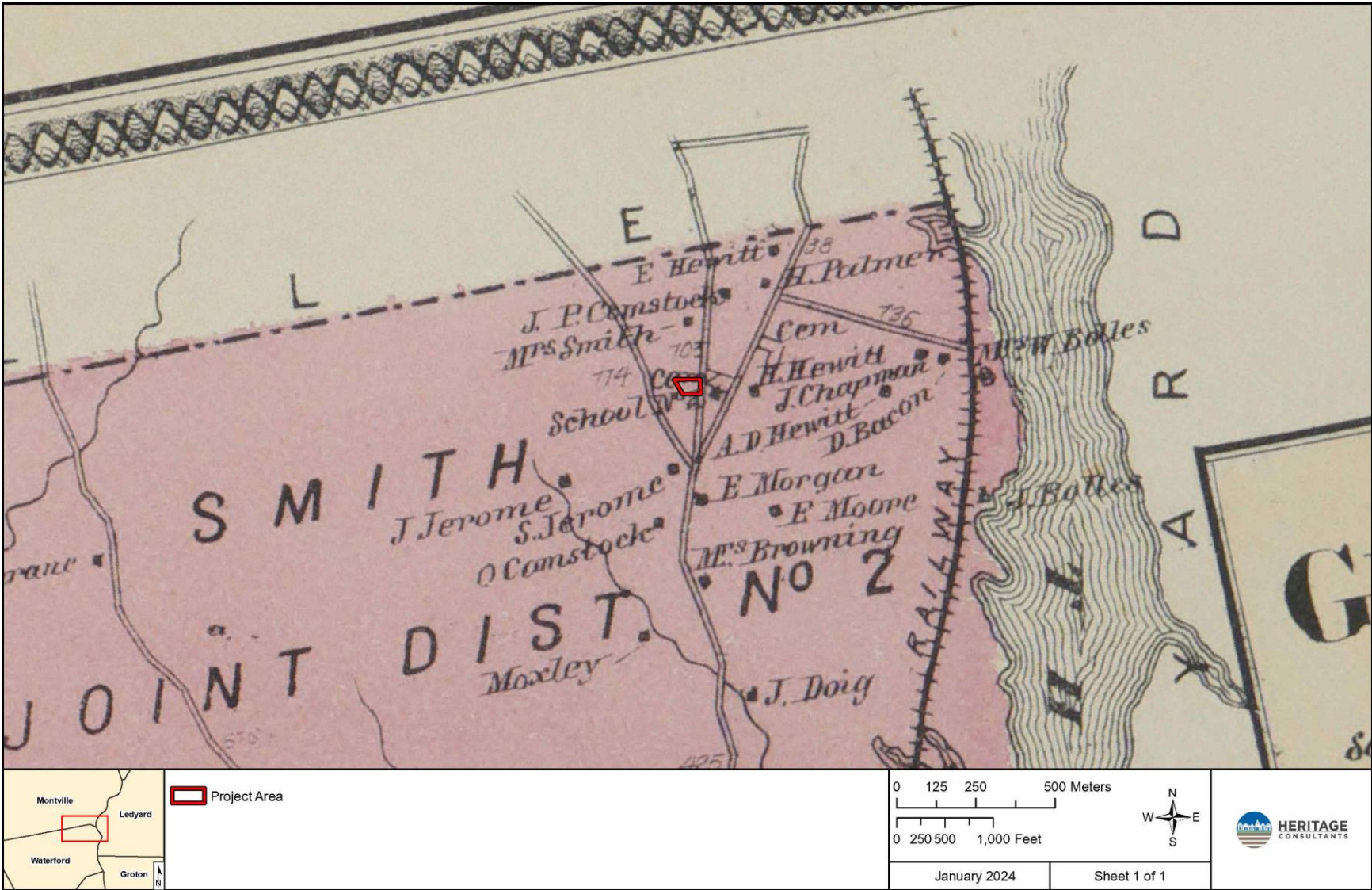


Figure 7. Excerpt from an 1868 map showing the location of the proposed project area in Waterford, Connecticut.



Figure 8. Excerpt from a 1934 aerial photograph showing the location of the proposed project area in Waterford, Connecticut.



Figure 9. Excerpt from a 1951 aerial photograph showing the location of the proposed project area in Waterford, Connecticut.



Figure 10. Excerpt from a 1970 aerial photograph showing the location of the proposed project area in Waterford, Connecticut.



Figure 11. Excerpt from a 2004 aerial photograph showing the location of the proposed project area in Waterford, Connecticut.



Figure 12. Excerpt of a 2019 aerial photograph showing the location of the project parcel and sensitivity areas in Waterford, Connecticut.



Figure 13. Excerpt of a 2019 aerial photograph with directional arrows of photo points taken of the project parcel and sensitivity areas in Waterford, Connecticut.



Photo 1. Overview photo from northeastern corner of the parking lot. Photo taken facing southwest.



Photo 2. Overview photo from southeastern corner of the parking lot. Photo taken facing northwest.



Photo 3. Overview photo from southwestern corner of the field. Photo taken facing northeast.



Photo 4. Close up of manhole in the facility area.



Photo 5. Close up of hole filled in with concrete in the facility area.



Photo 6. Close up of hole filled in with concrete in the facility area.



Photo 7. Close up of concrete debris indicative of disturbance in the facility area.