

ATTACHMENT E

Cultural Resources Review and Study



INTEGRATED HISTORIC PRESERVATION PLANNING

August 18, 2016

Shawn C. Crosbie
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RE: Preliminary Archeological Assessment of the Proposed United Illuminating Baird to Housatonic Crossing Upgrade Project in Milford and Stratford, Connecticut

Mr. Crosbie:

Heritage Consultants, LLC, is pleased to have this opportunity to provide United Illuminating, with the following preliminary archeological assessment of the Proposed Baird to Housatonic Crossing Upgrade Project in Milford and Stratford, Connecticut. The currently proposed project plans call for the separation of the existing utility lines from the overhead catenary system along Metro North's rail line system to a series of free-standing poles near the edge of the existing railroad corridor (Figure 1; Sheets 1 and 2). The proposed project corridor extends between 732 Naugatuck Avenue in Milford, Connecticut in the east and 1772 Stratford Avenue in Stratford, Connecticut in the west. The current project entailed completion of an existing conditions cultural resources summary based on the examination of GIS data obtained from the Connecticut State Historic Preservation Office, as well as historic maps, aerial photographs, and topographic quadrangles maintained by Heritage Consultants, LLC. This investigation is based upon project location information provided to Heritage Consultants, LLC by United Illuminating. The objectives of this study were: 1) to gather and present data regarding previously identified cultural resources situated within the vicinity of the Area of Potential Effect; 2) to investigate the proposed project corridor in terms of its natural and historical characteristics; and 3) to evaluate the need for completing additional cultural resources investigations.

Brief Contextual History of the New York and New Haven Railroad (Metro North)

In order to evaluate possible impacts the construction project may have cultural resource in the area, it was necessary to produce a historical context of the region. Railroad history in Fairfield and New Haven began in the 1840s, when the state's third railroad, the New York and New Haven Railroad, was incorporated. Its line from New Haven into New York State was completed in 1849, and it featured a single 69-mile iron track designed mainly for passenger traffic. During the 1860s, the line's economic situation improved, allowing for replacement of the rails with steel, the construction of new stations, and the expansion of maintenance facilities. The railroad also began to take more of an interest in freight shipping at that time. In 1872, the New York and New Haven Railroad merged with the Hartford and New Haven Railroad. Together they were the largest transportation company in Connecticut, and was renamed the New York, New Haven, and Hartford Railroad. Over the succeeding three decades, company leaders carried out a series of acquisitions and long-term leases, through which the rail line became a near-monopoly on transportation in the state. The company owned railroads (including almost 1,000 steam engines by 1904), steamboats, and electric trolley lines (Turner and Jacobus 1987). In the process it

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also purchased a number of electricity generation facilities (Campbell 1950). The company was an early experimenter with electric engines, first changing over the route between New Haven and New York to that mode of propulsion. The choice of overhead wire systems was made because the electrified third-rail system was demonstrably unsafe on open tracks (Turner and Jacobus 1987).

In the early years of the twentieth century, the rail line participated in fiscal overreach and shady dealings which led to a 1907 exposé and a series of investigations, fiscal retrenchment, and a series of fatal accidents. The president of the company resigned in 1913 and a series of prosecutions under the Sherman Anti-Trust Act led to some corporate divestments. This anti-trust process was interrupted by the federal takeover of the railroads during World War I, and in 1920 a partially revived company began adding buses and trucking companies to its portfolio. Old debts from World War I caught up to the company during the Great Depression, however, and in 1935 it entered bankruptcy and a 12-year long period of reorganization that carried the company through World War II. In 1947, however, it was taken over by a corporate profiteer, and the combination of persistently deferred maintenance, cost-cutting, and competition from Interstate 95 (opened in 1958 as the Connecticut Turnpike) led to a new bankruptcy in 1961. This bankruptcy led to its forced merger – and consequent disappearance as a corporate entity – into the new Penn Central Transportation Company in 1968. That poorly-run company went into bankruptcy in 1970, and in 1985, the Connecticut Department of Transportation bought much of the track and facilities. It now operates as Metro North.

Electrical Generation and Transmission along the Railroad Corridor

The process of using electricity to power New York, New Haven and Hartford Railroad trains began in 1904, when the process of electrifying the track between Woodlawn, New York, and Stamford, Connecticut was initiated. Opened for use in 1907, it was the country's first trunk line electrification and used alternating current, which was a break with the less efficient direct current systems that had been in common use up to that point. Much of the system was designed and built by Westinghouse Electric and Manufacturing Company, which was pioneering commercial use of alternating current at the time. Between 1911 and 1914, the electrification was continued an additional 45 miles to New Haven. Power generation was at first handled by a plant in Cos Cob, Greenwich, which was the first facility for generating 11,000 volts of alternating current at 25 cycles for railroad use. This later became the standard for railroad electrification in the United States. The plant included a monitoring and control system, and transmission was along an overhead catenary and trolley wire system. Electricity was also provided to stations and maintenance facilities. Finally, a signaling and communications system was also added. Various components of the system were improved while in service between 1907 and 1924. By 1912, further extension of electrification on other lines required the company to begin buying power from a Consolidated Edison predecessor company, in addition to that provided by the expanded Cos Cob plant (Stewart 2000).

Regardless of where the power came from, the railroad developed two different systems for transmitting it to the trains. There is an unusual section within a small area in Stamford, near the Darien line, which contains three wires above the track spaced by hangars, forming a downward-pointing triangle. The powered trolley wire comprises the lower point. Use of this type of system, however, showed that the hangers caused too much wear on the contact wire. As a result, flexible clips were installed to hold a new trolley wire below the original one, and no more of the triangular suspension system was built. The remainder of the electrical line uses a simpler system, with the catenary line suspended from "hanger beams" between "bridges." The powered trolley line is suspended by hangers from those. The four trolley wires (for the four tracks) were insulated from one another and a system of separate powered sections and circuit breakers helped make operation and repair safer. The system also called for steel open truss bridges over the tracks about 300 feet apart to support the complex of wires. It also includes "anchor

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bridges” approximately every two miles, which are much stronger structures that help support the weight of the wires and also carry transformers, access walkways, and other necessary items (Stewart 2000). This system has remained in place and in operation for over 100 years; however, the proposed project calls for the separation of the existing utility lines from the overhead catenary system to free-standing poles.

Results of the Current Investigation

As the historical discussion above suggests, the portions of Milford and Stratford containing the proposed project corridor were fully settled by the middle of the nineteenth century. This is confirmed by Figures 2; Sheets 1 and 2 and 3; Sheets 1 and 2, historic maps from 1856 and 1868, respectively, which demonstrate that these areas contained a well-developed system of roads and residential homes, as well as the tracks associated with the New York and New Haven Railroad (now Metro North). The area also contained a few parcels of open land that were likely used for agricultural purposes. As Figure 4; Sheets 1 and 2, an aerial image taken in 1934, shows the railroad was fully built and in operation by the mid nineteenth to early twentieth century, and its path crossed through developed portions of Milford and Stratford. By this time large housing blocks had been built throughout the area and large industrial facilities are located throughout the project region. Figure 5; Sheets 1 and 2 shows continued development of the area surrounding the proposed tower locations and the associated railroad corridor as of 1965. This image shows major disturbance areas on both sides of the Housatonic River, and in close proximity to the rail line and the proposed tower locations. This image also shows the route of the recently constructed Interstate 95 corridor, which resulted in wide scale reorientation of local roadways and significant disturbance throughout the area. Figure 6; Sheets 1 and 2, an aerial image captured in 1990, shows continued growth in the region, with the addition of several large commercial facilities, especially along the northeastern portion of the proposed project corridor. Finally, Figure 7; Sheets 1 and 2, an aerial image dating from 2012, shows the area encompassing the proposed tower locations in its essentially modern state. It confirms the highly developed nature of the proposed tower locations and their proximity to the Metro North rail line.

During the current investigation, Heritage Consultants, LLC also collected data relating to previously identified archaeological sites, National Register of Historic Places properties, and historic standing structures within the vicinity of the proposed tower locations (Figure 8; Sheets 1 and 2, Figure 9; Sheets 1 and 2, and Figure 10; Sheets 1 and 2). A single archaeological site has been recorded in close proximity to the proposed project corridor (138-16). This site, known as the Sutton Avenue Site, was recorded by H.E. Miller in 1947. Miller indicated that the site had yielded “numerous surface finds.” Unfortunately, none of those finds were described in terms of artifact types or possible time periods of use. Moreover, the official State of Connecticut site form contains no additional information about the size of the site, its state of preservation, or its period of affiliation. Site 138-16 has not been assessed applying the National Register of Historic Places criteria for evaluation (36 CFR 60-4 [a-d]), and no recommendations concerning additional testing of the site area were made. Site 138-16 will not be impacted as a result of the proposed construction.

In addition, a single National Register of Historic Places district was identified during the background research for this investigation (Figure 9; Sheet 1). This National Register property is known as the Stratford Center Historic District. The Stratford Center National Register Historic District contains 300 historic buildings located along the west bank of the Housatonic River and to the south and east of the Interstate 95. This area of Stratford contains portions of an early nucleated village that dates back as far as 1639. It contains examples of most major architectural styles dating from between the late seventeenth and twentieth centuries. The Stratford Center National Register Historic District is considered significant for its architecture and archaeological potential. This area, while located relatively close to the proposed project corridor, will not be impacted by the planned construction. Finally, no individually recorded

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historic standing structures are located in close proximity to the proposed project corridor (Figure 10; Sheets 1 and 2).

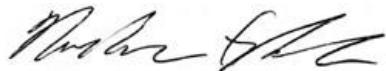
In addition to a review of historic maps, aerial images, previously completed cultural resources investigations, and previously recorded cultural resources, Heritage Consultants, LLC reviewed, environmental characteristics that frequently are used to predict the location of yet-to-be-identified archeological sites. Typically distance to water, slope, and soil types are included as part of these predictive models. Favorable conditions are characterized by gently sloping, well-drained, undisturbed soils in close proximity to fresh water. While some of the proposed towers are situated in proximity to gently sloping areas and fresh water sources, it is clear in Figure 11; Sheets 1 and 2 that the soils situated along the proposed project corridor have been substantially impacted by development over the last 150 years or more. That is, the proposed tower locations are situated within soil series designated as either Udorthents or Urban Land. While Udorthents are characterized by soils that have been substantially disturbed through cutting and filling activities, Urban Land is described as a land surface where at least 85 percent of it is covered by streets, parking lots, buildings and other impervious surfaces. Generally, the original soils within these series have been so significantly altered through excavating or filling that no other soil designation is possible. Udorthents and Urban Land soil types retain little, if any, potential to yield intact cultural deposits. Finally, pedestrian survey of the areas encompassing each of the proposed project items also was completed, the result of which clearly demonstrated the disturbed nature of each area, as well as the presence of additional underground facilities (Photos 1 through 6).

Summary and Recommendations

A review of environmental characteristics, historic maps and aerial images, and previously recorded cultural resources was used to assess the potential for the proposed project corridor to contain intact subsurface deposits. Given the substantial amount of development within the proposed areas and the large number of previous disturbances, it is highly unlikely that intact soil deposits remain. Therefore, it is the professional opinion of Heritage Consultants, LLC that no further archaeological investigations of the tower locations associated with the proposed United Illuminating Baird to Housatonic Crossing Upgrade Project in Milford and Stratford, Connecticut are warranted.

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 860-667-3001 or email us info@heritage-consultants.com. We are at your service.

Sincerely,



Nicholas Griffis, M.A.
Staff Archaeologist

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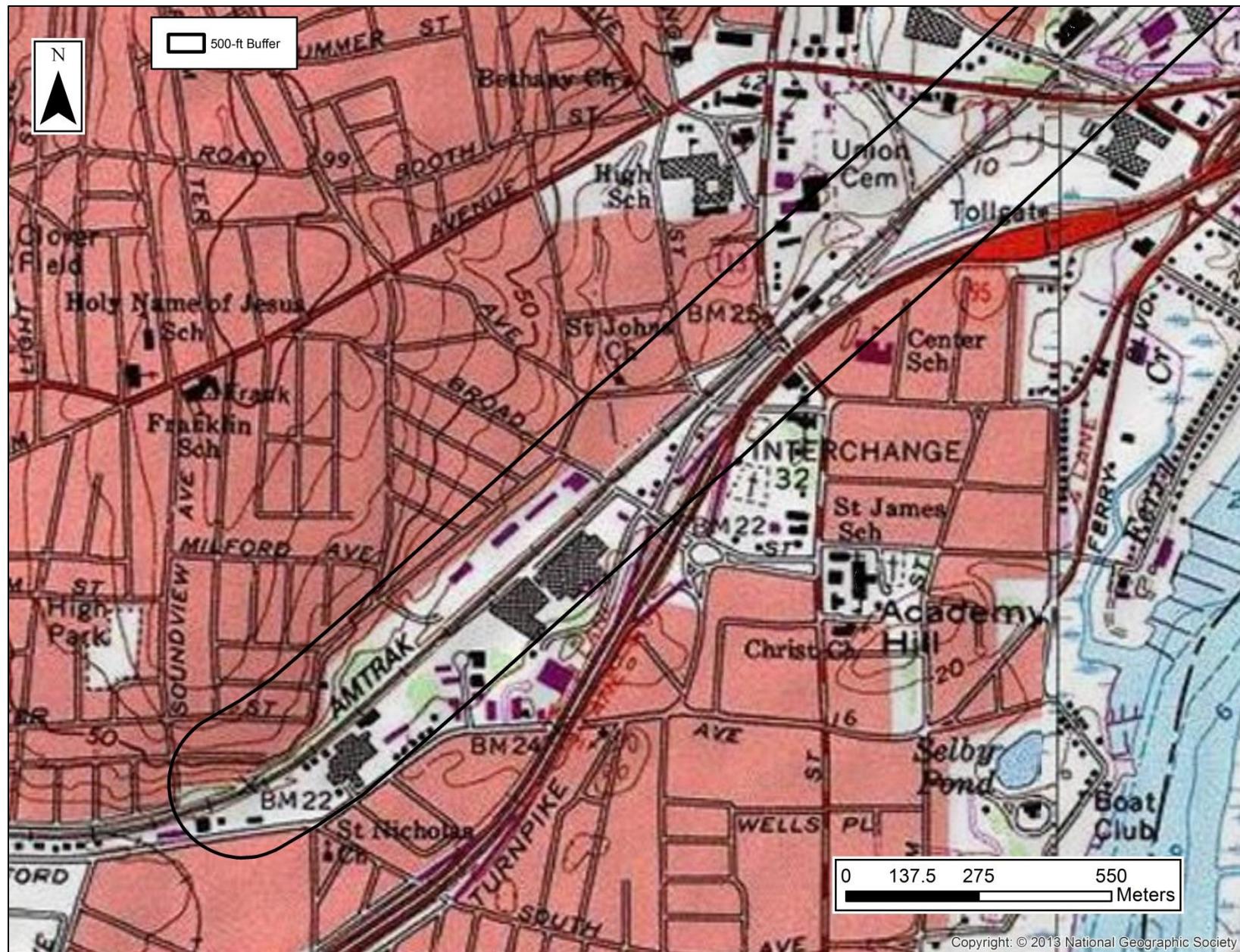


Figure 1; Sheet 1.

Excerpt from a recent USGS topographic quadrangle map depicting the proposed project area in Stratford and Milford, Connecticut.

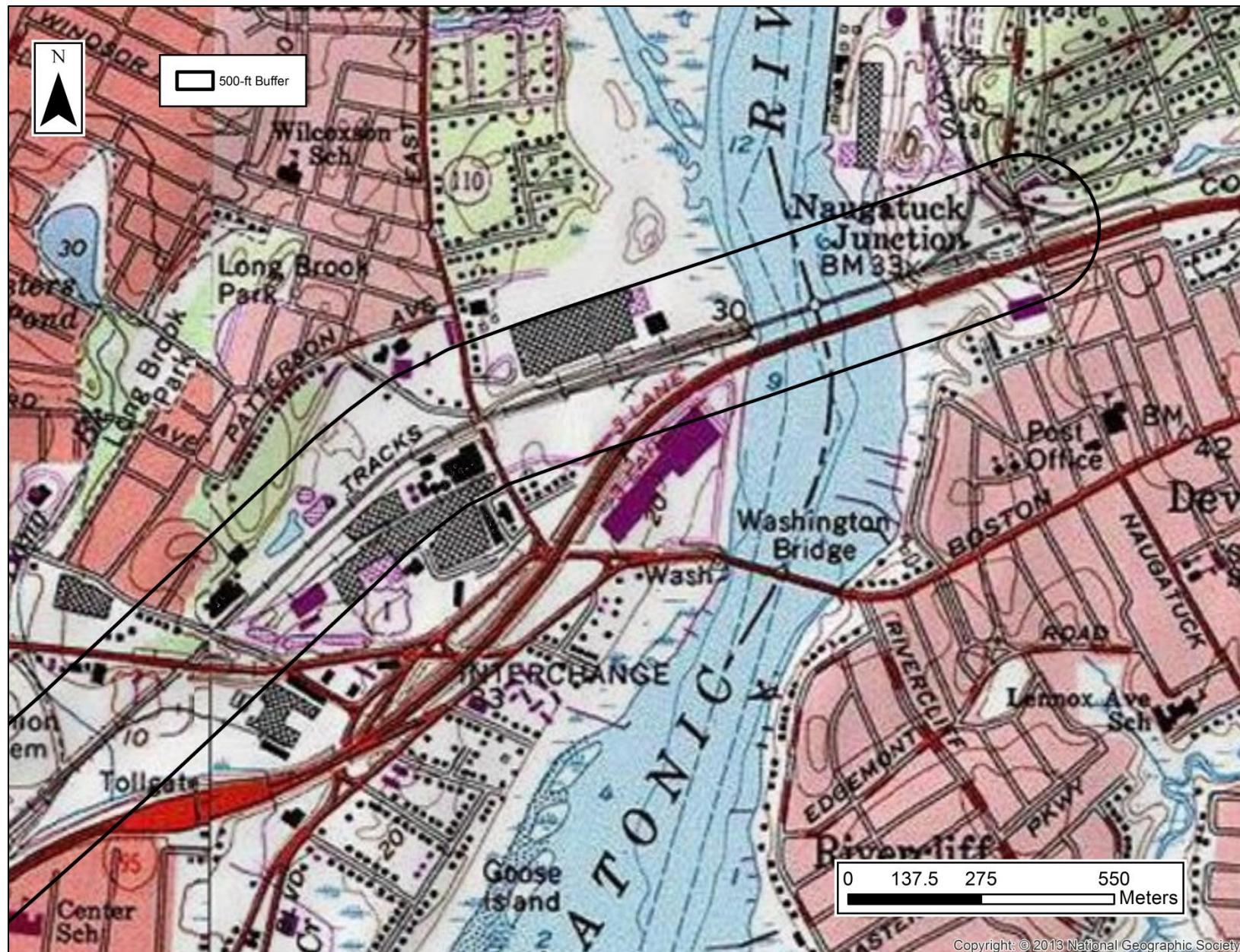


Figure 1; Sheet 2.

Excerpt from a recent USGS topographic quadrangle map depicting the proposed project area in Stratford and Milford, Connecticut.



Figure 2; Sheet 1. Excerpt from an 1856 historic map depicting the proposed project area in Stratford and Milford, Connecticut.



Figure 2; Sheet 2. Excerpt from an 1856 historic map depicting the proposed project area in Stratford and Milford, Connecticut.

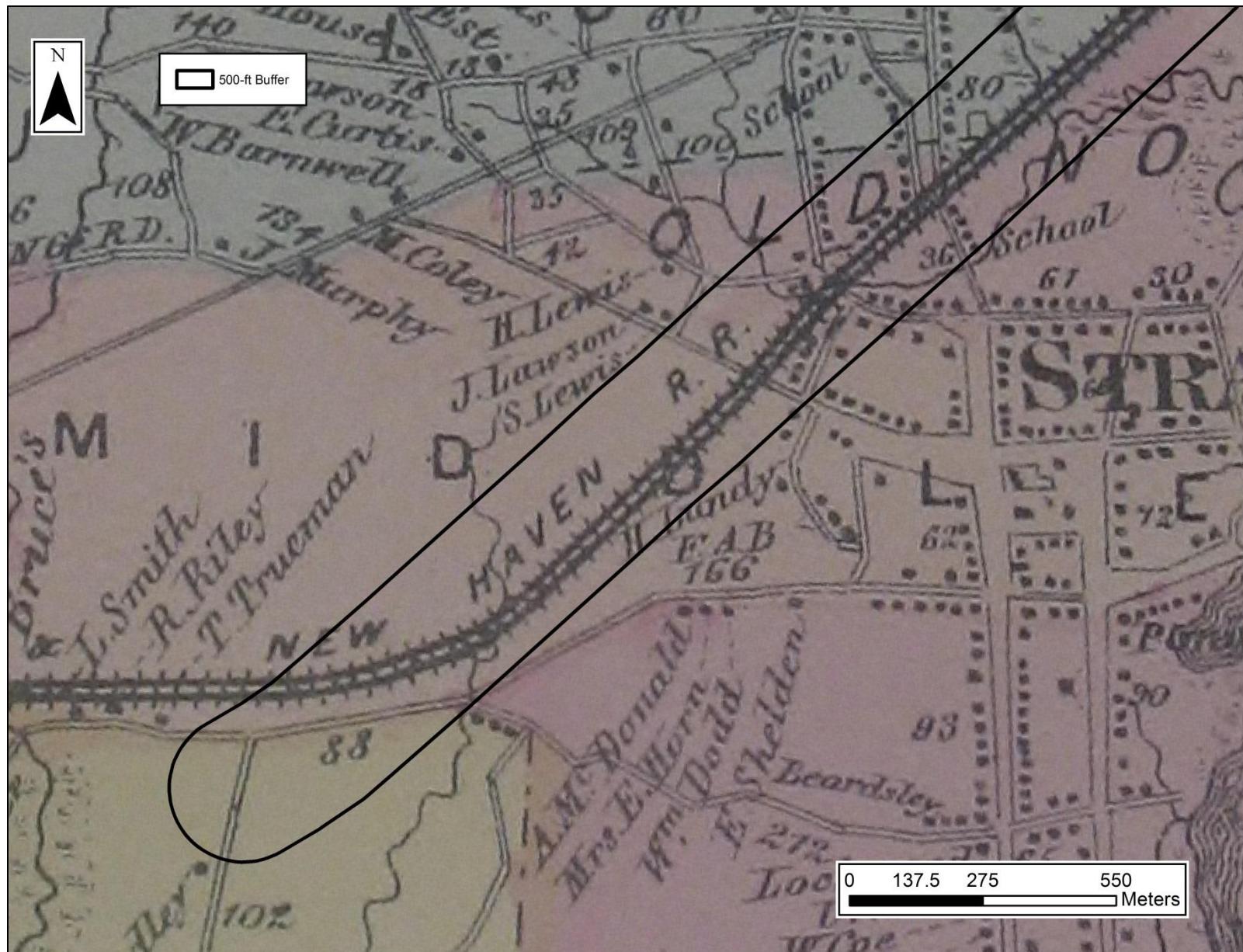


Figure 3; Sheet 1. Excerpt from an 1868 historic map depicting the proposed project area in Stratford and Milford, Connecticut.

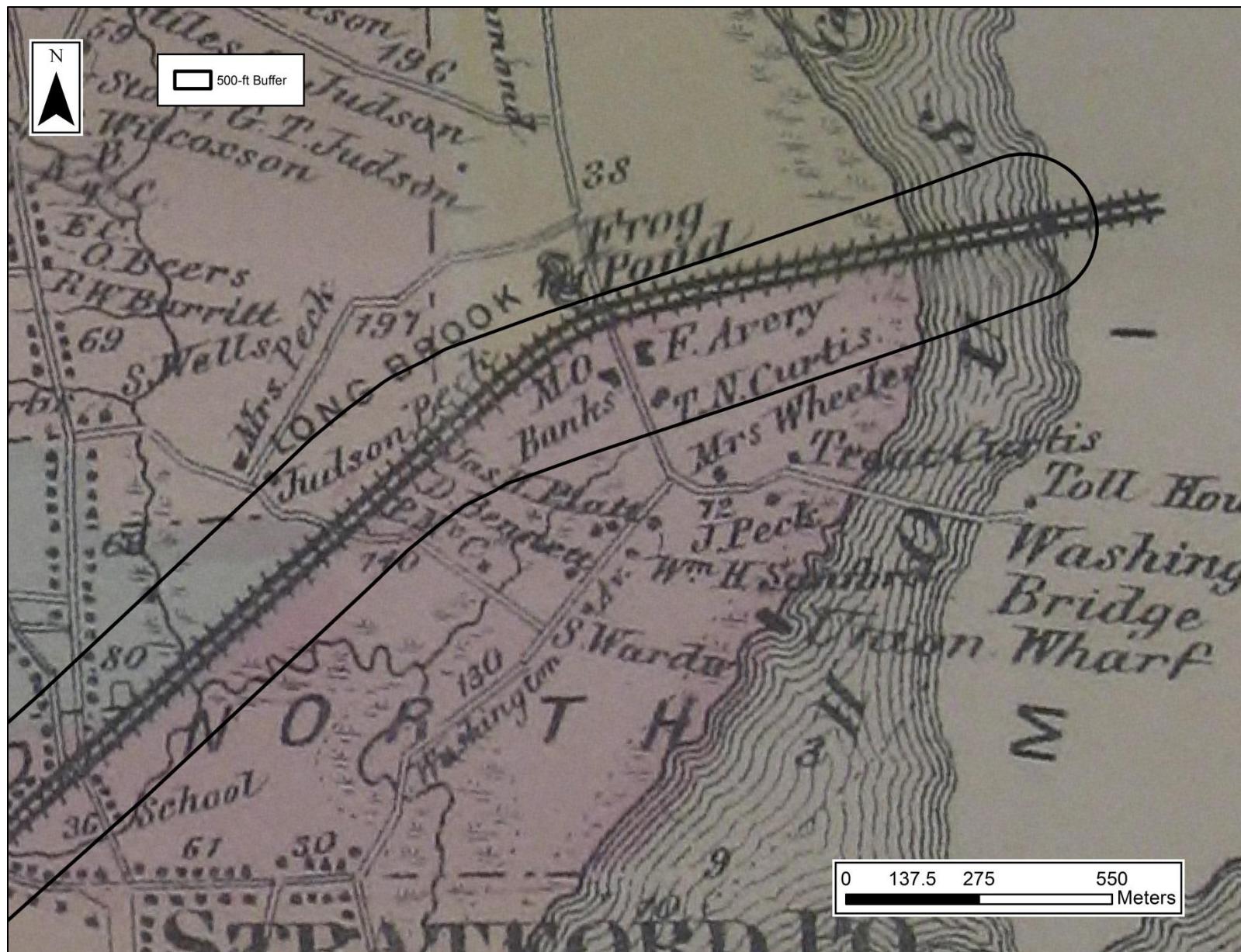


Figure 3; Sheet 2. Excerpt from an 1868 historic map depicting the proposed project area in Stratford and Milford, Connecticut.

Attachment E

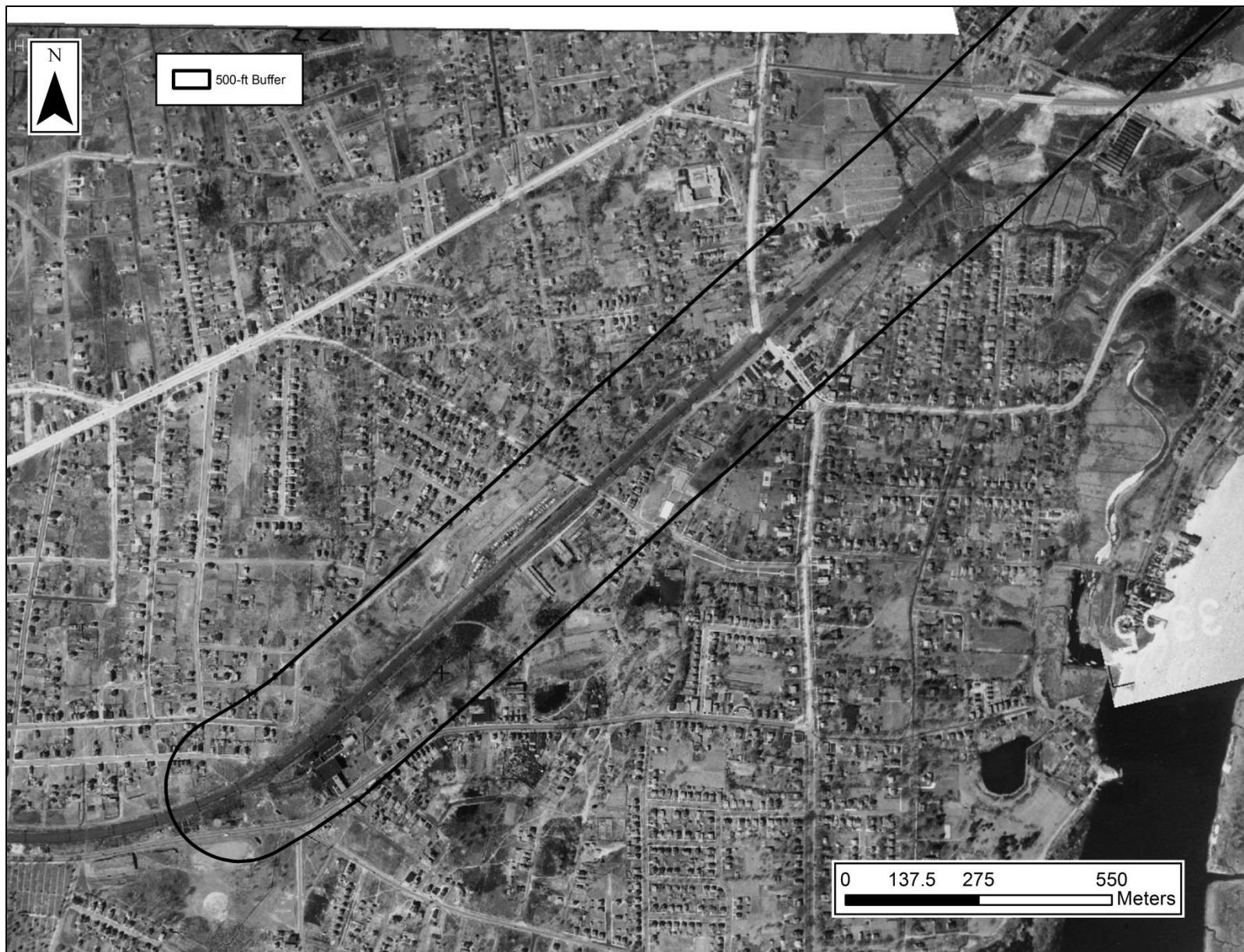


Figure 4; Sheet 1. Excerpt from an 1934 aerial image depicting the proposed project area in Stratford and Milford, Connecticut.

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Figure 4; Sheet 2. Excerpt from an 1934 aerial image depicting the proposed project area in Stratford and Milford, Connecticut.

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Figure 5; Sheet 1. Excerpt from a 1965 aerial image depicting the proposed project area in Stratford and Milford, Connecticut.

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Figure 5; Sheet 2. Excerpt from a 1965 aerial image depicting the proposed project area in Stratford and Milford, Connecticut.

Attachment E



Figure 6; Sheet 1. Excerpt from a 1990 aerial image depicting the proposed project area in Stratford and Milford, Connecticut.

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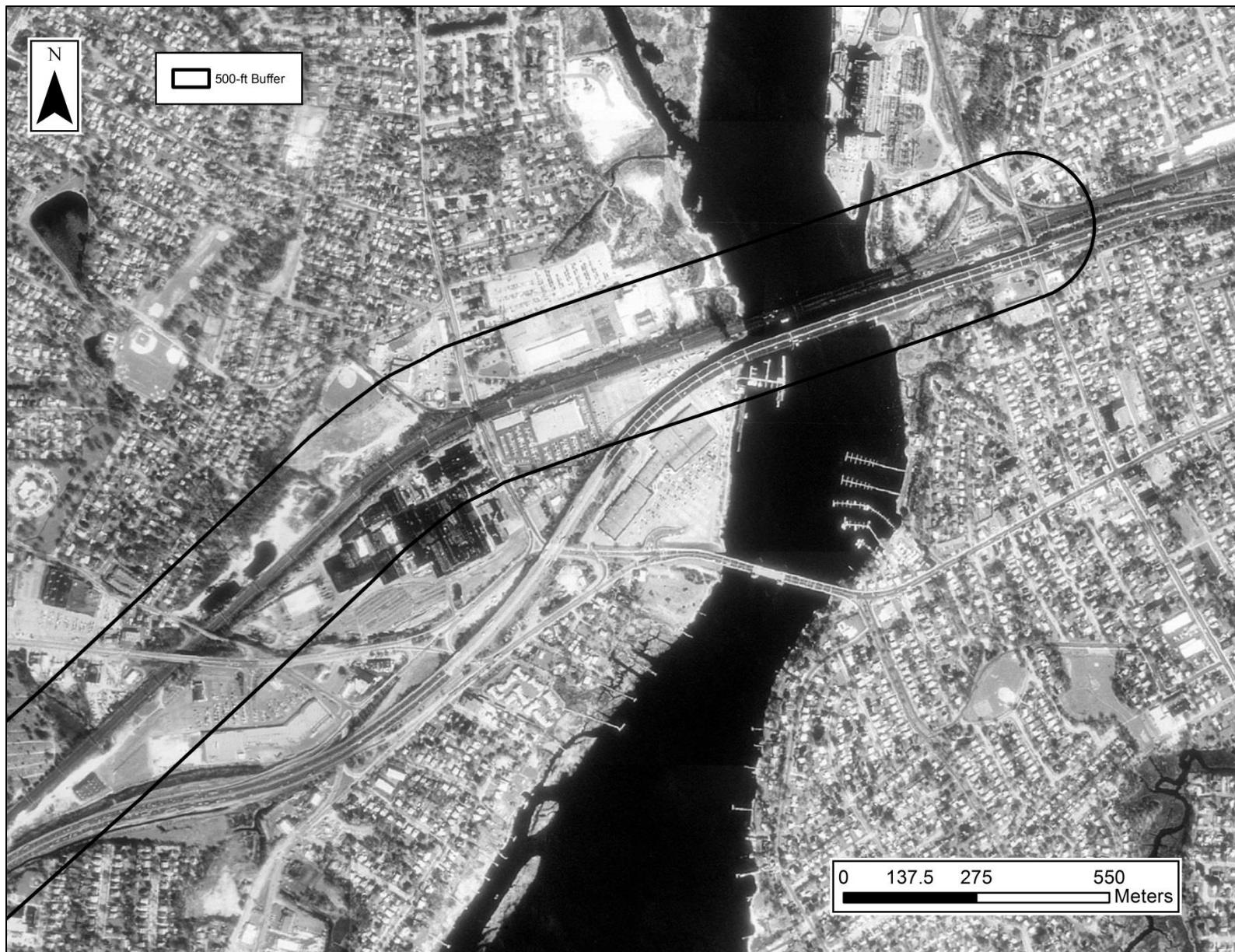


Figure 6; Sheet 2. Excerpt from a 1990 aerial image depicting the proposed project area in Stratford and Milford, Connecticut.

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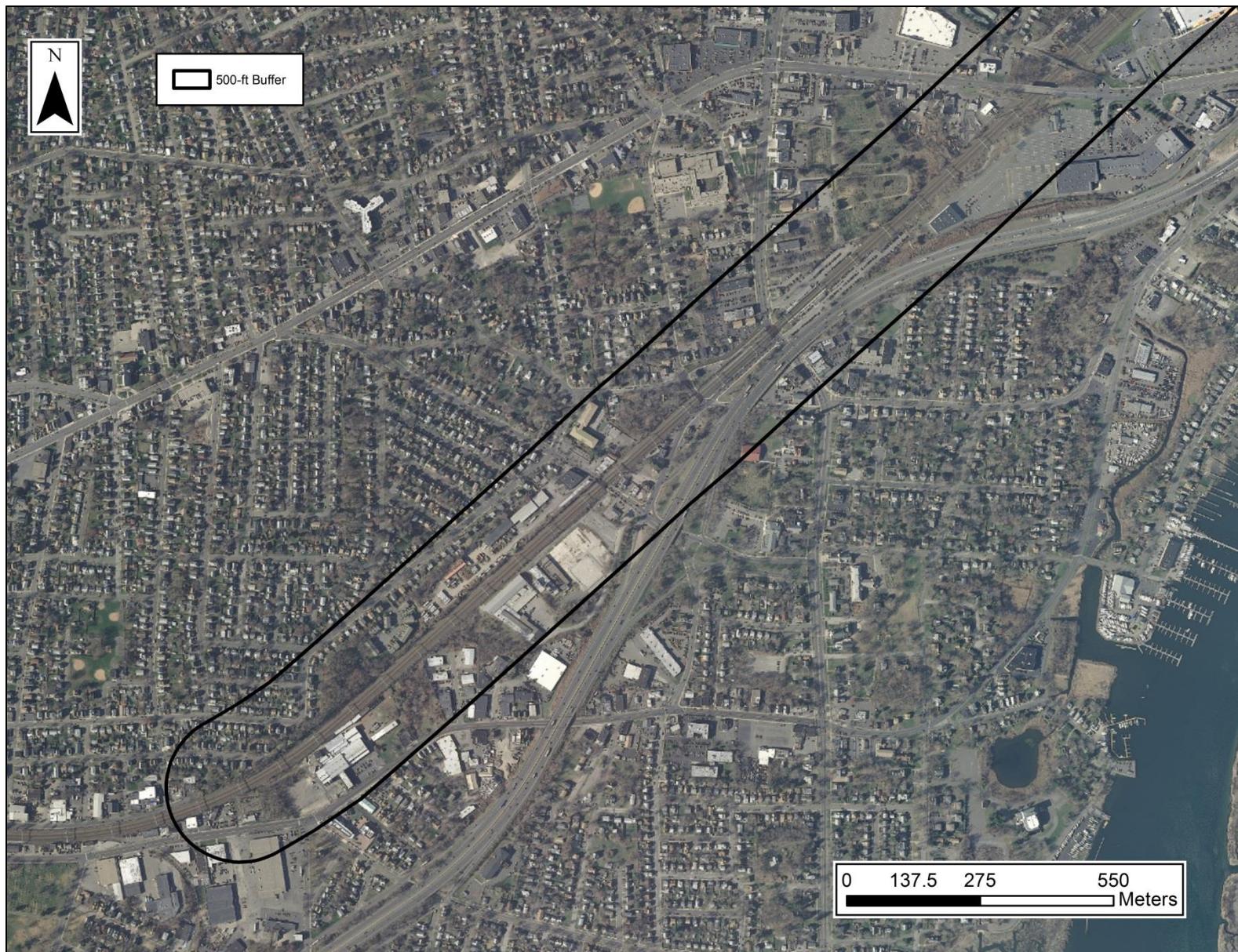


Figure 7; Sheet 1. Excerpt from a 2012 aerial image depicting the proposed project area in Stratford and Milford, Connecticut.

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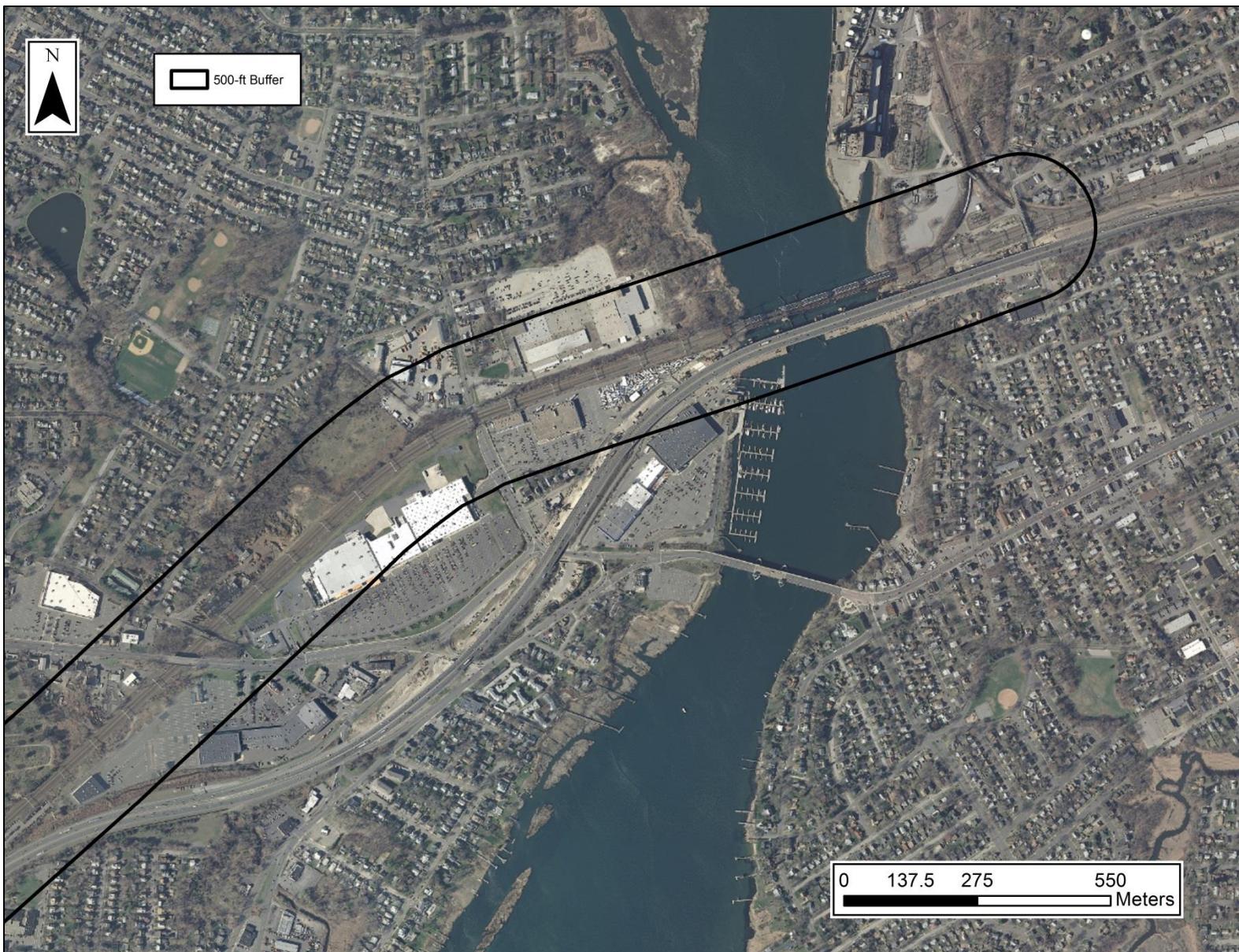


Figure 7; Sheet 2. Excerpt from a 2012 aerial image depicting the proposed project area in Stratford and Milford, Connecticut.

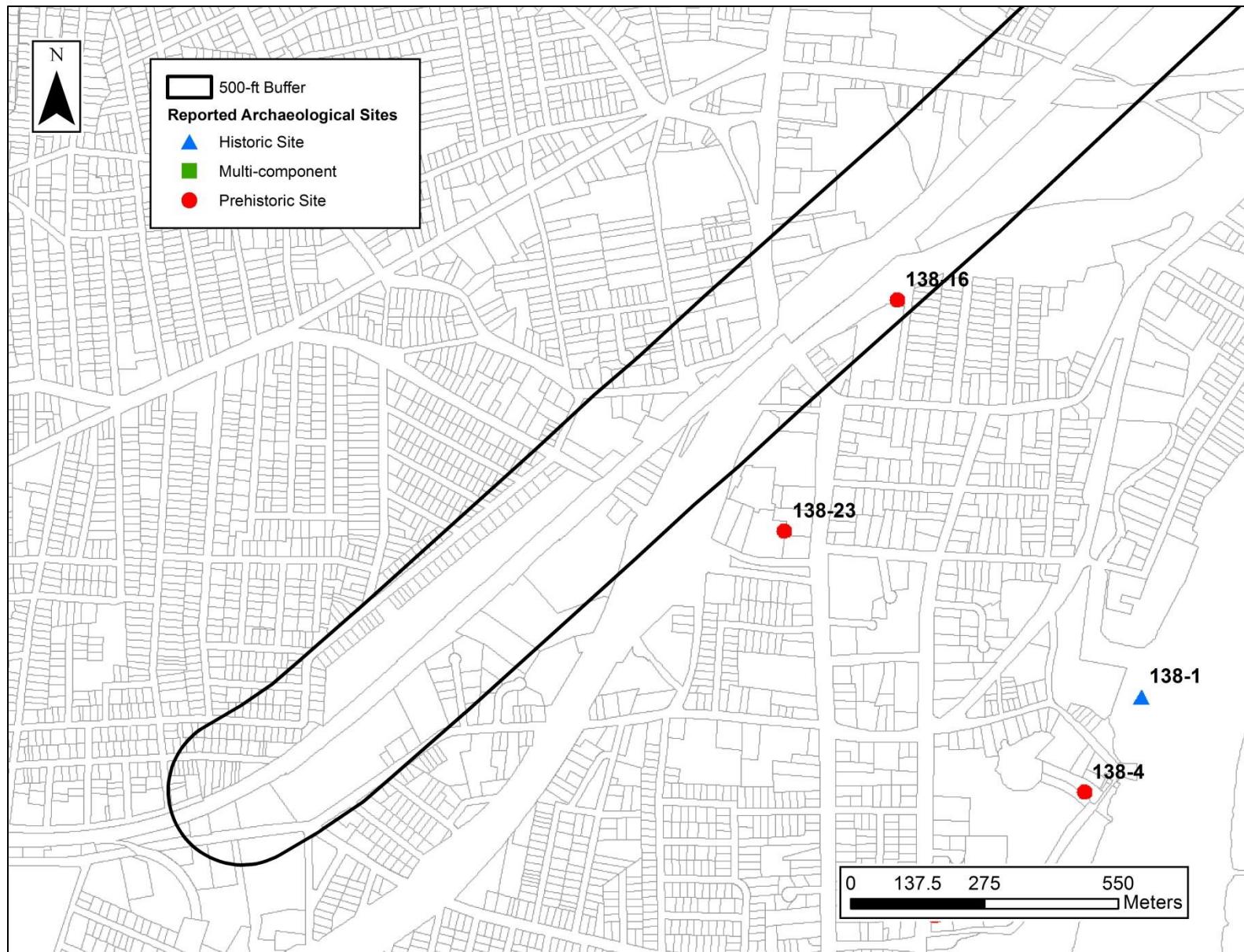


Figure 8; Sheet 1.

Digital map depicting the locations of previously identified archaeological sites in the vicinity of the proposed project area in Stratford and Milford, Connecticut.

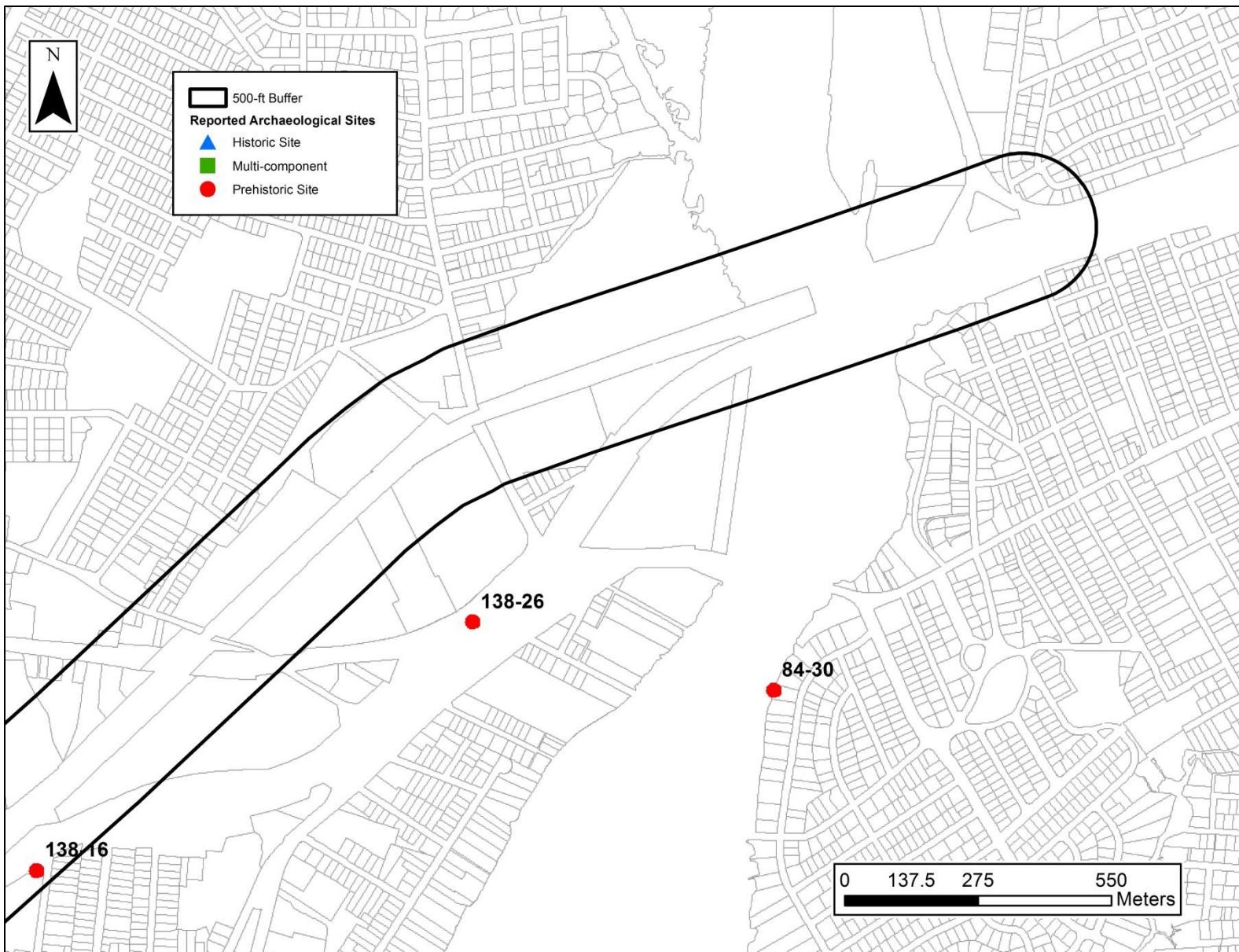


Figure 8; Sheet 2.

Digital map depicting the locations of previously identified archaeological sites in the vicinity of the proposed project area in Stratford and Milford, Connecticut.

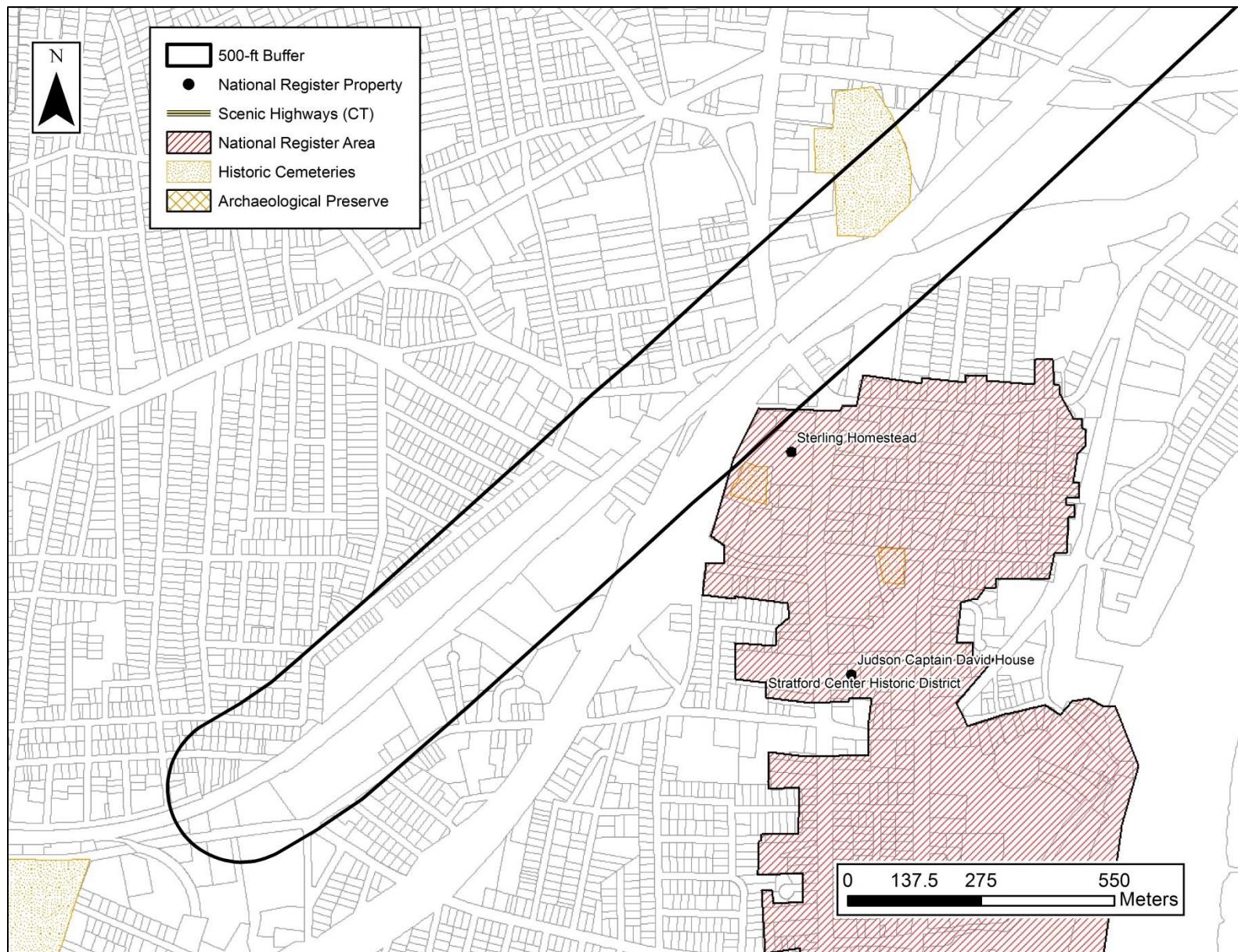


Figure 9; Sheet 1.

Digital map depicting the locations of previously identified National Register of Historic Places properties in the vicinity of the proposed project area in Stratford and Milford, Connecticut.

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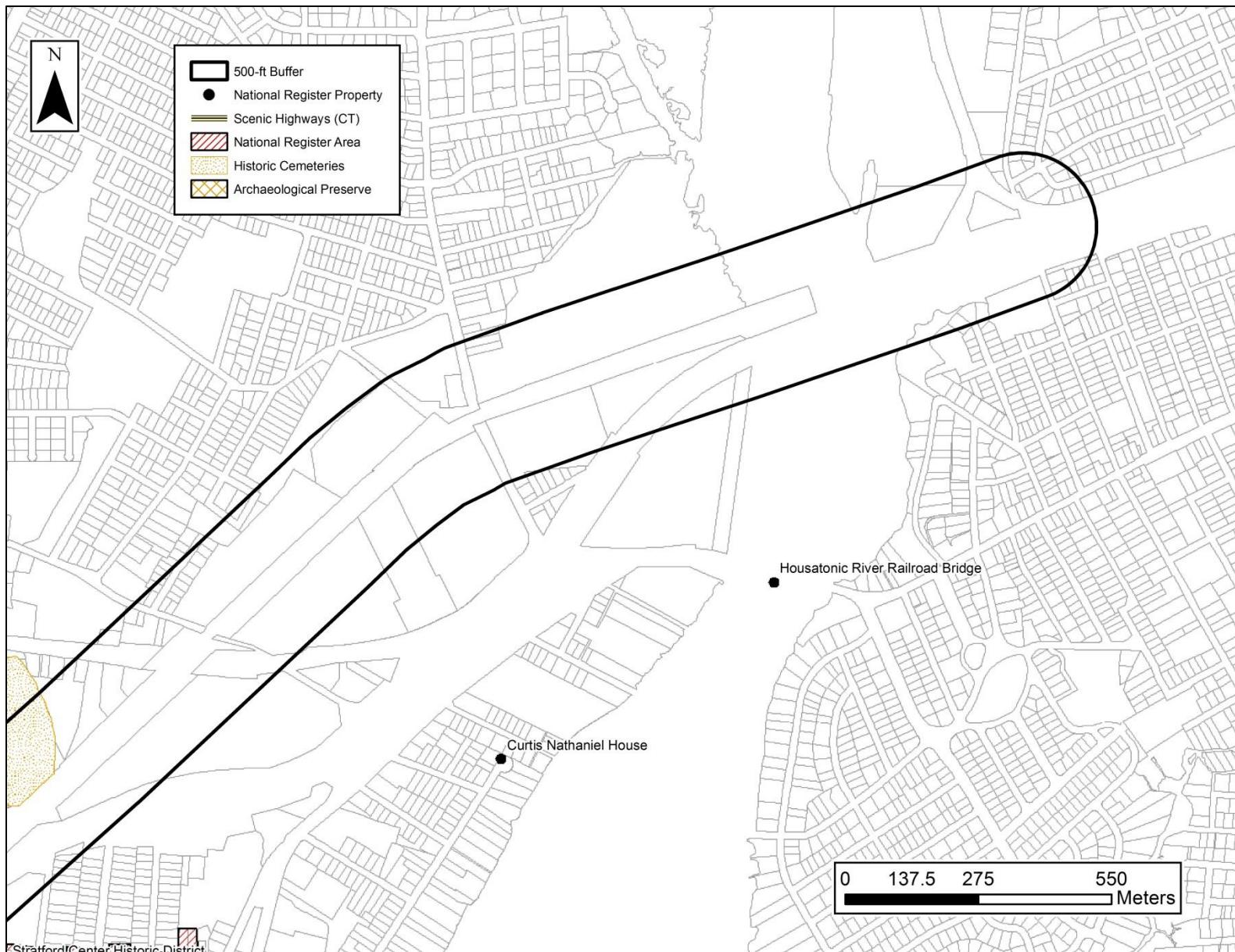


Figure 9; Sheet 2.

Digital map depicting the locations of previously identified National Register of Historic Places properties in the vicinity of the proposed project area in Stratford and Milford, Connecticut.

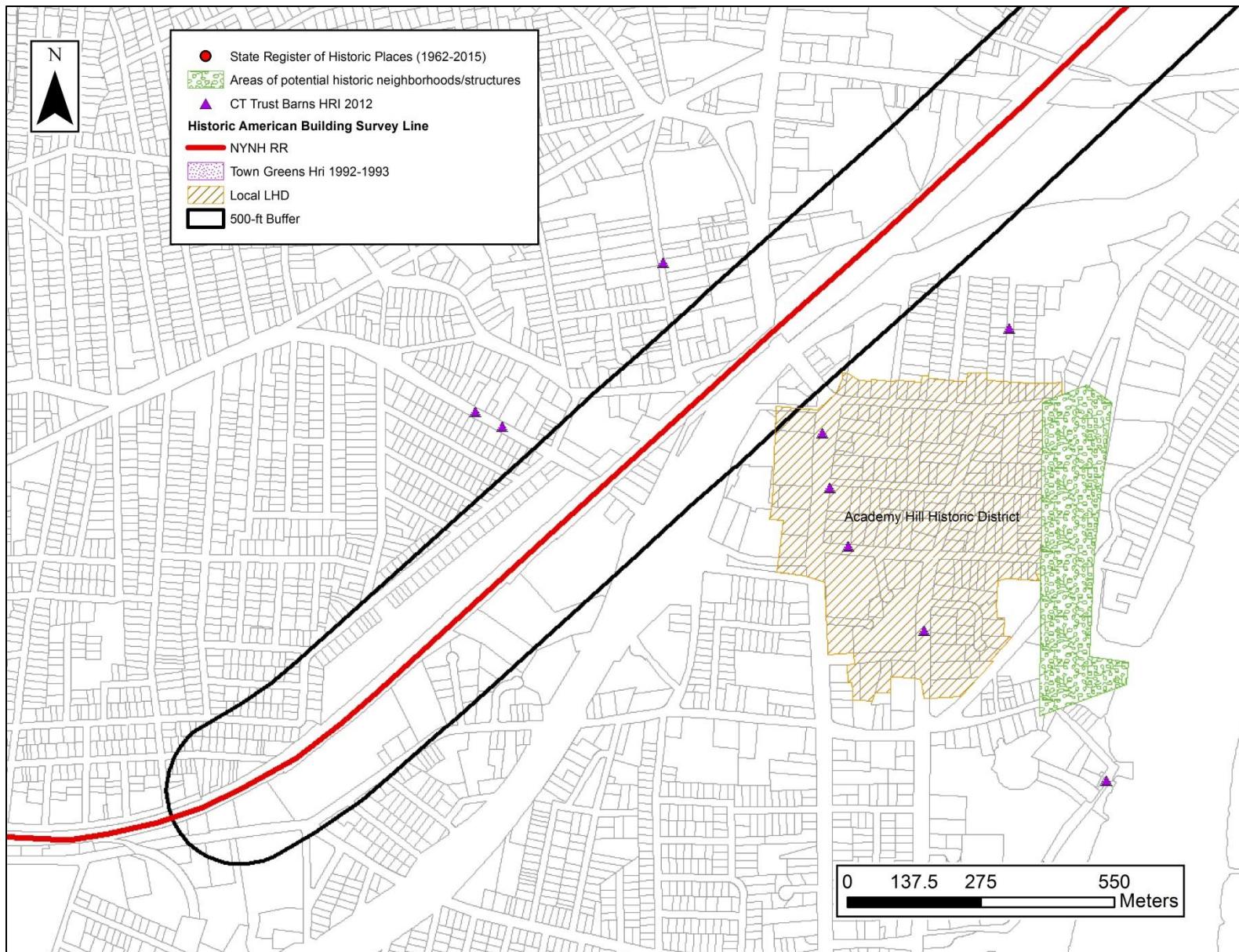


Figure 10; Sheet 1. Digital map depicting the locations of previously identified historic buildings properties in the vicinity of the proposed project area in Stratford and Milford, Connecticut.

Attachment E

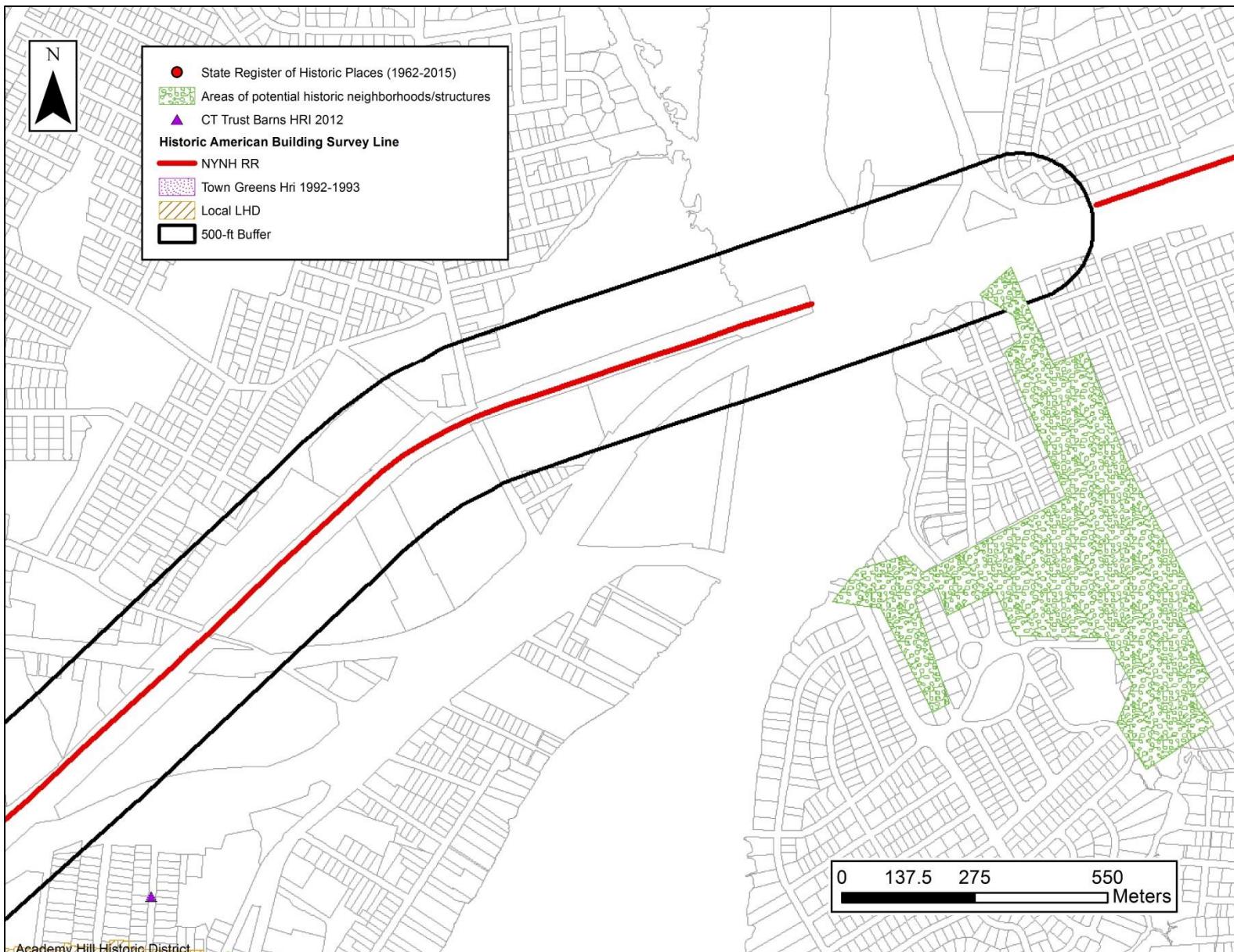


Figure 10; Sheet 2. Digital map depicting the locations of previously identified historic buildings properties in the vicinity of the proposed project area in Stratford and Milford, Connecticut.

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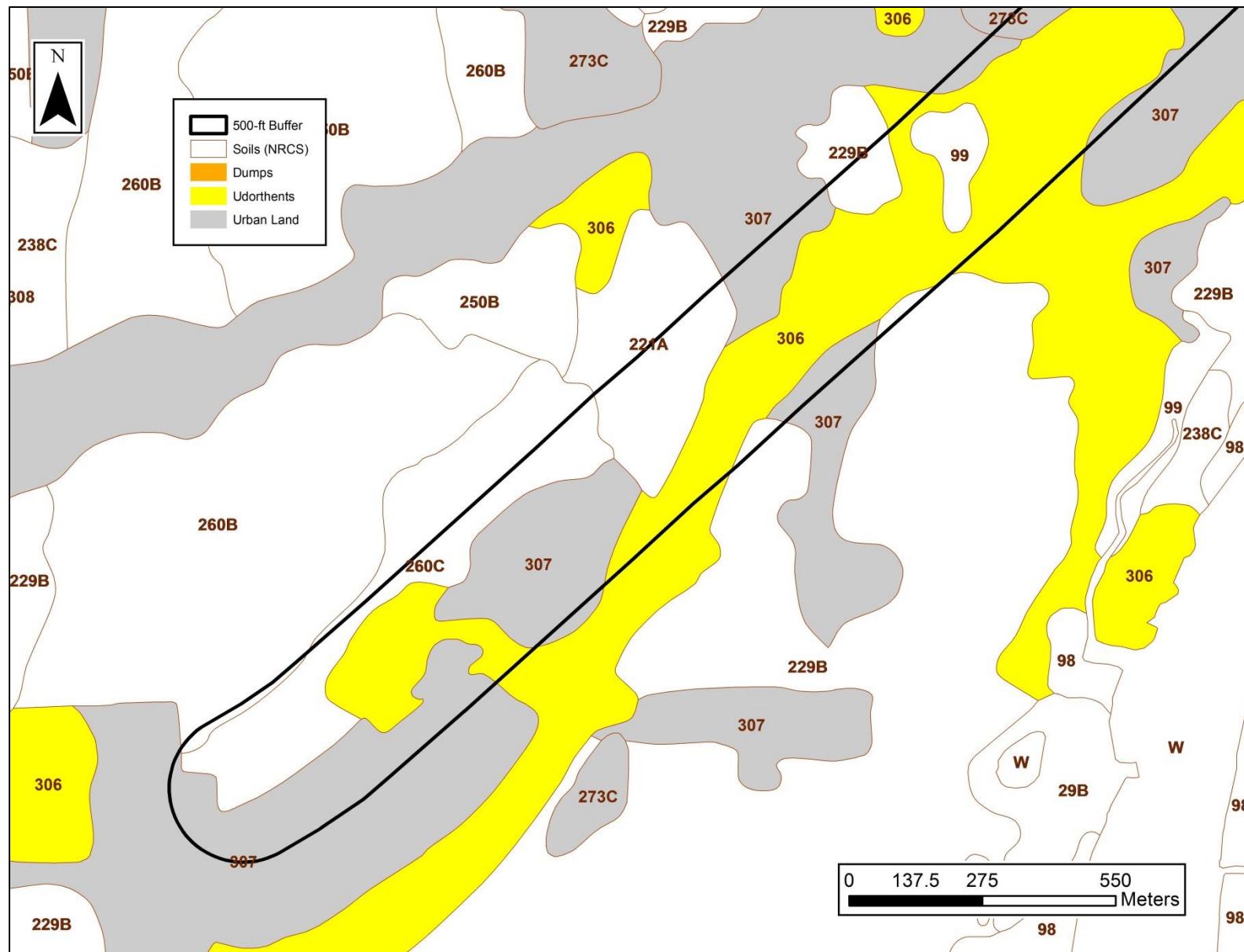


Figure 11; Sheet 1. Digital map depicting soil types in the vicinity of the proposed project area in Stratford and Milford, Connecticut.

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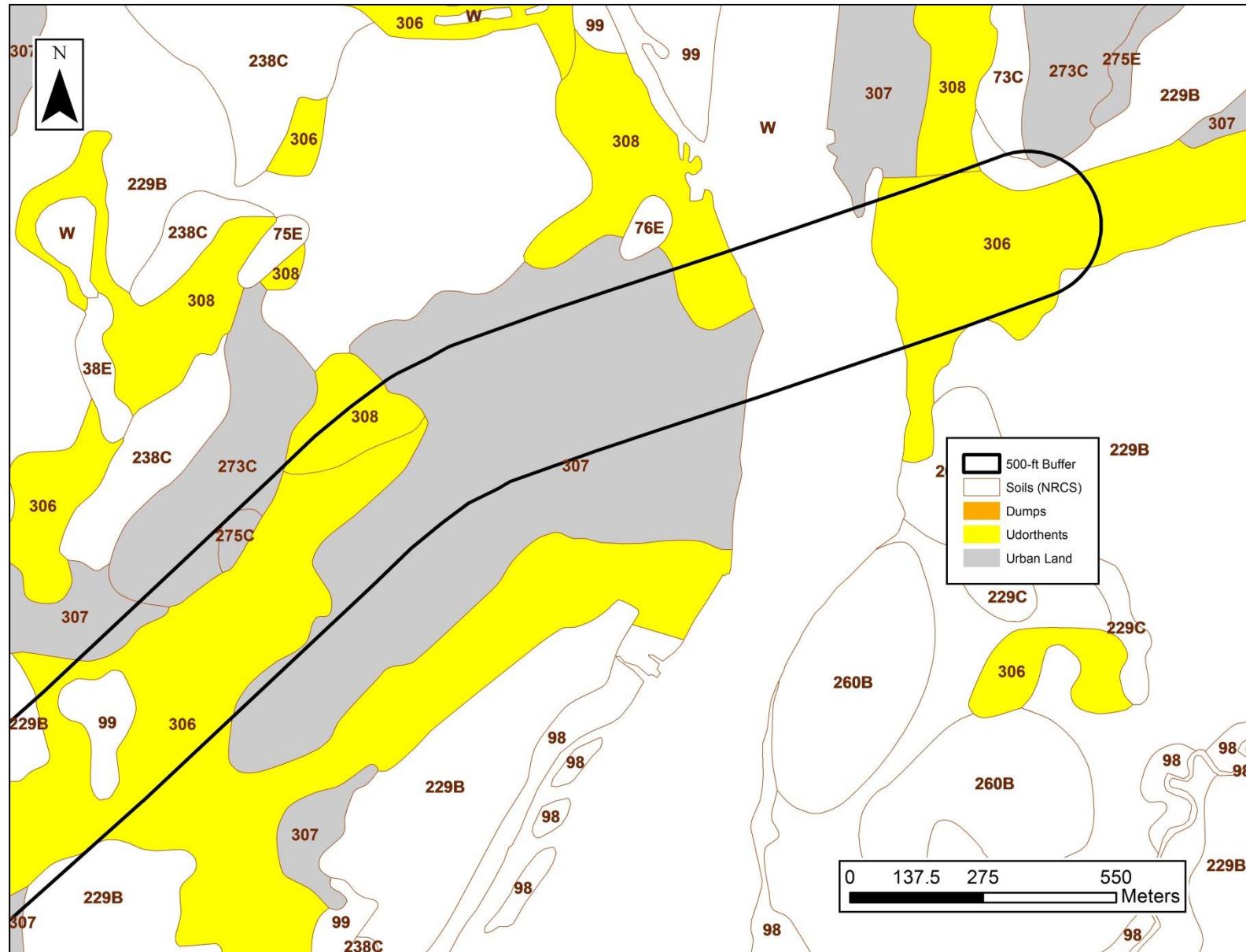


Figure 11; Sheet 2. Digital map depicting soil types in the vicinity of the proposed project area in Stratford and Milford, Connecticut.

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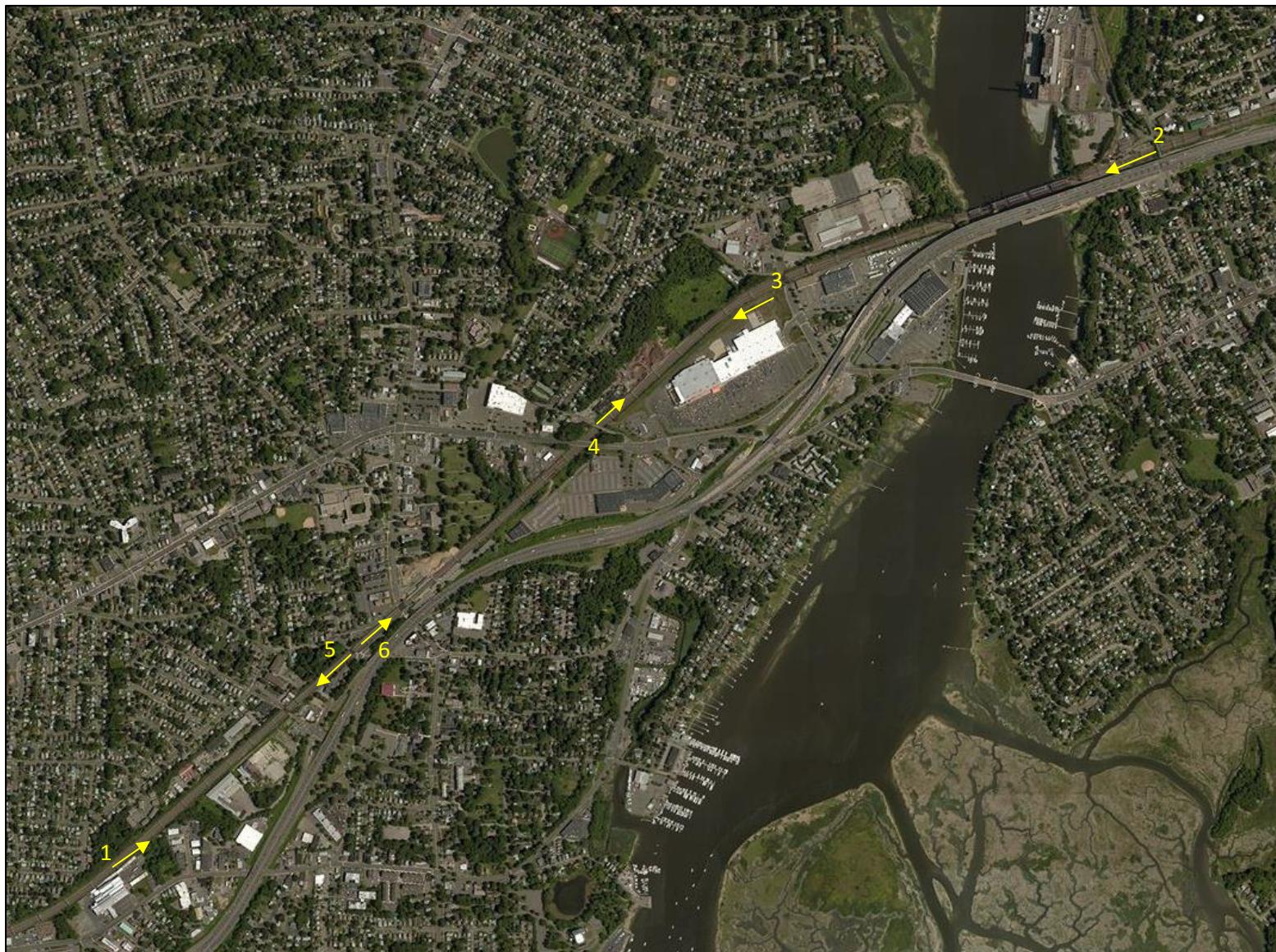


Figure 12. Excerpt from a 2014 aerial image depicting the proposed project corridor and photos taken.

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Photo 1. Overview photo of the proposed project corridor facing northeast.

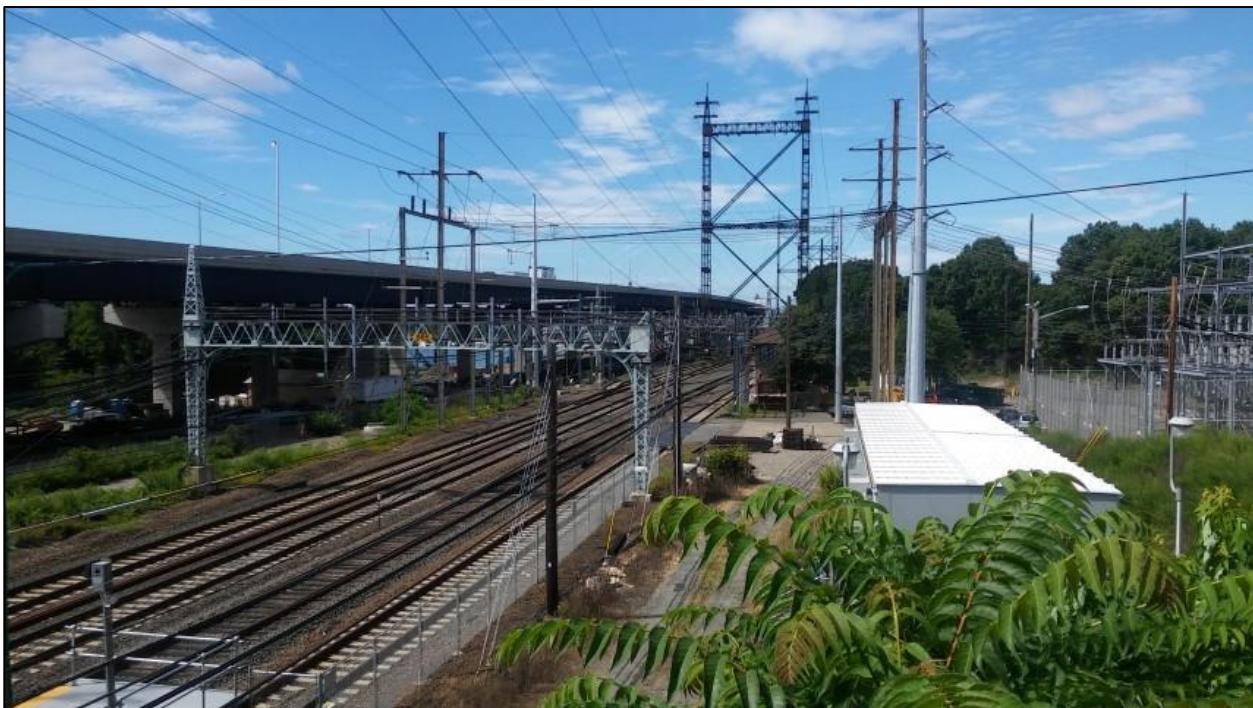


Photo 2. Overview photo of the proposed project corridor facing southwest.

Attachment E



Photo 3. Overview photo of the proposed project corridor facing west.



Photo 4. Overview photo of the proposed project corridor facing east.

Attachment E



Photo 5. Overview photo of the proposed project corridor facing west.



Photo 6. Overview photo of proposed project corridor facing east