

**Appendix D**

**Cultural Resources Reports (Phase 1A & Phase 1B)**

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**PHASE IA CULTURAL RESOURCES  
ASSESSMENT SURVEY**  
OF THE PROPOSED MILVON-WEST RIVER RAILROAD  
TRANSMISSION LINE 115-kV REBUILD PROJECT IN MILFORD,  
ORANGE, WEST HAVEN, AND NEW HAVEN, CONNECTICUT

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PHASE IA CULTURAL RESOURCES ASSESSMENT SURVEY OF THE  
PROPOSED MILVON-WEST RIVER RAILROAD TRANSMISSION  
LINE 115-KV REBUILD PROJECT IN MILFORD, ORANGE  
WEST HAVEN, AND NEW HAVEN, CONNECTICUT

PREPARED FOR:



100 MARSH HILL RD  
ORANGE, CONNECTICUT 06477

PREPARED BY:



830 BERLIN TURNPIKE  
BERLIN, CONNECTICUT 06037

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## **Introduction**

Heritage Consultants, LLC (Heritage) is pleased to have this opportunity to provide The United Illuminating Company (UI), with the following Phase IA cultural resources reconnaissance survey of the Proposed Milvon-West River Railroad Transmission Line 115-kV Rebuild Project (the Project) in Milford, Orange, West Haven, and New Haven, Connecticut (Figure 1). The current assessment survey entailed completion of an existing conditions cultural resources summary based on the examination of data maintained in the cultural resources files of the Connecticut State Historic Preservation Office (CT-SHPO). It also includes a review of historical mapping, aerial photographs, topographic quadrangles, and soils data, as well as viewshed mapping of the existing Connecticut Department of Transportation (CT DOT) corridor, which was completed by All-Points Technology Corporation (APT) and made available to Heritage.

This investigation is based upon project location information provided to Heritage by UI. The objectives of this study were: 1) to gather and present data regarding previously identified cultural resources situated within the vicinity of the existing CT DOT corridor; 2) to investigate the existing CT DOT corridor in terms of its natural and historical characteristics; and 3) to evaluate the need for completing additional cultural resources investigations. In addition to the tasks completed during the desktop portion of the Phase IA cultural resources reconnaissance survey, Heritage personnel also completed a pedestrian survey of the existing CT DOT corridor and recorded the conditions of the areas where construction will occur.

## **Project Background and Description**

The Project will include rebuilding two existing single-circuit 115-kilovolt (kV) overhead lines that are situated between the Milvon Substation in Milford and the West River Substation in New Haven, Connecticut (Figure 2; Sheets 1 through 12). The existing 115-kV lines are currently situated on bonnets that are located on top of the Metro North Railroad catenary structures where they were installed in the 1940s. The Project will include replacement and upgrade of related project items (see below) along an approximately 9.5 mile stretch along the existing CT DOT corridor that is used by Metro-North Railroad (MNR)/Amtrak Railroad. According to Project plans, 115-kV overhead lines also will extend to the Woodmont Substation in Milford, as well as to the Elmwest and Allings Crossing substations in West Haven. They currently connect to the Milvon, Woodmont, Allings Crossing, Elmwest and West River Substations. The rebuilt lines will similarly connect to these substations. The following sections were prepared by UI and they provide a detailed synopsis of the Project.

Recent engineering analyses, commissioned by UI, of the existing 115-kV lines along the existing CT DOT corridor between Milvon and West River substations determined that, to maintain the reliability of the bulk transmission grid, the transmission support structures need to be upgraded to meet current electrical codes and to withstand extreme weather conditions (e.g., hurricanes). Based on these engineering analyses, UI proposes to rebuild the 115-kV lines on double-circuit monopoles, expected to be located parallel to and mostly along the north side of the existing CT DOT corridor, on property mostly owned by CT DOT.<sup>1</sup> The primary components of the Project will include:

- Rebuild the two 115-kV lines in a double-circuit configuration, supported on galvanized steel monopole structures, between Milvon and West River substations. The new monopoles will be offset from the catenary structures based on the railroad corridor width and clearance requirements specified by CT DOT / MNR and electrical standards. This offset will vary based on location, but typically is expected to be 25 feet. The

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<sup>1</sup> In locations where the width of the CT DOT property from the existing bonnet structures to the edge of the CT corridor boundary is less than approximately 55 feet, UI would have to acquire easements from other property owners for the new 115-kV lines.

centerline of the new monopoles will be approximately 15 feet from the edge of the existing CT DOT corridor boundary, where space is available within the CT DOT corridor, or from the edge of the new UI easement boundary.

- The new structure heights will vary by location. Based on current design information, the proposed pole heights, by segment, are:
  - Milvon to Woodmont: 80-140 feet. The tallest poles (125-140 feet) will be between the Milford Train Station and the Milford Cemetery. Structures adjacent to the US Route 1 crossing and the Indian River crossing will be approximately 120 feet tall. Along the remainder of the segment, structure heights will be 80-100 feet;
  - Woodmont to Allings Crossing: 75-115 feet;
  - Allings Crossing to Elmwest: 65-160 feet. The tallest poles (>120 feet) will be near the West Haven Train Station. The proposed parking garage between P1017N and P1018N requires the tallest poles of the Project (150 and 160 feet);
  - Elmwest to West River: 65-130 feet. The tallest poles (>120 feet) are between 1<sup>st</sup> Avenue and the I-95 crossing, as required to span the MNR under build and road overpasses.
- The new 115-kV lines will consist of 1590 ACSS conductors and 72-fiber optical ground wire (OPGW) shield wires. However, the new structures will be designed to support 2156 ACSS “Bluebird” conductors and to meet the clearance requirements for such conductors.
- Modify existing 115-kV connections, based on the configuration of the rebuilt 115-kV lines, to the Milvon and West River substations and to four other existing UI substations located adjacent to the existing CT DOT corridor (Woodmont, Allings Crossing, Elmwest, and West River) between Milvon and West River substations.
- Remove or modify certain steel monopoles that were installed as part of previous recent UI transmission upgrade projects (i.e., UI’s 2015 Milvon Take-Off Structure Replacement Project [Structure P887N]; FAC-08 Project [Structure P898AS, P930AS, P959N, P968AS; P1015AS, P1026AS]; 2011 West Haven Train Station Project).
- Decommission and remove the existing 115-kV facilities on the railroad catenary structures (the bonnets may remain in place if CT DOT accepts ownership of them).

In terms of the Project description above, UI has conducted a careful study of the Project alignment and has sought to minimize potential direct impacts to the area. In doing so, its engineers have called for the construction of taller poles (especially in Milford) so that the Project can be implemented using less of them while still meeting engineering constraints and concomitant public safety. Another benefit of this approach will be the lessening of direct impacts to potentially sensitive resources along the existing CT DOT corridor, including wetlands and cultural areas such as the Milford Cemetery. A more robust discussion of the Project engineering is included in the attached memo generated by the design engineers (see Appendix 1). Finally, the Project plans, which are currently at 50 percent as shown in the attached

figures, may evolve as the Project proceeds through the regulatory/siting processes. As a result, the currently defined access, pull pads, work pads, etc., in this report may be modified. Final plans will be provided in a Development & Management.

### **Historical Background of the Project Region**

New Haven County, which was formed in 1666, was one of the first four counties in Connecticut and originally encompassed the towns of Guilford, Branford, New Haven, and Milford (Rockey 1892). Orange separated from those towns in 1823 and West Haven separated from Orange in 1921. Historically, the interior portions of New Haven County were characterized by farms and agricultural land, and areas near the shoreline were supported by fishing, shipbuilding, and shipping. The oldest settlement in the county, New Haven, is now the largest city in the region. Early settlers of the regions were primarily farmers and raised crops such as corn, rye, oats, barley, and tobacco. During the eighteenth century some of them turned to grazing and raising livestock, including cattle, sheep, and pigs. Other forms of industry also appeared relatively early during the colonial period including gristmills, sawmills, and fulling mills (Van Dusen 1961).

As the eighteenth and early nineteenth century progressed, parts of New Haven County became industrial centers and the local populations in these areas increased. The establishment of better transportation and railroads also spurred development throughout the region. In 1848, the New York & New Haven railroad opened, and it extended from New Haven to the west to New York State. The New York & New Haven joined the Hartford & New Haven in 1872 to form the New York, New Haven, & Hartford Railroad Company, becoming the largest corporation of its kind in Connecticut at that time (Turner and Jacobus 1986). As of 1890, the population of New Haven County had reached 209,058 residents (Rockey 1892). Throughout the latter half of the twentieth century, industrialization subsided in the region and suburbanization increased, particularly after World War II. Populations shifted throughout the region as people moved from cities to towns when the automobile and the establishment of highways facilitated easier travel. By 2019, there were 854,757 people living in New Haven County (United States Census Bureau 2021).

### Capsule History of Milford

Considered the sixth oldest town in Connecticut, Milford was settled in 1639 and was originally known as “Wepawaug” (Milford 2021; Barber 1837). Initially extending as far north as present-day Waterbury, the city now encompasses a 26.2 square mile area (Barber 1837, Connecticut 2020). In 1685, Milford received a town patent to become part of the Connecticut Colony. Early settlers in Milford raised crops and harvested oysters and clams along the shoreline of Long Island Sound. As of the late nineteenth and early twentieth centuries, Milford was still supported primarily by agricultural, but the production of seeds and straw hats had become prominent industries as well (Connecticut 1887, 1910). The population of Milford remained relatively small until the twentieth century, when it began to increase dramatically. In 1900, Milford was home 3,783 residents and by 1970 the population had reached 50,858 residents, after which it leveled off (Secretary of the State Denise W. Merrill 2021a, 2021b). Milford was incorporated as a city in 1959 and as of 2020, the population was recorded at 51,054 residents (Connecticut 2020, AdvanceCT and CTData Collaborative 2020a). In modern times, Milford has become a retail center and is the site of the headquarters of several corporations, including Schick-Wilkinson Sword, the razor manufacturer, and Subway World Headquarters, which are also two of the major employers in the city (AdvanceCT and CTData Collaborative 2020a).

### Capsule History of Orange

The Town of Orange was incorporated in 1822 and was formed from the northern part of the city of Milford and the western part of the city of New Haven. Initially called Bryan's Farms, Orange became known as North Milford in 1804 before it joined with the community of West Haven to form the Town of Orange (Labaree 1933). The area that was North Milford was primarily agricultural historically, though it was the location of a seed manufacturer and several mills during the nineteenth century. During this time, the community of West Haven was considered an industrial center (Rockey 1892). This dynamic continued until the separation of West Haven in the early twentieth century. Today, Orange is a rural residential community with a population of just under 14,000 residents. It is also home to several corporations, including The United Illuminating Company and PEZ Candy (AdvanceCT and CTData Collaborative 2020b).

### Capsule History of West Haven

West Haven was settled in 1648 and was originally known as West Farms, a part of New Haven. Located on the Long Island Sound shoreline, the residents of this community were heavily involved in shipbuilding and other maritime industries during the historical period (West Haven Historical Society 2021). In 1822, West Haven joined with North Milford to become the town of Orange. In 1873, it was incorporated as a borough with its own governing body. West Haven was an industrial center in the nineteenth century and produced buckles, pianos, keys, water pipes, and carriages (Rockey 1892). During the twentieth century, West Haven was the site of the American Mills Web Shop, a producer of elastics used in a variety of clothing products, as well as the Armstrong Rubber Company, a producer of tires (Connecticuthistory.org 2013a, 2013b). In 1921, the borough separated and became a separate town with 25,808 residents by 1930 (Secretary of the State Denise W. Merrill 2021a). In 1961, West Haven was eventually incorporated as a city and in 2020 the population was recorded at 58,318 residents (Connecticut 2020, AdvanceCT and CTData Collaborative 2020c). Today, the city is considered a business-friendly shoreline destination that is also the location of the University of New Haven and part of the Yale University West Campus (West Haven Historical Society 2021).

### Capsule History of New Haven

Originally called "Quinnipiac," New Haven was founded in 1637 by the Reverend John Davenport and Theophilus Eaton, both of whom were colonists that migrated to the area from Massachusetts. Today, New Haven is the second largest city in Connecticut (behind Bridgeport) and is home to Yale University, which was founded in 1701 and is the third oldest university in the United States (AdvanceCT and CTData Collaborative 2020d; Yale University 2021). Early settlers in New Haven relied on farming, as well as harvesting oysters and clams from Long Island Sound (Barber 1837). New Haven became a major port and was incorporated as a city in 1784 (Rockey 1892). At the beginning of the nineteenth century, New Haven had 5,157 residents and an industrial base that produced leather, brass, combs, paper, and bells (Secretary of the State Denise W. Merrill 2021c, Rockey 1892). By the end of the nineteenth century, New Haven had a population of 86,045 residents and was a major manufacturing hub that manufactured a variety of items, including carriages, firearms, steam boilers, and rubber goods (Secretary of the State Denise W. Merrill 2021d, Connecticut 1891). In the twentieth century, New Haven's economy moved away from manufacturing and the suburbanization trend set in after World War II. While the number of inhabitants in the city still increased, the population peaked in 1960 at 164,443 residents (Secretary of the State Denise W. Merrill 2021a). By 2020, the population had decreased to 135,379 inhabitants. At that time, the city's largest employment sectors were health care and education and the largest employers were universities and hospitals, namely Yale University, Southern Connecticut State University, and Yale Medical Group, among others (AdvanceCT and CTData Collaborative 2020d).

### **Historical Mapping of the Project Existing CT DOT Corridor**

As part of the Phase IA cultural resources assessment survey, Heritage reviewed historical maps showing the location of the proposed Project. The two maps series examined during the background review date from 1856 and 1890, respectively. These series were chosen because they cover the entirety of the existing CT DOT corridor unlike other historical map series that have incomplete coverage and only show small segments of coastal Connecticut.

The 1856 maps series, which is included in Figure 3; Sheets 1 through 4, depicts the historical development of the areas containing the existing CT DOT corridor as of the middle of the nineteenth century (H. & C.T. Smith 1856). The western portion of the existing CT DOT corridor between Structure P888N and the Indian River in Milford was well-settled as of 1856. The area contained dozens of residences, open space to the south, the New York & New Haven Railroad, and a “RR Station” (railroad station) along Railroad Avenue. Further to the east, between the Indian River and Oyster River, the 1856 maps depict little development. While there was a road network in place along this segment of the existing CT DOT corridor, this area contained only a few residences in the vicinity of the New York & New Haven Railroad alignment. This is likely due to the fact that this part of the region contained large wetland areas that were not considered suitable for habitation. The 1856 map series also shows that no appreciable amount of mid-nineteenth century development is evident until the western edge of West Haven. The portion of the existing CT DOT corridor, which crosses through West Haven proper, is located in an area that was characterized by a well-developed transportation network and numerous buildings. The latter consisted of dozens of residences, the West Haven Female Seminary, and several stores. The 1856 map series ends on the east on the eastern bank of the West River. In 1856, this area contained what appears to have been a newly developed road network leading to City Point, but not much else. Overall, the 1856 map series shows the Project region at the cusp of the Industrial Revolution. The area remained largely residential and was supported by nearby farms, small-scale milling operations, and small commercial business. The economic focus of this area was undoubtedly very local as of 1856.

The succeeding 1890 map series in Figure 4; Sheets 1 through 4 shows the region containing the existing CT DOT corridor 35 years later (USGS 1890). The initial stretch of the existing CT DOT corridor between Structure P888N and the Indian River also shows that this portion of Milford was well developed near the turn of the twentieth century (Figure 3; Sheet 1). Sheet 1 of Figure 4, shows that the area immediately to the west of Milford remained on a similar growth trajectory as that of 1856; however, this map sheet also shows that the railroad alignment in this area had been moved from the north to the south. As of 1890, the railroad alignment was altered to match the current alignment of the existing CT DOT corridor. Sheets 2 and 3 of Figure 4 also are similar to those of the 1856 series. These areas remained as a combination of open spaces and intermittent development, likely due to the presence of a large amount of wetlands in this area. Finally, the last sheet of Figure 4 shows the West Haven/New Haven portion of the existing CT DOT corridor as well-developed and containing dozens of structures, likely related to housing, commercial enterprises, and industrial manufacturing.

### **Aerial Imagery Depicting the Existing CT DOT Corridor**

Heritage also reviewed aerial images as part of the Phase IA cultural resources assessment survey. They include aerial series dating from 1934, 1951, 1974, 1990, and 2019. These images document the overall development of the area containing the existing CT DOT corridor throughout the twentieth century and into the twenty first century.

The 1934 aerial image series is depicted in Figure 5; Sheets 1 through 12. This image series shows the existing CT DOT corridor in its modern location. As of 1934, the westernmost segment of the existing CT

DOT corridor between Structure P888N and the Indian River was characterized by a combination of open rural land in the west and the downtown area of Milford in the east. It is clear that farming remained important to the west of Milford center up to 1934 as evidenced by the presence of agricultural fields, but the core of the city now contained many more buildings representative of row housing, which is typical of a transition from agriculture to more of an industrially based economy where workers houses were located near commercial and industrial operations. The portion of the 1934 aerial image depicting the downtown Milford area also shows numerous larger buildings that are indicative of municipal, commercial, and/or manufacturing facilities, as well as the Milford Cemetery to the east. The section of the 1934 aerial image between the Indian River and the Oyster River is characterized by large undeveloped areas, especially on the northern side of the existing CT DOT corridor. The southern side of the P existing CT DOT corridor in this area contains many more buildings, including residences and commercial buildings. In general though, the existing CT DOT corridor remains a mixture of open spaces, wetlands, and agricultural fields until it intersects with the western edge of the downtown West Haven Area. That part of the existing CT DOT corridor was well developed by 1934 and contained hundreds of houses, commercial buildings, small factories, and roadways. As of 1934, the eastern end of the existing CT DOT corridor in New Haven contained a large wetland area adjacent to the West River and was a mixed use area consisting of housing and larger industrial buildings.

The subsequent 1951 aerial shown in Figure 6; Sheets 1 through 12, while not of the highest quality, offer some interesting insights into the Project region during the middle of the twentieth century. The area between Structure P888N in the west and the Milford town center remained largely unchanged with the exception that many of this area's agricultural fields were in the process of reforestation by the early 1950s. This is not surprising since farming declined rapidly in Connecticut between the 1930s and 1950s, and many former agricultural areas became suburbs after the close of World War II. The portion of the 1950 aerial image series depicting Milford center and the area immediately to the east of it shows that many more commercial and larger industrial buildings had been added in the vicinity of the existing CT DOT corridor. The 1951 aerial shows that with the exception of the construction of a large facility associated with the U.S. Electric Motors Facility on the northern edge of the existing CT DOT corridor, the remainder of the area extending to the western limits of downtown West Haven remained largely undeveloped at that time, though many of the former farm fields along this stretch had become reforested. The remaining images in the 1951 series show that West Haven development had expanded to the west except within the large wetland associated with the West River. That area remained open, while the easternmost end of the existing CT DOT corridor in New Haven continued to be developed. Mid twentieth century additions to the 1951 aerial series include many additional roadways, a rapid expansion of housing due to suburbanization, and the continued expansion of commercial and industrial facilities.

As documented by the aerial images in Figure 7; Sheets 1 through 12, large scale changes had occurred in the vicinity of the existing CT DOT corridor by 1974. The area between Structure P888N and the downtown area of Milford was almost entirely lacking in agricultural fields by that time, having been replaced by wooded areas, residences, new streets, and a large number of commercial and industrial facilities, many of which lined both the northern and southern edges of the existing CT DOT corridor. The former rural feel of that area had been replaced by modern characteristics. The downtown portion of Milford on both sides of the existing CT DOT corridor also was the location of significant changes related the construction of additional municipal and housing complexes, as well as more commercial and industrial enterprises. Still, the location of the Milford Cemetery remained largely unchanged with the exception of the pond within the southeastern corner of the burial ground. The pond within the cemetery continued to be silted in as it transitioned to wetlands rather than open water. The area to the east of Milford and extending to West Haven also witnessed increases in development between 1951 and 1974. While many of the large

wetland areas remained undeveloped, many of the former open spaces and agricultural fields along both side of the existing CT DOT corridor became developed and contained some very large scale enterprises. These include large warehouse complexes, manufacturing facilities, and truck depots, among others. The area immediately to the west of the West River remained a large wetland, but a highway alignment was built from north to southern along its western edge. The overall character of the 1974 aerial image series of one of significant development and increase in commercial and industrial enterprises.

The 1990 aerial series showing the existing CT DOT corridor is included in Figure 8; Sheets 1 through 12. The western portion of the existing CT DOT corridor between Structure P888N and the downtown area of Milford appears similar to that of 1974, with the inclusion of some additional commercial and industrial-sized facilities. The portion of the existing CT DOT corridor to the immediate east of the Milford downtown area also appears similar in character to the 1974 appearance, with numerous residences, commercial buildings, industrial facilities, and the Milford Cemetery present. Further to the east, in the area containing the Indian River and beyond, the existing CT DOT corridor was flanked on the north and south by many of the same buildings seen in the 1974 aerial, as well as several new, large facilities. The area near the West River also continued to be developed between 1974 and 1990, including the construction of the New Haven Fire Training Division complex immediately to the south of the existing CT DOT corridor on the east bank of the West River. Overall, the 1990 aerial image series shows that the region containing the existing CT DOT corridor continued on a trajectory of growth and development during the last decades of the twentieth century.

The final aerial image series reviewed as part of the Phase IA cultural resources assessment dates from 2019 and is depicted in Figure 9; Sheets 1 through 12. This series of images shows the existing CT DOT corridor in its essentially modern condition. While there are some differences between the 1990 and 2019 aerial image series, they are not dramatic. The area to the west of the Milford downtown center remained largely unchanged from 1990, and the area to the north and west of Structure P888N was largely undeveloped due to the presence of a large wetland system. Milford center itself also was not dramatically altered between 1990 and 2019, and the area in the vicinity of the Indian River remains similar in nature and content to that of 1974. The same is true for the portion the existing CT DOT corridor between the Indian River and the West River; however, one change in this area is the establishment of a large materials storage yard to the south of the existing CT DOT corridor and along the western bank of the West River. The overall impression of the existing CT DOT corridor depicted in the 2019 aerial image series is that of a well-developed residential, commercial, and industrial region. Almost all of the land along the existing CT DOT corridor that does not contain rivers or large wetland areas has been developed over the course of the last 150 years or so.

### **Archaeological Context and Potential of the Existing CT DOT Corridor**

A review of previously recorded archaeological sites on file with the CT-SHPO in the vicinity of the existing CT DOT corridor was completed by Heritage during June of 2021 (Figure 10; Sheets 1 through 12). The literature review revealed that there are four archaeological sites that have been recorded in the area. They include Sites 84-65 and 84-73 in Milford, Connecticut and Sites 107-15 and 107-16 in Orange, Connecticut. These sites are discussed in turn below. No previously identified archaeological sites were detected in the New Haven and West Haven segments of the existing CT DOT corridor during the literature review.

#### Site 84-65 (Milford)

The official State of Connecticut form for Site 84-65 simply records this resources as the location of a prehistoric occupation (Figure 10; Sheet 2). The site form provides no other information pertaining to



methods of identification, recovered artifacts, recorder, date identified, site type, age of occupation or National Register of Historic Places (NRHP) eligibility for Site 64-65. This site is located almost 500 feet to the south of the existing CT DOT corridor and has been plotted within the current the east to west trending Broad Street alignment (Figure 9; Sheet 2). Based on this location, Site 84-65 likely has been destroyed by modern construction and will not be impacted by the Project. No additional examination of this site is warranted.

#### Site 84-73 (Milford)

This site, also known as the Peter Pond Project Site, was recorded by Jaclyn Nadeau of the Connecticut Office of State Archaeology at an unspecified date. The placement of Site 84-73 on the official site form corresponds to the location of the Milford Cemetery, which is situated along the northern edge of the existing CT DOT corridor in Milford, Connecticut (Figure 10; Sheet 3). According to the site form, while “looking for Peters Pond unmarked graves, excavators found three juvenile burials next to Mary’s Pond, Peter’s Mother.” The recovered archaeological remains consisted of coffin nails, shroud pins, and wood samples dating from the eighteenth century. According to the site form, the excavated area, which contained good depositional integrity, measured 7 x 7 feet in size. The site form indicates that Site 84-73 is positioned in the southern portion of the Milford Cemetery and to the west of a large round wetland that once was referred to as Mary’s Pond as shown on Sheet 4 of Figure 4. This archaeological site has not been assessed applying the NRHP criteria for evaluation (36 CFR 60.4 [a-d]). Since the Project has been designed to avoid the limits of the Milford Cemetery completely, neither Site 84-73 nor the Milford Cemetery will be impacted by proposed structure installation and the project. No additional examination of this site is recommended.

#### Site 107-15 (Orange)

Site 107-15 was recorded by Mary Harper of Archaeological and Historical Services, Inc., (AHS) in 2010. The site was identified during a Phase IB cultural resources reconnaissance survey of then-proposed upgrade areas associated with the Orange Train Station in Orange, Connecticut. According to the submitted site form, Site 107-15 yielded 1 quartz Lamoka-like projectile point, a single quartz bifacial retouch flake, 2 bottle glass shards, and 1 piece of window glass. The prehistoric component was attributed to a Late Archaic period of occupation (ca., 3,900 to 6,000 years ago) based on the recovery of the Lamoka-like projectile point, while the historical period component dated from an unknown time period. Despite the small amount of archaeological data recovered, Harper suggested that Site 107-15 may have been eligible for listing on the NRHP applying the criteria for evaluation (36 CFR 60.4 [a-d]). This site is located between Structures P982N and P983S along Access Road AR-P-982N-W in Orange, Connecticut (Figure 10; Sheets 7 and 8). It is recommended that Access Road AR-P-982N-W be cleared using hand techniques, that tree stumps not be grubbed in this area, and that the road be covered with timber matting during construction to avoid any potential ground disturbance and impacts to Site 107-15. If ground disturbance within the site area cannot be avoided through the use of the above-referenced Best Management Practices (BMPs), it is recommended that Phase II testing and evaluation be completed to determine the NRHP eligibility of Site 107-15.

#### Site 107-16 (Orange)

Site 107-16 also was recorded by Mary Harper of AHS in 2010, and it was identified to the northeast of Site 107-15 during the Phase IB cultural resources reconnaissance survey of then-proposed upgrade areas associated with the Orange Train Station in Orange, Connecticut. Harper indicated that the site yielded “1 quartz drill and a charred unidentified botanical fragment.” Based on the archaeological data recovered, the site could not be attributed to a particular period of occupation or cultural affiliation. Nevertheless, Harper indicated that “the charred botanical fragment may suggest a feature is present,” and that Site

107-16 may have been eligible for listing on the NRHP. Thus, Phase II testing and evaluation of Site 107-16 was recommended to determine its NRHP eligibility applying the criteria for evaluation (36 CFR 60.4 [a-d]). This site is located well away from any of the proposed construction areas and will not be impacted by the proposed Project (Figure 10; Sheets 7 and 8). Therefore, no additional archaeological examination of Site 107-16 is recommended.

#### Soils Series Contained Within the Existing CT DOT Corridor

In order to further refine the archaeological context of the area and to evaluate the likelihood that any yet-to-be-identified archaeological sites may be located within the existing CT DOT corridor, Heritage reviewed soils within and immediately adjacent to the proposed construction areas (Figure 11; Sheets 1 through 12). With respect to the potential for identifying prehistoric archaeological sites, the existing CT DOT corridor was examined to determine which portions of it retained a no/low or moderate/high potential to yield intact archaeological deposits based on soils present, as well as slope, aspect, soils, and distance to water. In general, areas located less than 1,000 feet and no more than 2,000 feet from a fresh water source water and that contain slopes of 8 percent or less and well-drained soil types were deemed to retain a moderate/high potential for producing prehistoric archaeological deposits. This is in keeping with broadly based interpretations of prehistoric settlement and subsistence models that are supported by previous archaeological research. It is also may expected that there will be variability of prehistoric site types 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, near stream/river confluences, or in coastal environments. Smaller temporary or task specific sites may be expected on level areas with well-drained soils that are situated more than 1,000 feet but less than 2,000 feet 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 since they are generally not habitable. The subtle nuances of prehistoric 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 Existing CT DOT corridor and associated construction areas.

The Existing CT DOT corridor was also assessed on the potential for yielding intact historical period archaeological sites. Project elements that are situated within 500 feet of a previously identified historical period archaeological site or an above-ground NRHP property/district that may have associated archaeological deposits also may be deemed to retain a moderate/high archaeological sensitivity if intact soil deposits are present. In contrast, those areas situated over 500 feet from any of the above-referenced property types may considered to retain a no/low historical period archaeological sensitivity.

As mentioned above, environmental characteristics influenced prehistoric and historical period site selection, where gently sloping areas with well-drained soils situated near fresh water sources were considered desirable locations. Figure 11; Sheets 1 through 12 show the various major types within the Existing CT DOT corridor They include Raypol silt loam (soil code 12), Dumps (soil code 302), Udorthents-Urban Land (soil code 306), and Urban Land (soil code 307). The Raypol silt loam soil series is attributed to wet areas. Dumps are those areas that have been filled with debris and highly modified. Udorthents-Urban Land include areas that have been developed in the past and have been subject to cutting, filling, smoothing, and reworking on a large scale. Finally, Urban Land soils are those types that have generally been disturbed in the past and are now covered with impermeable surfaces such as concrete, pavement, and buildings. None of the soil types located within the Existing CT DOT corridor are well correlated with either prehistoric or historical period site locations, and all of them would be considered no/low archaeologically sensitive areas.

### Summary of Archaeological Context and Potential

The review of CT-SHPO files revealed that there are four previously recorded archaeological sites located within 500 feet of either side of the Project centerline; however, three of these (Sites 84-65, 84-73, and 107-16) are situated in areas that are well outside of the Project footprint and have no potential to be impacted by construction. In contrast, Site 107-15, is situated along the northern edge of Access Road AR-P-982N-W, which extends from Structure P982N to Structure P983N (Figure 10; Sheets 7 and 8). This site was identified by AHS in 2010 and assessed as potentially eligible for listing on the NRHP applying the criteria for evaluation (36 CFR 60-4 [a-d]). In order to avoid construction-related impacts to this site, it is recommended that Access Road AR-P-982N-W be cleared using hand techniques, that tree stumps in the area not be grubbed, and that the road is covered with timber matting during construction to avoid any potential ground disturbance. If these BMPs are employed, no additional archaeological examination of Site 107-15 is recommended. If the use of BMPs is not feasible given Project design constraints and there is the potential for construction-related impacts, it is recommended that Phase II NRHP testing and evaluation of Site 107-15 be completed. Based on the archaeological and environmental data at hand, the remainder of the Existing CT DOT corridor appears to have been largely disturbed and retains little, if any, potential to contain intact archaeological deposits. Other than consideration of the area containing Site 107-15, no archaeological examination of the Existing CT DOT corridor is recommended prior to construction.

### **National/State Register of Historic Places Within the Vicinity of the Existing CT DOT**

The review of CT-SHPO files also revealed that there are five NRHP properties/districts recorded in the immediate vicinity of the Existing CT DOT corridor, all of which are located in Milford, Connecticut. No NHRP properties were identified within the vicinity of the Existing CT DOT corridor in Orange, West Haven, or New Haven. The identified NRHP resources consist of The Academy of Our Lady of Mercy—Lauralton Hall, River Park Historic District, U.S. Post Office – Milford Main, St. Peter’s Episcopal Church, and Taylor Memorial Library. All of these resources are located in Milford and they are discussed in turn below. The review also indicated that there are no listed State Register of Historic Places properties situated within the immediate vicinity of the Existing CT DOT corridor; however, all of the NRHP properties/districts referenced above also are included in the State Register of Historic Places. The identified above-ground historic resources in the vicinity of the Existing CT DOT corridor centerline are discussed below.

### The Academy of Our Lady of Mercy—Lauralton Hall

The Academy of Our Lady of Mercy—Lauralton Hall is situated at 200 High Street in Milford, Connecticut (Figure 13; Sheet 2). The Victorian era campus is the former estate of Charles Hobby Pond, former Lieutenant Governor and Governor of the State of Connecticut from 1851 through 1854. This property was added to the NRHP in August of 2011. The Academy was established in 1905 by the Sisters of Mercy as an independent high school for girls of the Roman Catholic faith. The Academy is an extension of the Roman Catholic Archdiocese of Hartford. It is the oldest Catholic college-preparatory school devoted to girls education in Connecticut. The Academy campus, which consists of 30 acres of land containing numerous education and outbuildings, parking areas, and recreation fields, is located one block to the northwest of the Existing CT DOT corridor. The school provides education for girls from throughout Connecticut. Notable past pupils include Democratic Congresswoman Rosa Delauro, para-normal investigator Lorraine Warren, and Senior Vice President of Communications for Comcast NBC Universal Kathy Kelly-Brown. The Academy of Our Lady of Mercy—Lauralton Hall is considered significant in the areas of architecture, education, and social history for the period of significance between 1864 and 1960. It was considered eligible for listing to the NRH under Criterion A, which stated that a property is associated with events that have made a significant contribution to the broad patterns of our history and Criterion C. The latter indicates that the property embodies the distinctive characteristics of a type, period,

or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

#### River Park Historic District

The River Park Historic District was listed on the NRHP in 1986. It encompasses the residential and municipal center of Milford, Connecticut and it is situated between Boston Post Road to the north and Milford Harbor to the south (Figure 12; Sheets 2 and 3). A total of 192 buildings and sites have been recorded within the River Park Historic District. Of these, the majority (n=168) are considered contributing elements to the historic district. The heart of the River Park Historic District contains a municipal open space characterized by three parks, four bridges, and two dams. With the exception of the King's Bridge on Maple Street, which was built in 1952, all of the bridges and both dams pre-date 1936. The vast majority of the structures contained within this historic district were built between 1800 and 1950, with only 12 structures dating from prior to 1800. While various programs designed to improve the appearance of the River Park Historic District have altered its historical appearance, the layout of the River Park Historic District has remained similar to its original early colonial period form. Being a downtown historical district, institutional buildings are the primary architectural type representing the River Park Historic District. The Milford City Hall, for example, was built in 1916 in the Classical Revival Style. The United Church of Christ Congregational Church, which dates from 1823 also has a large presence within the district; it was constructed in the Adamesque Style. Other municipal and institutional buildings in the area include three public schools built between 1908 and the 1970s (Old Milford High School, Old Central Grammar School, and Milford High School). The River Park Historic District also contains the county courthouse and a post office to the south, both of which were constructed in the 1930s. The majority of the historic residences located within this historic district are relatively simple wood framed constructions that were built in the Vernacular Style and most date from after 1850. Very few examples of colonial period houses remain within the River Park Historic District. They include the Thomas Buckingham House at 61 North Street), which is thought to be the oldest house in Milford and constructed ca., 1650; Abijah Carrington House at 88 West Main Street; and the Samuel Durand House at 24 North Street, which is thought to date from 1725. According to the NRHP nomination form, "the River Park Historic District comprises the residential and institutional center of Milford. It is a significant and distinguishable entity which illustrates the development of the town from settlement to the present (1650-1936) (Criterion A). Good representative vernacular examples of most of the major domestic styles are contained within the district, including a notable group of well-preserved Greek Revival-style houses (Criterion C)." Its period of significance is 1650 to 1936.

#### U.S. Post Office – Milford Main

The U.S. Post Office-Milford Main, also known as Milford Main Post Office, was listed on the NRHP in 1986. This historical post office building is located at 6 West River Street in Milford, Connecticut (Figure 12; Sheets 2 and 3). It is a Neo-Colonial building that was designed in 1929 by noted architect James A. Wetmore and built in 1931. Wetmore designed the building to be consistent with the 1926 Public Buildings Act, which mandated that new civic structures be similar to surrounding existing buildings of the area, in this case the adjacent county courthouse and nearby Milford City Hall. Wetmore designed a single-story building that is rectangular in plan. Construction plans called for the use of steel and concrete for the framing members to be faced in red brick and trimmed in limestone. The building is characterized by a low hip roof that is covered in slate tiles. Just below the roof line is a limestone cornice. The front facade of the building is five bays wide, with the two end bays sitting slightly back from the central ones. The projecting middle three bays have large sash windows topped by half-round windows and characterized by limestone accents. The main entry to the post office is in the center of the building; the doorway is framed by round columns and a modest entablature. There are also faux balconies beneath two of the

front elevation windows. The post office represents a fine example of Classical Revival design that is located amongst other of Milford's civic buildings. It is considered significant in the categories of architecture and community planning, which are encompassed within Criterion A and C of the NRHP criteria for evaluation (36 CFR 60.4 [a-d]), respectively.

#### St. Peter's Episcopal Church

St. Peter's Episcopal Church, which was added to the NRHP in 1979, is located at 61, 71, and 81 River Street in Milford, Connecticut (Figure 12; Sheets 2 and 3). This Gothic Revival church, which is located on the opposite side of the U.S. Post Office-Milford Main building discussed above, was built in the Gothic Revival between 1850 and 1851 using brownstone cut from the large quarries in Portland. The original building was expanded in the mid-1890s to include a parish hall and a rectory. The church was originally envisioned and designed by architect Frank Wills, who designed many buildings in the Gothic Revival Style. The plan of the church consists of a nave for the congregation, a chancel for the clergy and choir, and a tower-entrance; it does not contain side aisles, galleries, or transepts. According to the NRHP nomination form, St. Peter's Episcopal Church "is an excellent example of the Ecclesiological Movement in American church architecture, a movement which was a major factor in the development of the Gothic Revival style in this country. Further, the church is a representative example of the work of Frank Wills, a leader of this movement in America. Finally, the church is the only remaining 19th-century structure within an important historical area of Milford along River Street, from the town's traditional municipal center at the juncture of West River Street on the north, to the River Street railroad bridge on the south." For these reasons, it was considered eligible for listing under Criterion C of the NRHP criteria for evaluation (36 CFR 60.4 [a-d]).

#### Taylor Memorial Library

The Taylor Memorial Library was listed on the NRHP in 1979. This historical building is also known as Taylor Library or Old Library and it is located at 5 Broad Street in Milford, Connecticut (Figure 12; Sheets 2 and 3). The Taylor Memorial Library was designed by local architect designed by Joseph W. Northrop, a prominent architect from Bridgeport, Connecticut, and was constructed in 1894 and 1895 in the Richardsonian Romanesque Style. It is a masonry structure that is rectangular in plan and measures one-and-one-half stories in height. The building materials include a mixture local fieldstones, red sandstone, and yellow bricks. The main entrance to the library is along the south-facing façade and it slightly offset from the center of the building. It is located within a half-round arch topped opening surrounded by a three-part round-arched window and projecting roof gable. The front right corner of the building is characterized by a rounded projection that is covered with a bell-shaped roof. The interior of the building once contained rooms for the library stacks, a large hearth, and several windows that were made of finely crafted leaded panes. Several changes to the building after the 1920s included the replacement of the original slate roof with an asphalt one, the addition of a second set of doors to the library's entrance, the removal of the original stacks and gas lights, breakage and loss of some of the original windows, and the destruction of some of the original interior oak molding trim work. These alterations have diminished some of the library's historical integrity; however, the overall historic fabric of the building remains. The construction of the Taylor Memorial Library was funded by prominent citizen Henry Augustus Taylor. Mr. Taylor also was a railroad executive and the library is one of several buildings he funded in memory of his mother Mary. The Taylor Memorial Library is considered significant under Criterion C of the NRHP criteria for evaluation (36 CFR 60.4 [a-d]) for its association with Richardsonian Romanesque Style architecture, architect Joseph W. Northrup, and "unprecedented architectural patronage in Milford by Henry Augustus Taylor," a prominent railroad executive.

### **Metro-North Railroad (MNR)/Amtrak Railroad Alignment**

In addition to the archaeological sites and NRHP properties/districts noted above, the current assessment survey also considered the potential visual effects to the Metro-North Railroad (MNR)/Amtrak Railroad alignment, which itself has historical origins. In order to evaluate possible effects to the alignment, it was necessary to produce a brief historical context for the railroad. That context is included below.

Railroad history in Fairfield and New Haven Counties began in the 1840s, when the state's third railroad, the New York & New Haven Railroad, was incorporated. This line extended from New Haven west into New York State. Its construction was completed in 1849 and the line featured a single 69-mile long iron track that was designed mainly for passenger transportation. During the 1860s, the New York & New Haven Railroad's prospered as a result of high levels of ridership. The improved economic position of the railroad company permitted increased investment of the line's infrastructure, including the replacement of the iron rails with steel ones, the construction of new stations, and the expansion of maintenance facilities. The railroad also began the shipping of freight during the 1860s.

In 1872, the New York & New Haven Railroad merged with the Hartford & New Haven Railroad to become the largest transportation company in Connecticut. The company was renamed the New York, New Haven, & 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 Connecticut. The New York, New Haven, & Hartford Railroad owned railroads (including almost 1,000 steam engines by 1904), steamboats, and electric trolley lines (Turner and Jacobus 1987). New York, New Haven, & Hartford Railroad also purchased a number of electricity generation facilities, and was one of the first entities in the region to experiment with electric engines. The initial success with electric propulsion was along the route between New Haven and New York, and the choice of overhead wire systems was made because the third-rail system was demonstrably unsafe on open tracks (Turner and Jacobus 1987).

The process of using electricity to power the railroad began in 1904, and it was initiated along a segment of track between Woodlawn, New York and Stamford, Connecticut. 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 process was continued an additional 45 miles to extending to New Haven were electrified. 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 Cos Cob power plant included a monitoring and control system, as well as a mode of transmission of electricity along a series of overhead catenaries and trolley wires. Electricity was also provided to the various stations and maintenance facilities along the line. Finally, an electrical signaling and communications system were also added. This system has remained in place and in operation for over 100 years

As mentioned in the introductory section of this report, the Project calls for decommissioning and removal the existing 115-kV facilities on the railroad catenary structures and moving them to a series of free-standing monopoles. The bonnets currently supporting the electrical lines may remain in place if CT DOT accepts ownership of them. If not, they will be removed and the historical catenaries will remain in place in their original configuration. Based on the brief history of the railroad presented above, the current Metro-North Railroad (MNR)/Amtrak Railroad alignment and its associated infrastructure are historical in

origin and are of significance related to railroad history, transportation, and the nineteenth/twentieth century development of the Connecticut shoreline. While UI proposes to separate the existing electrical lines from the Metro-North Railroad (MNR)/Amtrak Railroad alignment and possibly the bonnets located on top of the historical catenaries, no adverse effect (direct or visual) to the character-defining features of the railroad and its associated infrastructure are anticipated.

### **Preliminary Viewshed Analysis**

As part of the investigation of the Existing CT DOT corridor, All-Points Technology Corporation (All-Points) prepared a preliminary Viewshed Analysis (VA) showing the visibility of the proposed Project structures within a 0.8 km (0.5 mi) buffer to the north and south of the railroad alignment. The VA shows year-round visibility of the Project elements from various vantage points; it is a preliminary depiction, but is not expected to change drastically when finalized. A portion of the VA is presented in Figure 13. Only this section is included as it is the only portion germane to the discussion of potential visual effects to the NRHP above-ground cultural resources described above, namely The Academy of Our Lady of Mercy—Lauralton Hall, River Park Historic District, U.S. Post Office – Milford Main, St. Peter’s Episcopal Church, and Taylor Memorial Library. The remainder of the VA includes areas where no NRHP properties/districts have been recorded; thus, is it not included in this report.

A review of Figure 12 shows that The Academy of Our Lady of Mercy—Lauralton Hall, River Park Historic District, U.S. Post Office – Milford Main, St. Peter’s Episcopal Church, and Taylor Memorial Library will be affected visually by the proposed structures associated with the project. However, the effect will be variable across these five resources. The visual effect to The Academy of Our Lady of Mercy—Lauralton Hall will be the least noticeable. Because this NRHP property is largely screened from the Existing CT DOT corridor by intervening vegetation and buildings, the visual effect of the proposed structural elements will be limited to less than half of The Academy of Our Lady of Mercy—Lauralton Hall property and most of that will occur within the open athletic fields in the eastern portion of the property. Similarly, the visual effect to the River Park Historic District is also only partial, and it will be limited to the southern portion of this historic district only; this area encompasses the municipal center of Milford. The remaining above-ground resources, including the U.S. Post Office – Milford Main, St. Peter’s Episcopal Church, and Taylor Memorial Library, all fall within parts of the VA that indicates the structural elements of the Project will be visible from their location on a year round basis.

### **Summary and Recommendations**

This Phase IA survey included a review of various data related to existing CT DOT corridor and its immediate surroundings, including historical mapping, aerial imagery analysis, a literature search related to previously identified archaeological sites and NRHP-listed properties, a preliminary viewshed of the construction area and surroundings in Milford, and a consideration of the historical nature of the railroad alignment itself. The survey revealed that the Access Road AR-P-982N-W area is the only Project item situated in close proximity to a known archaeological site (107-15) in Orange, Connecticut. It is recommended that the BMPs described above be used in the vicinity of Site 107-15. If this is not feasible, it is recommended that Phase II NHRP testing and evaluation of Site 107-15 be completed prior to construction. All other improvements will be situated away from previously identified archaeological deposits in areas characterized by previous disturbances, wetlands, poorly drained soils, or paved surfaces. These areas can be considered to possess a no/low archaeological sensitivity. No additional archaeological examination of these areas is recommended prior to construction. The proposed Project also has been designed so that are no impacts to the Milford Cemetery.

This Phase IA survey also has resulted in the determination that The Academy of Our Lady of Mercy—Lauralton Hall, River Park Historic District, Milford Main Post Office, St. Peter’s Episcopal Church, and Taylor Memorial Library in Milford will not be impacted directly by the proposed Project. However, given that the Project structures in the vicinity of these NRHP-listed properties will reach between 38.1 and 42.6 m (125 and 140 ft) above the ground surface, they will be visible from each of these properties and will represent an adverse effect to their viewsheds. Since the design engineers have determined that poles measuring between 38.1 and 42.6 m (125 and 140 ft) in height are necessary these areas for both engineering and public safety reasons, it is recommended that UI work in consultation with the CT-SHPO to mitigate the visual impacts of construction to The Academy of Our Lady of Mercy—Lauralton Hall, River Park Historic District, Milford Main Post Office, St. Peter’s Episcopal Church, and Taylor Memorial Library.

Finally, the proposed Project will necessarily result in alterations to the existing CT DOT corridor, which contains the railroad, itself is a historical landscape feature. These alterations will include removal of the existing electrical lines from the bonnets on top of the historic railroad catenaries, possible removal of the bonnets themselves, and the installation of electrical transmission structures along the existing CT DOT (Figures 14 and 15). These changes are not expected to have any adverse effect on the historical character-defining features of the railroad features within the existing CT DOT corridor. Thus no additional recordation of the railroad or its associated historical elements is recommended prior to construction. Overview photos of a sample of the proposed structure changes and access roads/work areas are contained within Figures 16 through 33. As mentioned above, the access points shown in the attached figures are at the 50 percent design level and they may evolve as the Project proceeds through the regulatory and siting processes. Nevertheless, design changes to the access points are not anticipated to have effects on cultural resources as the edges of the existing CT DOT corridor have already been highly modified and no longer retain the potential to produce archaeological deposits except in the area of the Milford Cemetery and Site 107-15 in Orange, which in the case of the former will be avoided during construction completely or in the latter will be subjected to BMPs to protect potential archaeological deposits. The finalized version of the access points will be included in a final Design & Management Plan.



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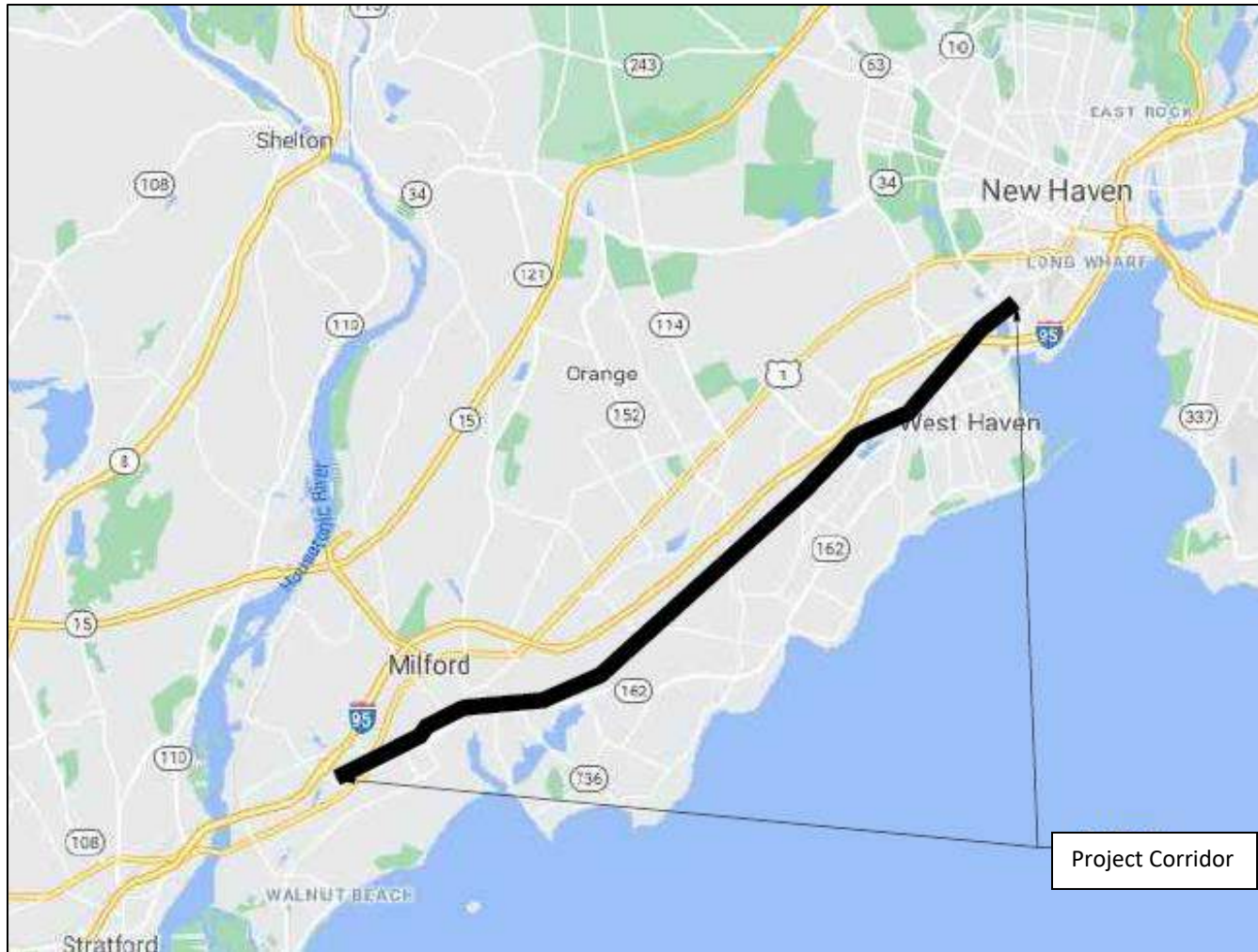


Figure 1. Location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut.

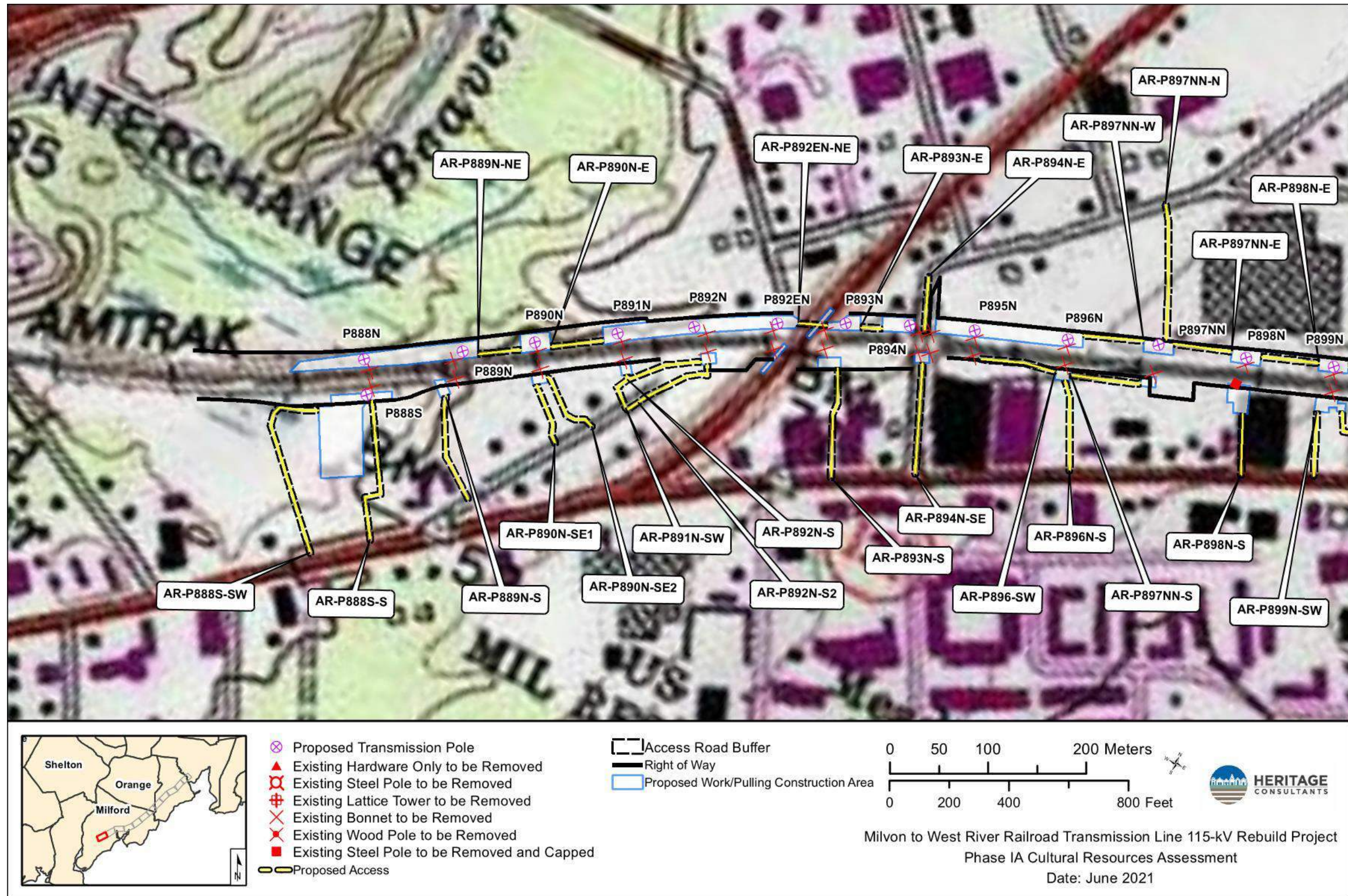


Figure 2; Sheet 1.

Excerpt from a 1996 USGS 7.5' series topographic quadrangle image showing the proposed project items associated with the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut.

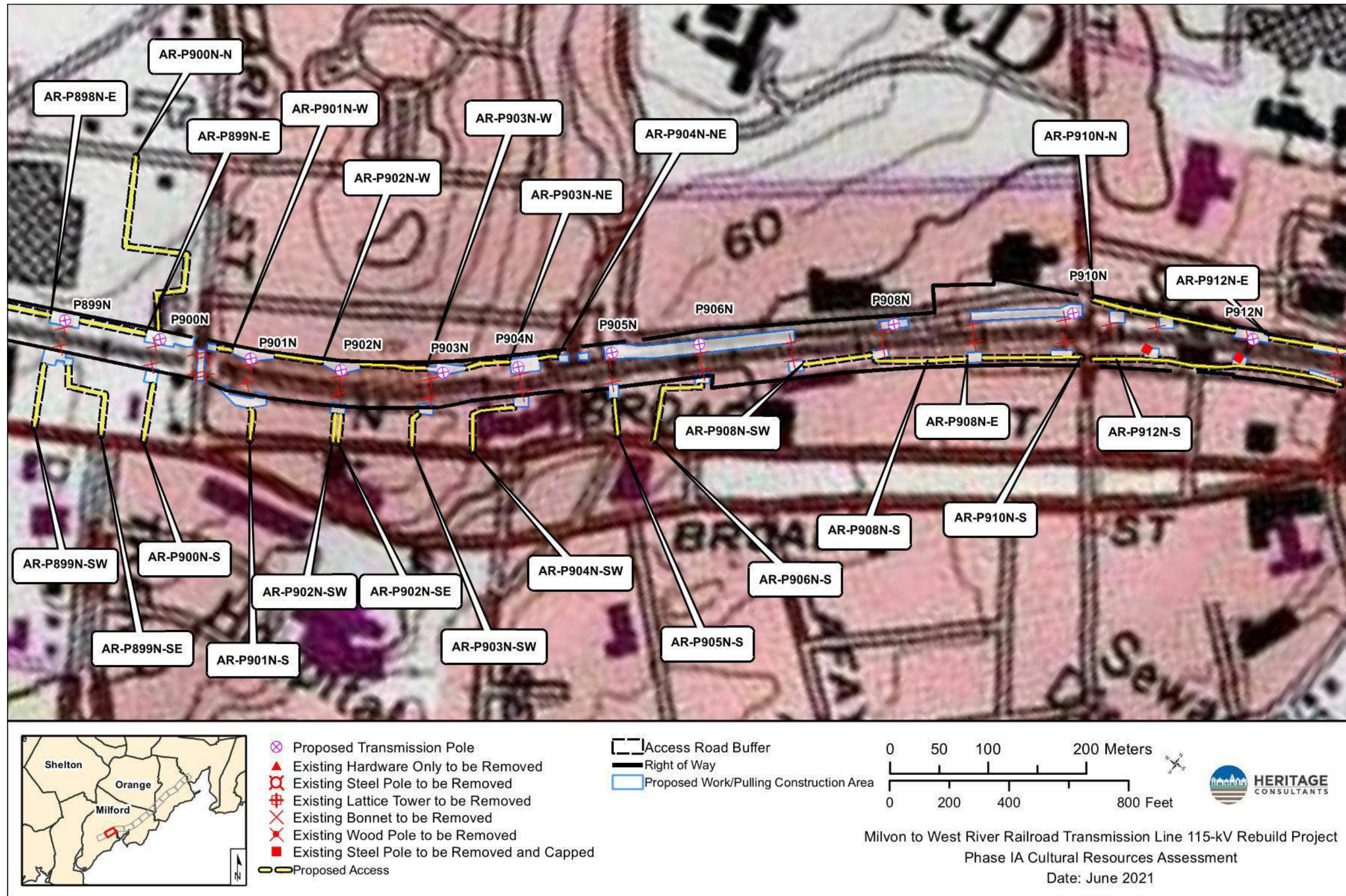


Figure 2; Sheet 2.

Excerpt from a 1996 USGS 7.5' series topographic quadrangle image showing the proposed project items associated with the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut

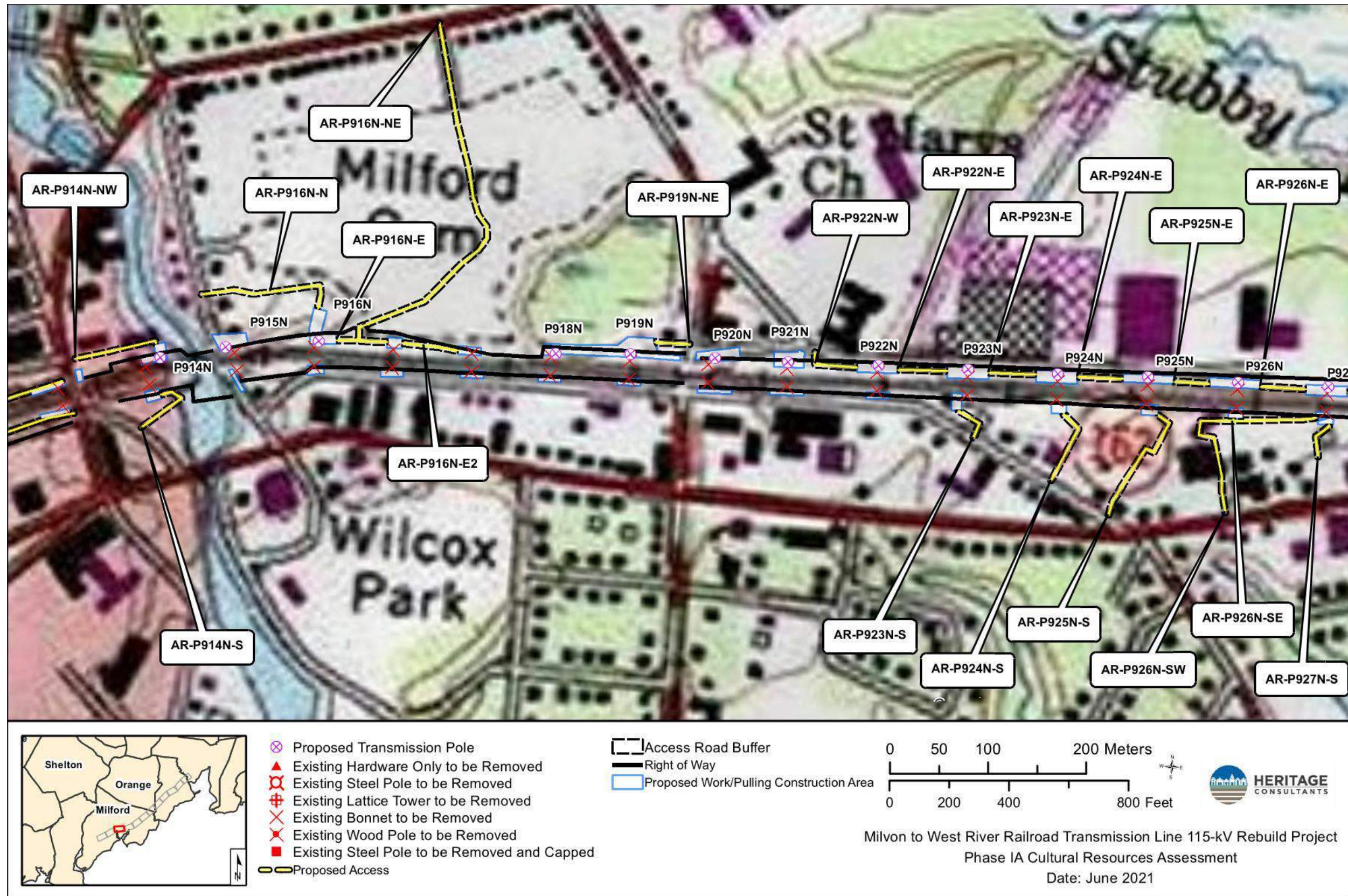


Figure 2; Sheet 3.

Excerpt from a 1996 USGS 7.5' series topographic quadrangle image showing the proposed project items associated with the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut



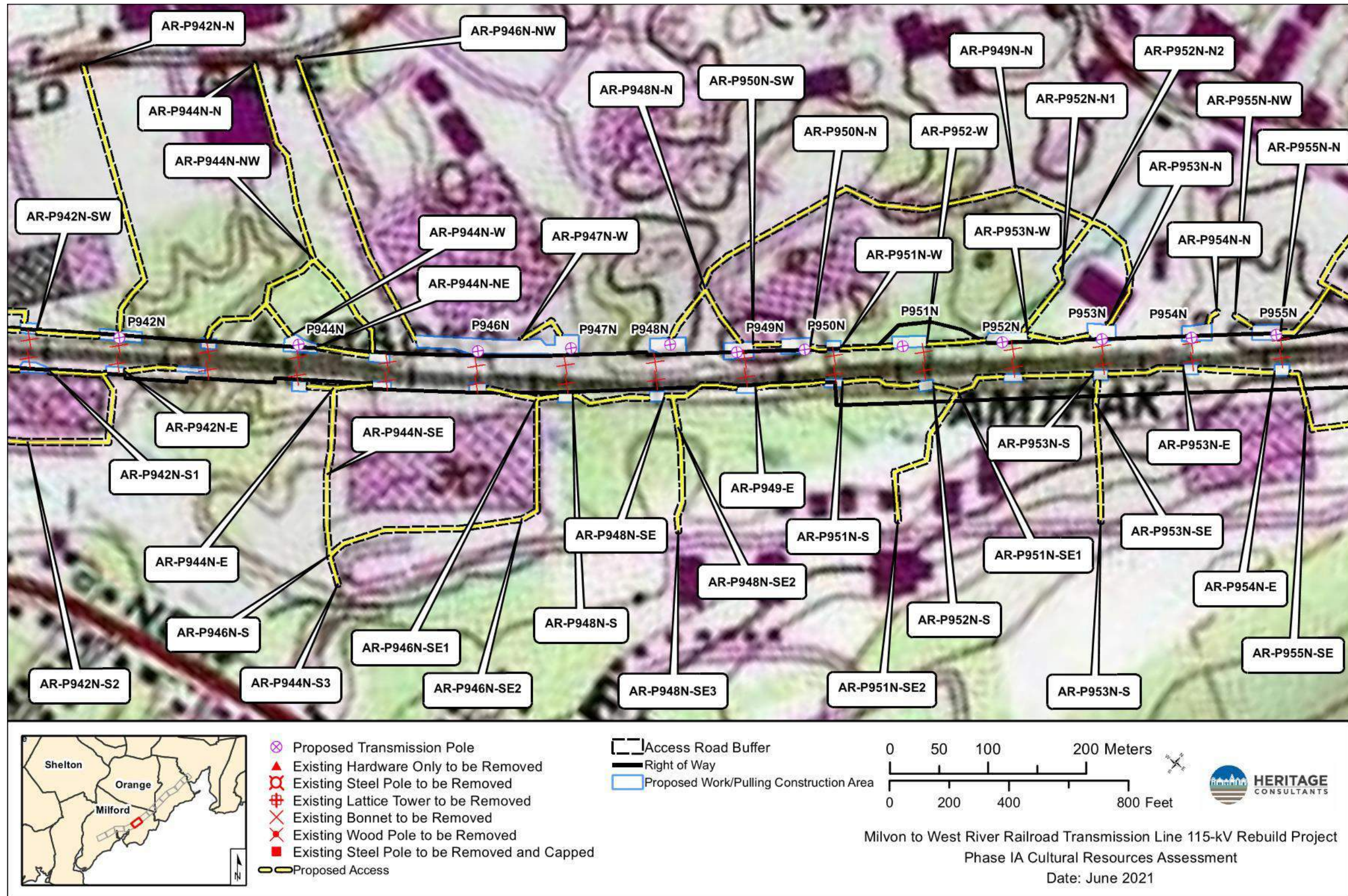


Figure 2; Sheet 5. Excerpt from a 1996 USGS 7.5' series topographic quadrangle image showing the proposed project items associated with the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut



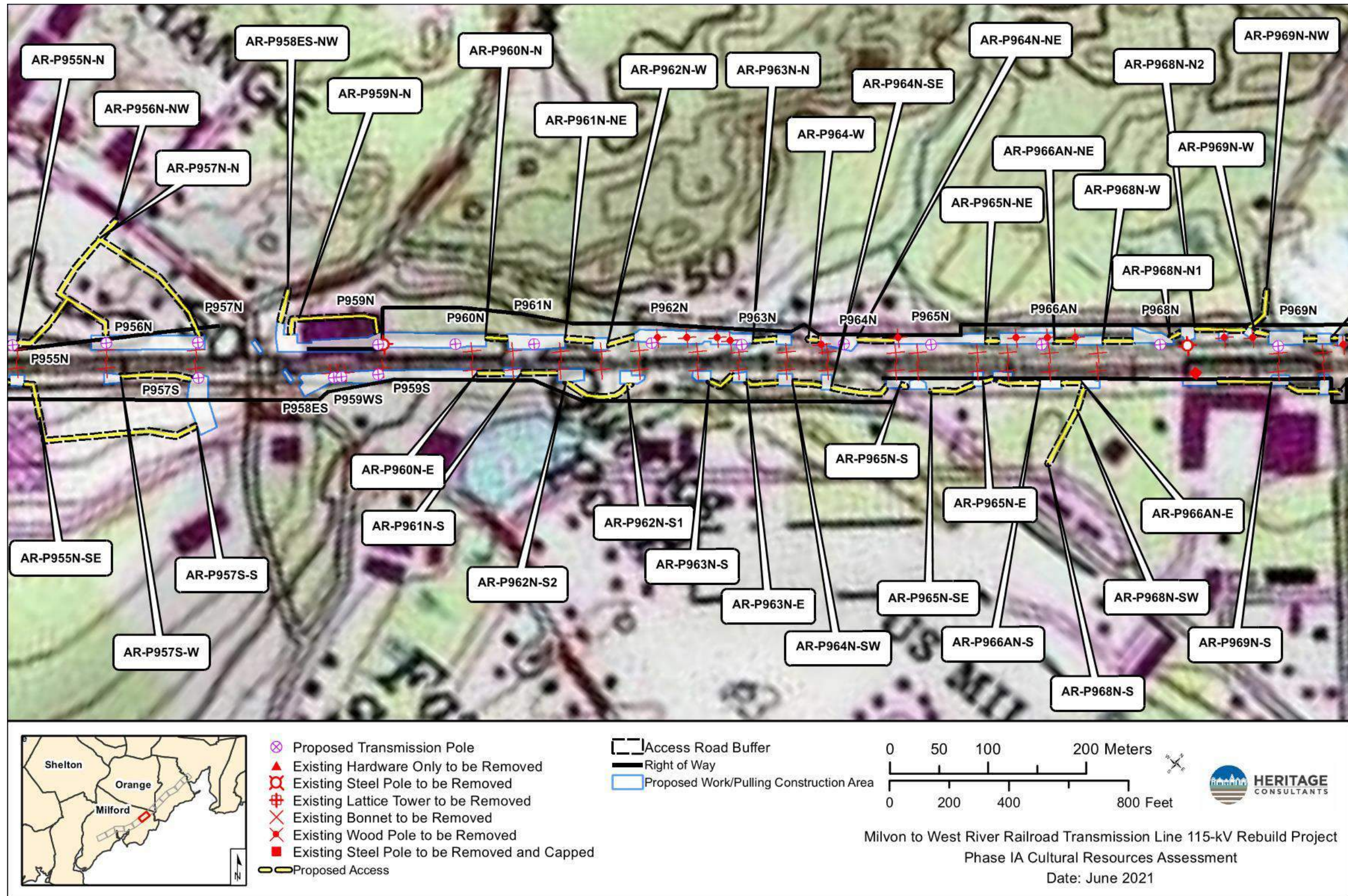


Figure 2; Sheet 6.

Excerpt from a 1996 USGS 7.5' series topographic quadrangle image showing the proposed project items associated with the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut

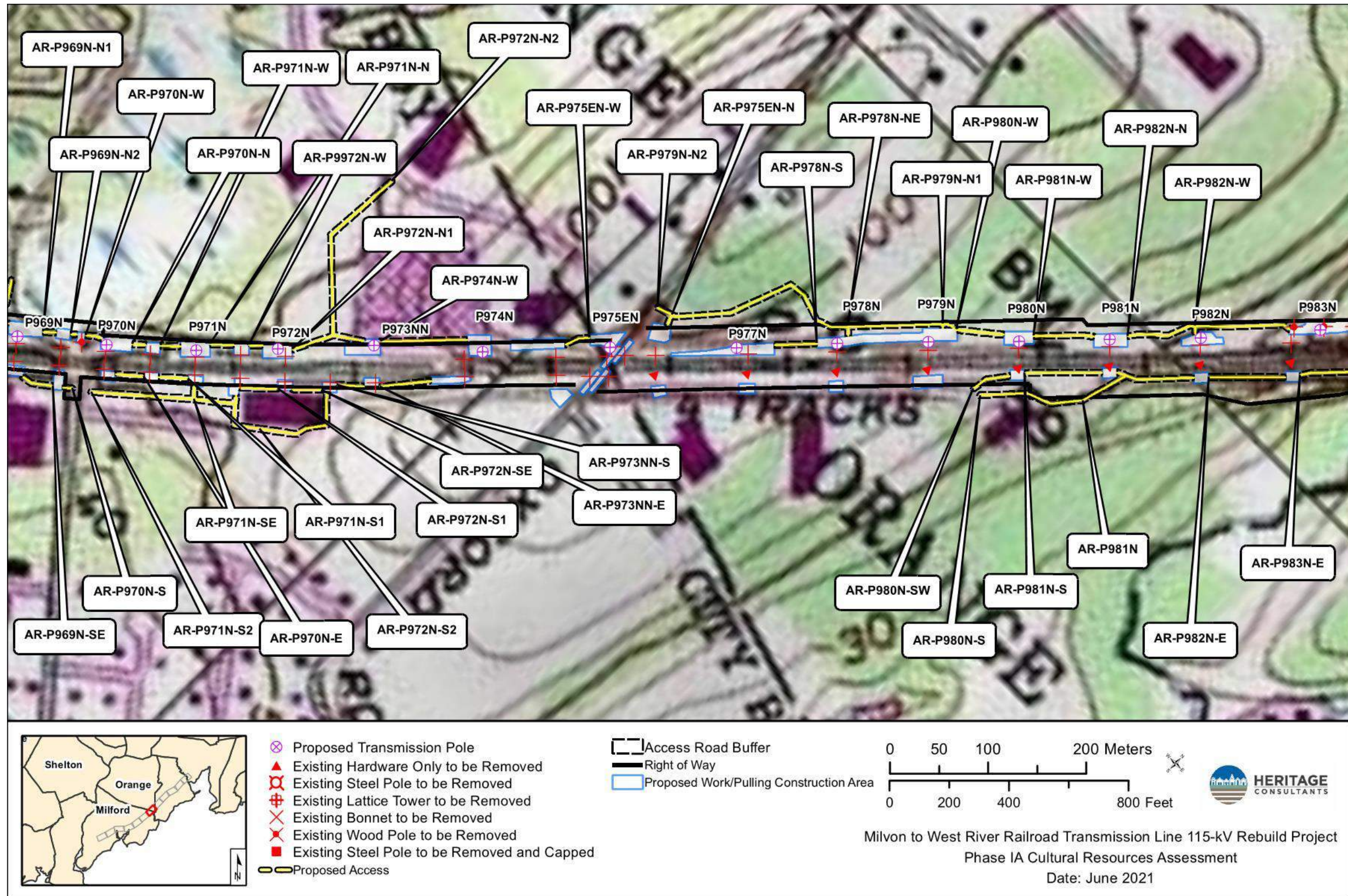


Figure 2; Sheet 7. Excerpt from a 1996 USGS 7.5' series topographic quadrangle image showing the proposed project items associated with the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut

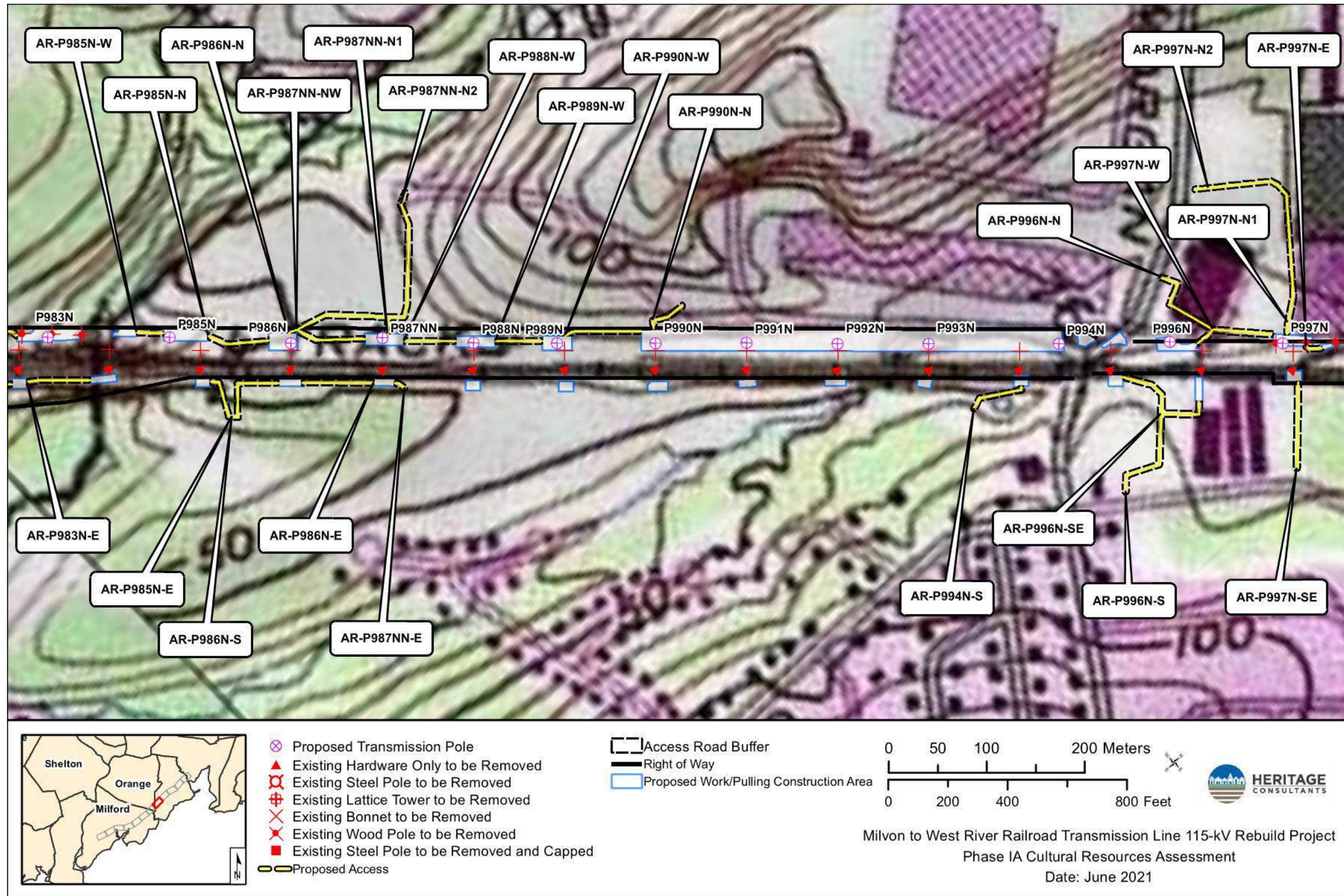


Figure 2; Sheet 8.

Excerpt from a 1996 USGS 7.5' series topographic quadrangle image showing the proposed project items associated with the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut

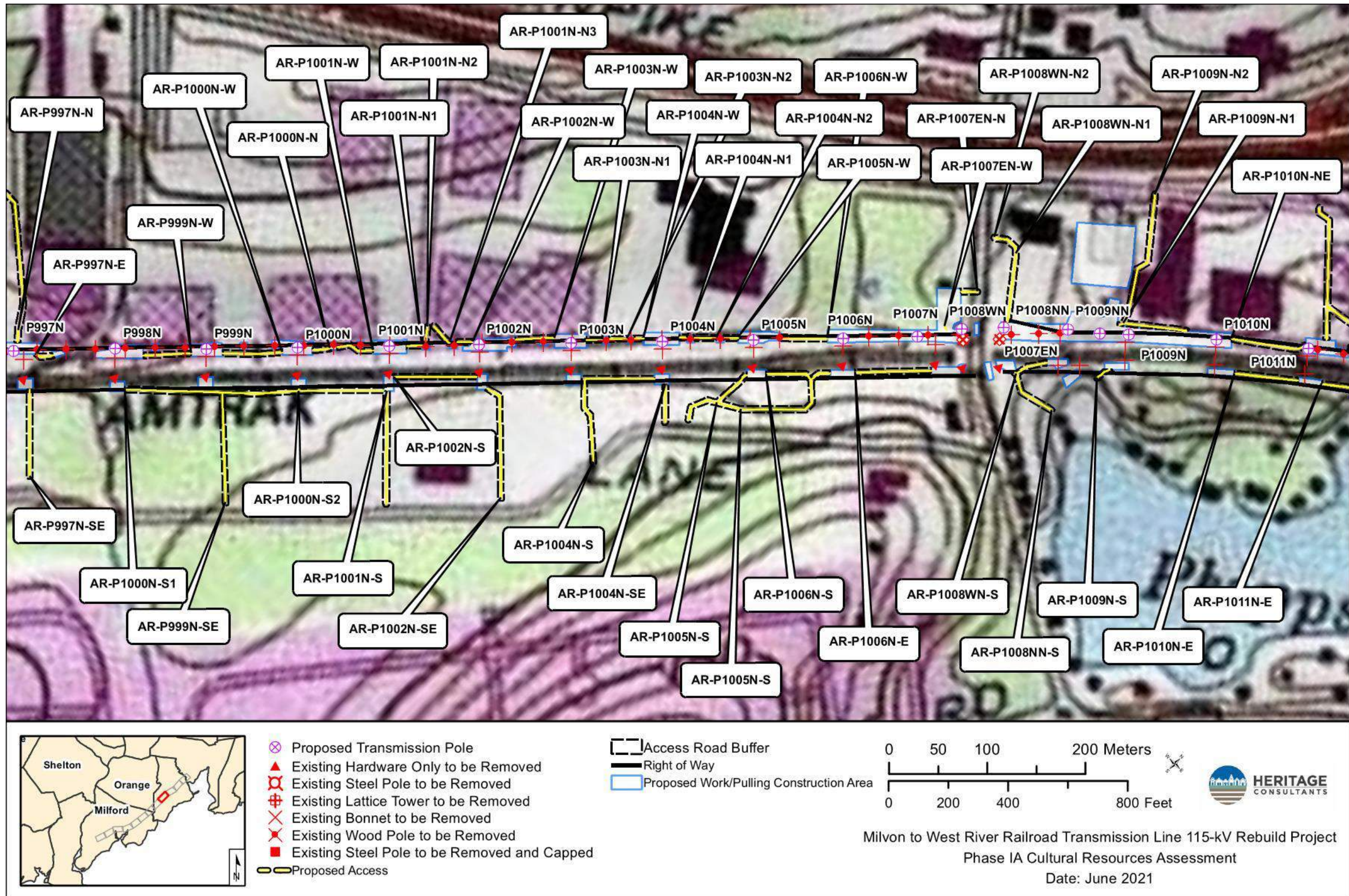


Figure 2; Sheet 9. Excerpt from a 1996 USGS 7.5' series topographic quadrangle image showing the proposed project items associated with the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut

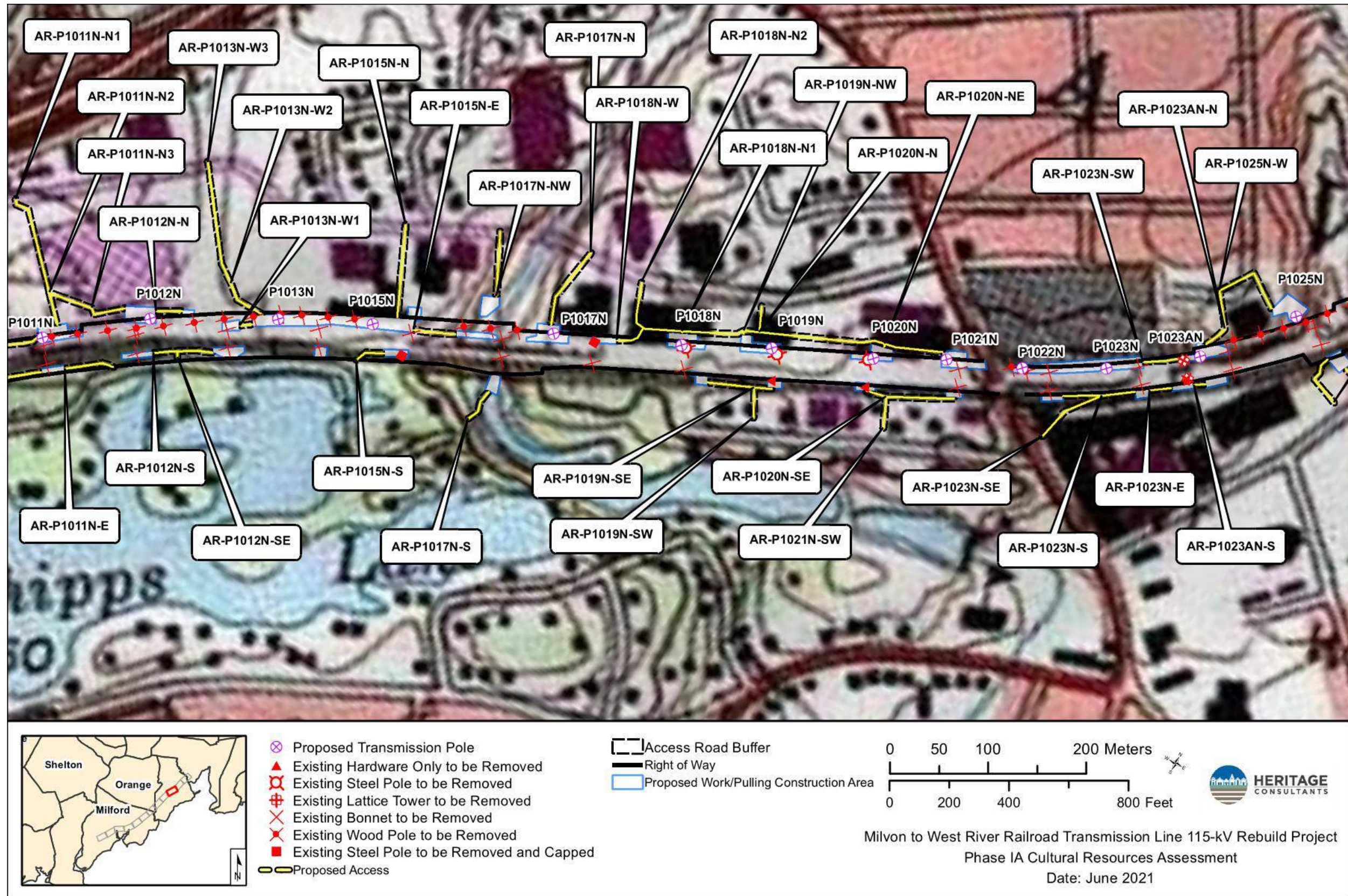


Figure 2; Sheet 10. Excerpt from a 1996 USGS 7.5' series topographic quadrangle image showing the proposed project items associated with the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut

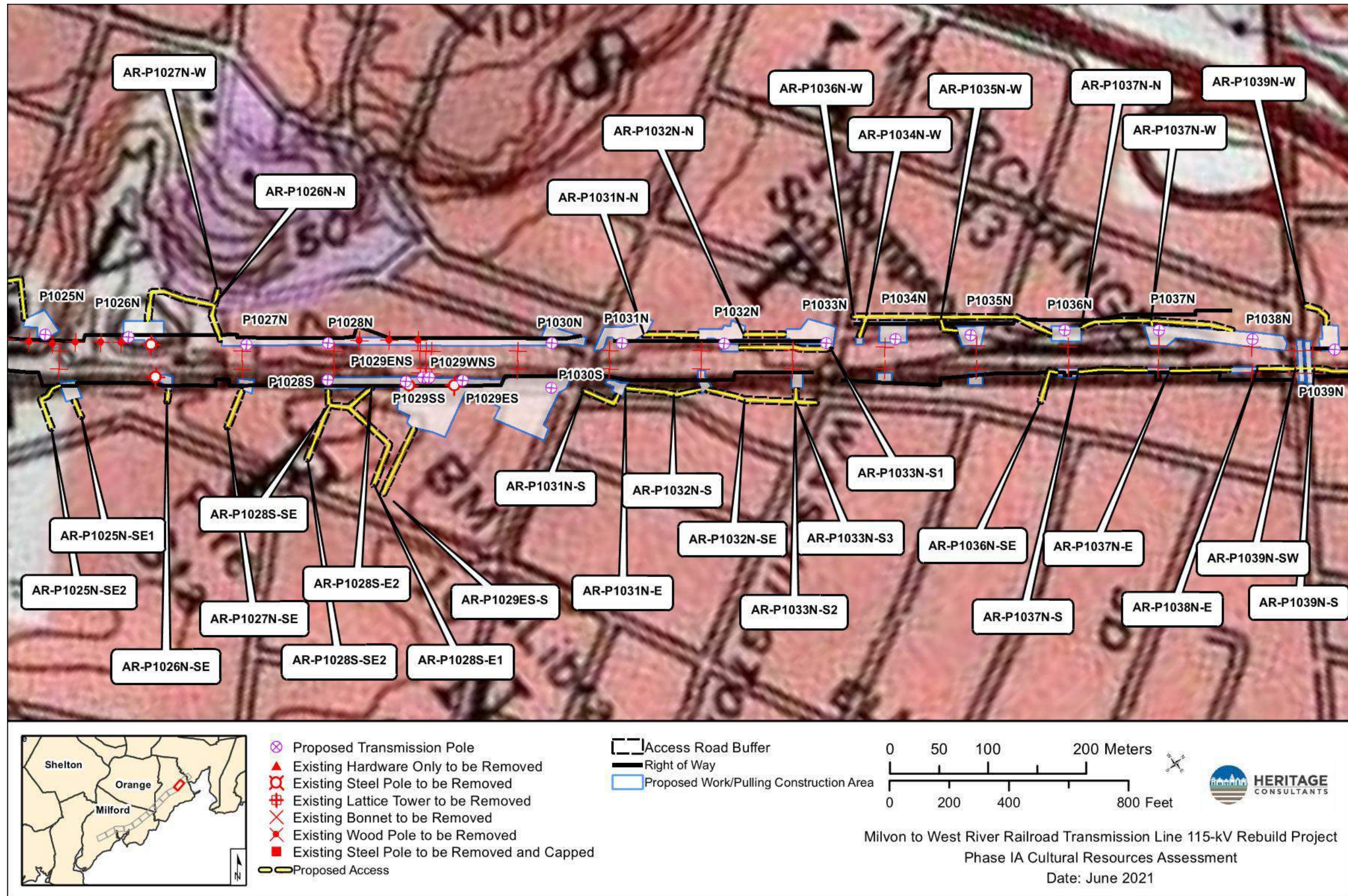


Figure 2; Sheet 11. Excerpt from a 1996 USGS 7.5' series topographic quadrangle image showing the proposed project items associated with the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut

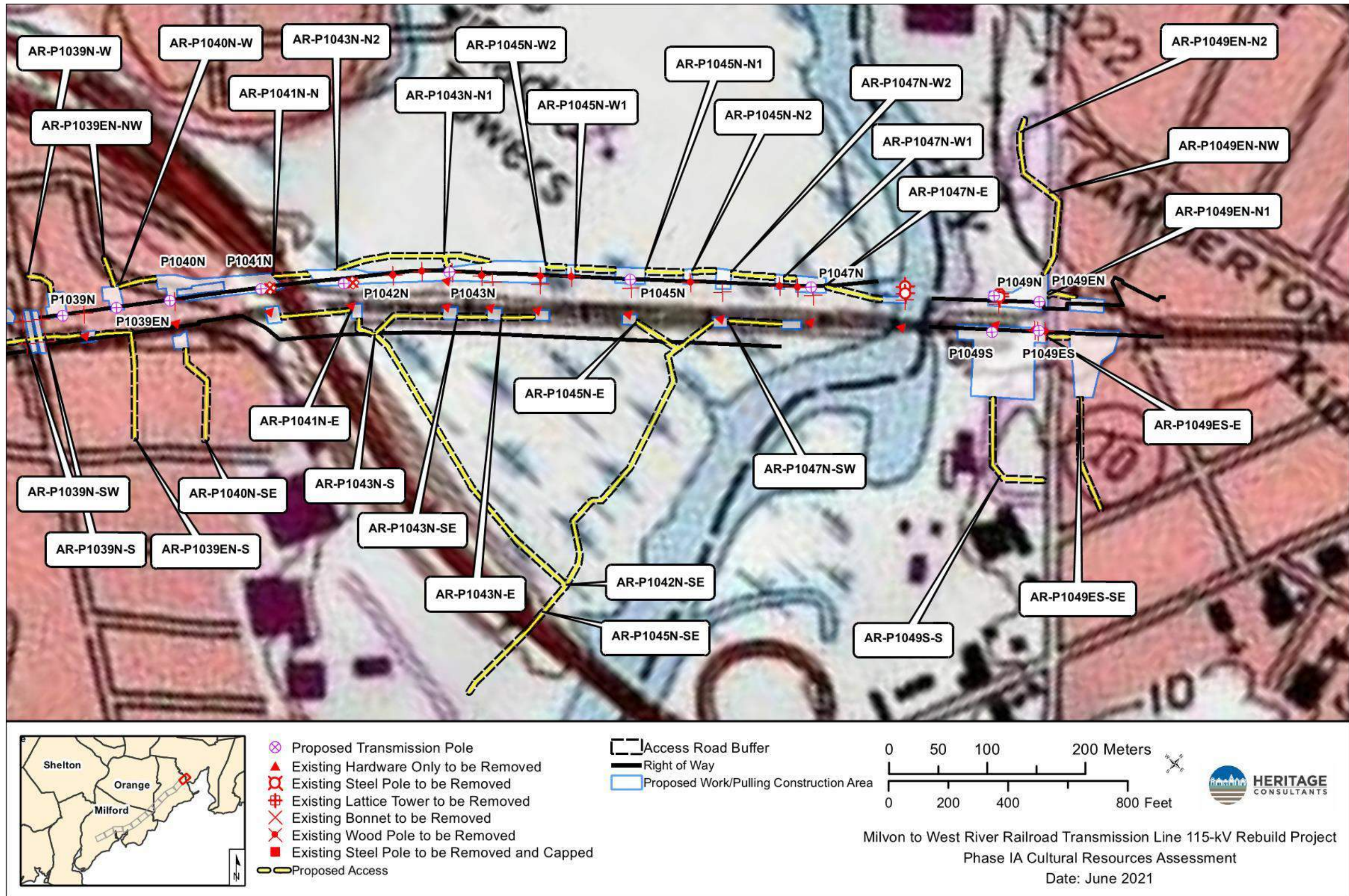
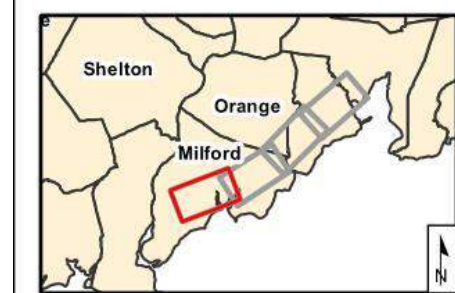


Figure 2; Sheet 12. Excerpt from a 1996 USGS 7.5' series topographic quadrangle image showing the proposed project items associated with the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut



Project Area

0 125 250 500 Meters

0 500 1,000 2,000 Feet

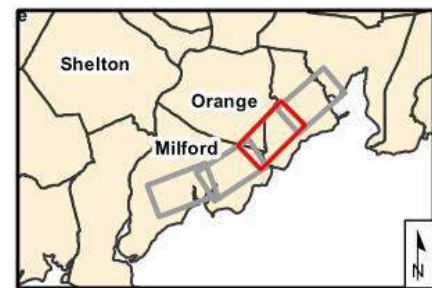
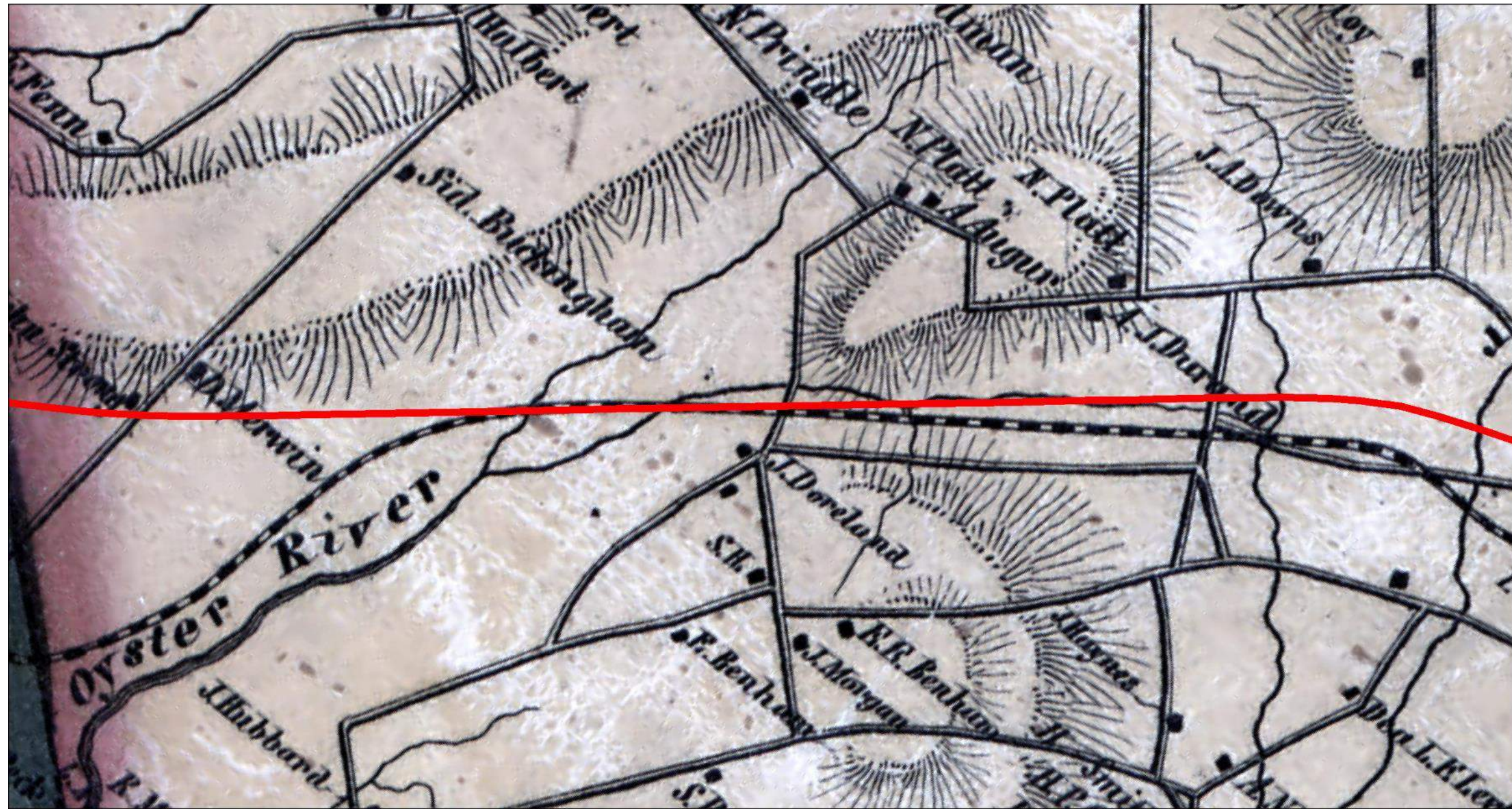


Milvon to West River Railroad Transmission Line 115-kV Rebuild Project  
 Phase IA Cultural Resources Assessment  
 Date: June 2021

Figure 3; Sheet 1. Excerpt from an 1856 map showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut (H. & C.T. Smith 1856).







Project Area

0 125 250 500 Meters

0 500 1,000 2,000 Feet



Milvon to West River Railroad Transmission Line 115-kV Rebuild Project  
 Phase IA Cultural Resources Assessment  
 Date: June 2021

Figure 3; Sheet 3. Digital Excerpt from an 1856 map showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut (H. & C.T. Smith 1856)..

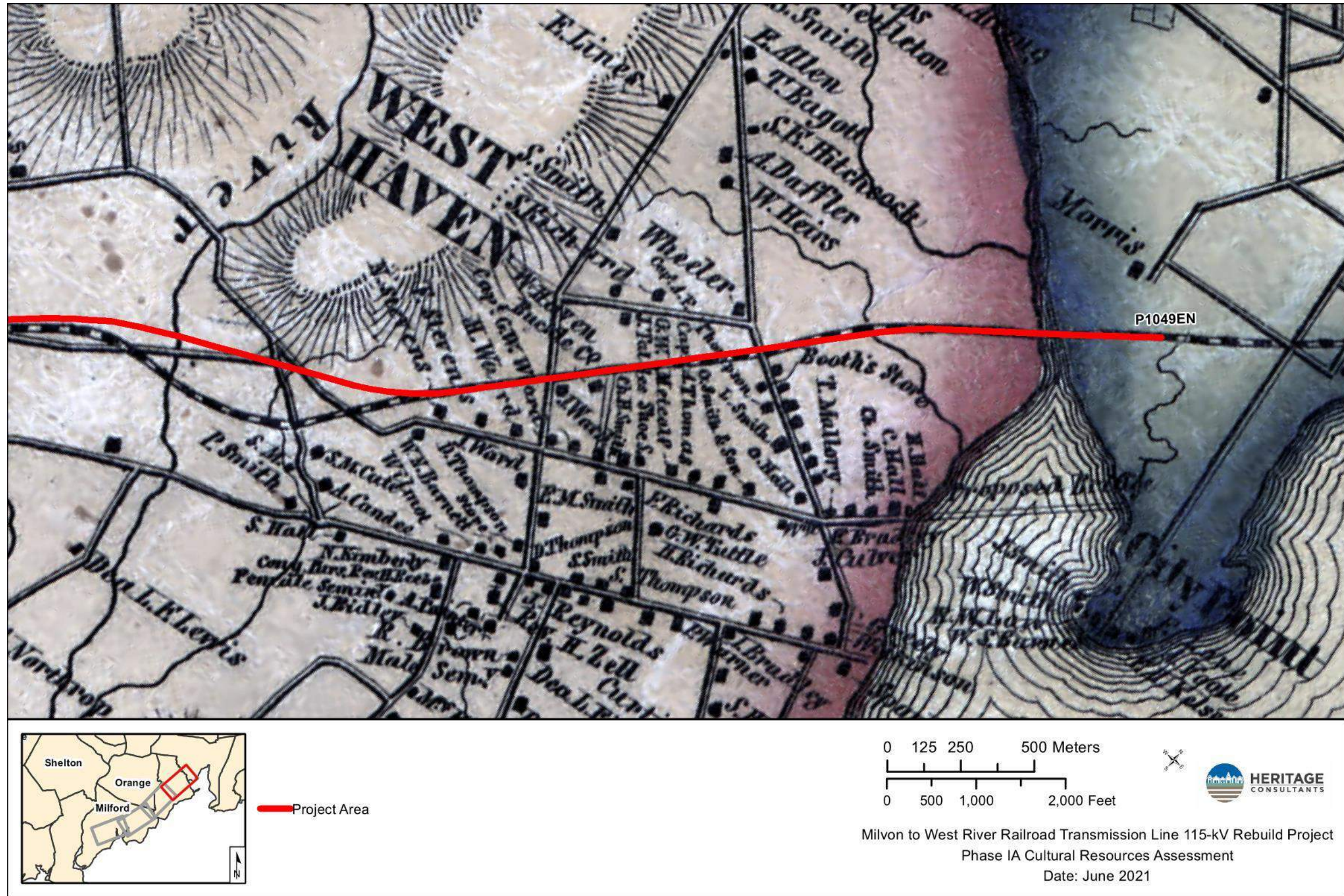
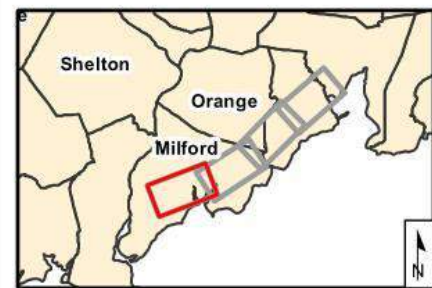
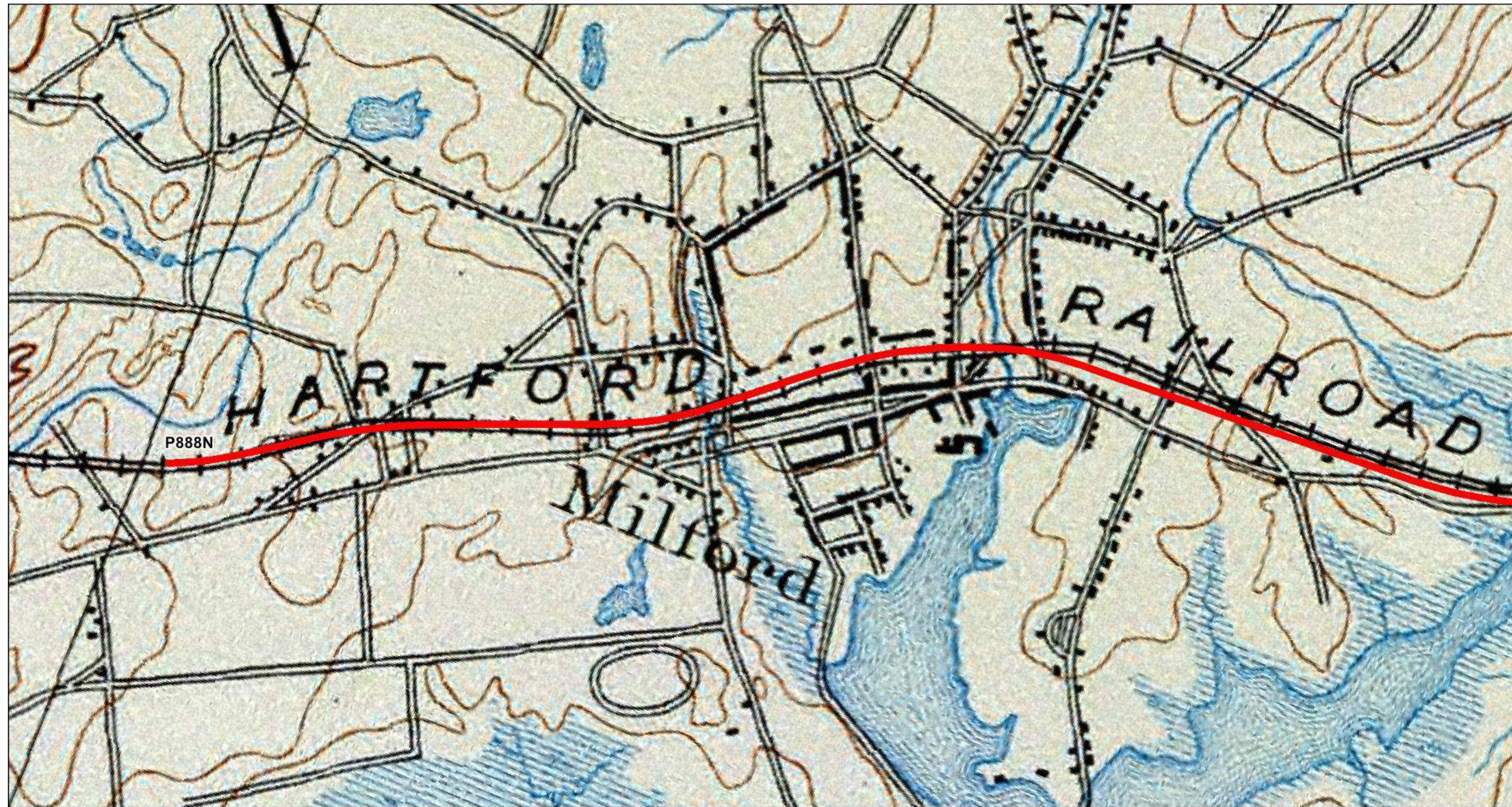


Figure 3; Sheet 4. Digital Excerpt from an 1856 map showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut (H. & C.T. Smith 1856).



Project Area

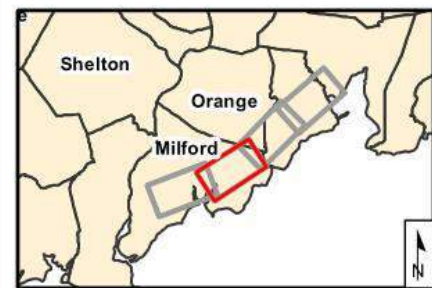
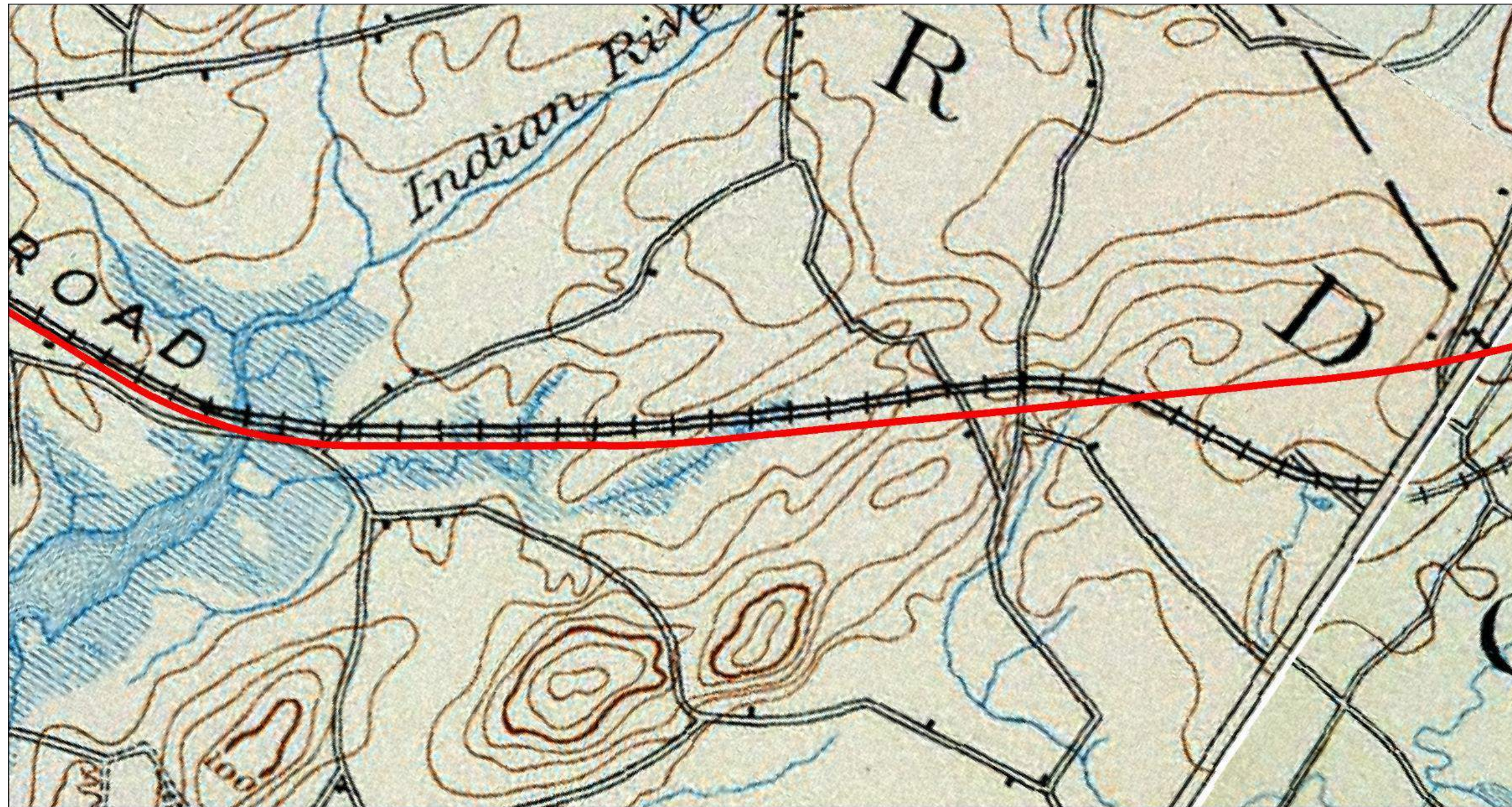
0 125 250 500 Meters

0 500 1,000 2,000 Feet

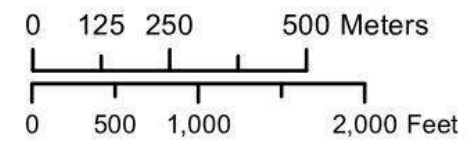


Milvon to West River Railroad Transmission Line 115-kV Rebuild Project  
 Phase IA Cultural Resources Assessment  
 Date: June 2021

Figure 4; Sheet 1. Digital Excerpt from an 1890 map showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut (USGS 1890).



Project Area



Milvon to West River Railroad Transmission Line 115-kV Rebuild Project  
Phase IA Cultural Resources Assessment  
Date: June 2021

Figure 4; Sheet 2. Digital Excerpt from an 1890 map showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut (USGS 1890).

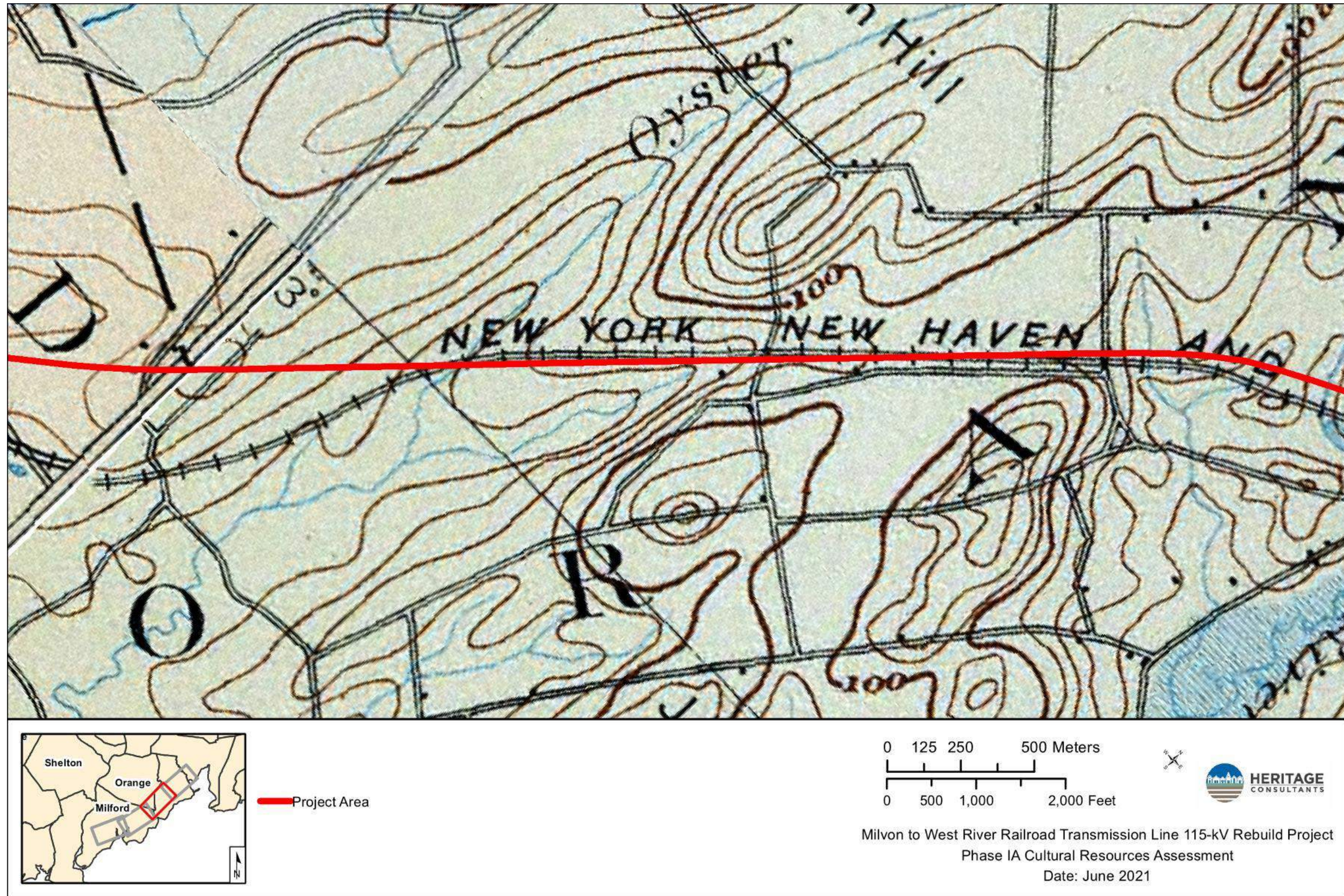
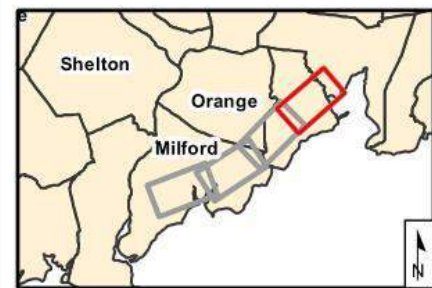
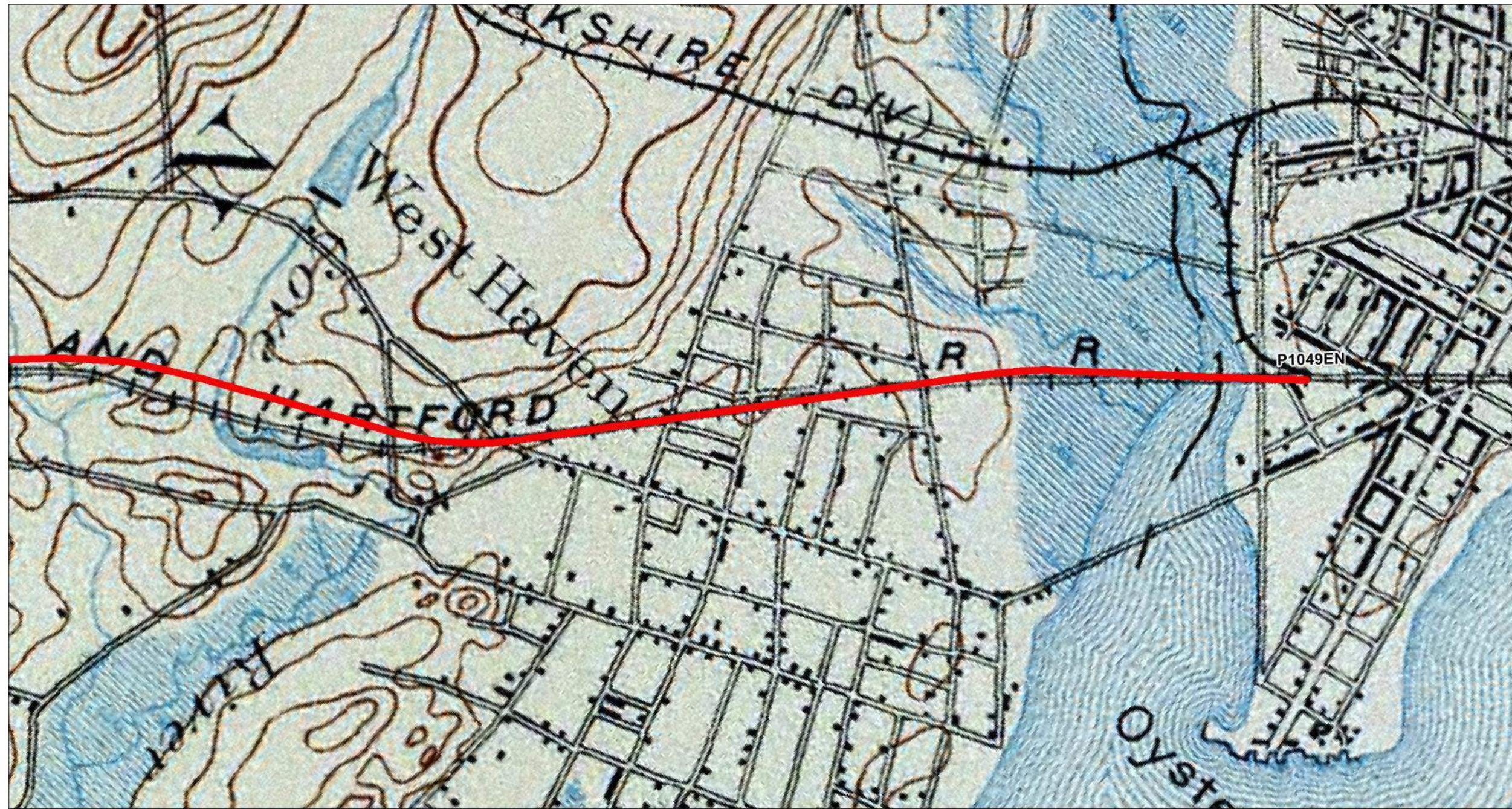
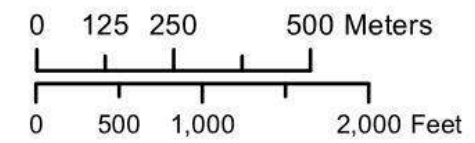


Figure 4; Sheet 3. Digital Excerpt from an 1890 map showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut (USGS 1890).



Project Area



Milvon to West River Railroad Transmission Line 115-kV Rebuild Project  
 Phase IA Cultural Resources Assessment  
 Date: June 2021

Figure 4; Sheet 4. Digital Excerpt from an 1890 map showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut (USGS 1890).

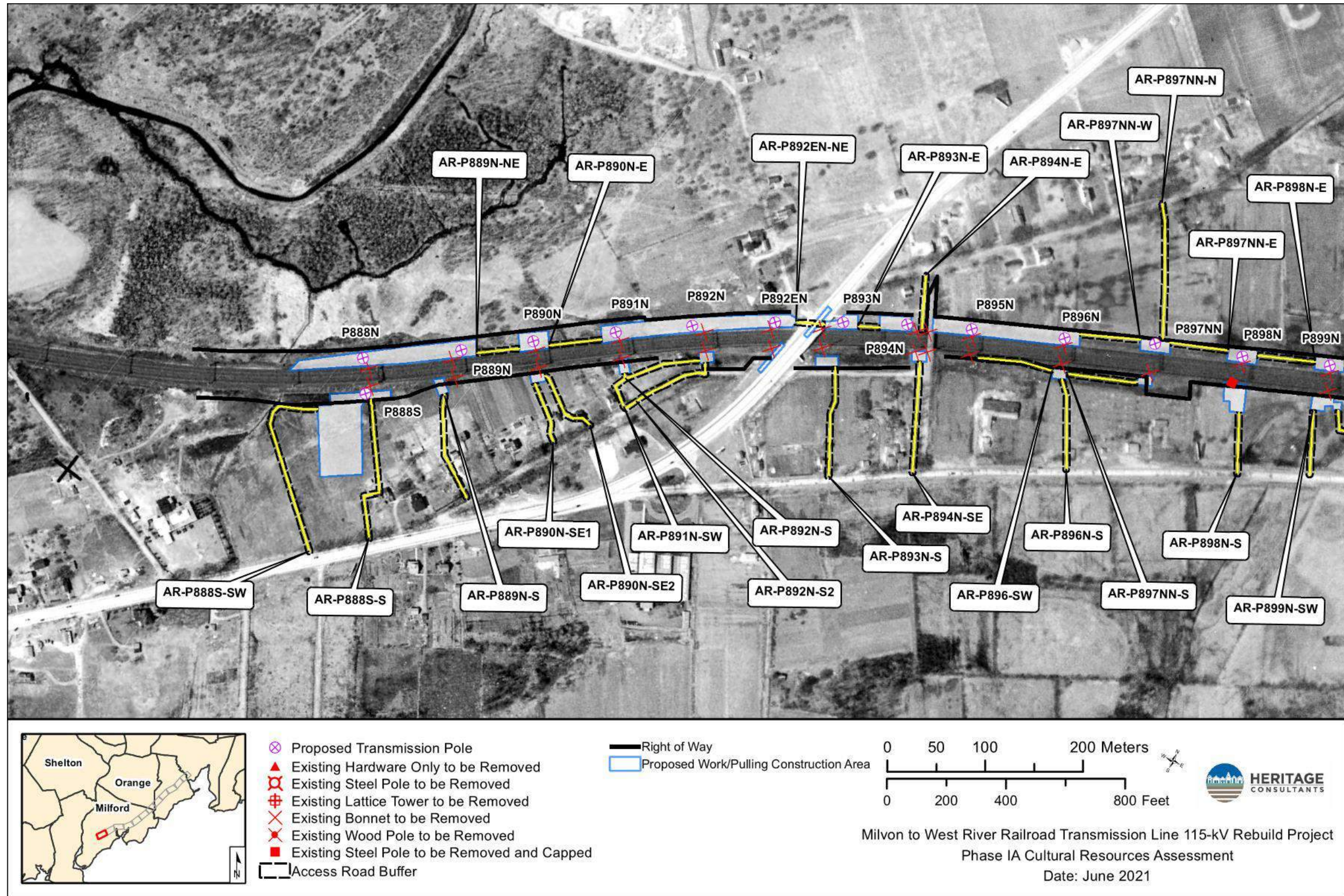


Figure 5; Sheet 1.

Excerpt from a 1934 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.



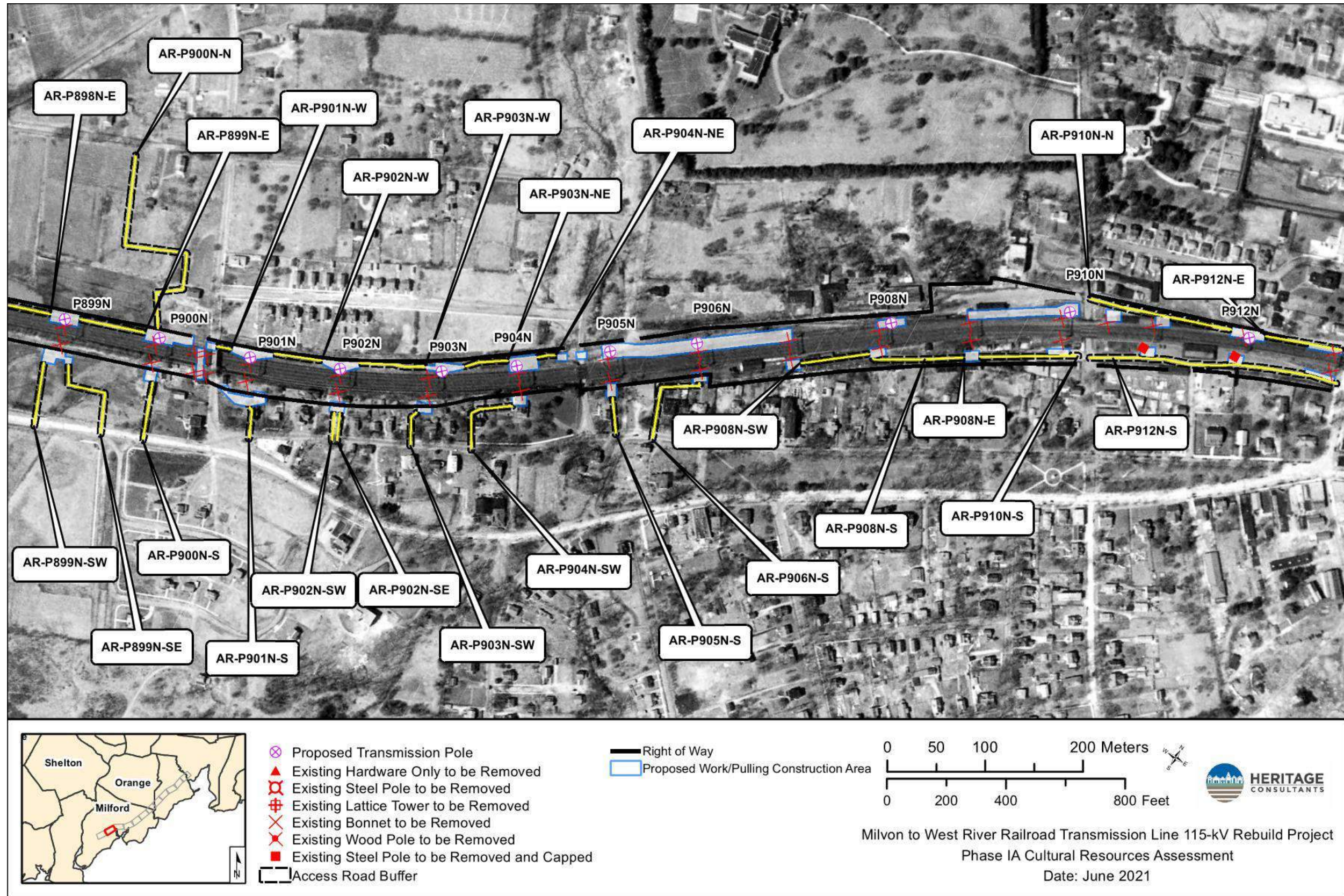


Figure 5; Sheet 2.

Excerpt from a 1934 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

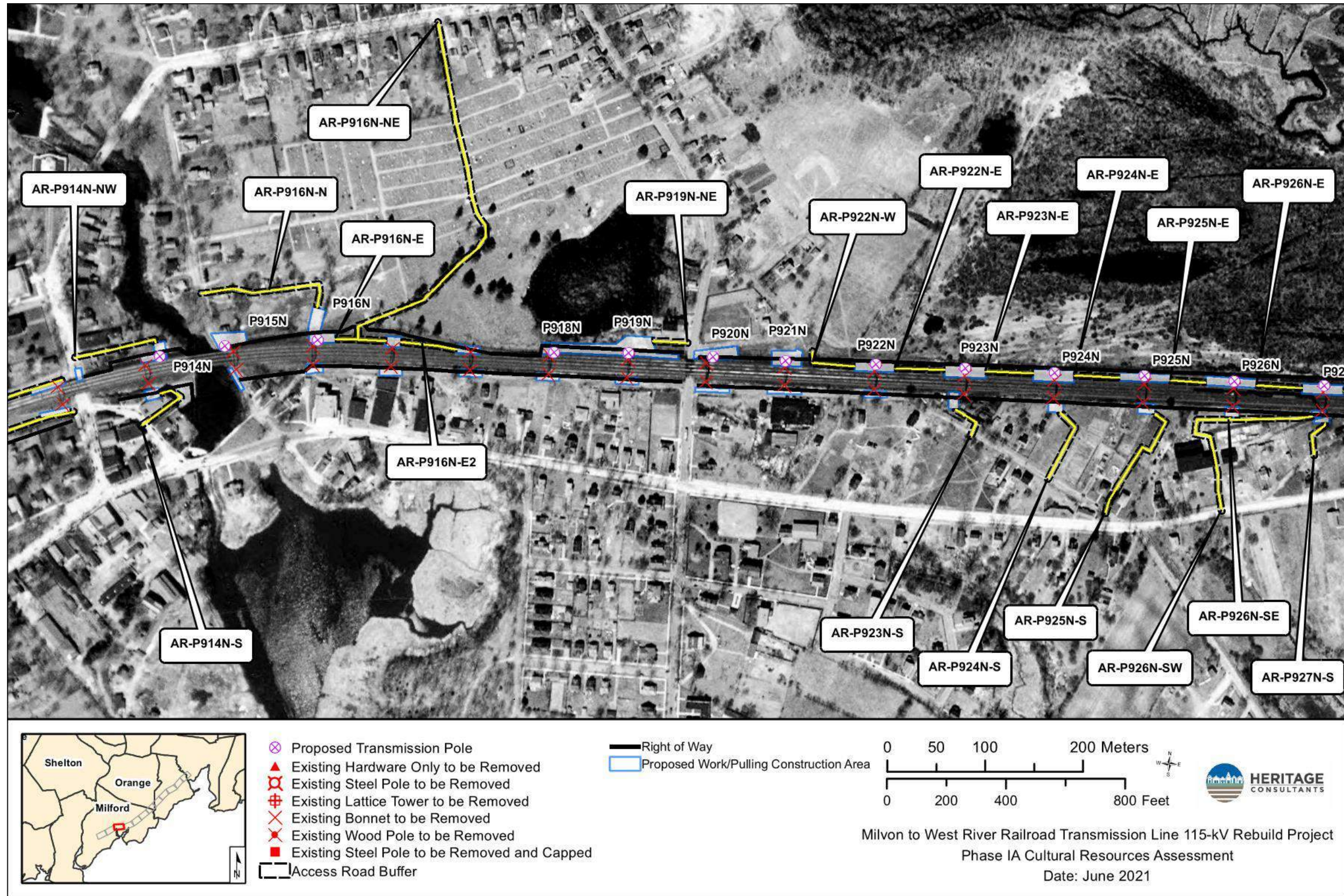


Figure 5; Sheet 3.

Excerpt from a 1934 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

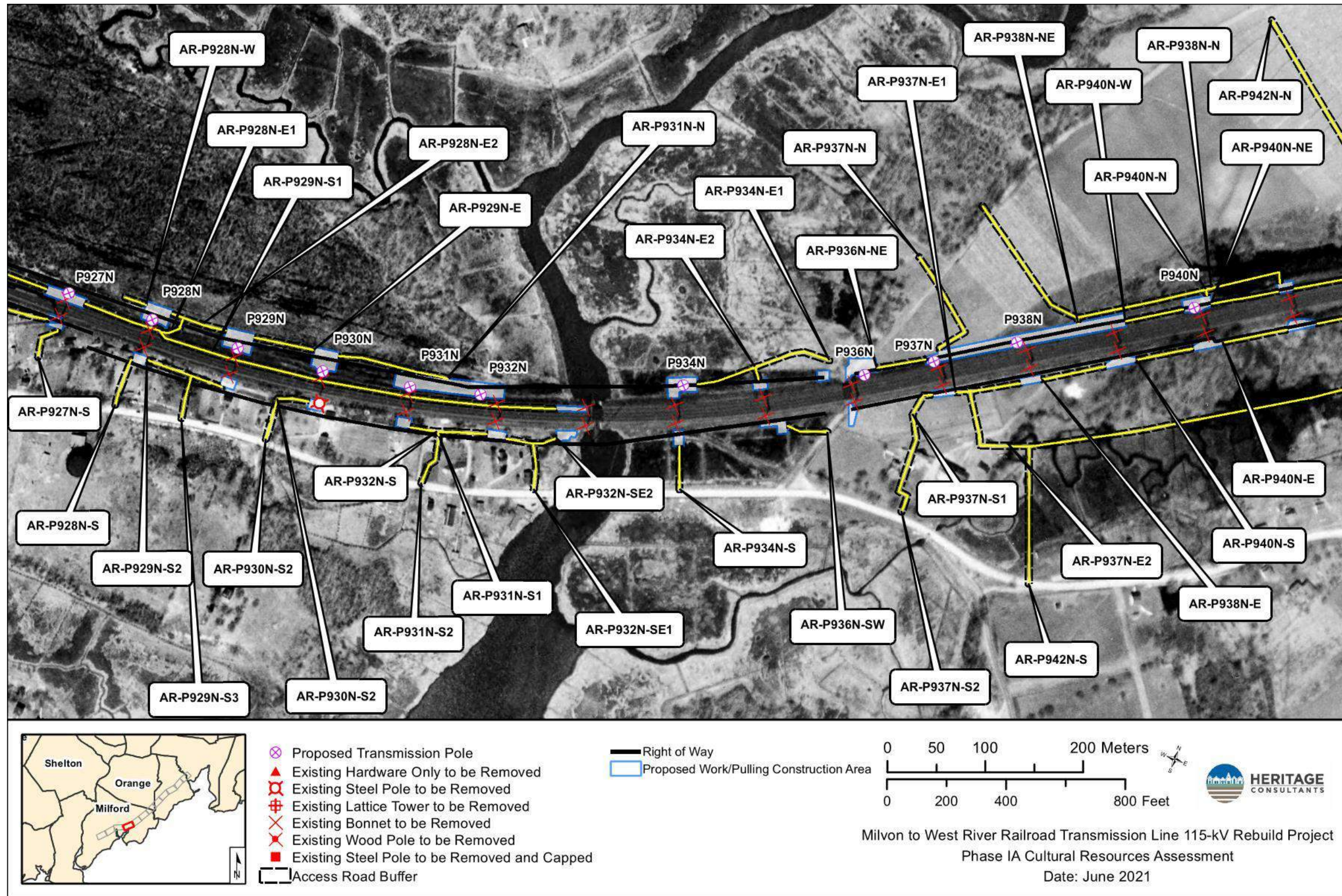


Figure 5; Sheet 4. Excerpt from a 1934 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

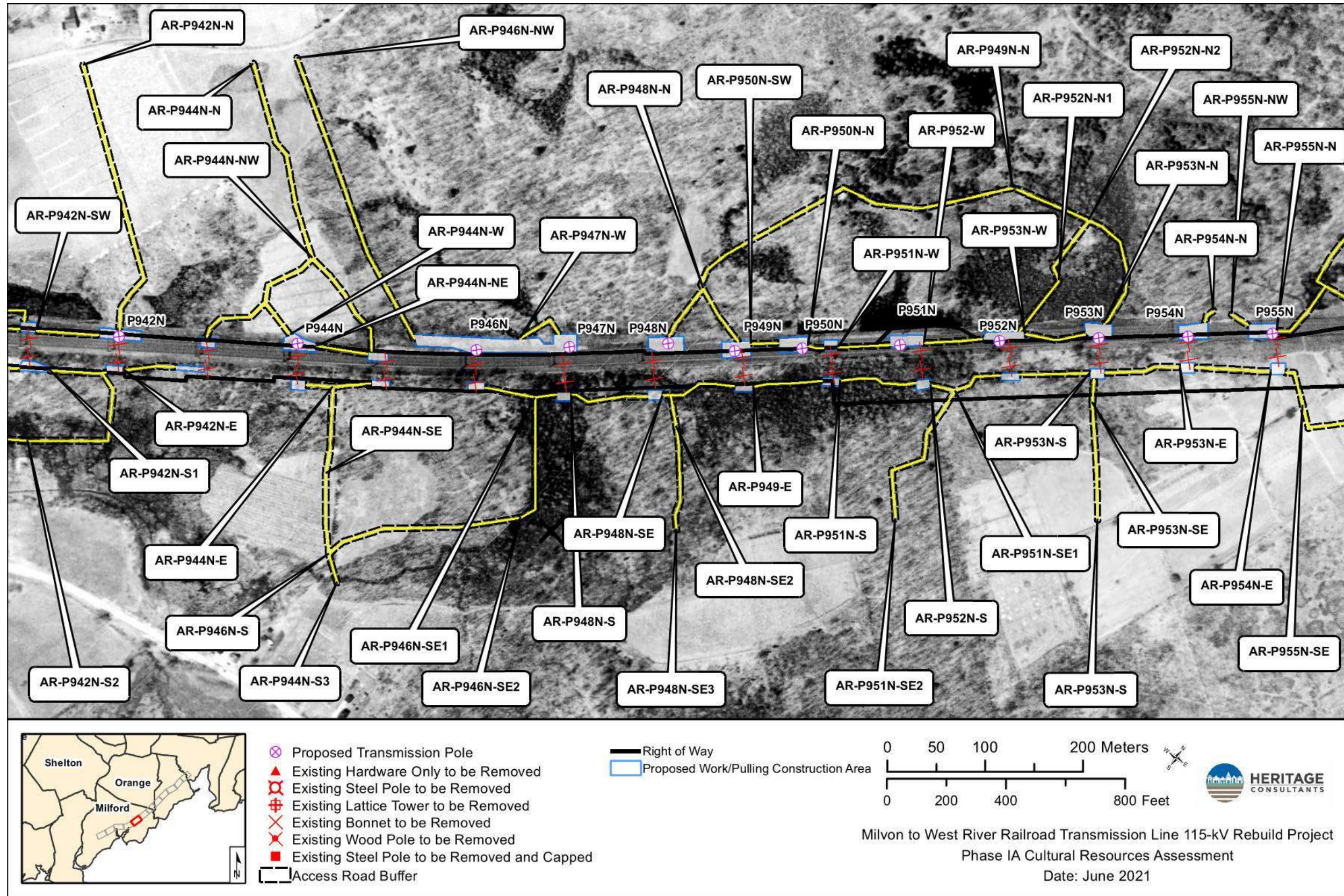


Figure 5. Sheet 5. Excerpt from a 1934 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

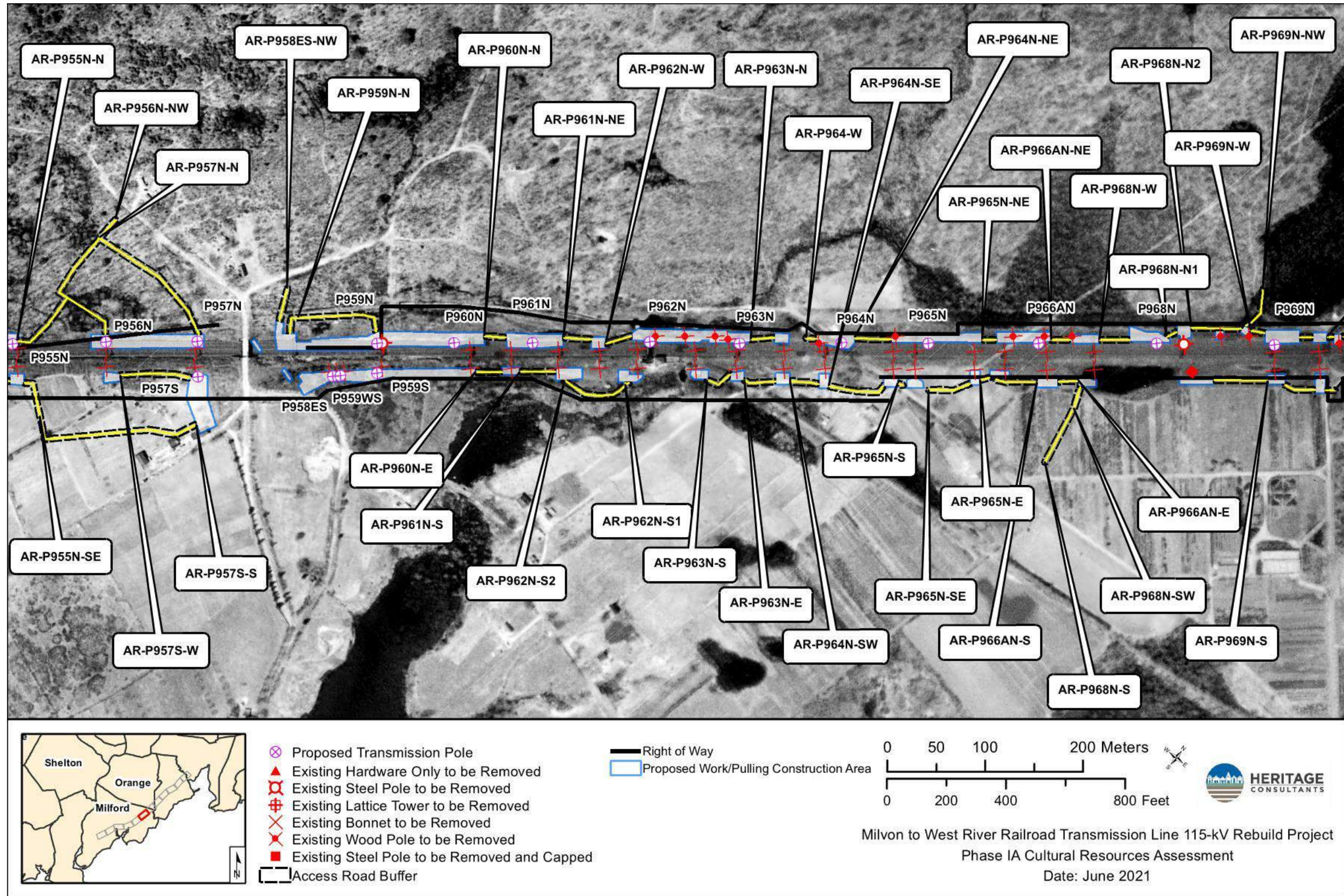


Figure 5; Sheet 6.

Excerpt from a 1934 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

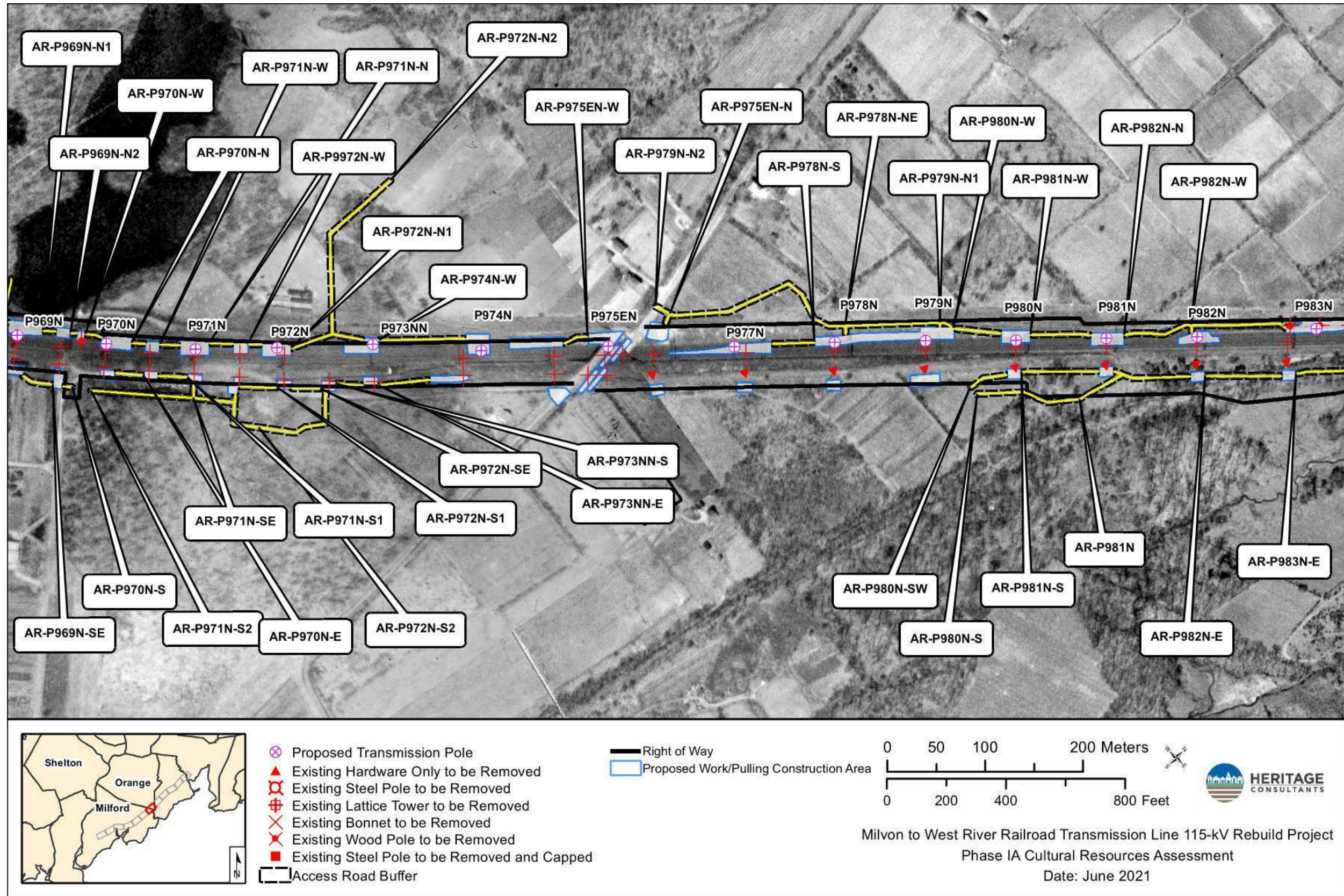


Figure 5; Sheet 7.

Excerpt from a 1934 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

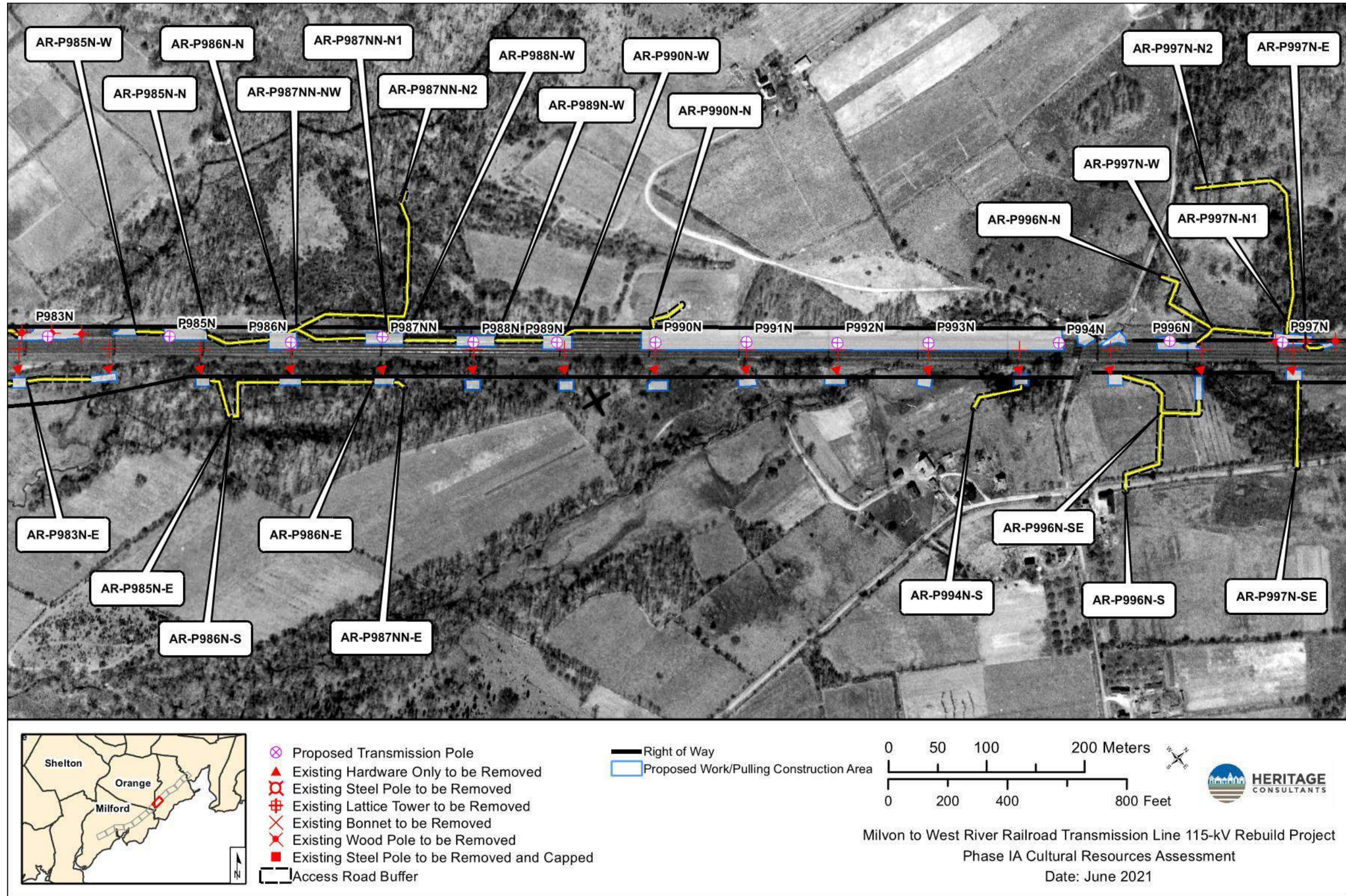


Figure 5; Sheet 8.

Excerpt from a 1934 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

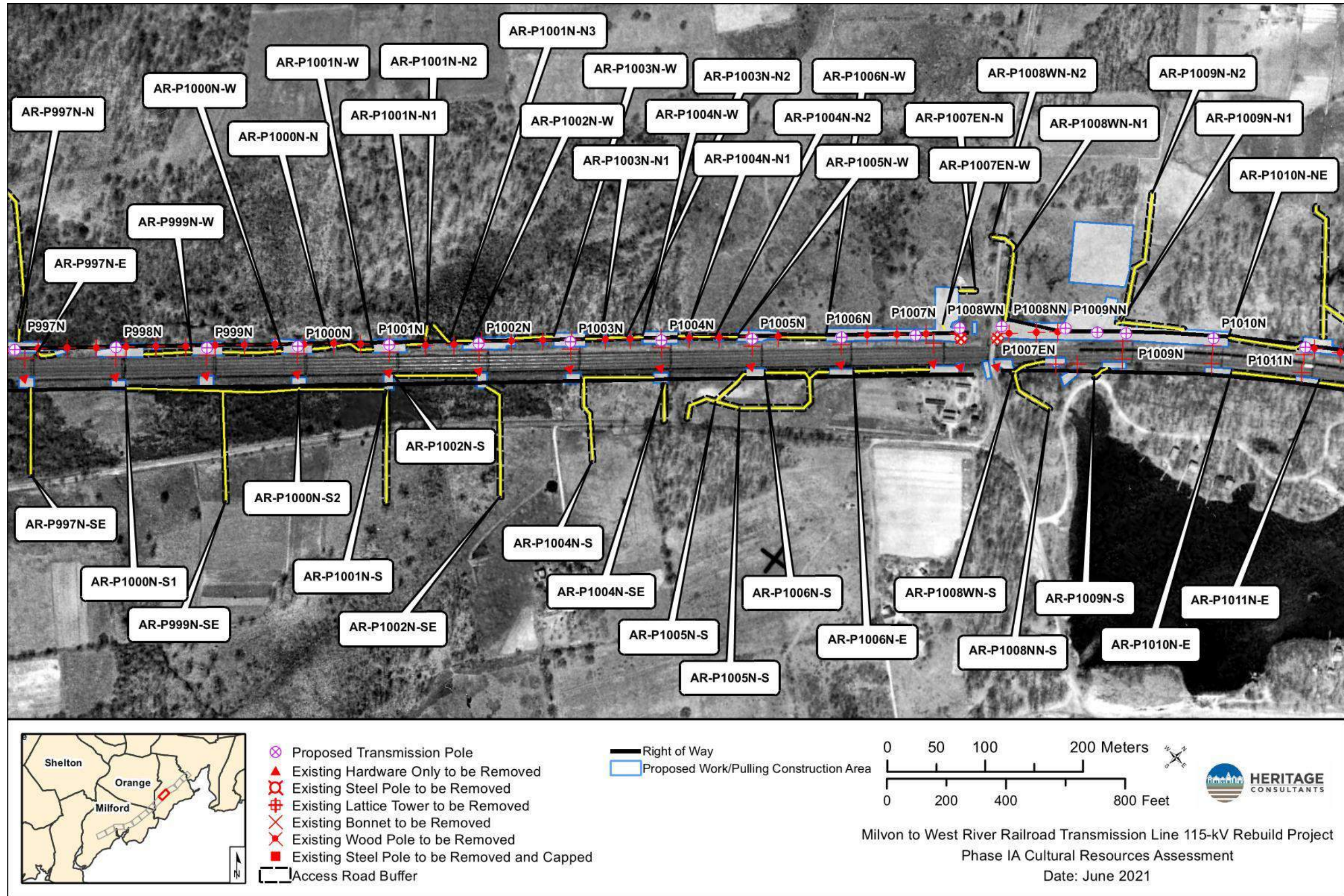


Figure 5; Sheet 9.

Excerpt from a 1934 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.



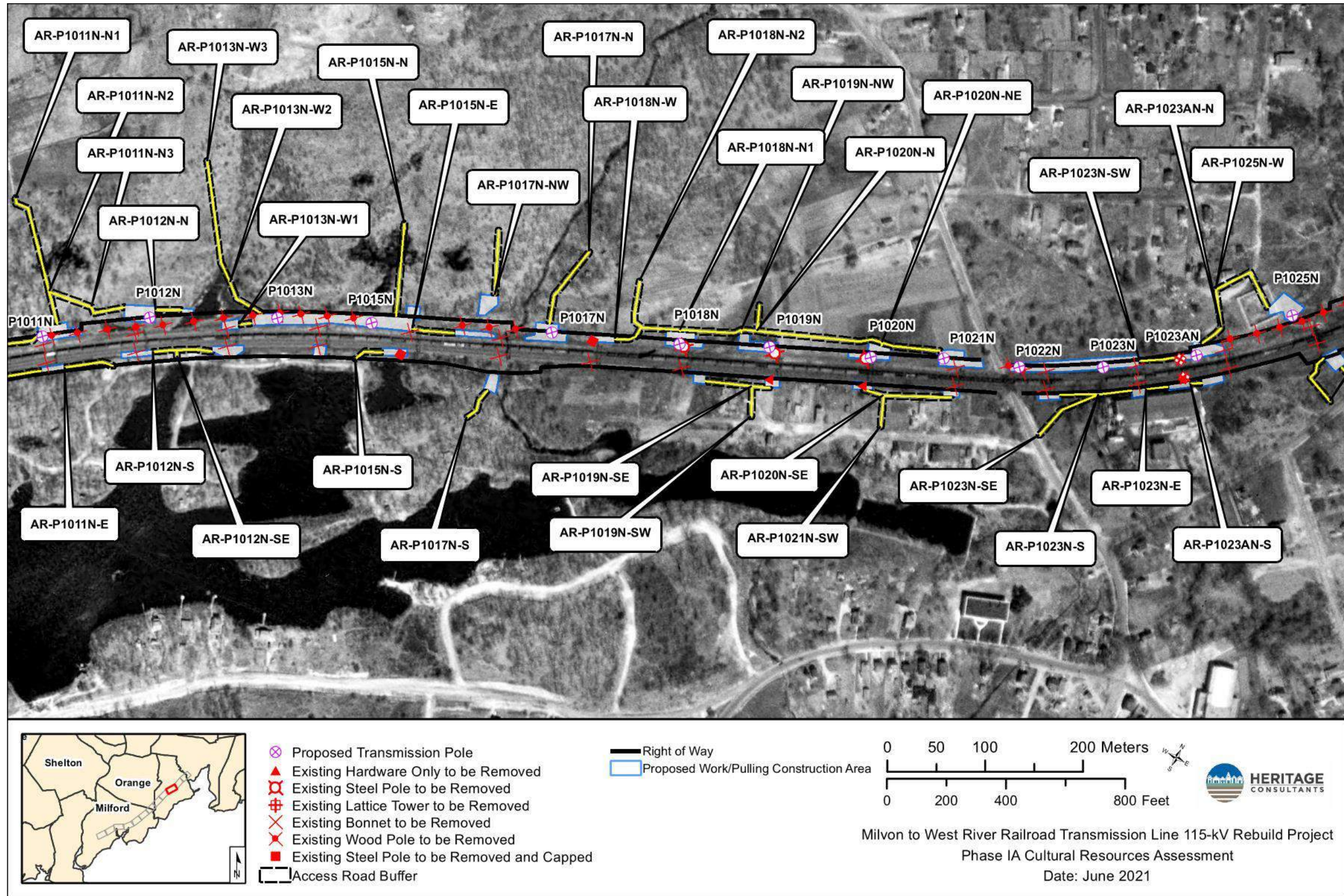


Figure 5; Sheet 10. Excerpt from a 1934 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

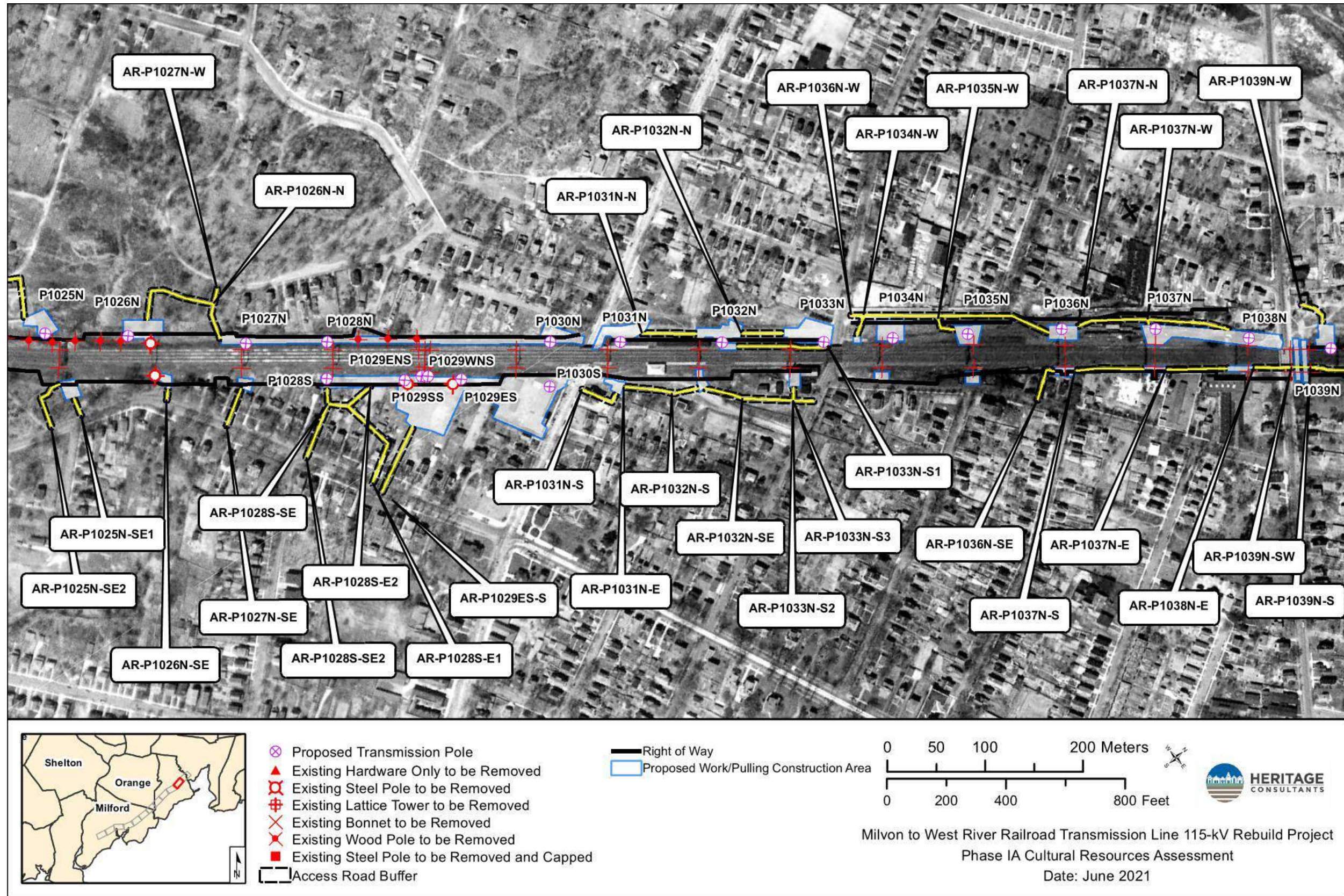


Figure 5; Sheet 11. Excerpt from a 1934 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

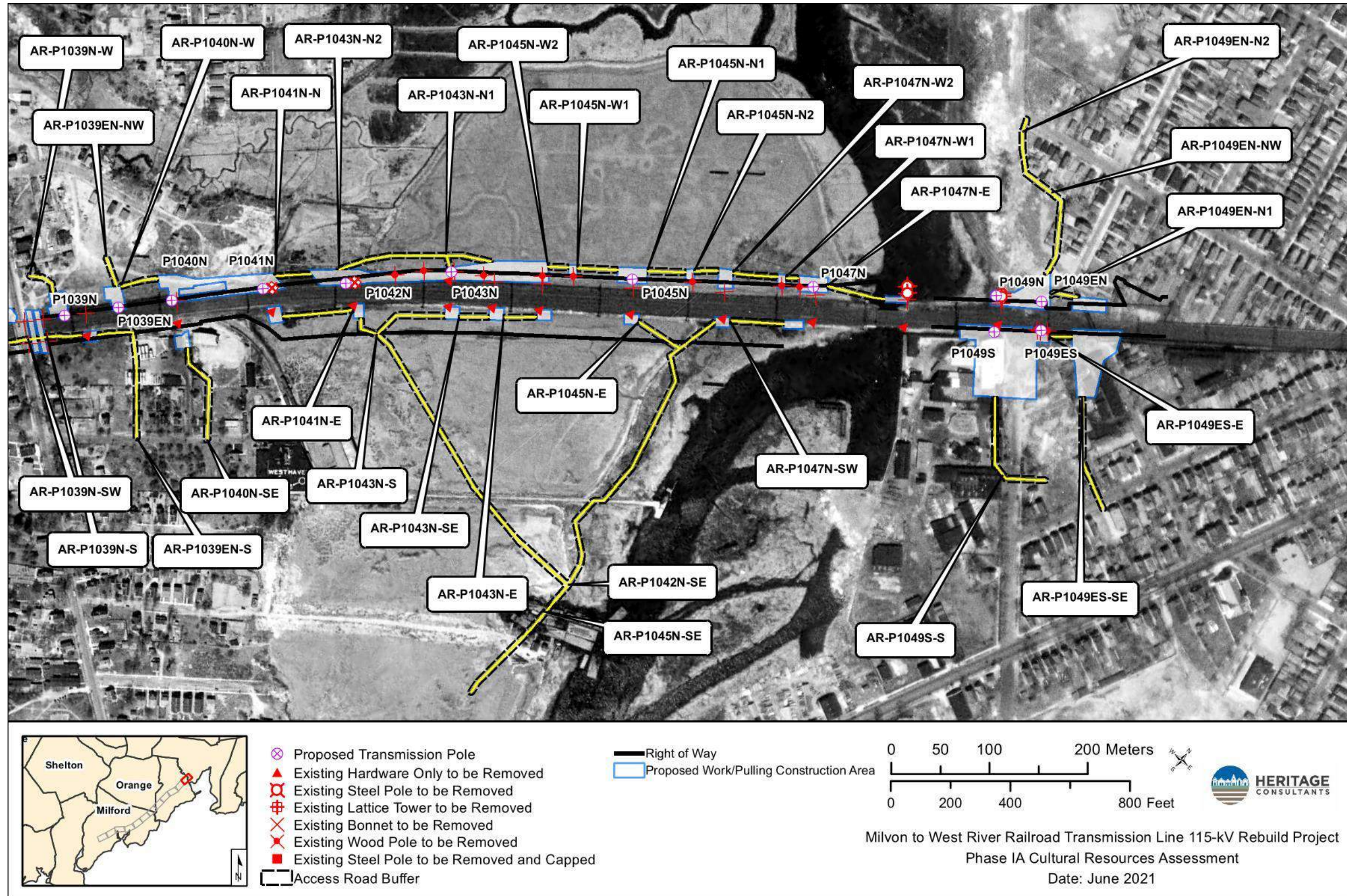


Figure 5; Sheet 12. Excerpt from a 1934 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

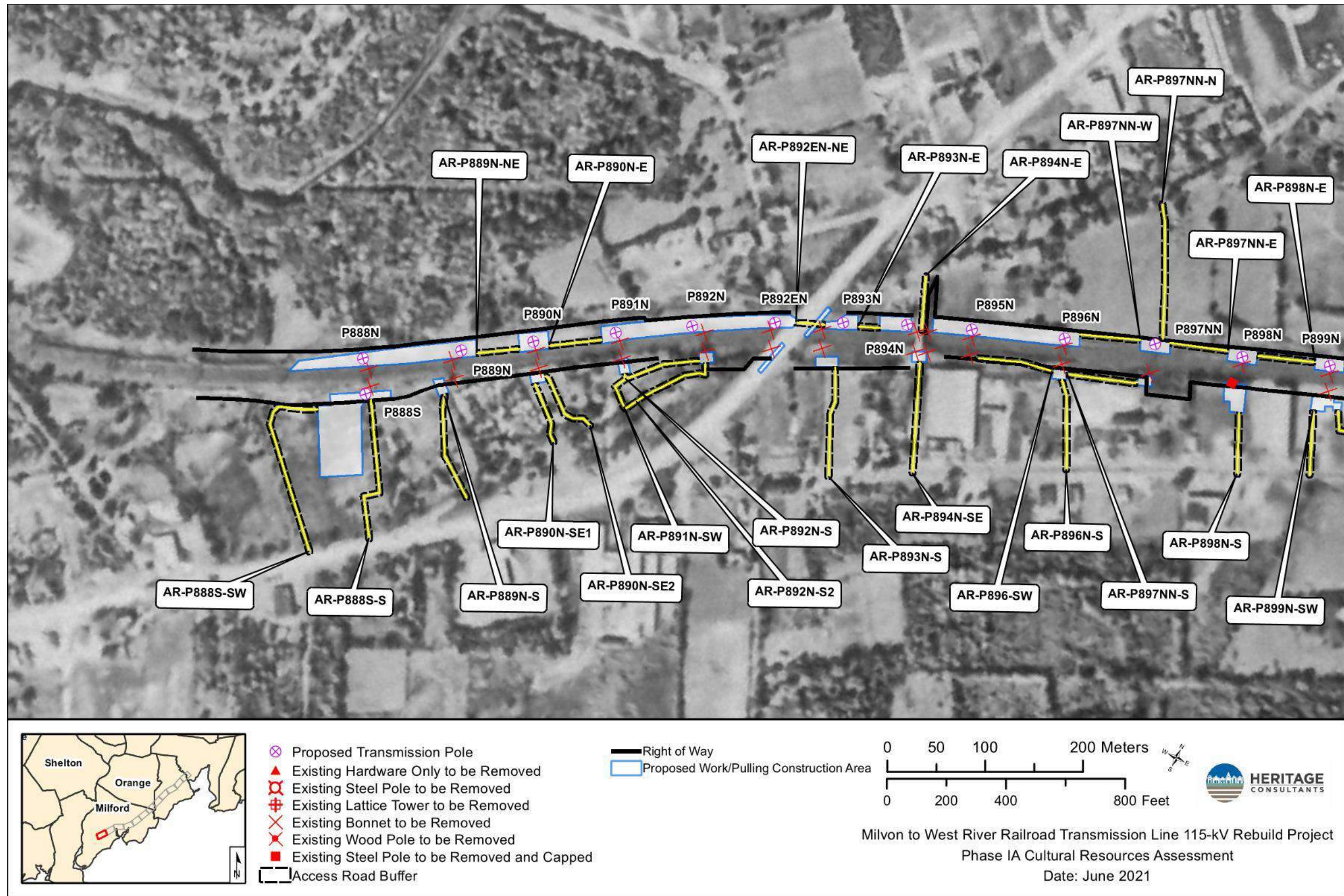


Figure 6; Sheet 1. Excerpt from a 1951 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

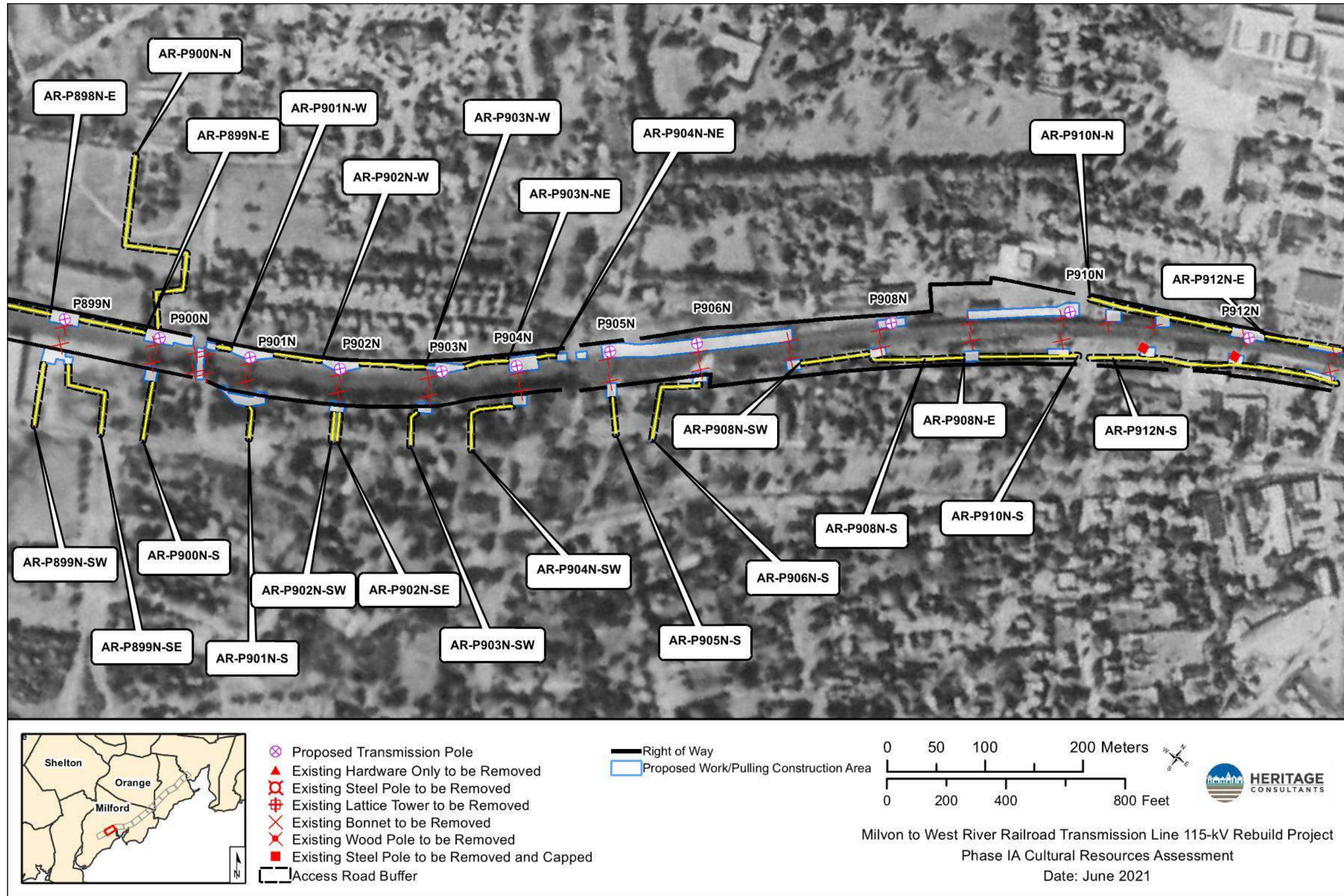


Figure 6; Sheet 2.

Excerpt from a 1951 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

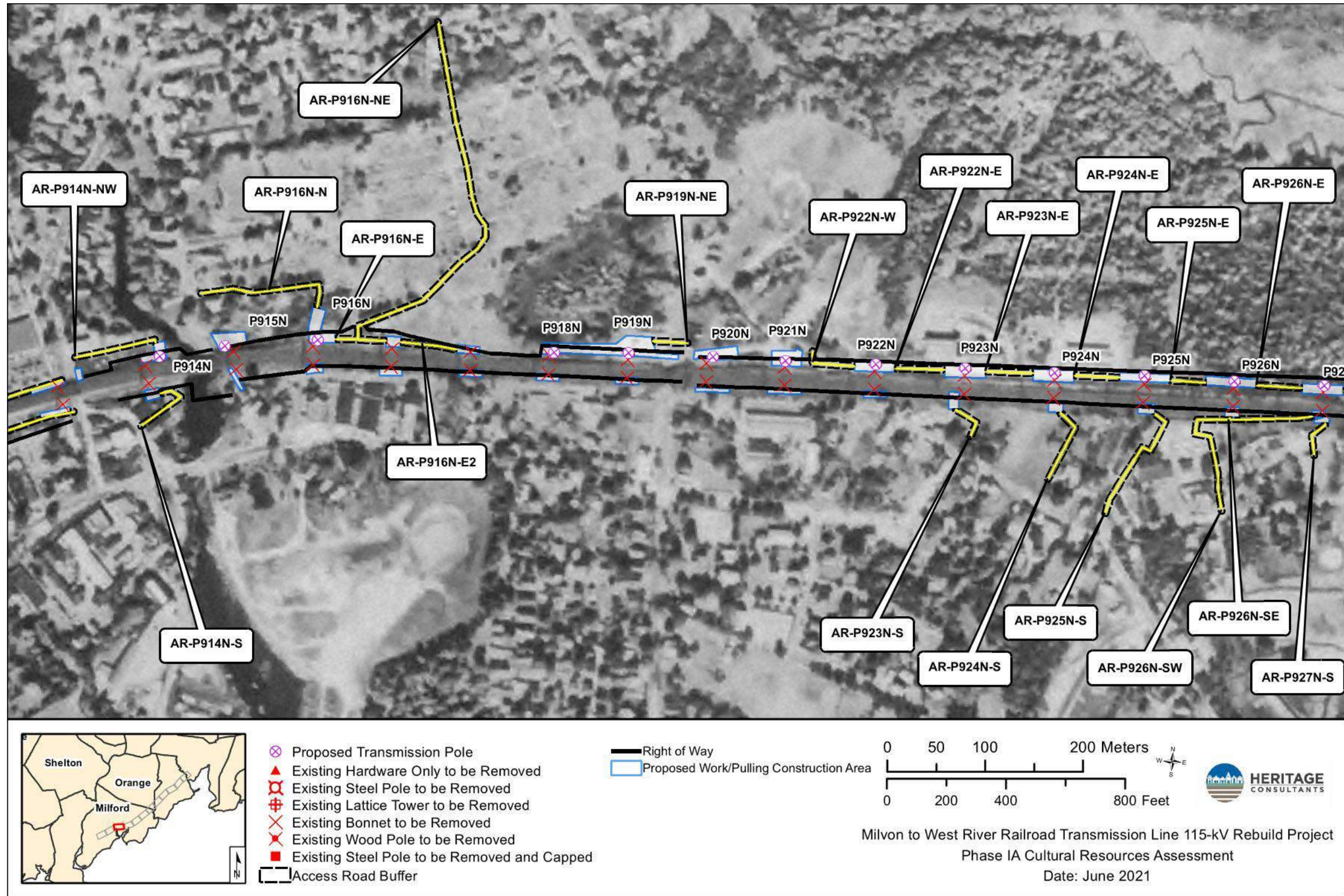


Figure 6; Sheet 3.

Excerpt from a 1951 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

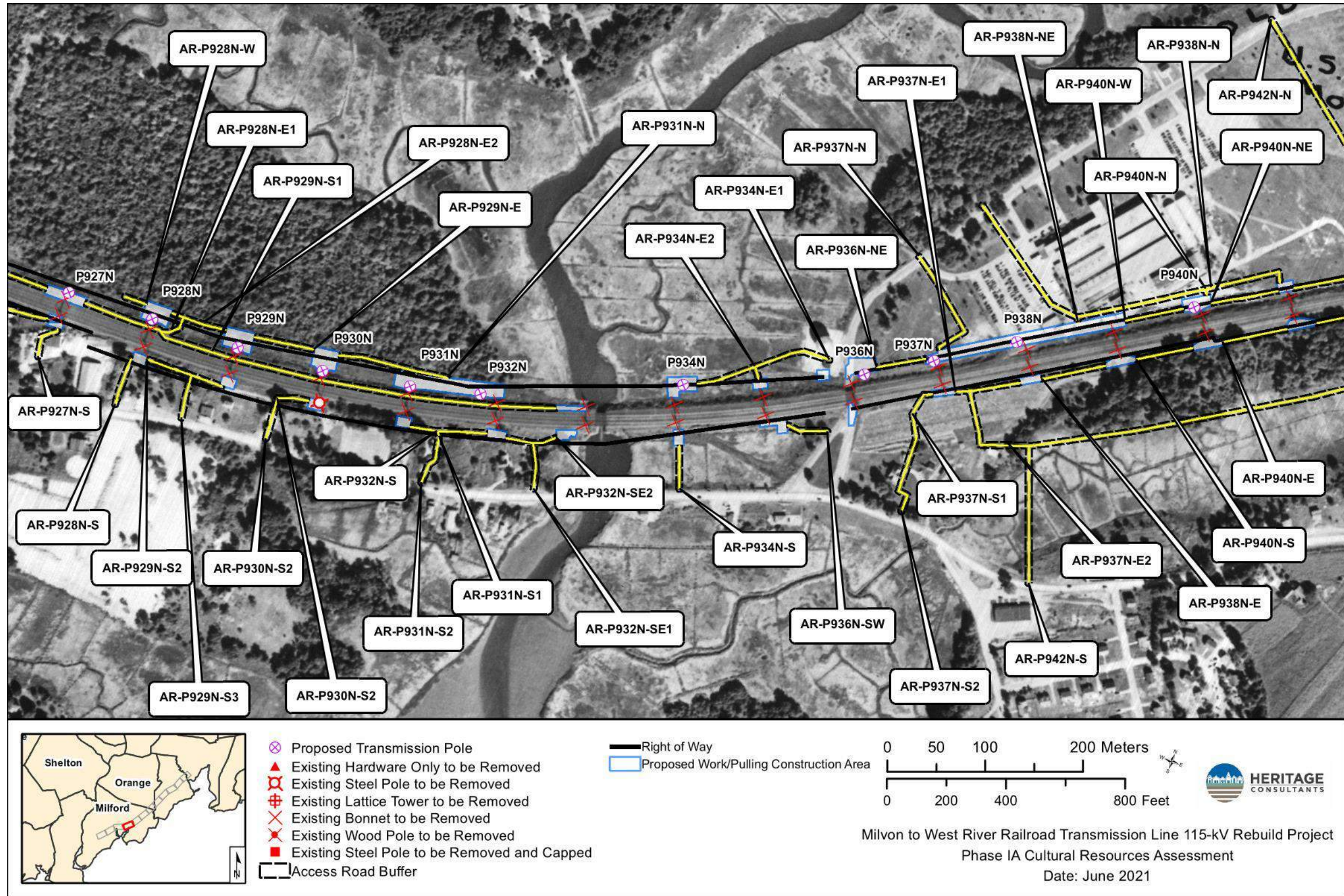


Figure 6; Sheet 4.

Excerpt from a 1951 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

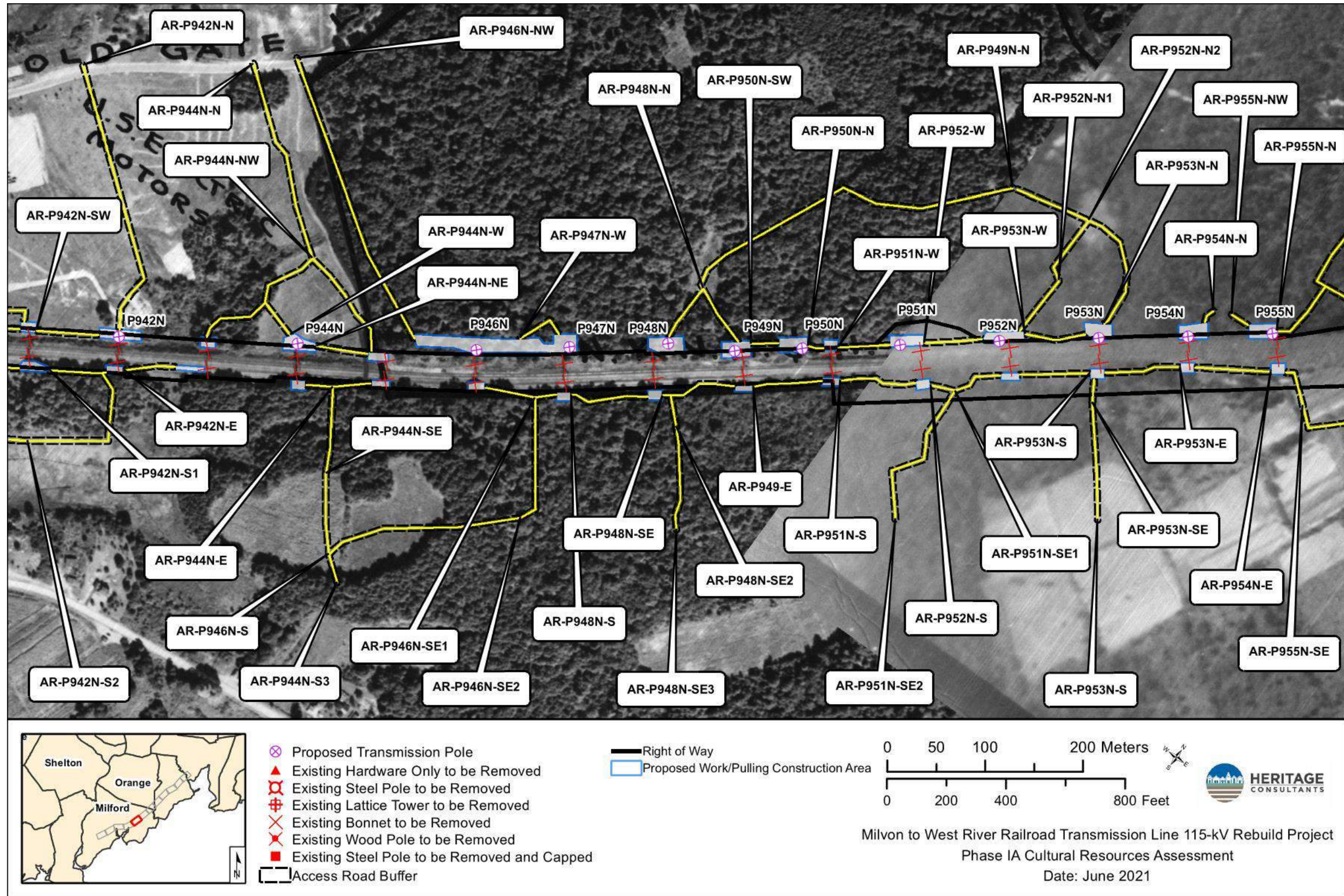


Figure 6; Sheet 5. Excerpt from a 1951 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.



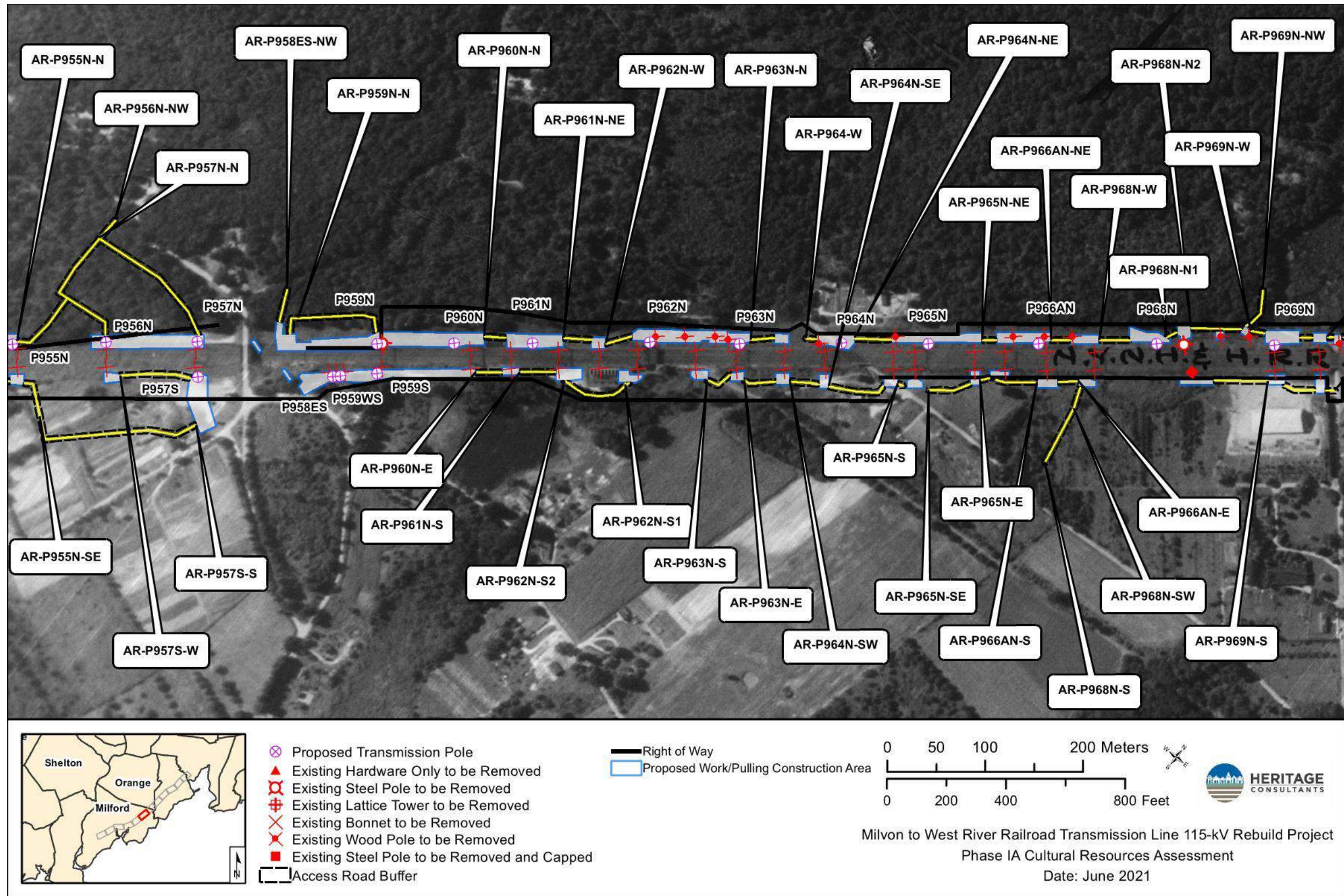


Figure 6; Sheet 6. Excerpt from a 1951 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

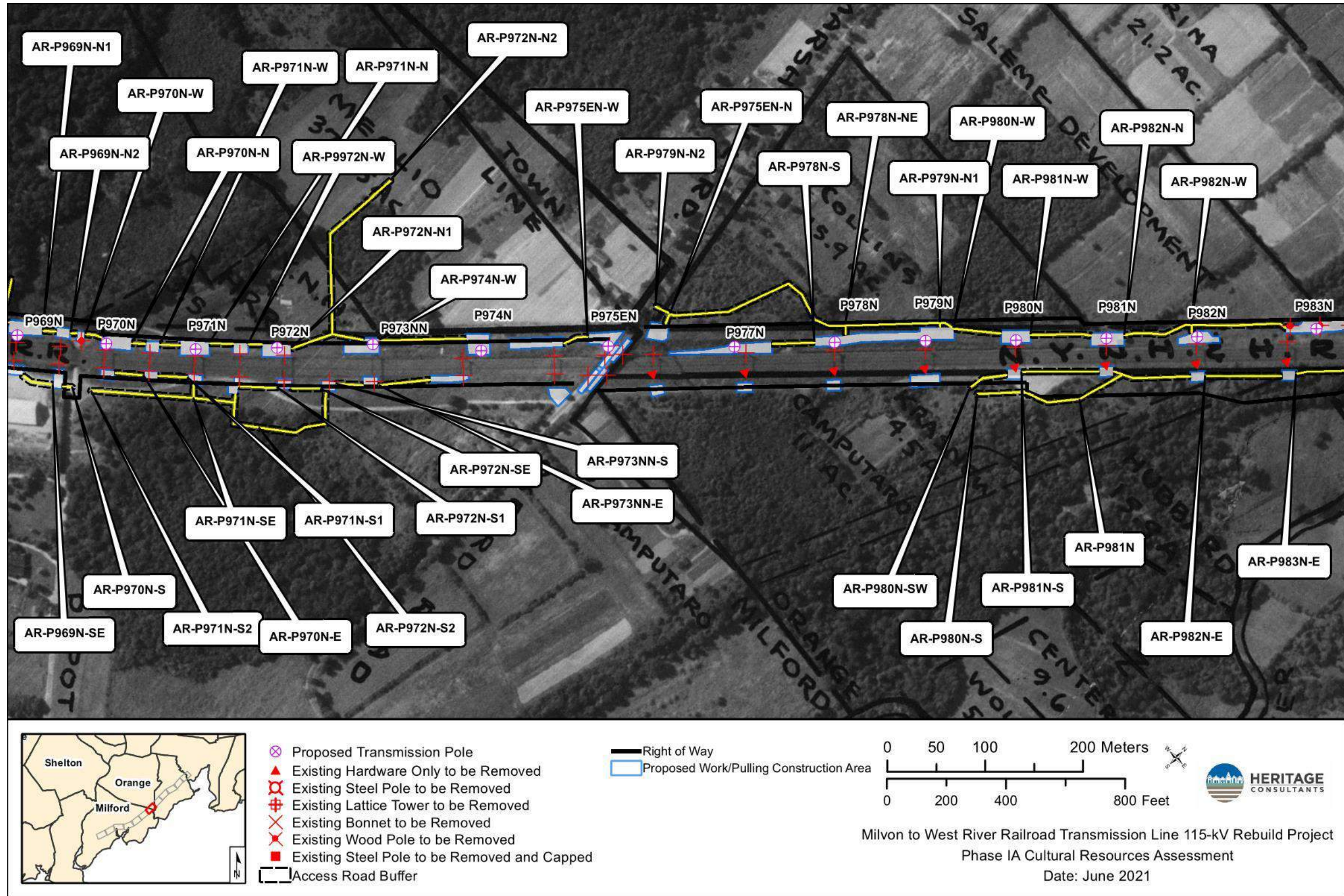


Figure 6; Sheet 7.

Excerpt from a 1951 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

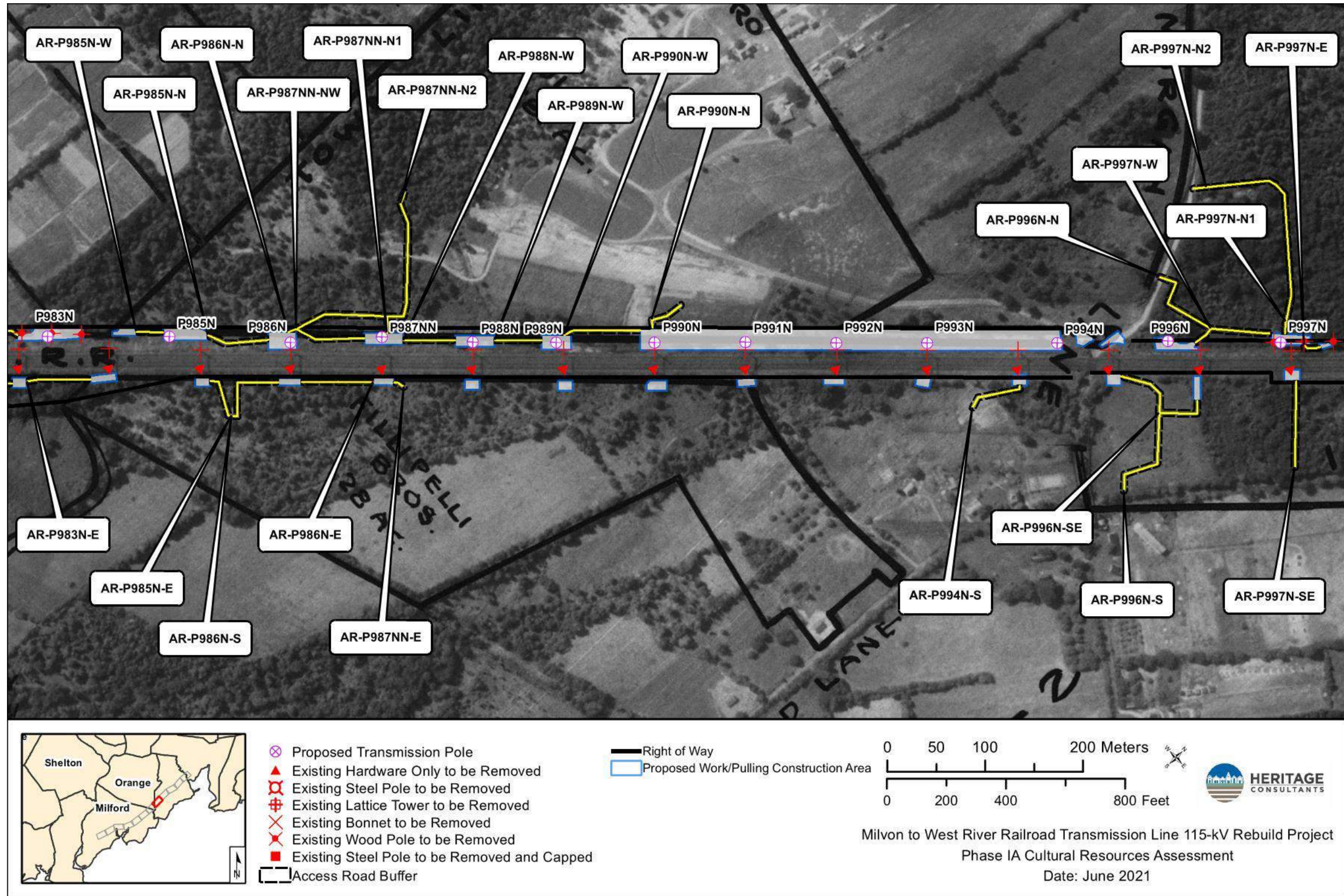


Figure 6; Sheet 8.

Excerpt from a 1951 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

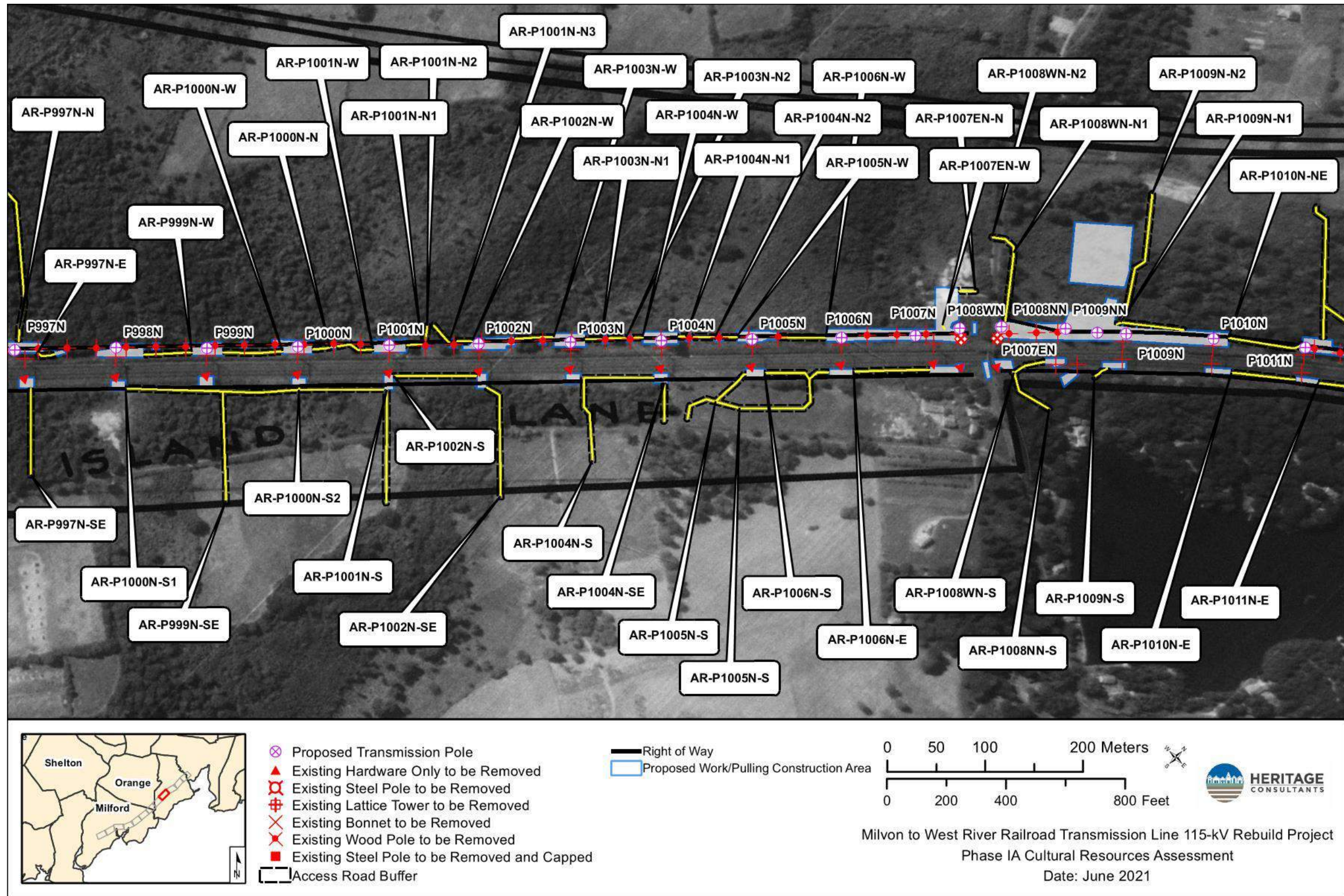


Figure 6; Sheet 9. Excerpt from a 1951 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

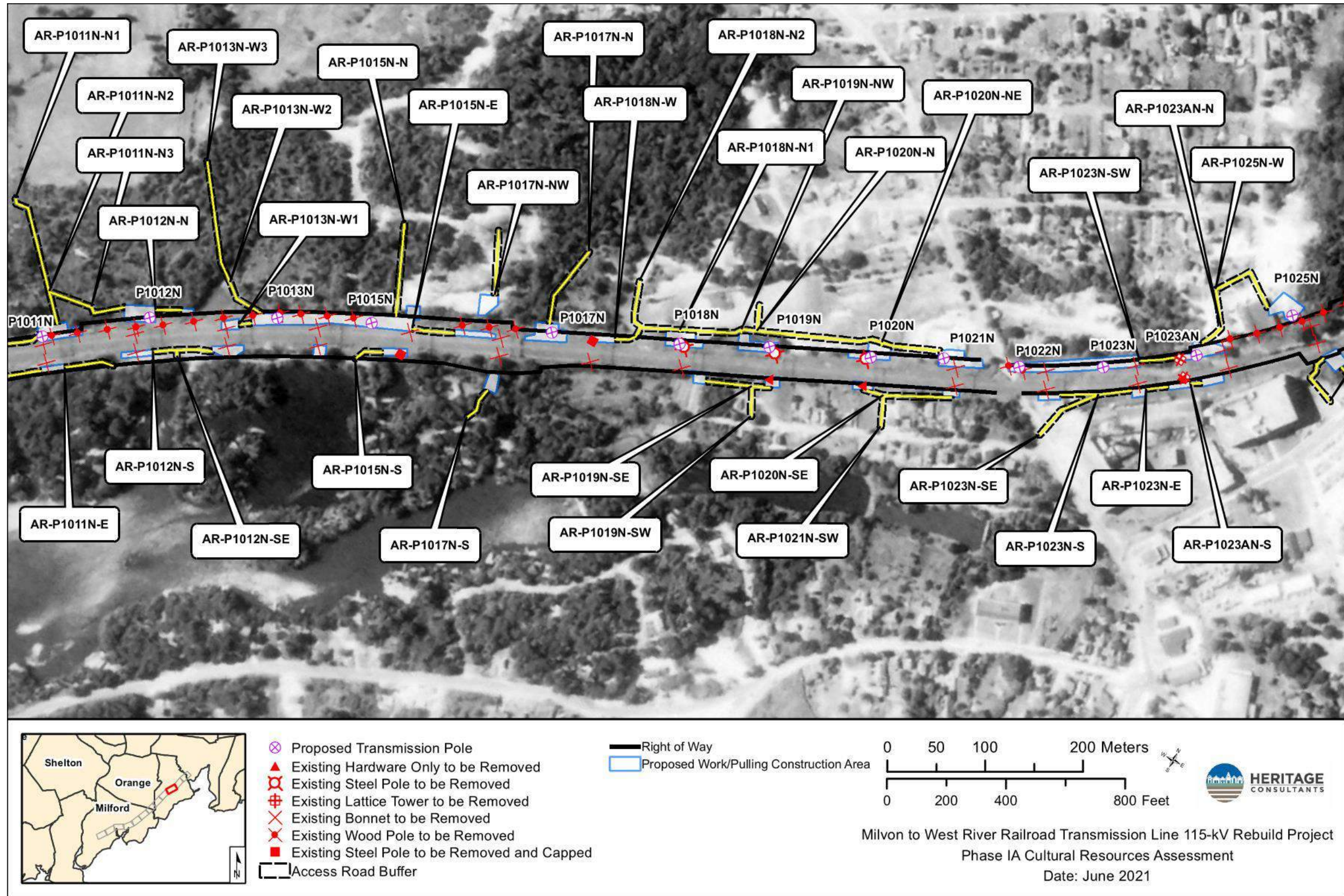


Figure 6; Sheet 10. Excerpt from a 1951 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

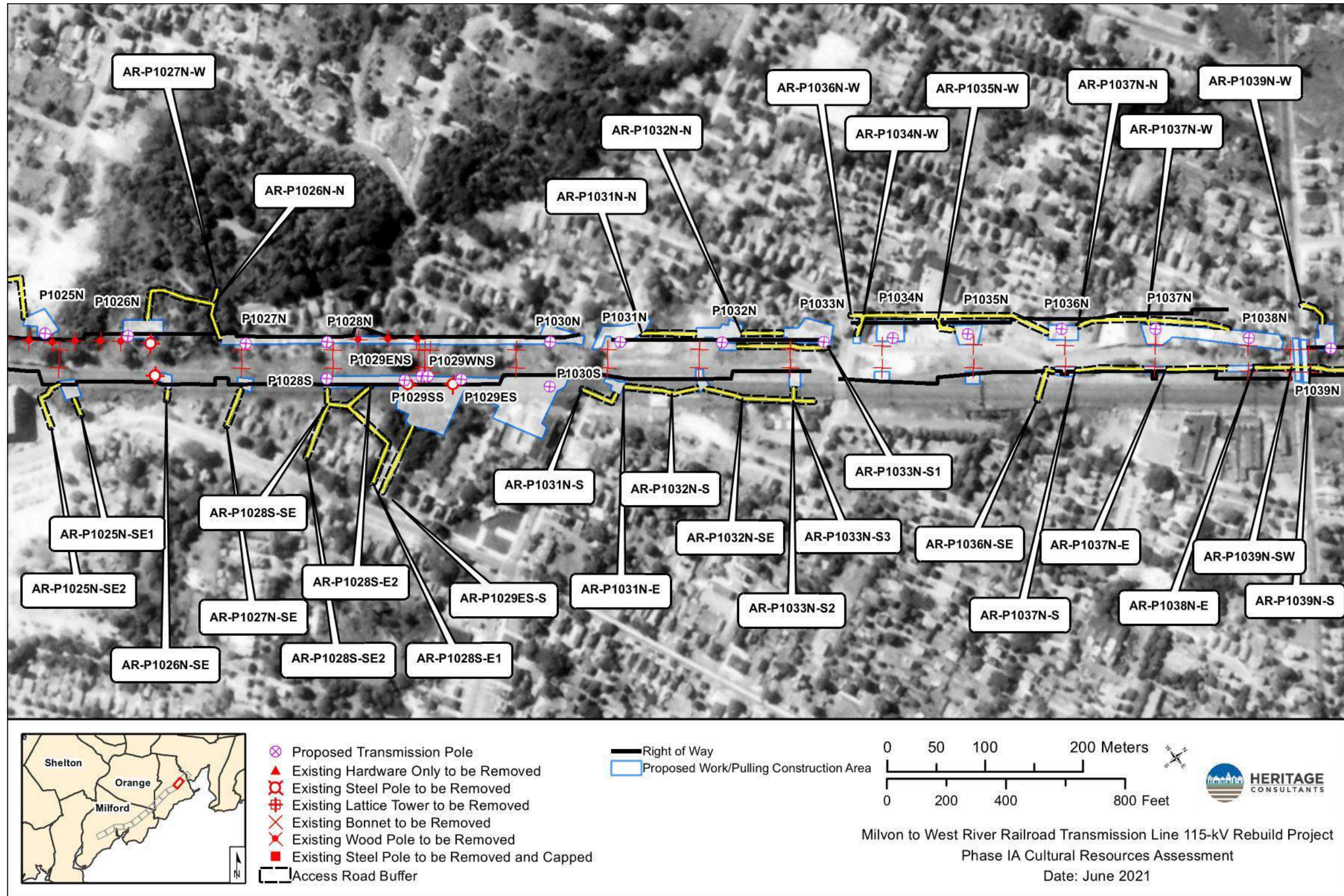


Figure 6; Sheet 11. Excerpt from a 1951 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

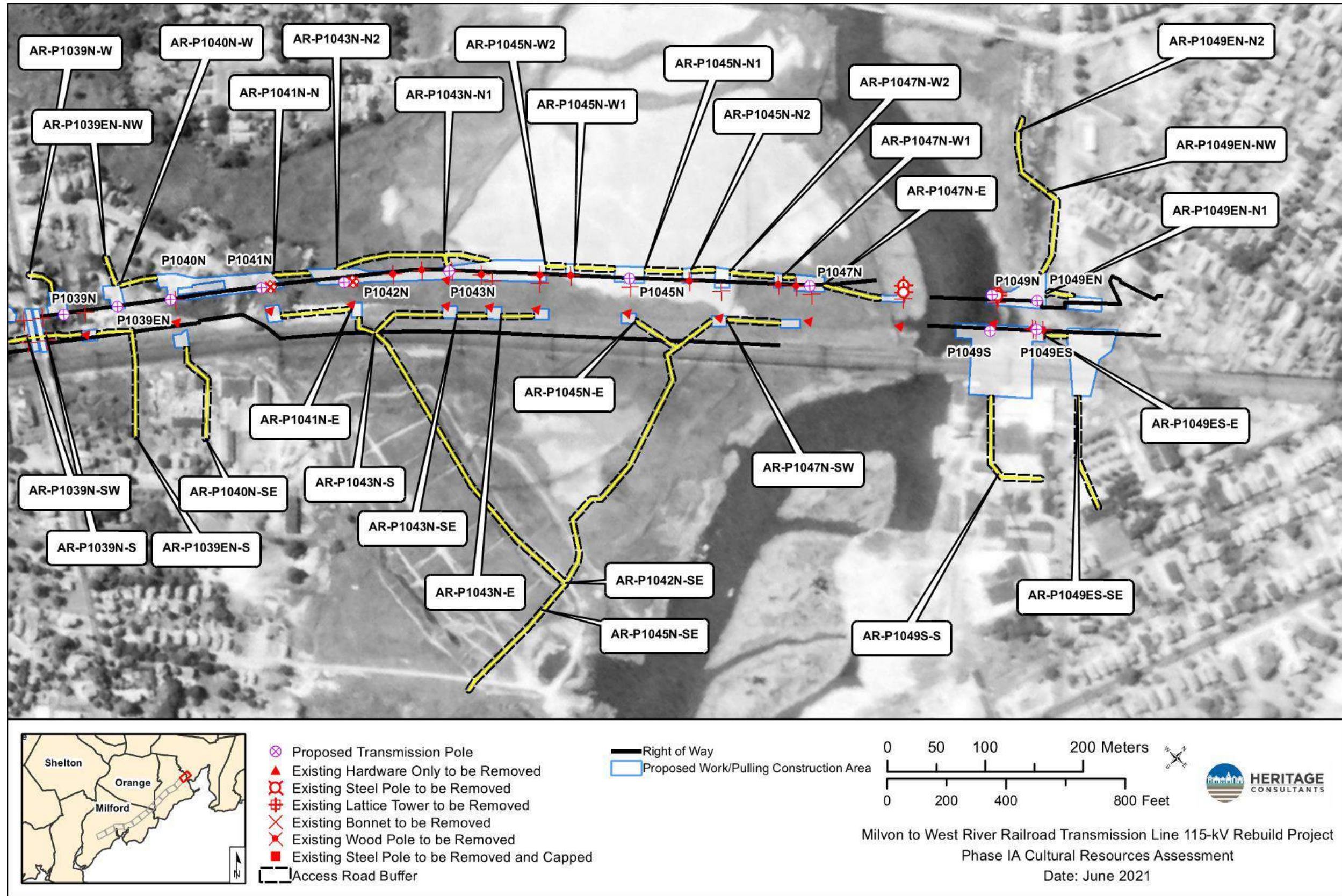


Figure 6; Sheet 12. Excerpt from a 1951 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

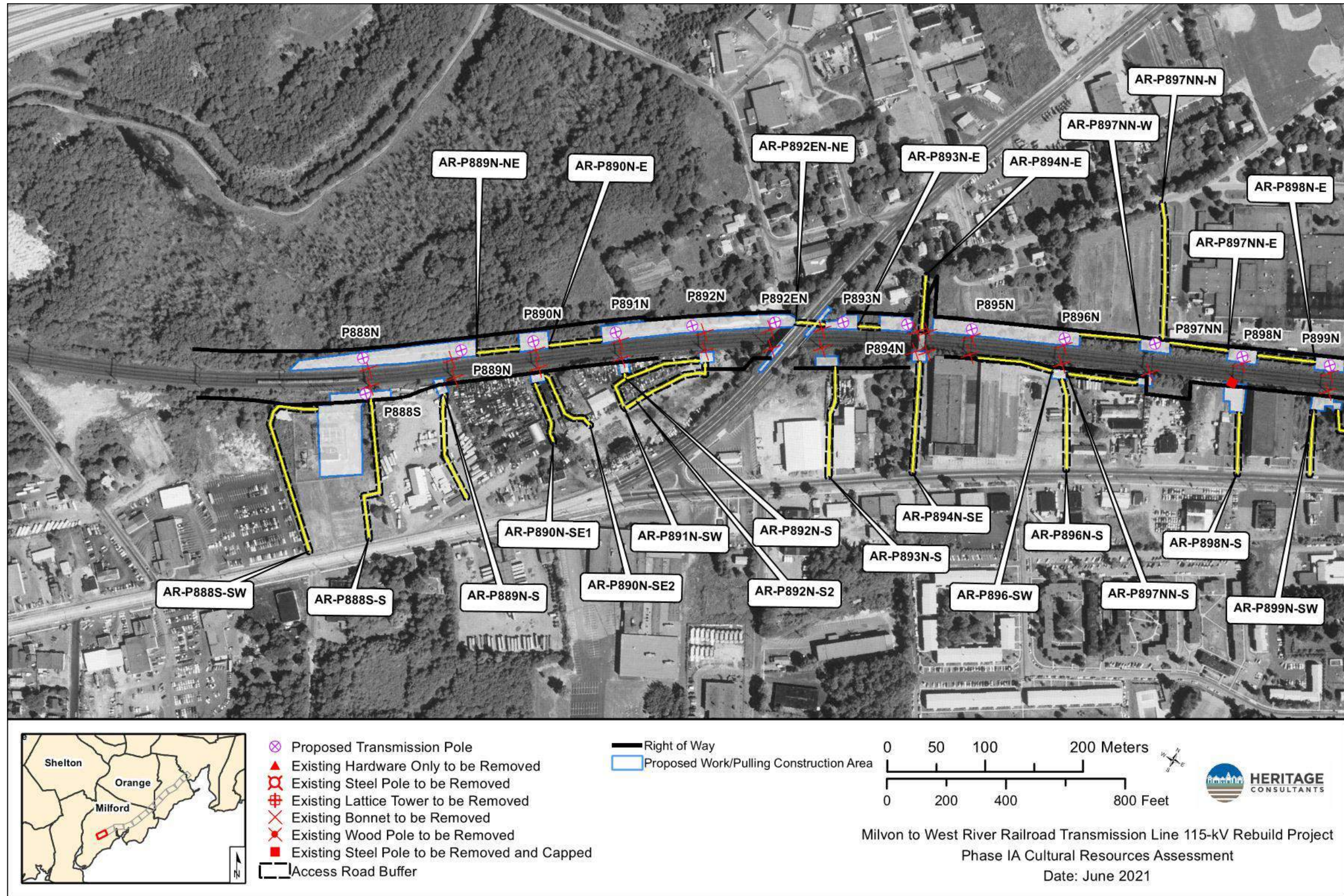


Figure 7; Sheet 1.

Excerpt from a 1974 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.



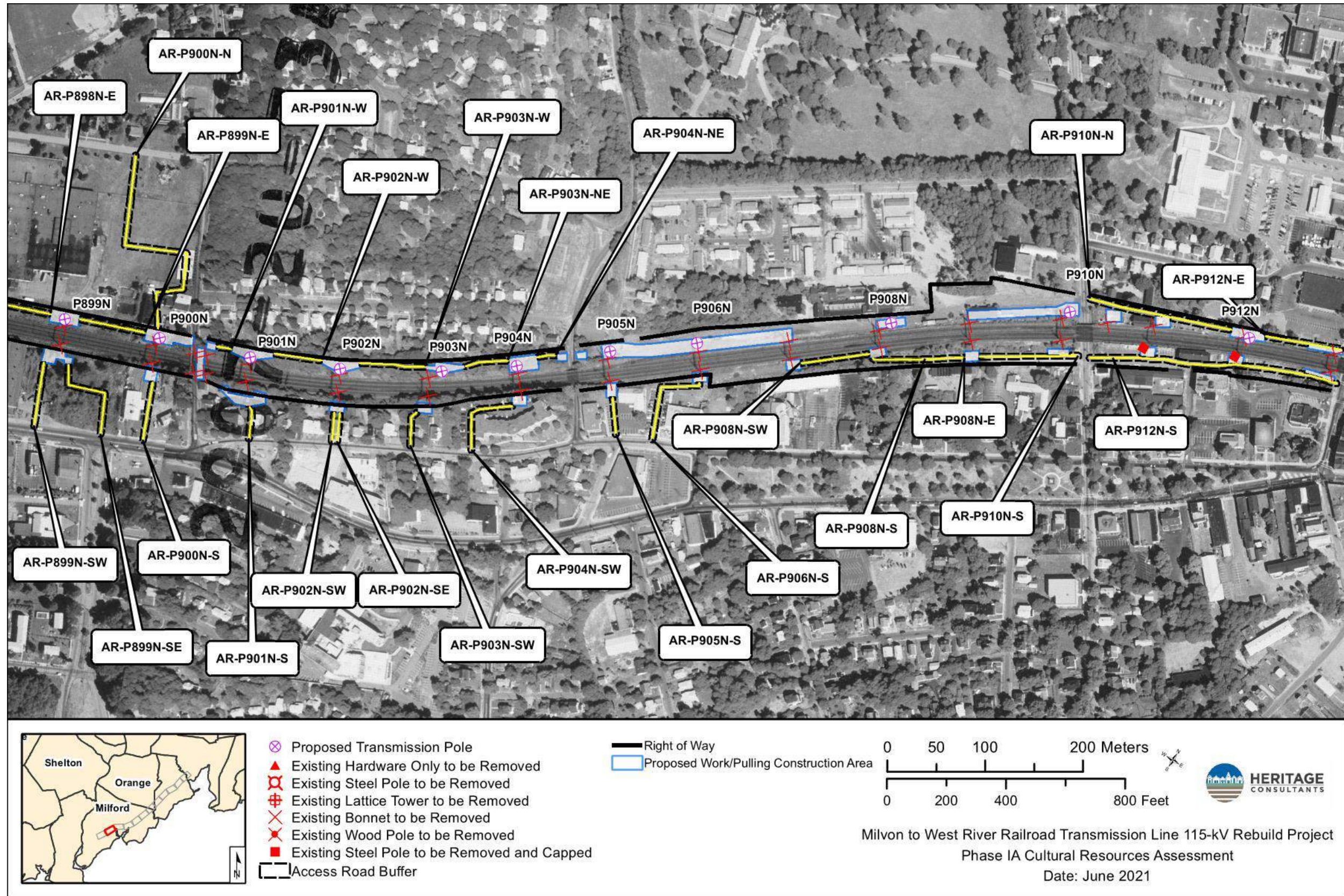


Figure 7; Sheet 2.

Excerpt from a 1974 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

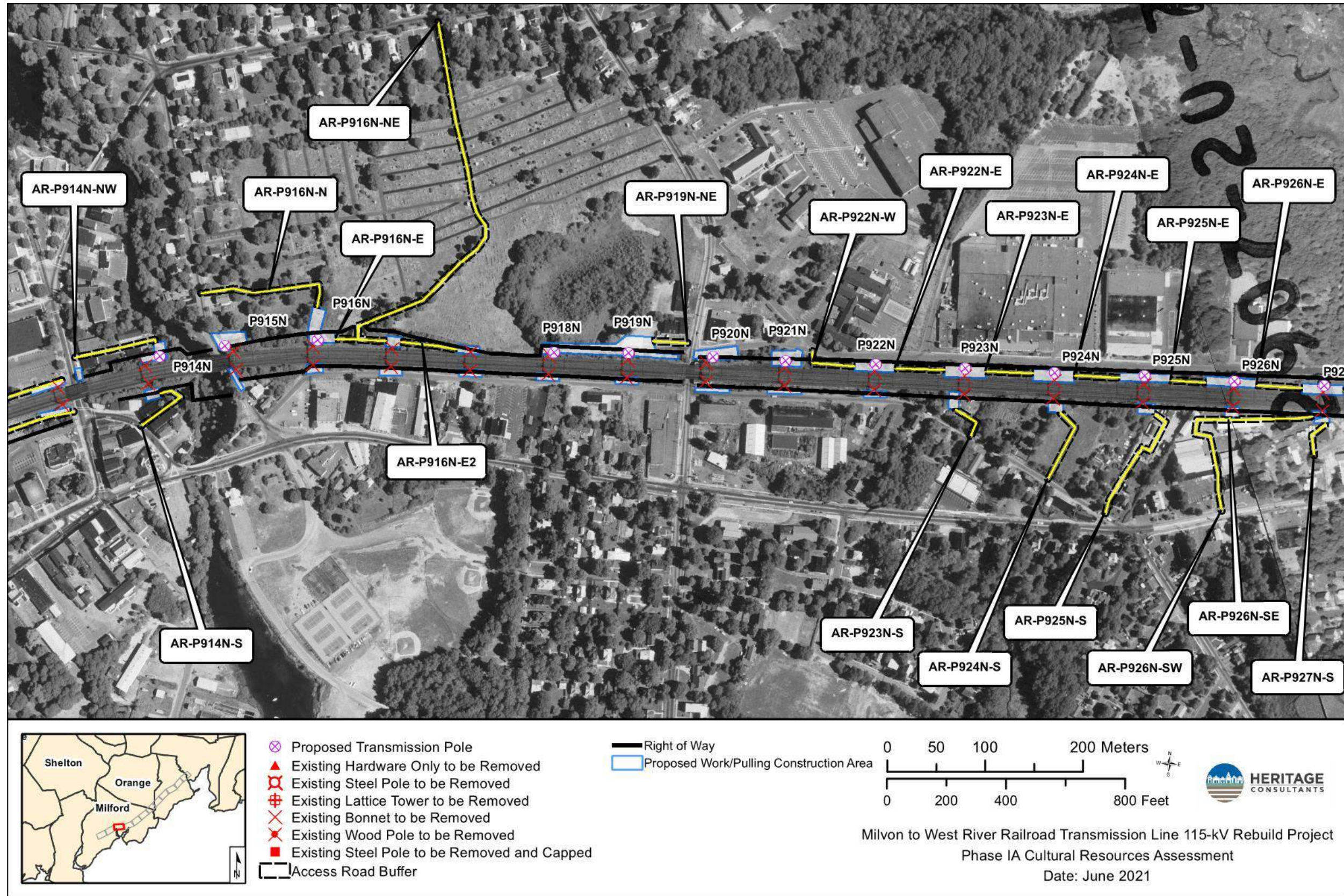


Figure 7; Sheet 3. Excerpt from a 1974 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

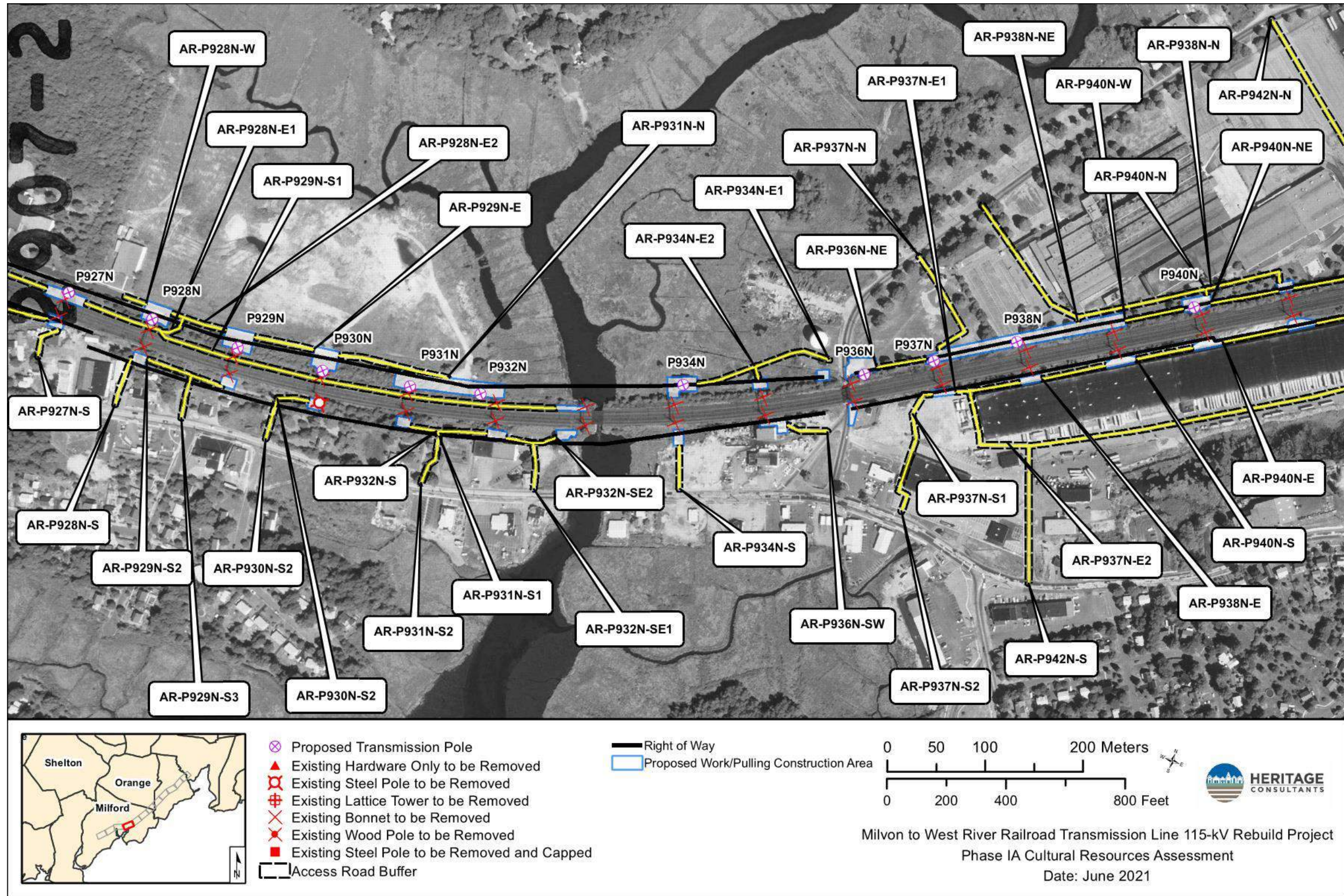


Figure 7; Sheet 4.

Excerpt from a 1974 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

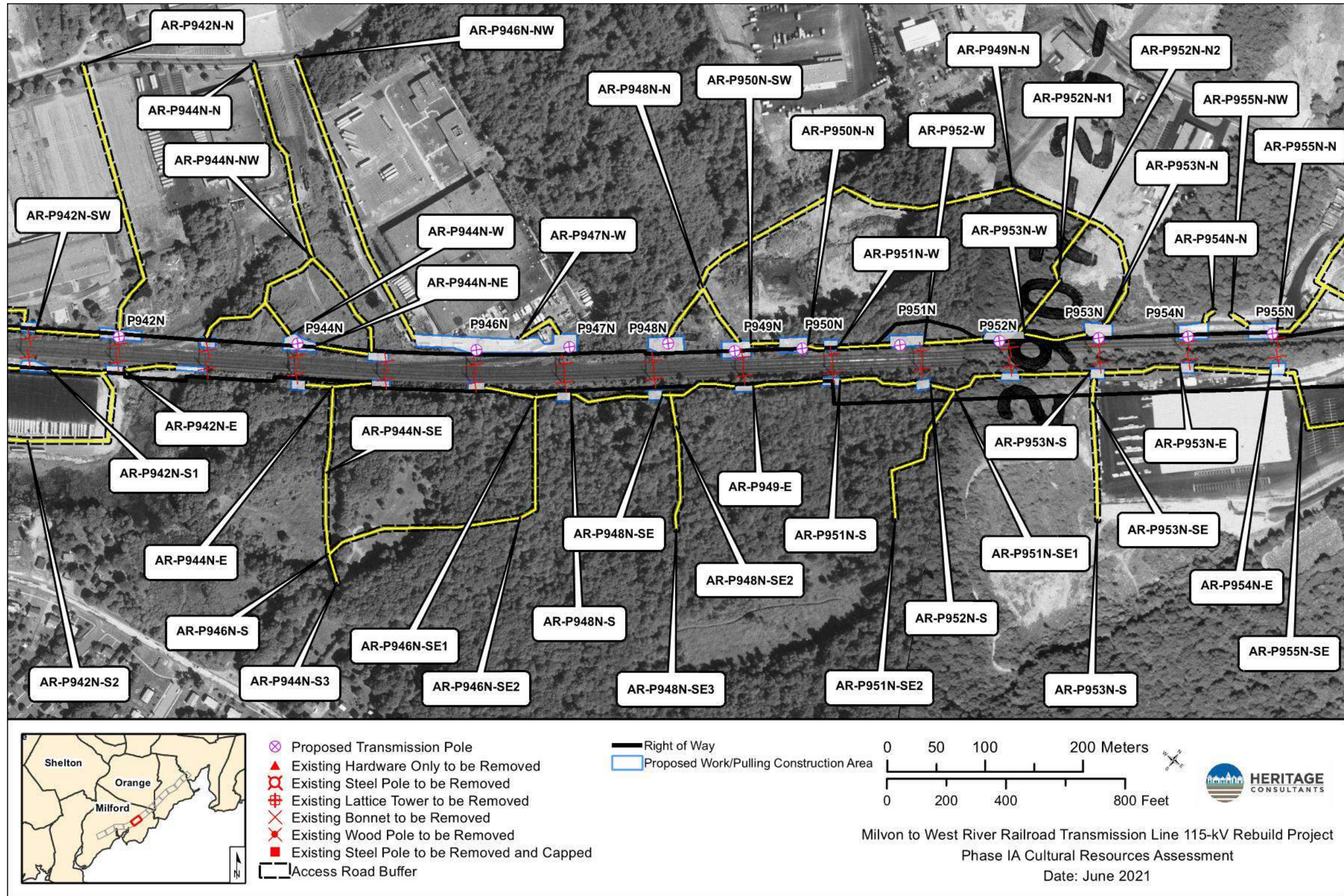


Figure 7; Sheet 5.

Excerpt from a 1974 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

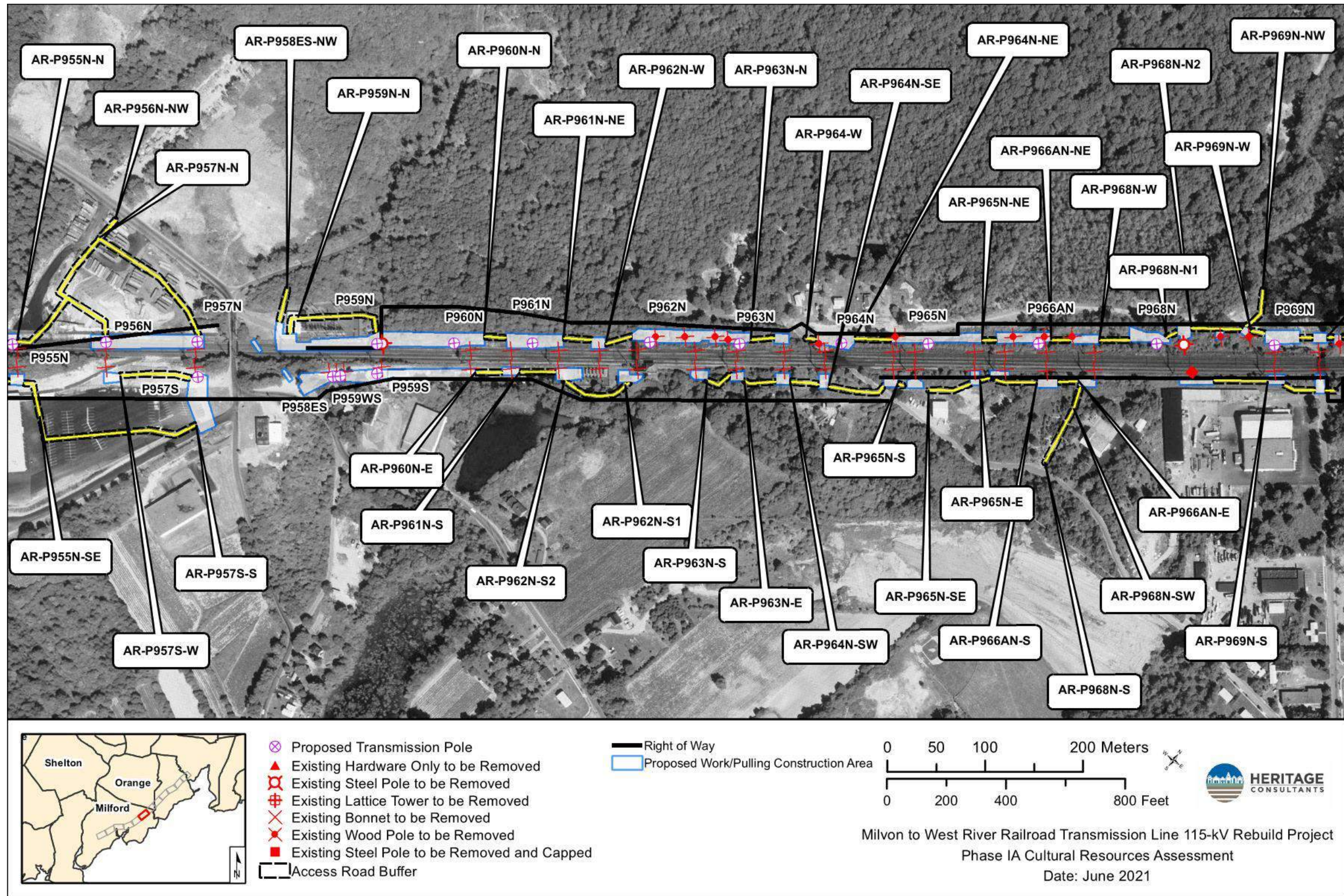


Figure 7; Sheet 6. Excerpt from a 1974 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

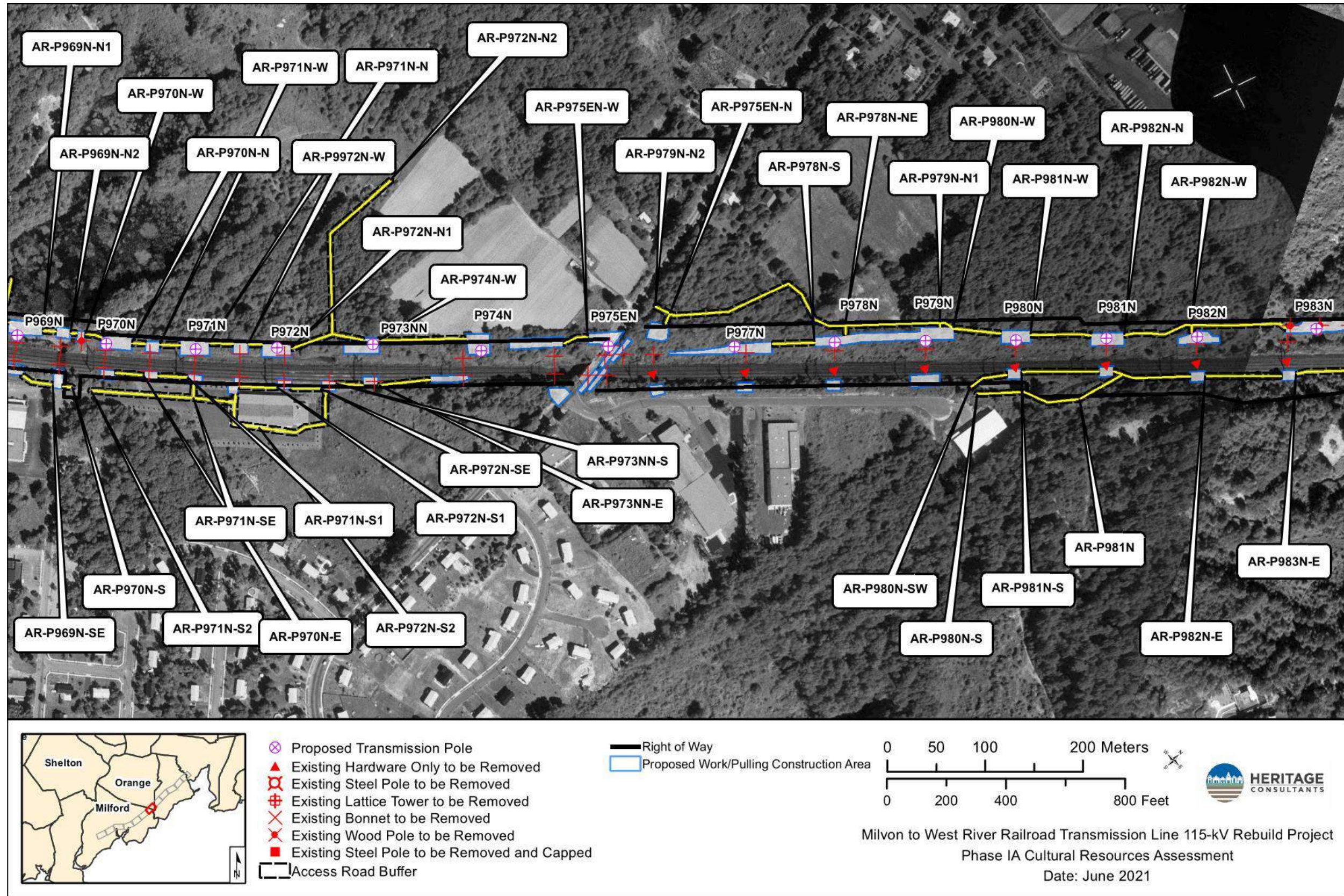


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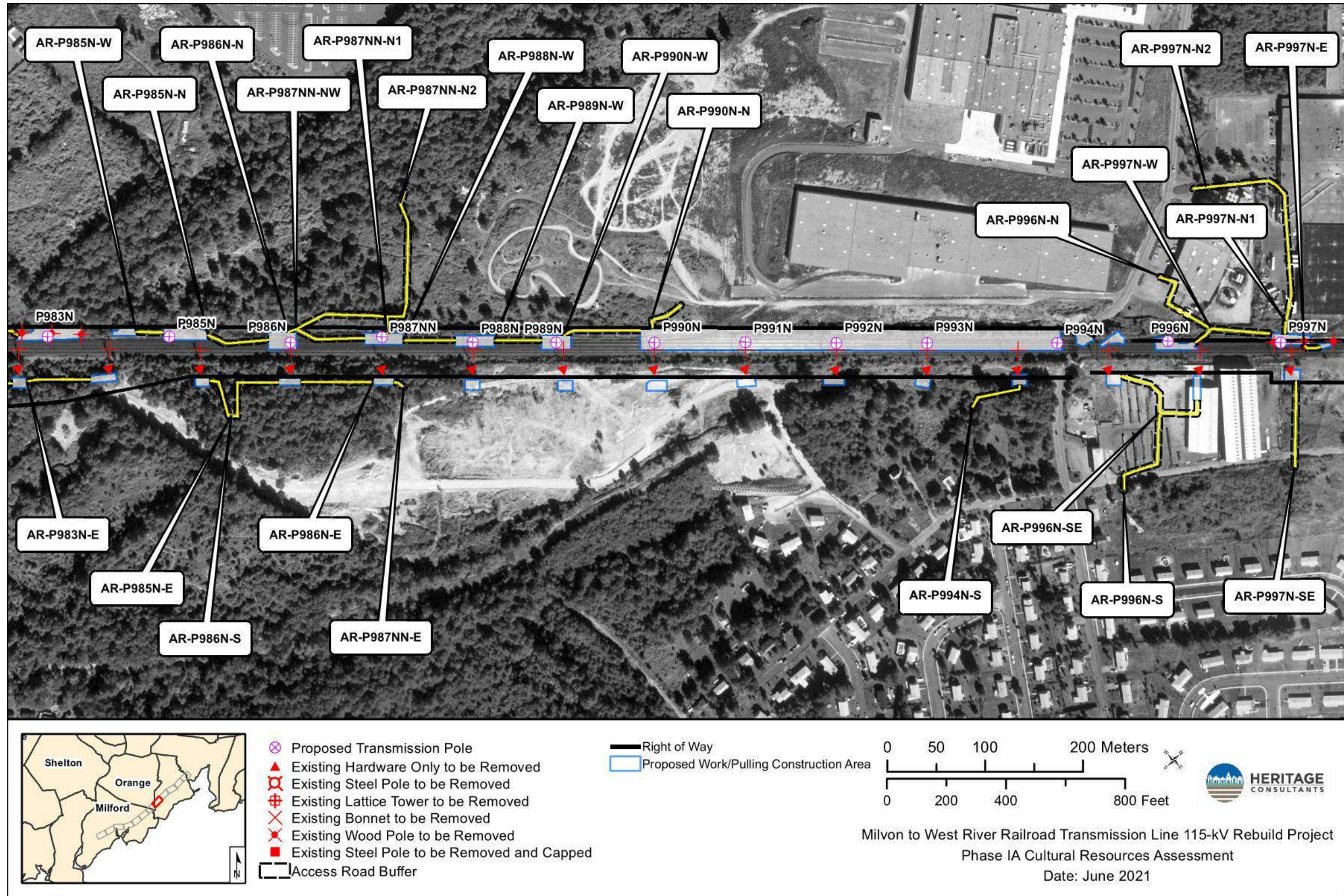


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Excerpt from a 1974 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

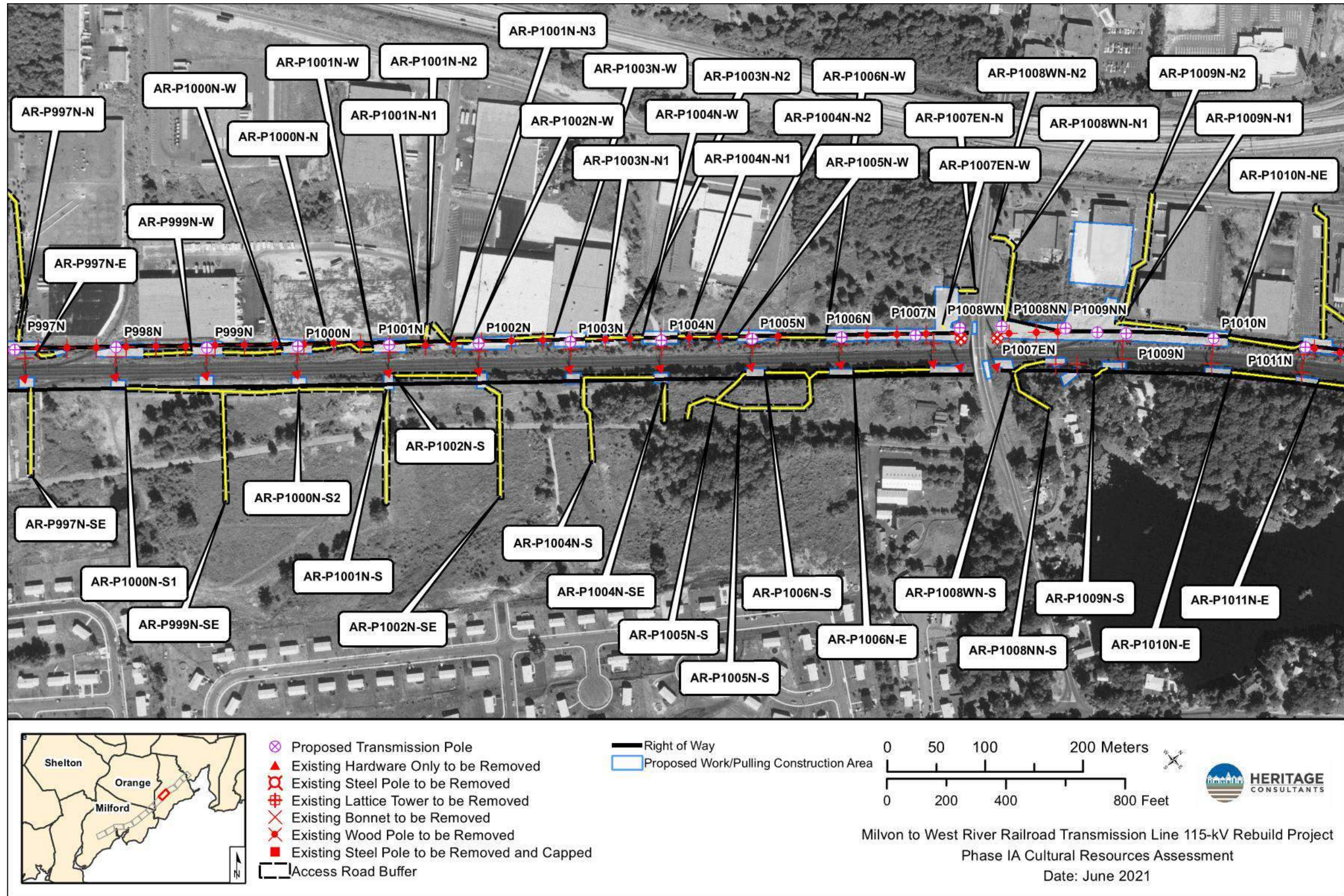


Figure 7; Sheet 9.

Excerpt from a 1974 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.



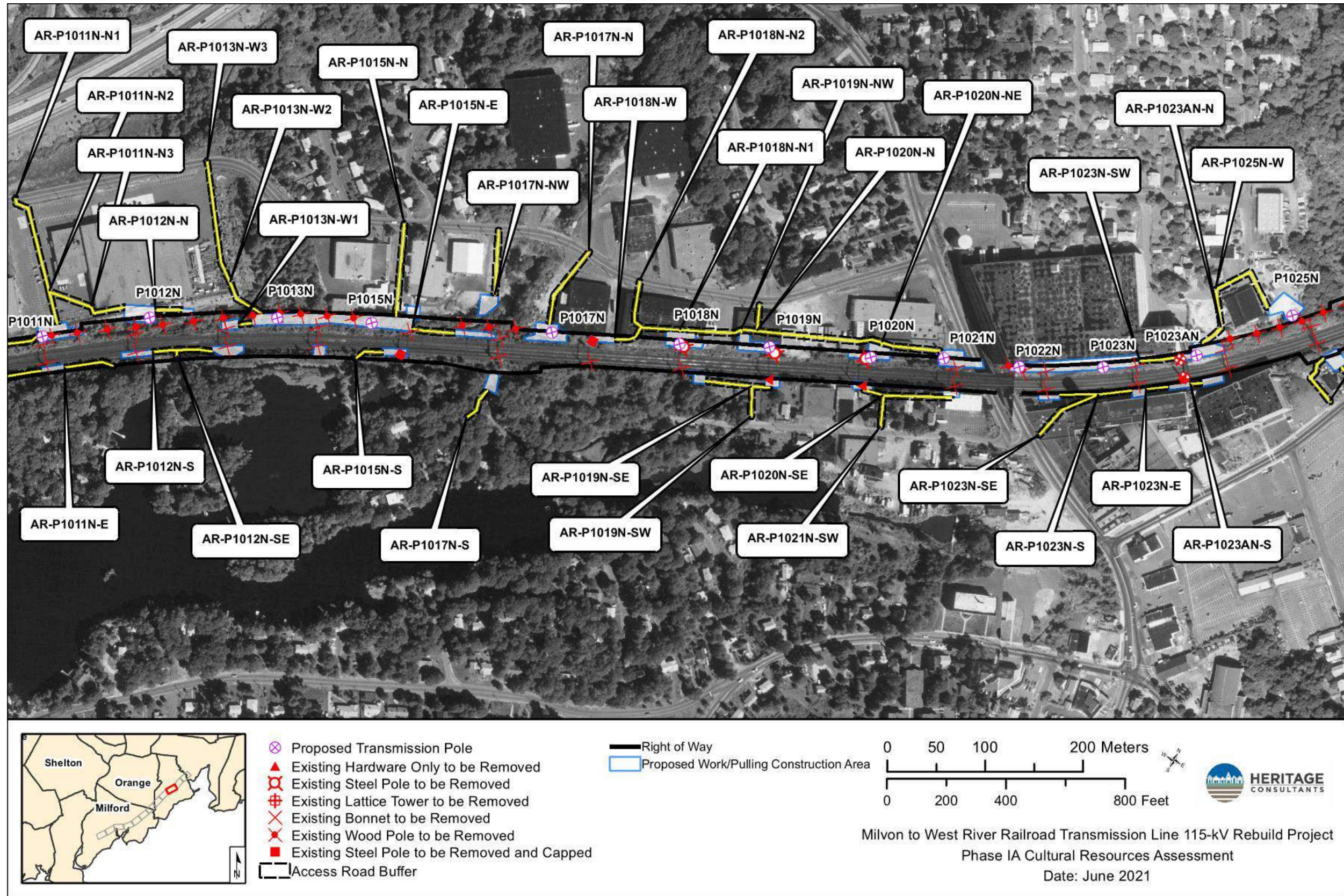


Figure 7; Sheet 10. Excerpt from a 1974 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

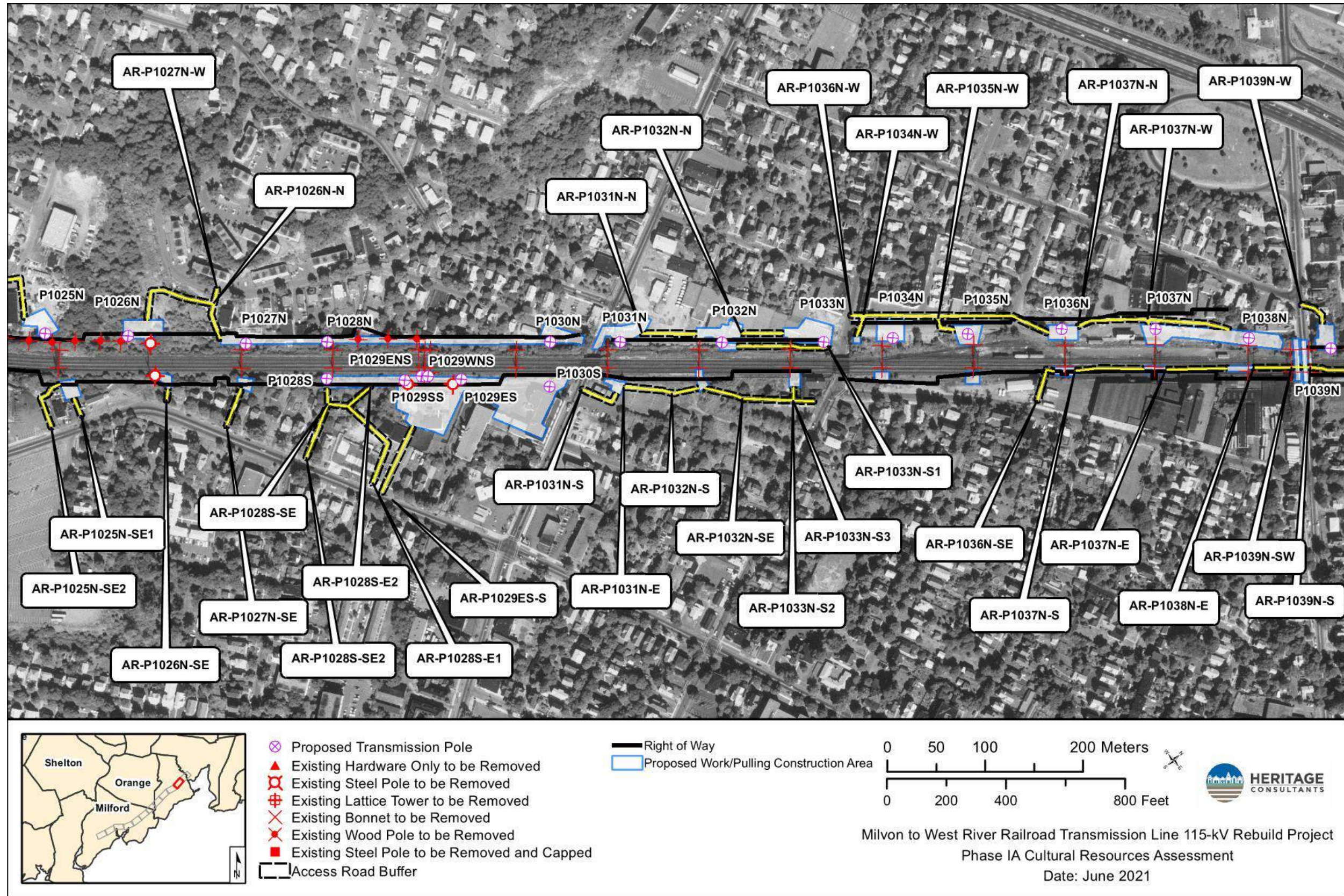


Figure 7; Sheet 11. Excerpt from a 1974 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

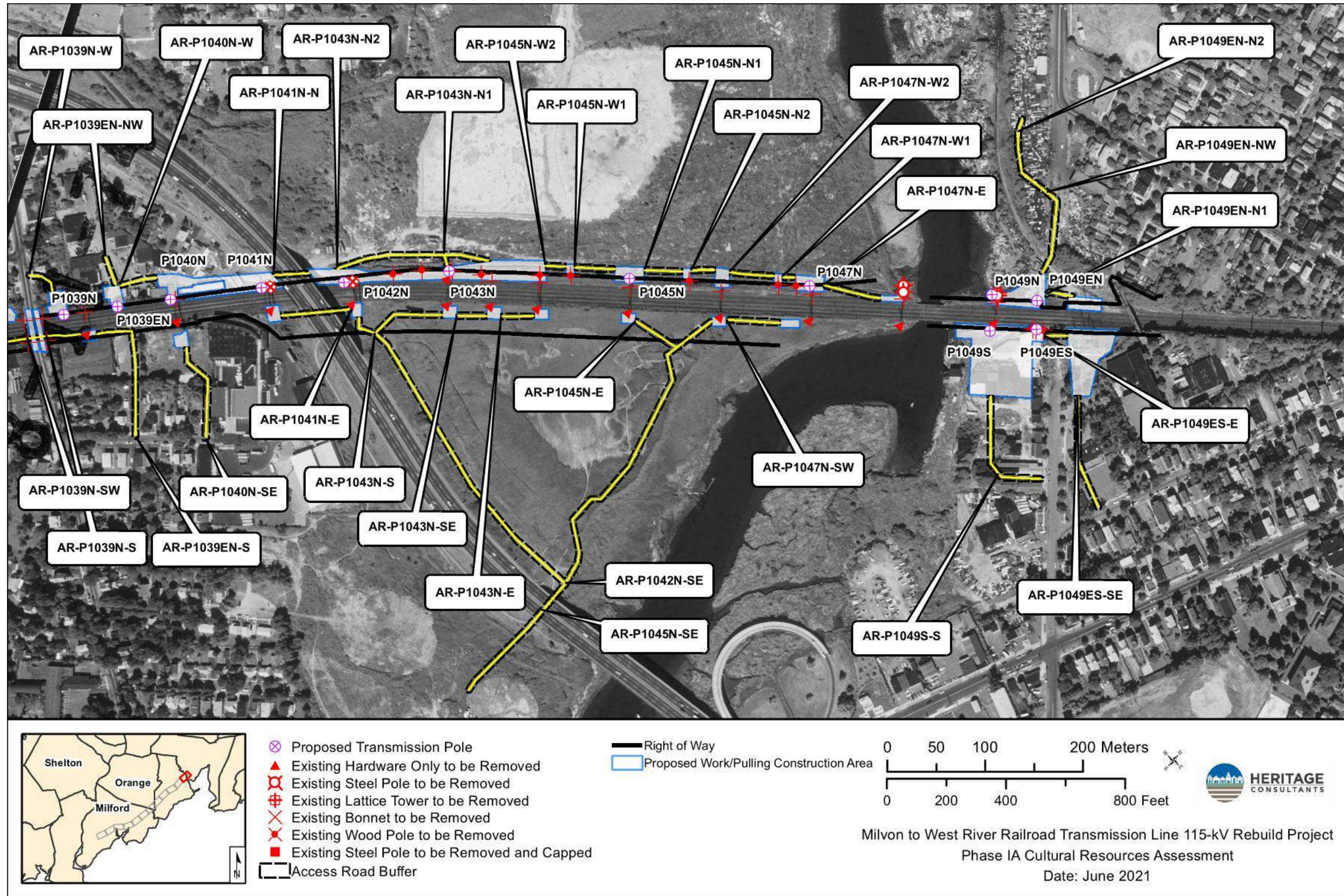


Figure 7; Sheet 12. Excerpt from a 1974 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

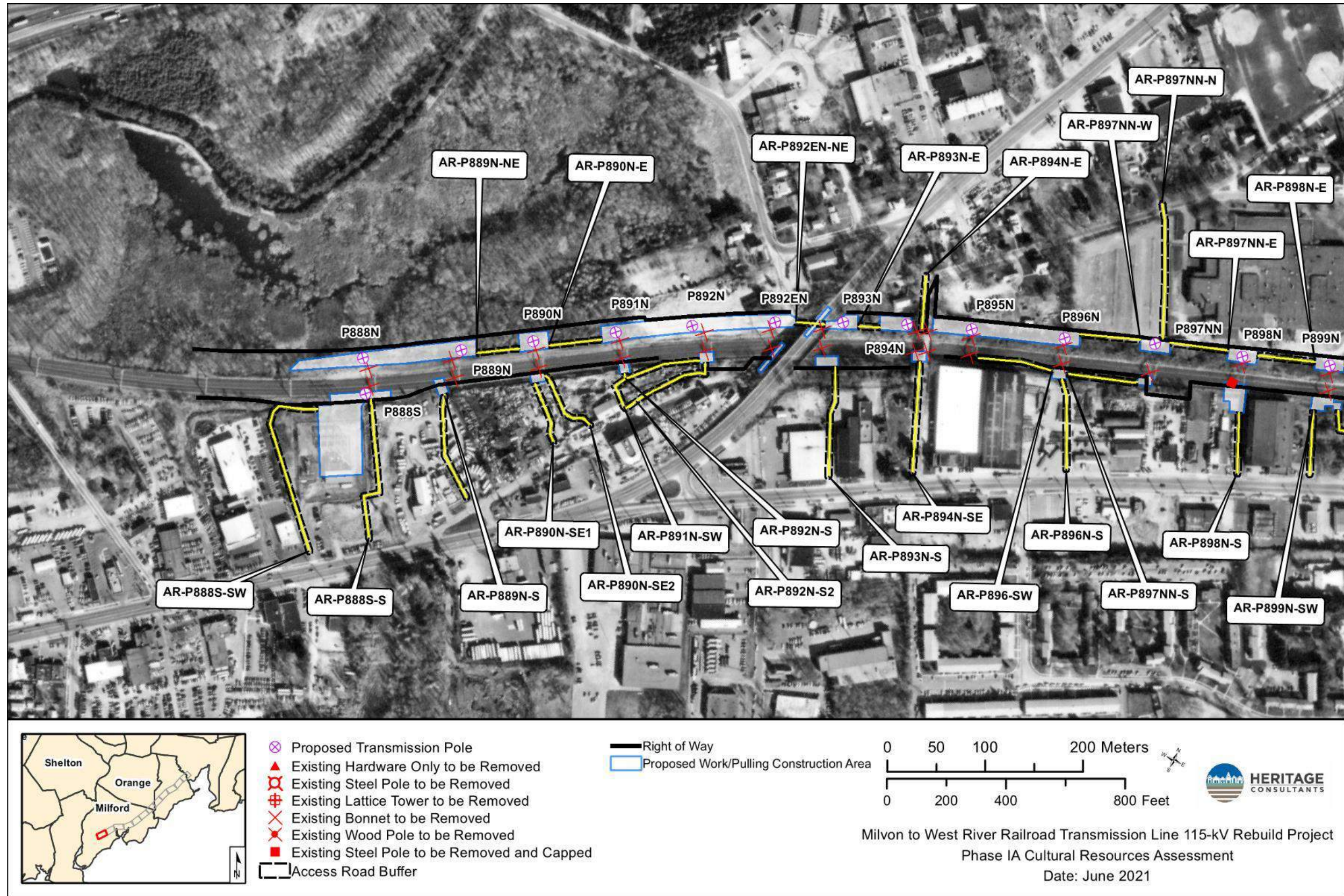


Figure 8; Sheet 1.

Excerpt from a 1990 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

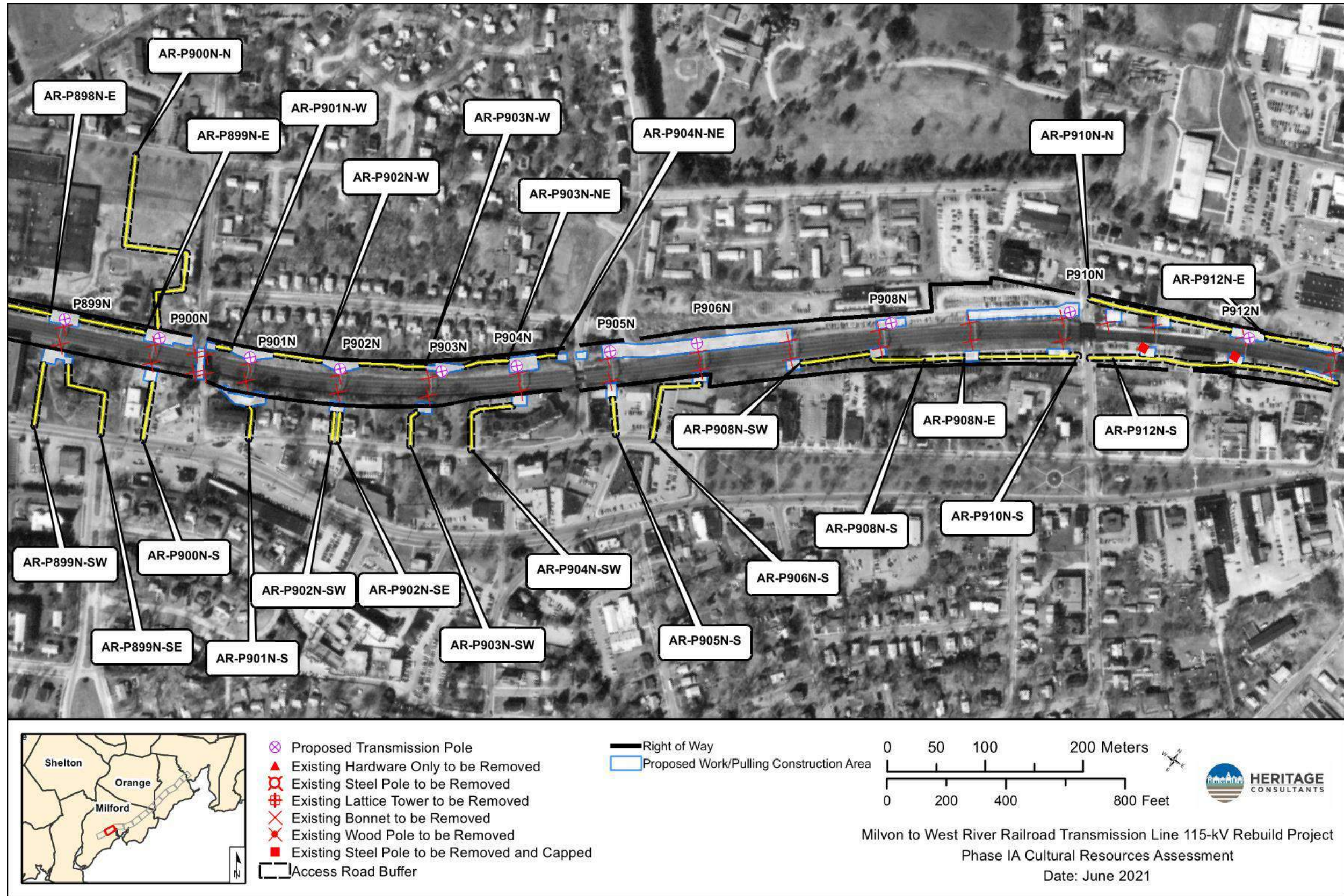


Figure 8; Sheet 2.

Excerpt from a 1990 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

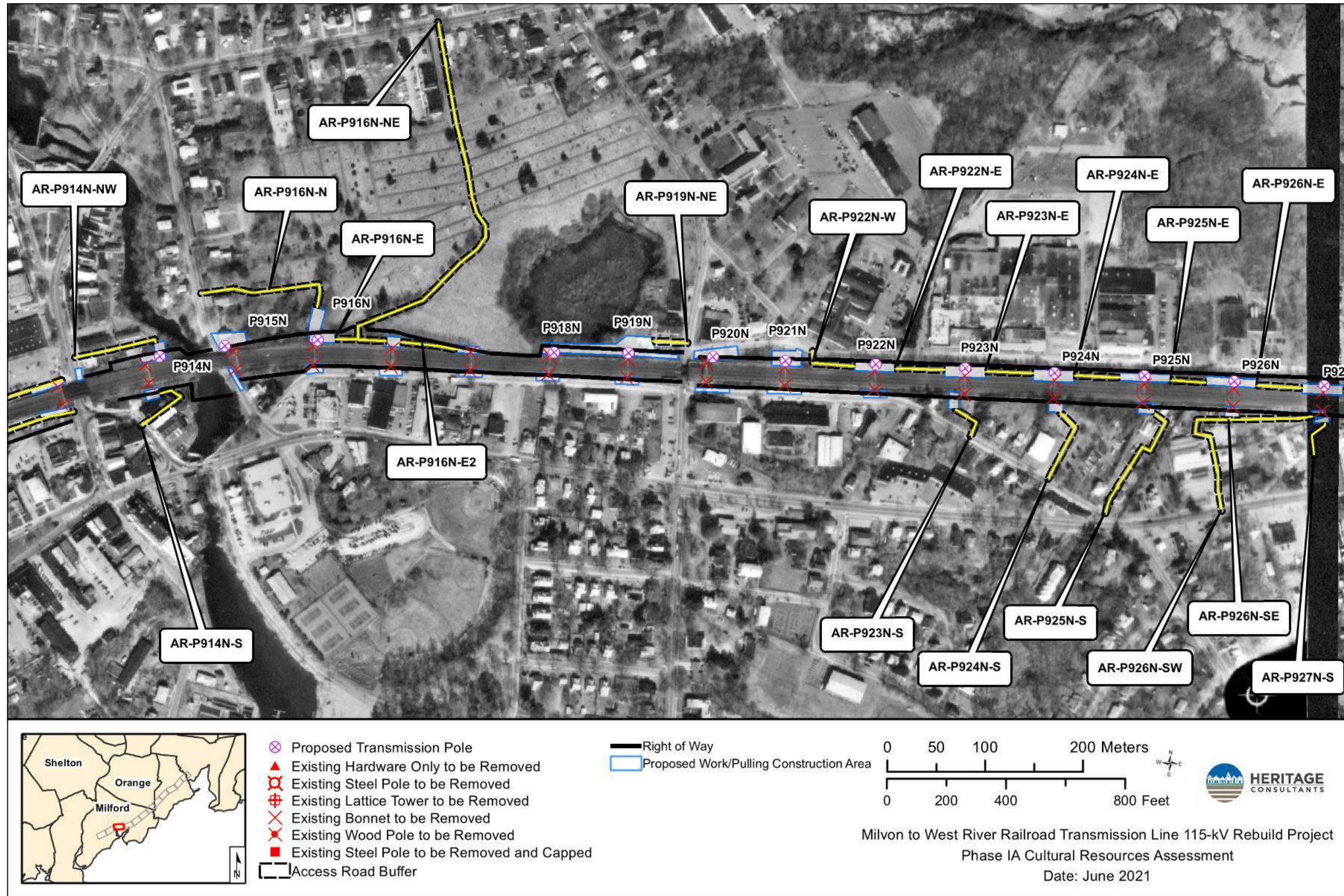


Figure 8; Sheet 3. Excerpt from a 1990 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

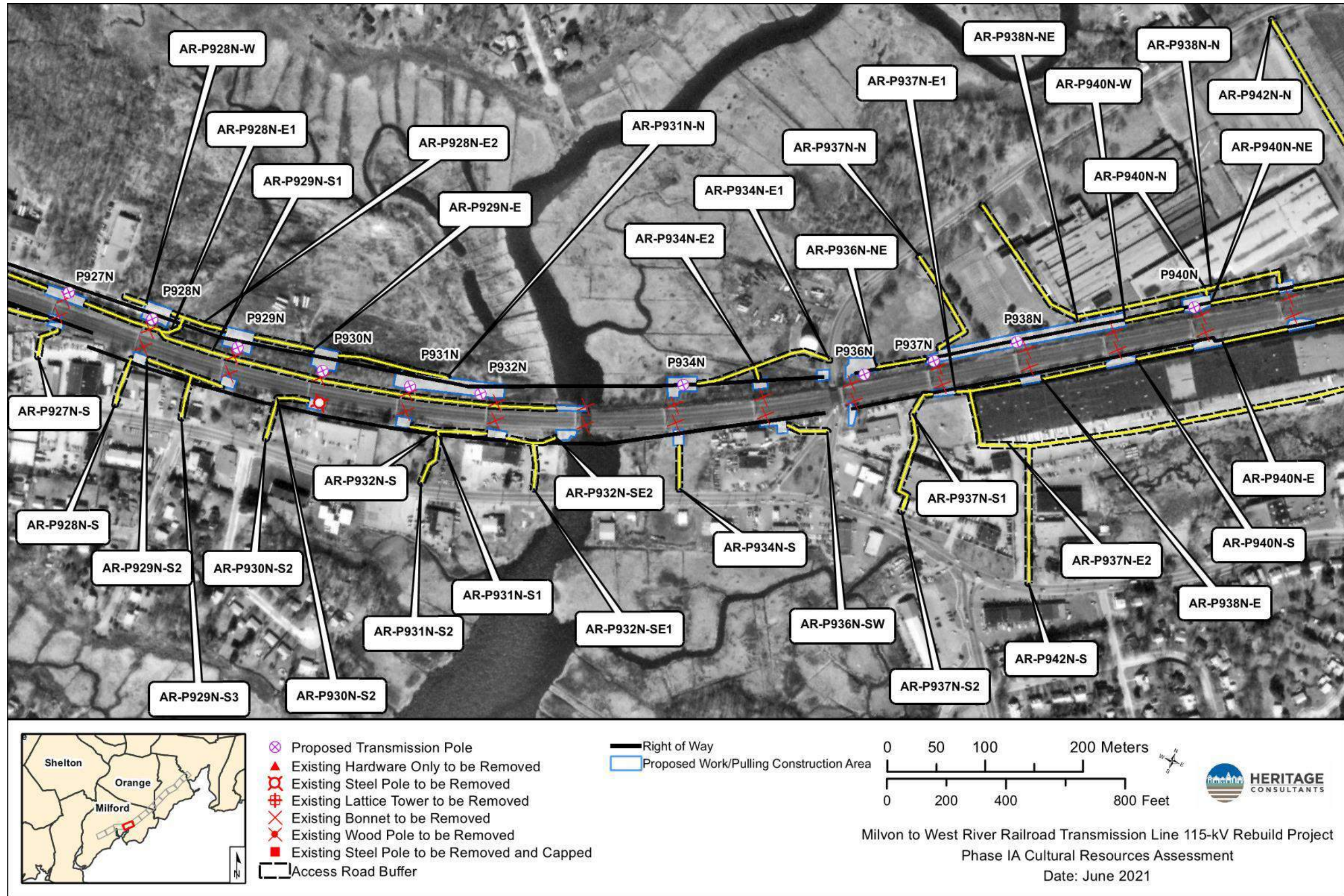


Figure 8; Sheet 4. Excerpt from a 1990 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

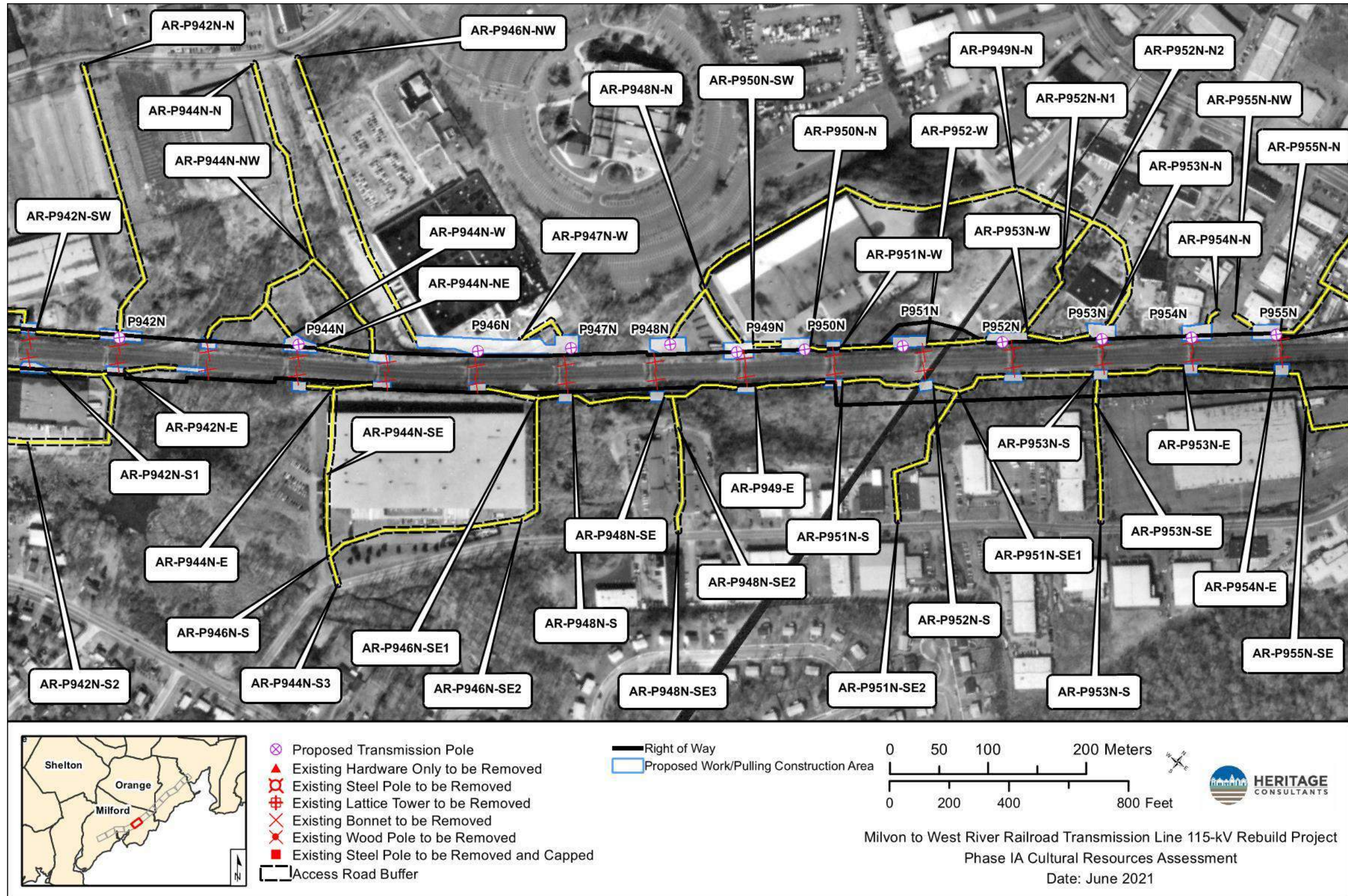


Figure 8; Sheet 5. Excerpt from a 1990 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.



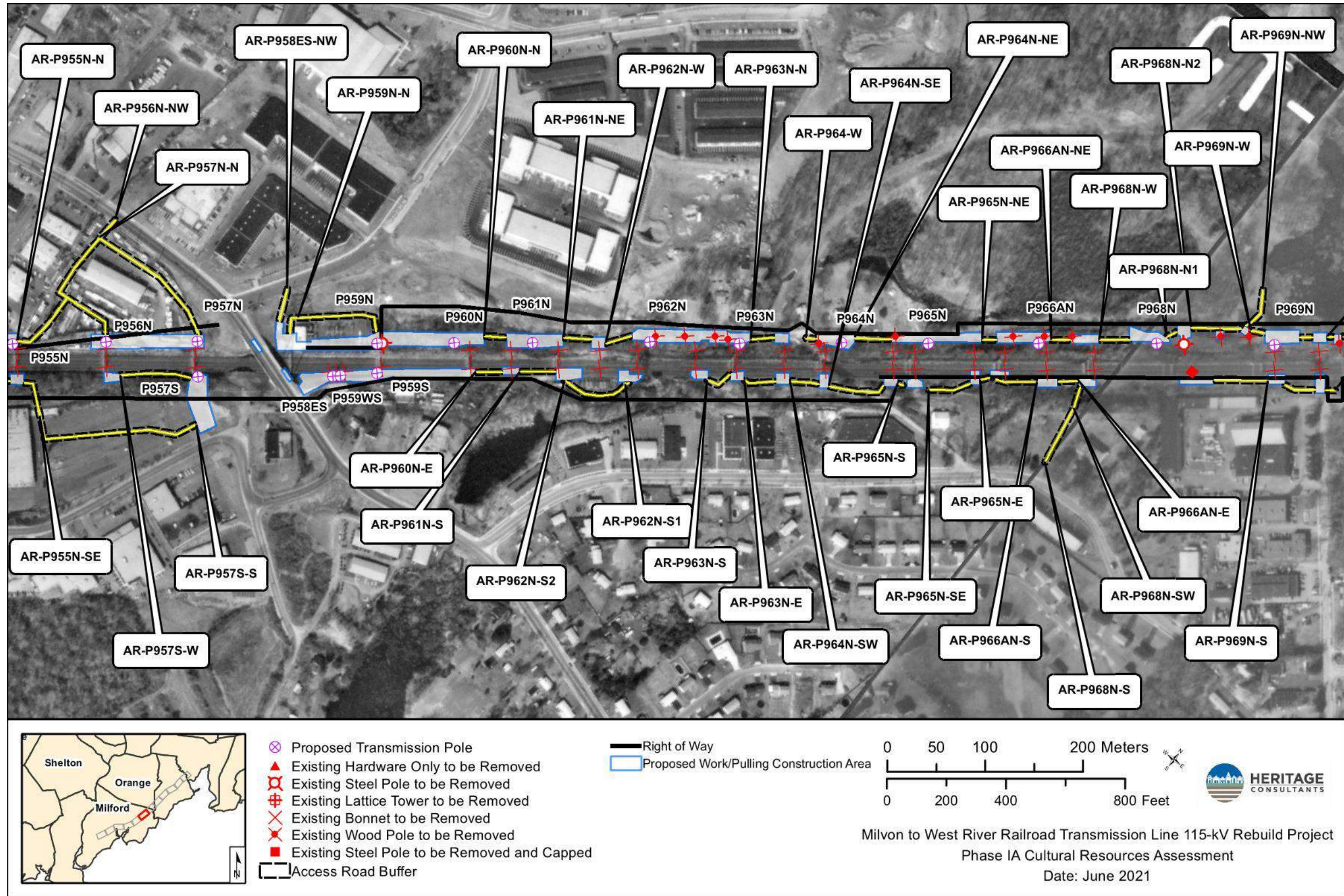


Figure 8; Sheet 6.

Excerpt from a 1990 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

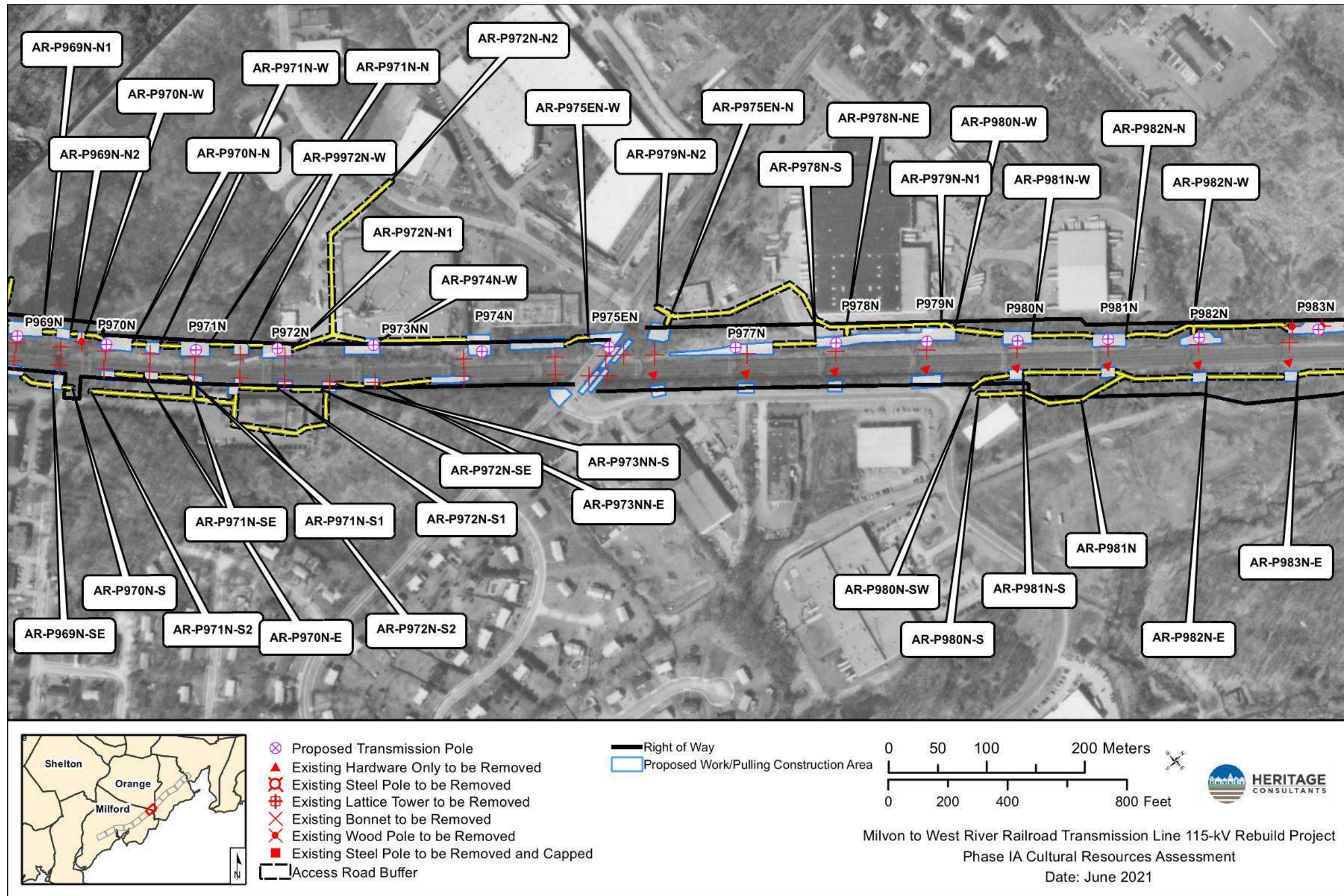


Figure 8; Sheet 7. Excerpt from a 1990 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

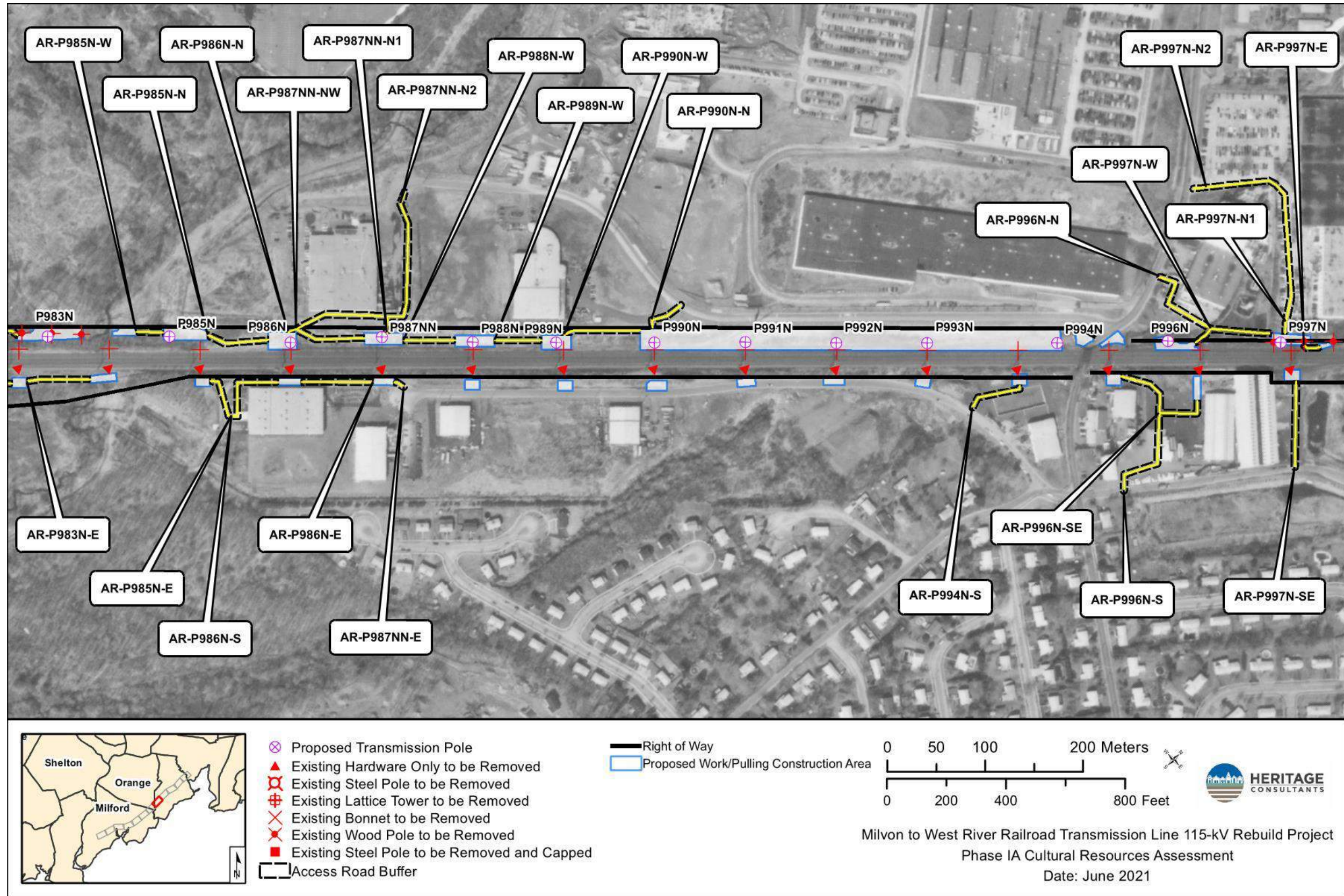


Figure 8; Sheet 8.

Excerpt from a 1990 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

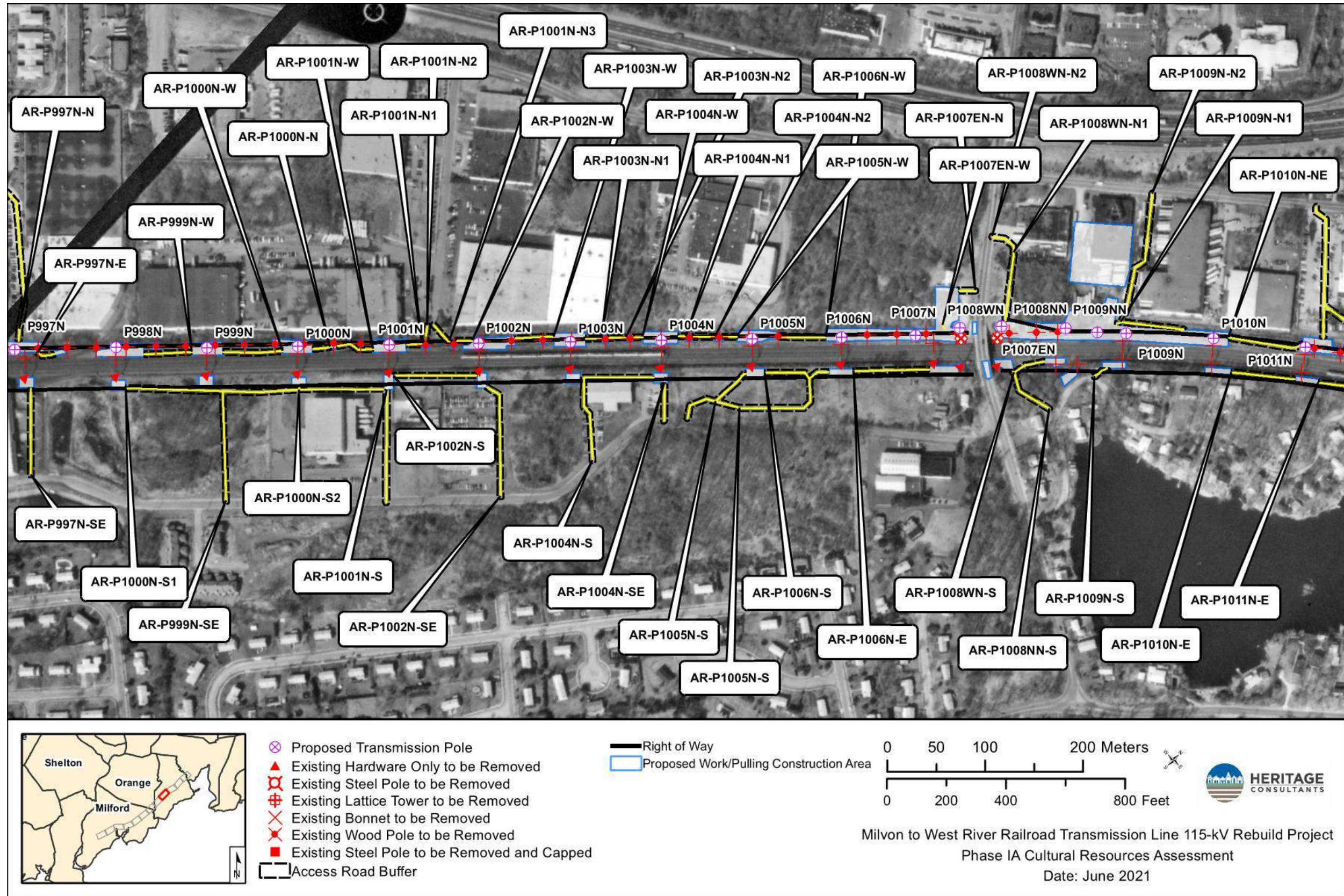


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Excerpt from a 1990 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

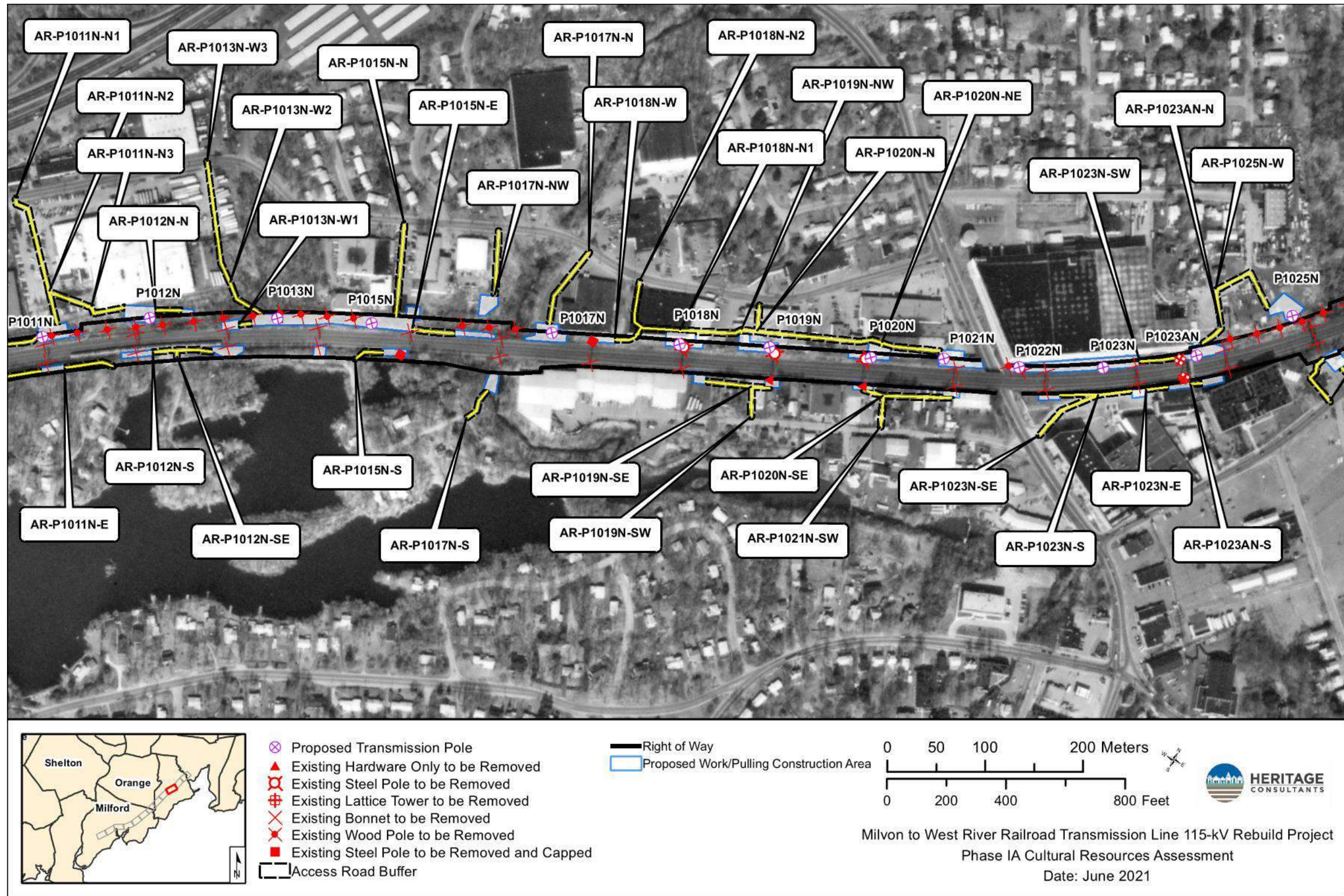


Figure 8; Sheet 10. Excerpt from a 1990 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

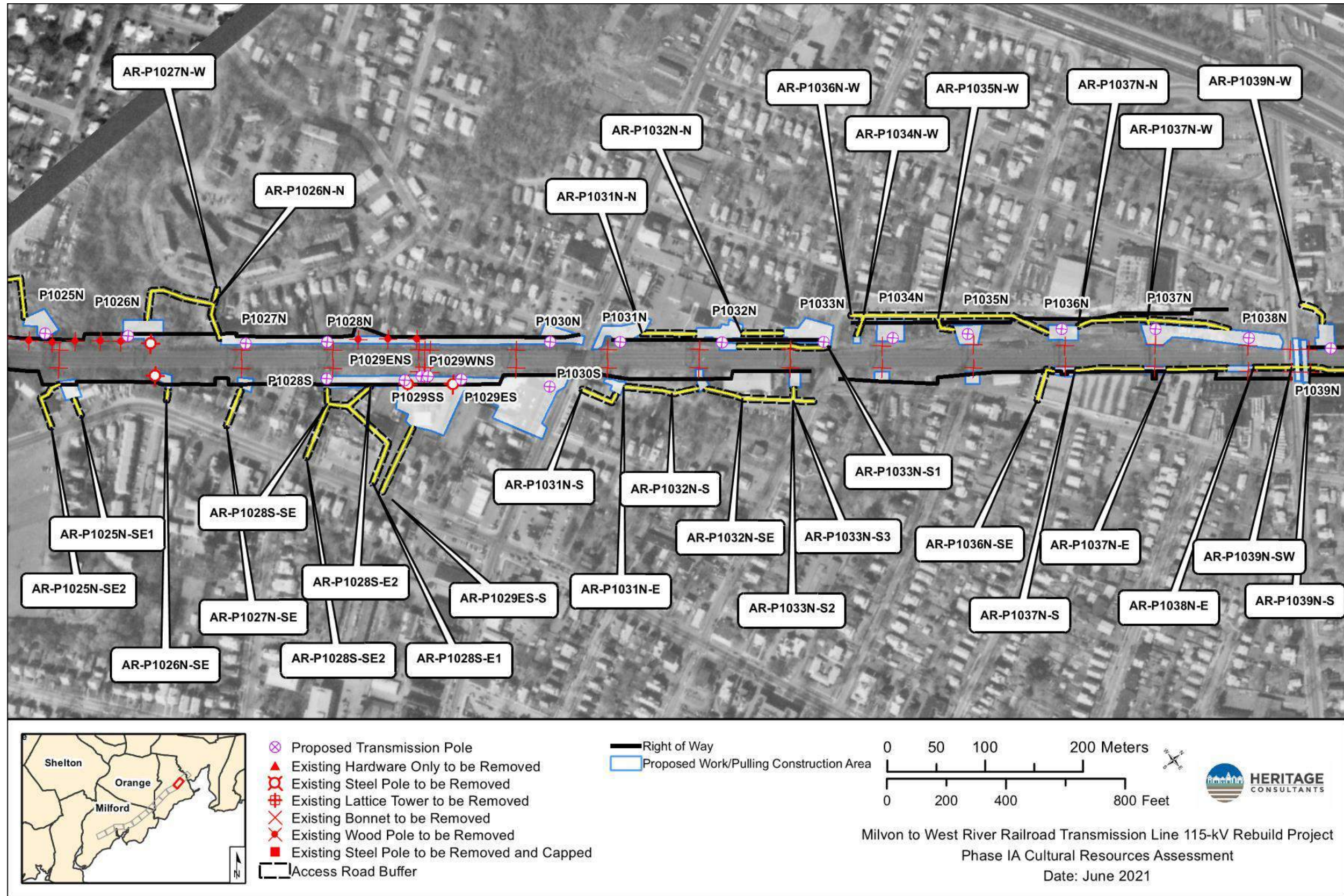


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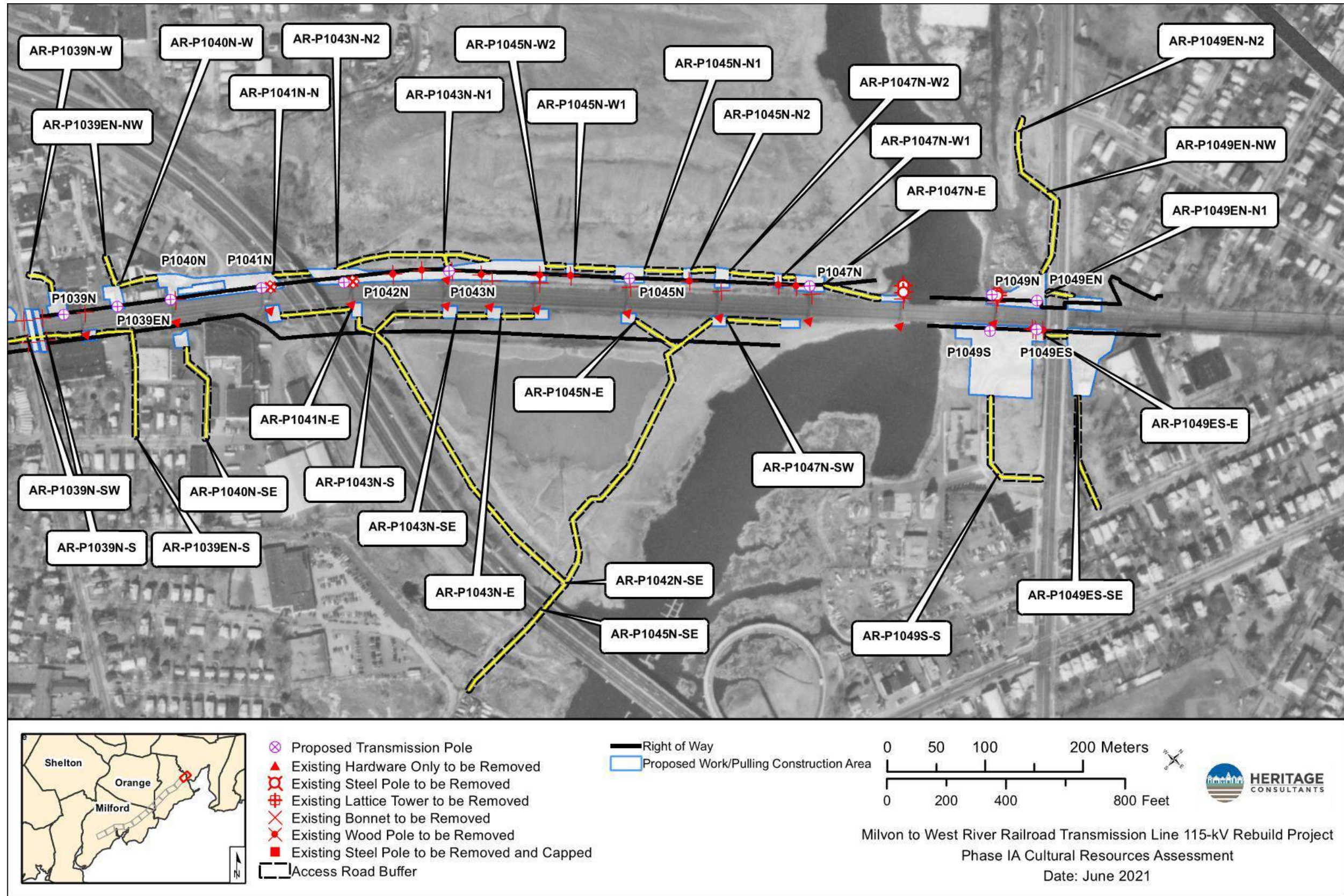


Figure 8; Sheet 12. Excerpt from a 1990 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

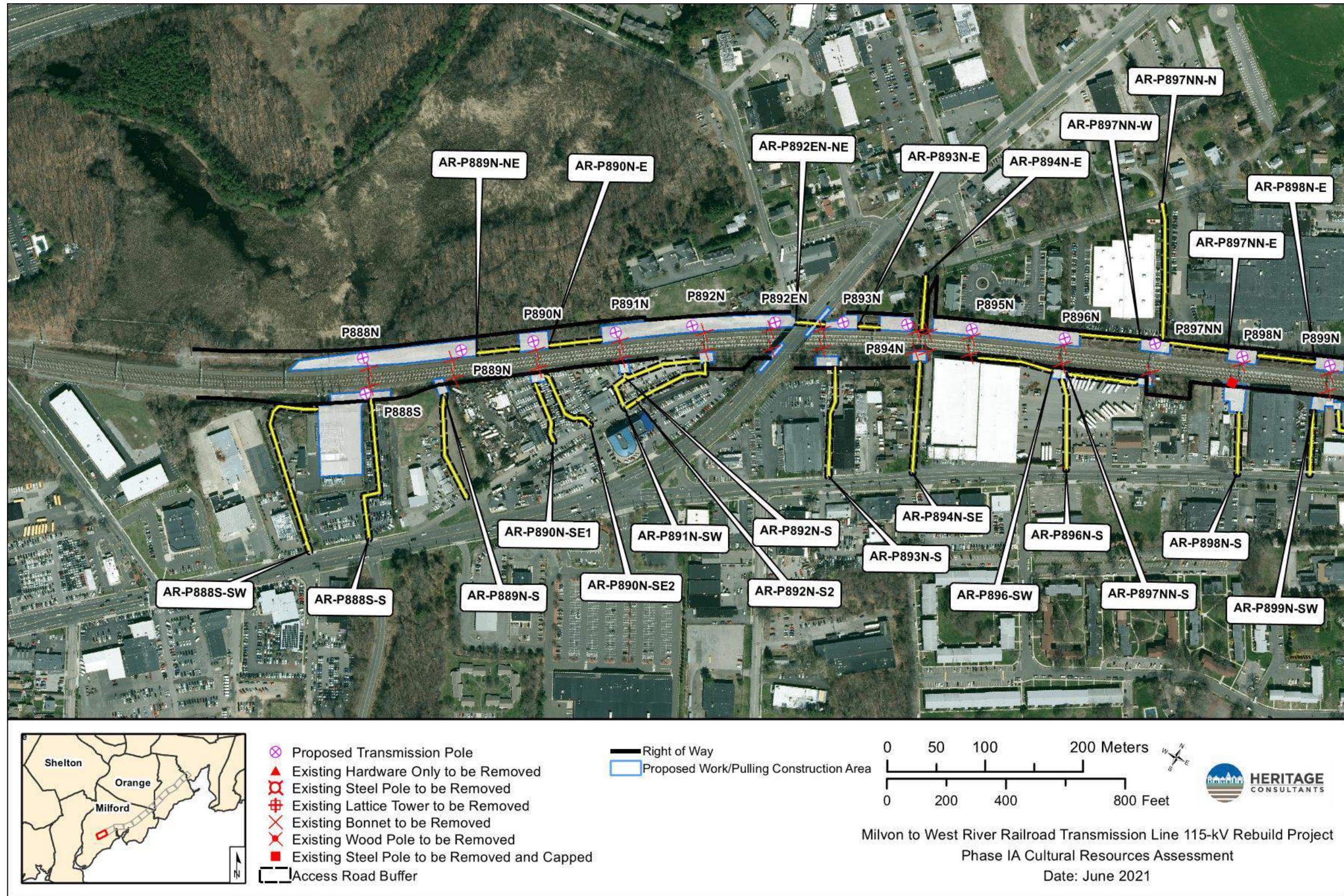


Figure 9; Sheet 1.

Excerpt from a 2019 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.



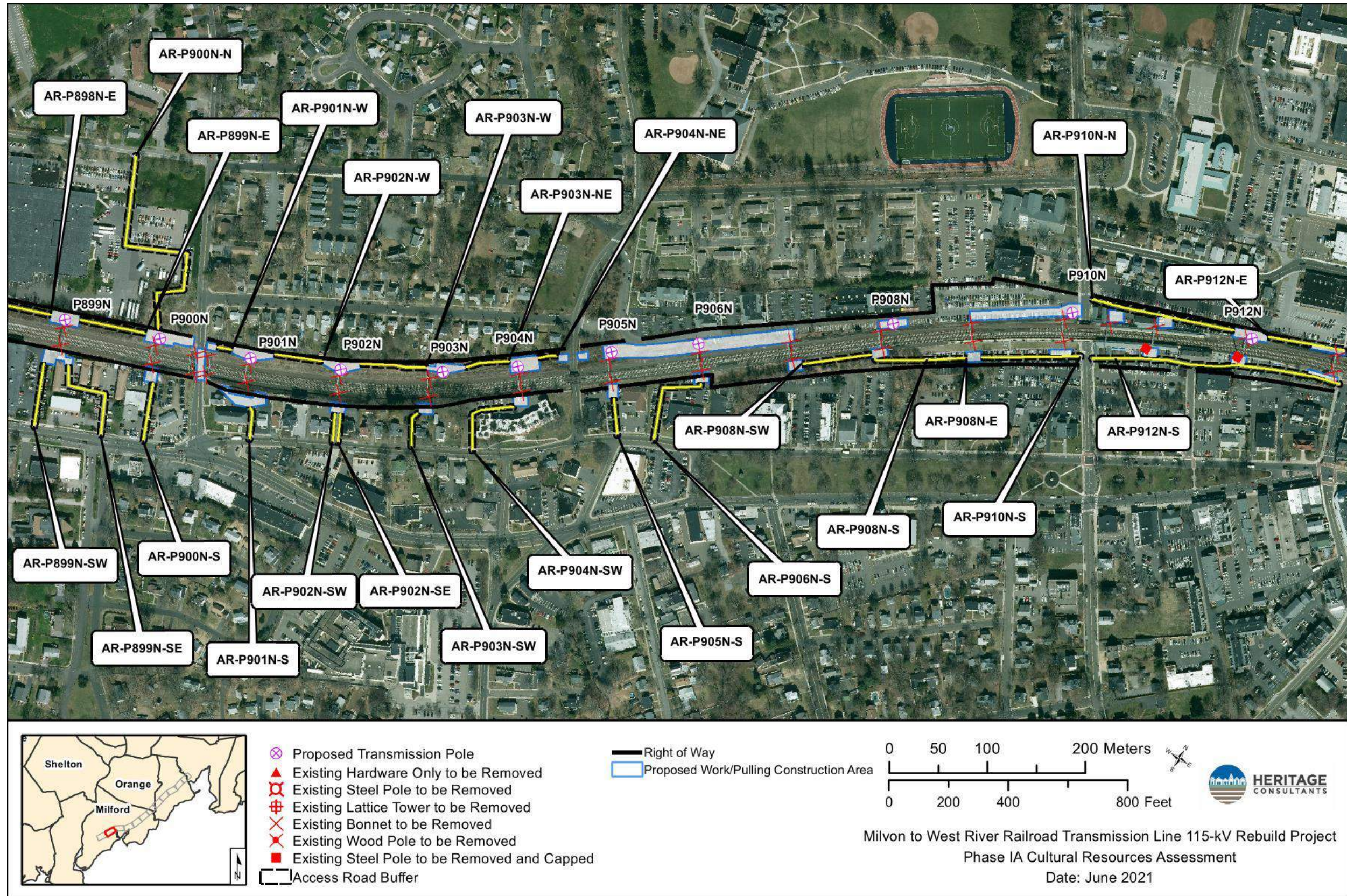


Figure 9; Sheet 2.

Excerpt from a 2019 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

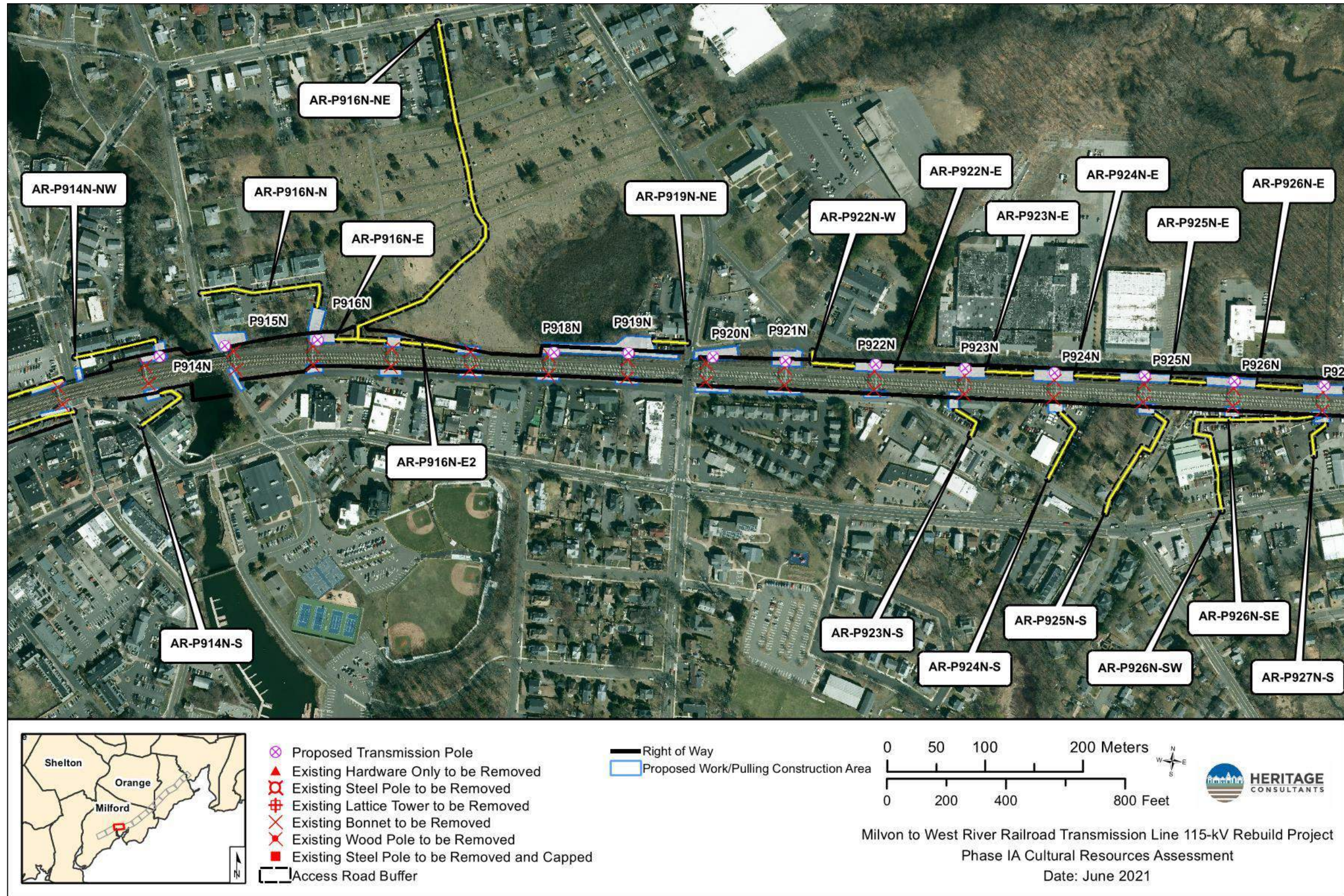


Figure 9; Sheet 3.

Excerpt from a 2019 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

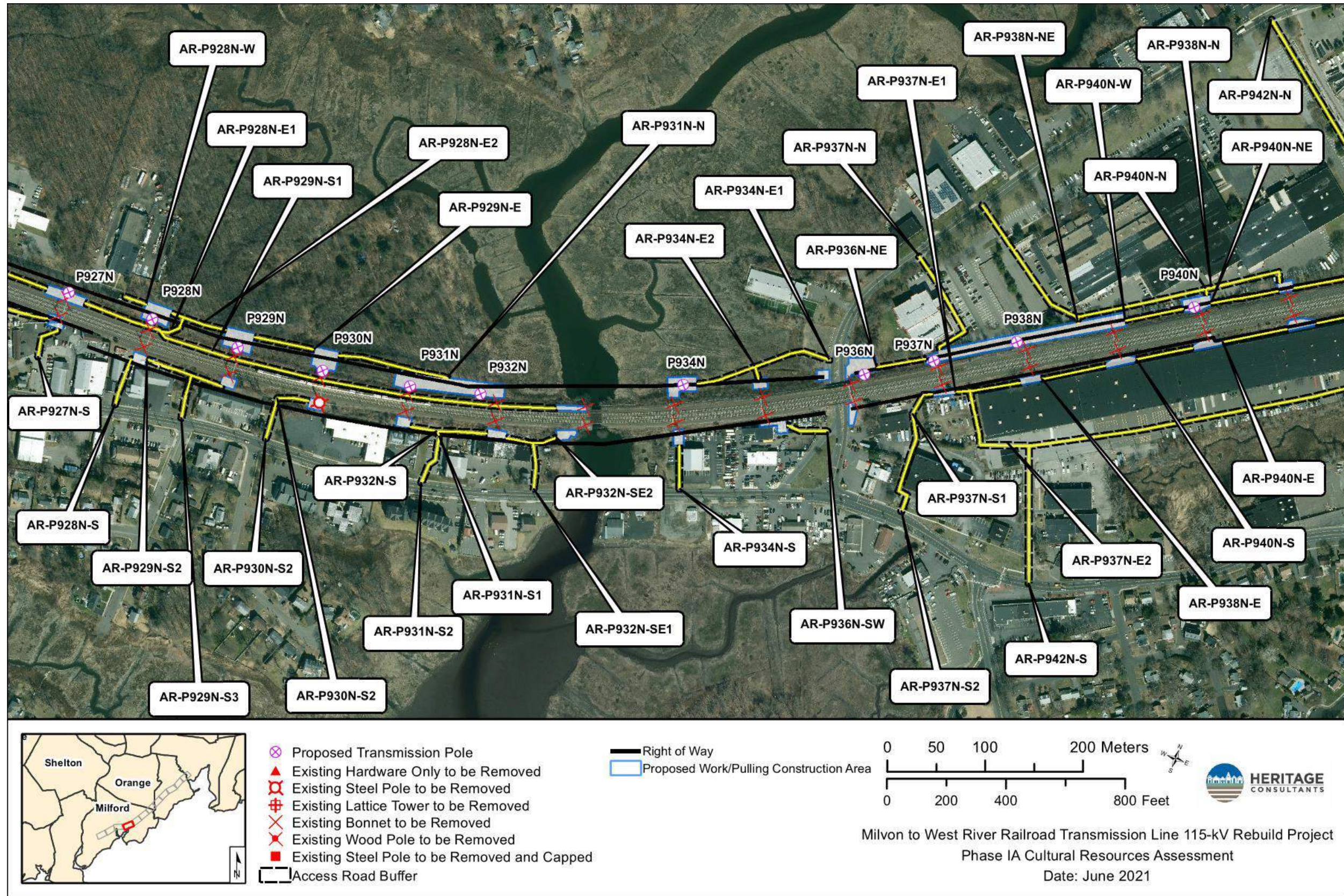


Figure 9; Sheet 4.

Excerpt from a 2019 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

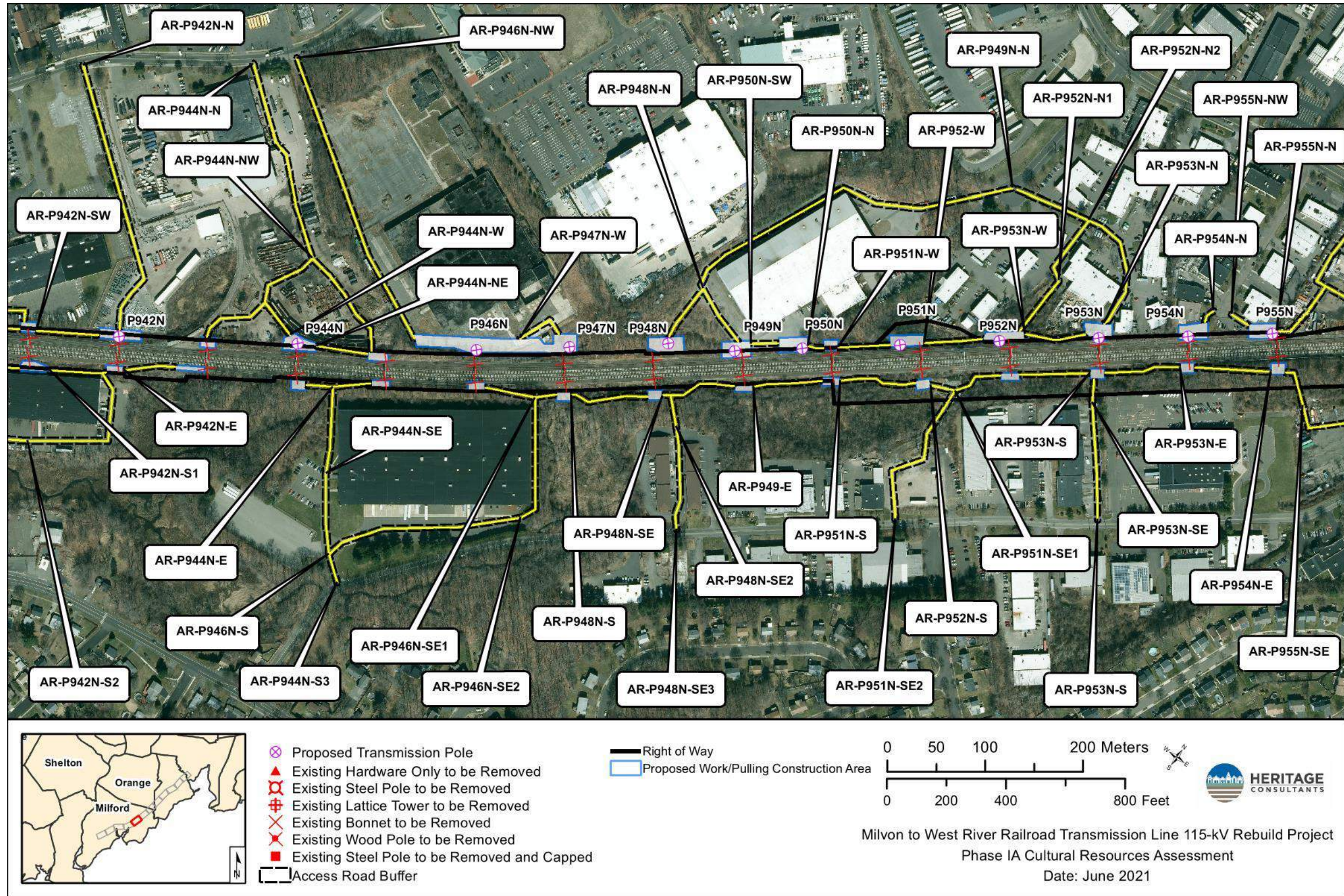


Figure 9; Sheet 5.

Excerpt from a 2019 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

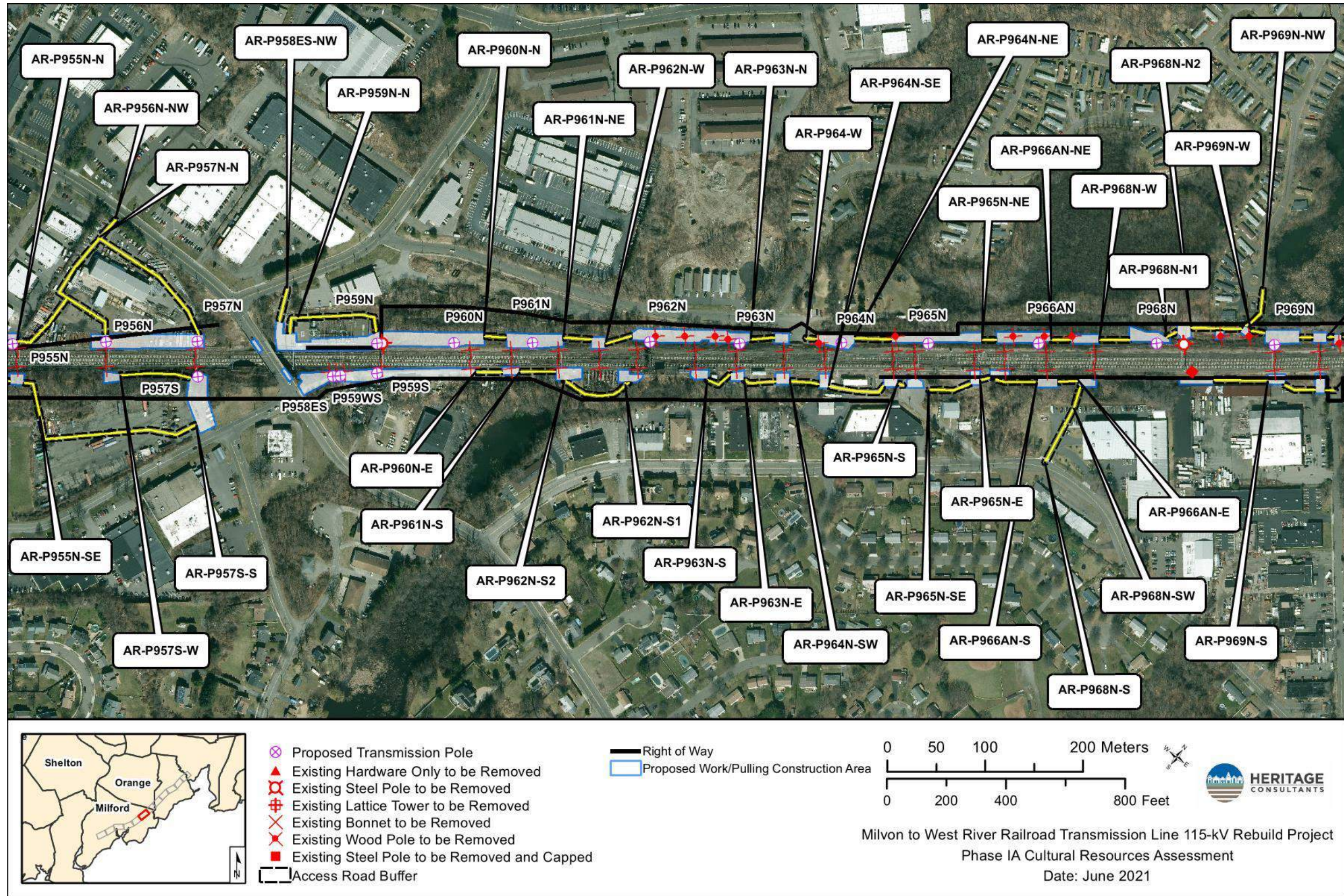


Figure 9; Sheet 6.

Excerpt from a 2019 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

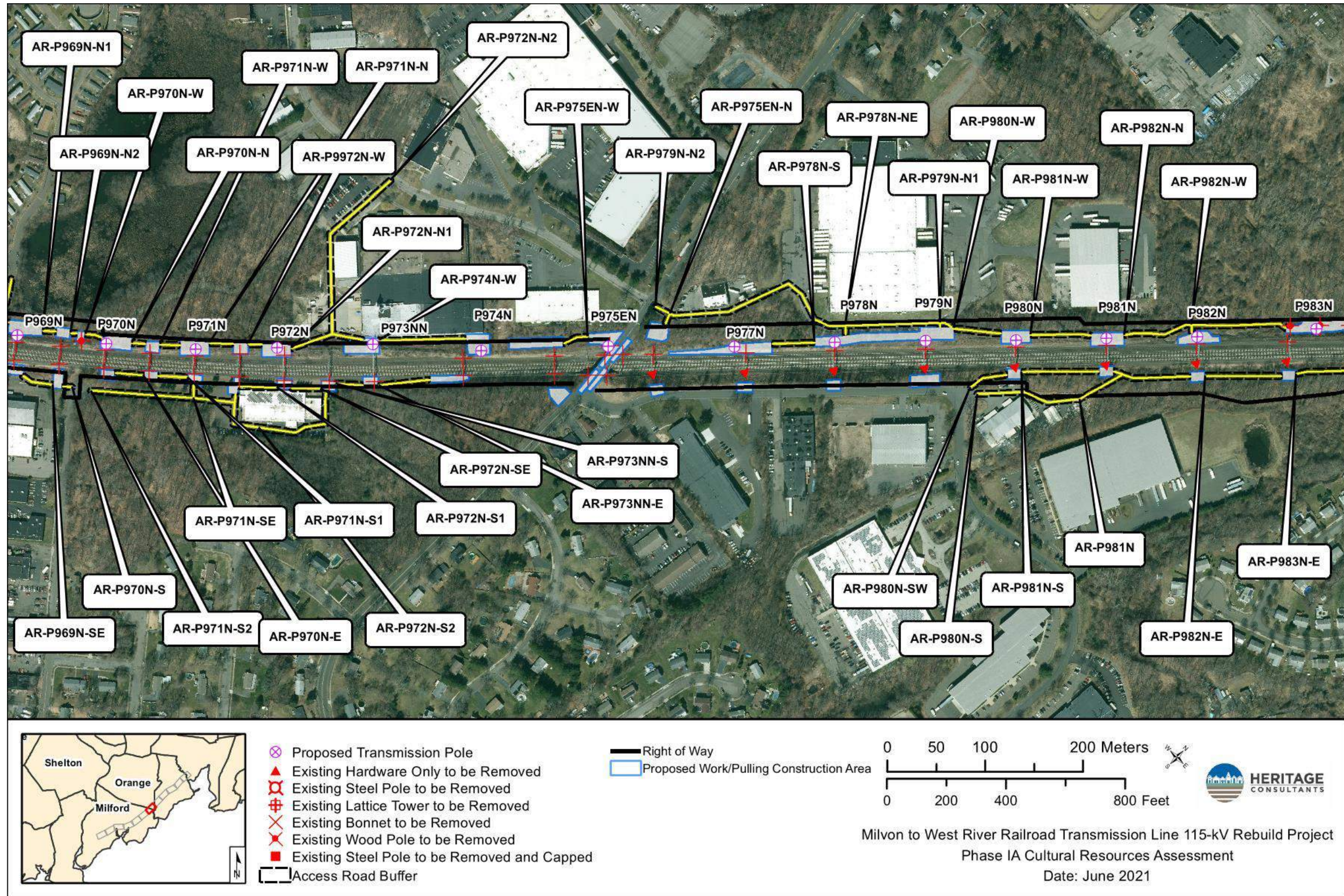


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Excerpt from a 2019 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

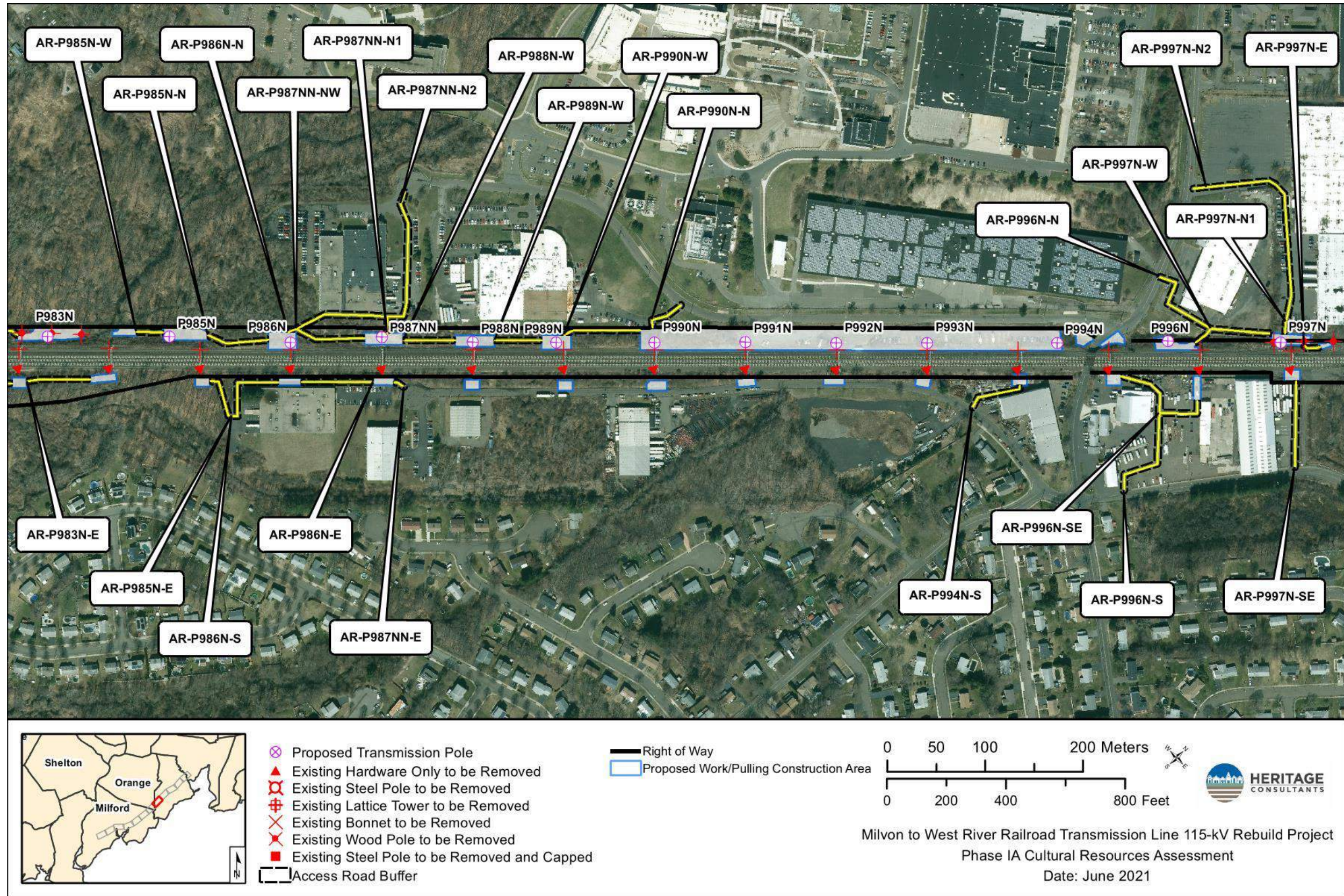


Figure 9; Sheet 8.

Excerpt from a 2019 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

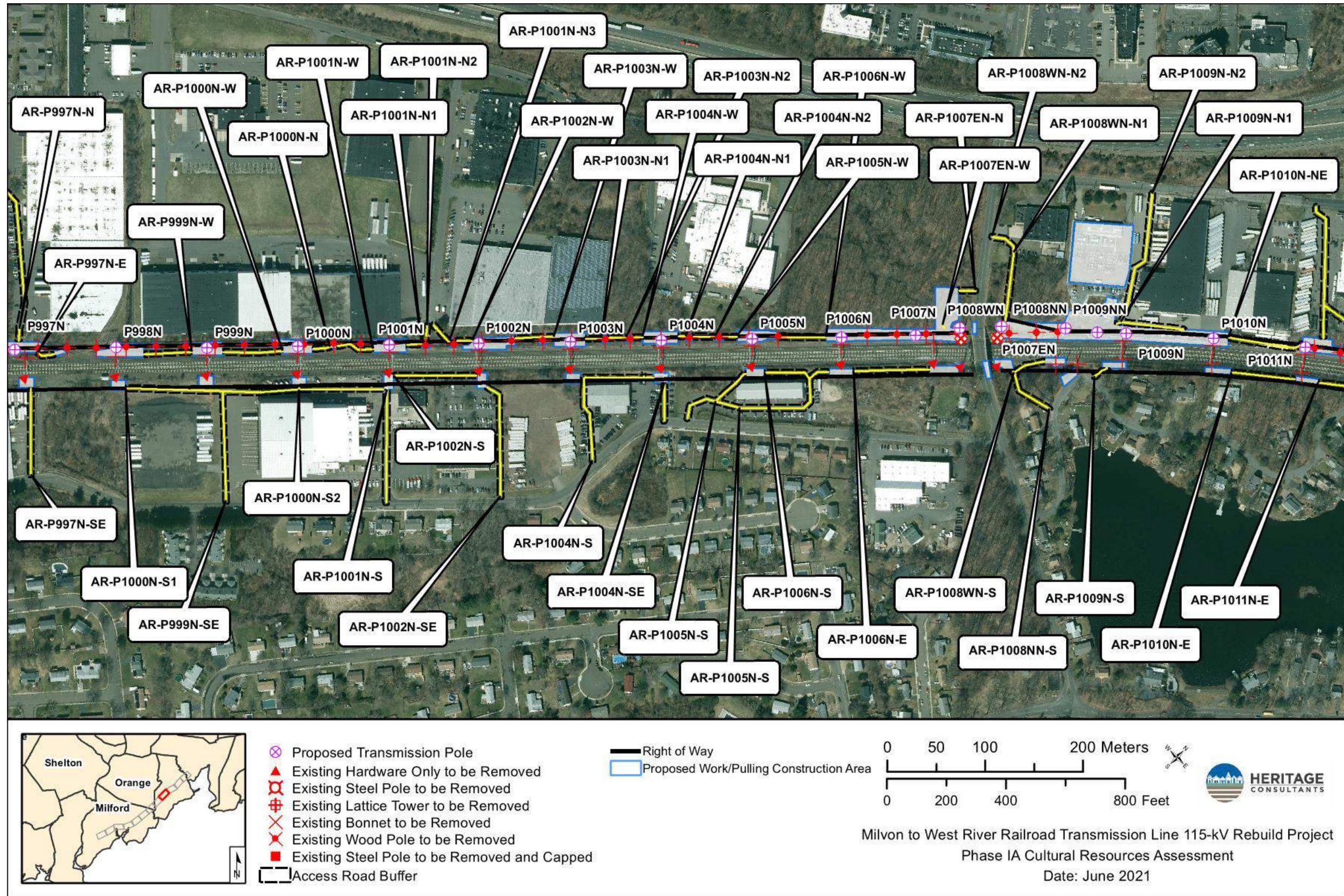


Figure 9; Sheet 9.

Excerpt from a 2019 aerial image showing the location of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.



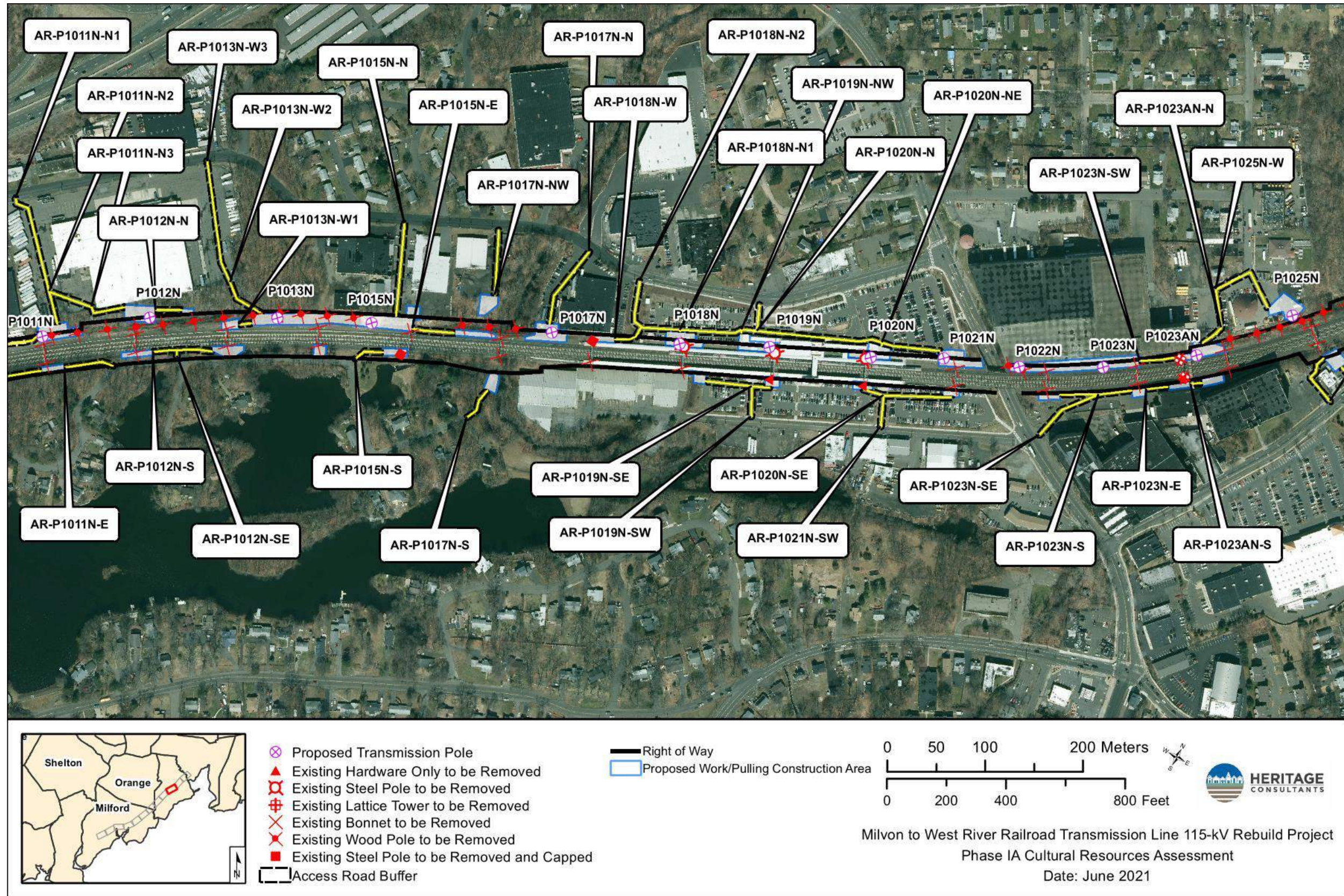


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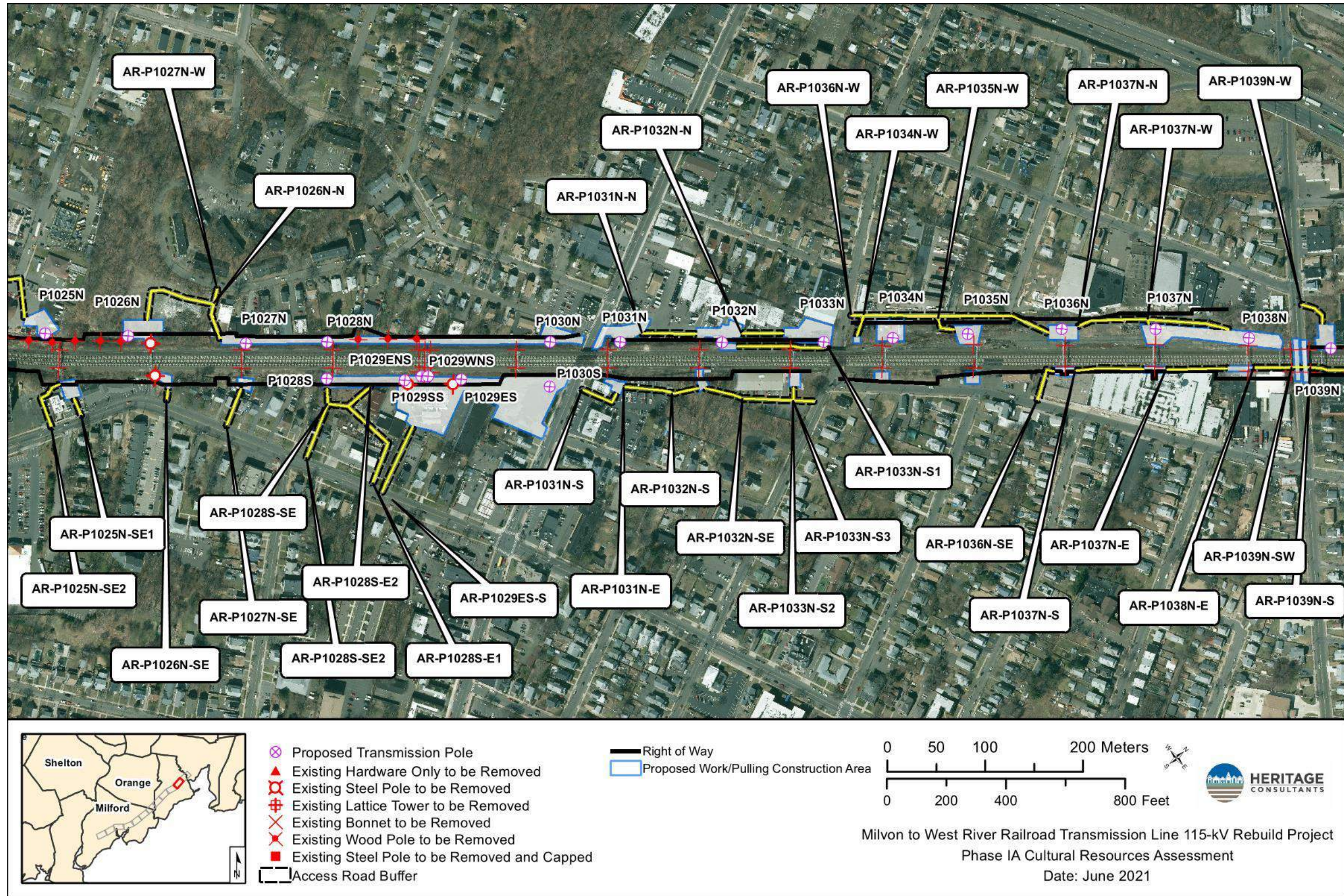


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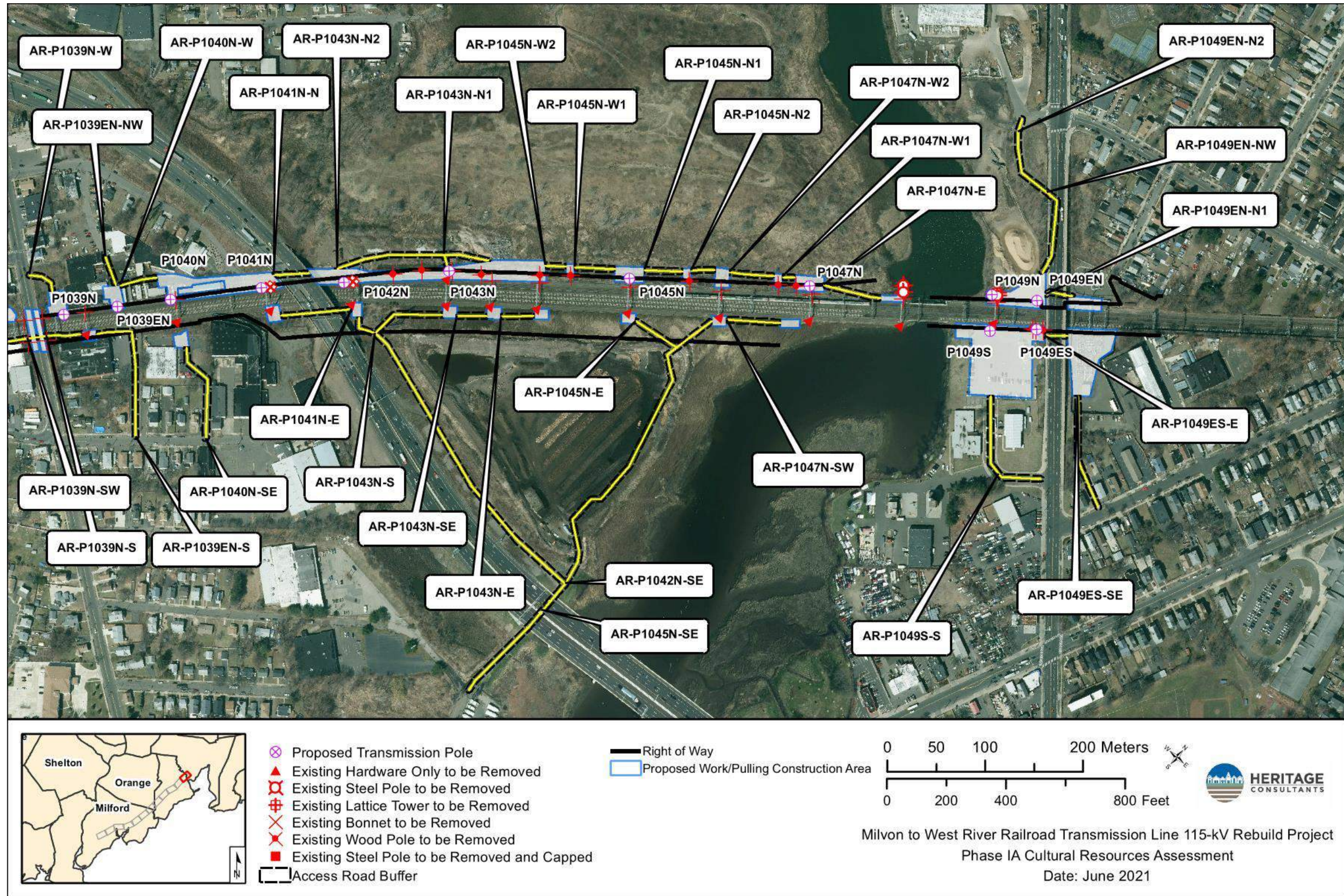


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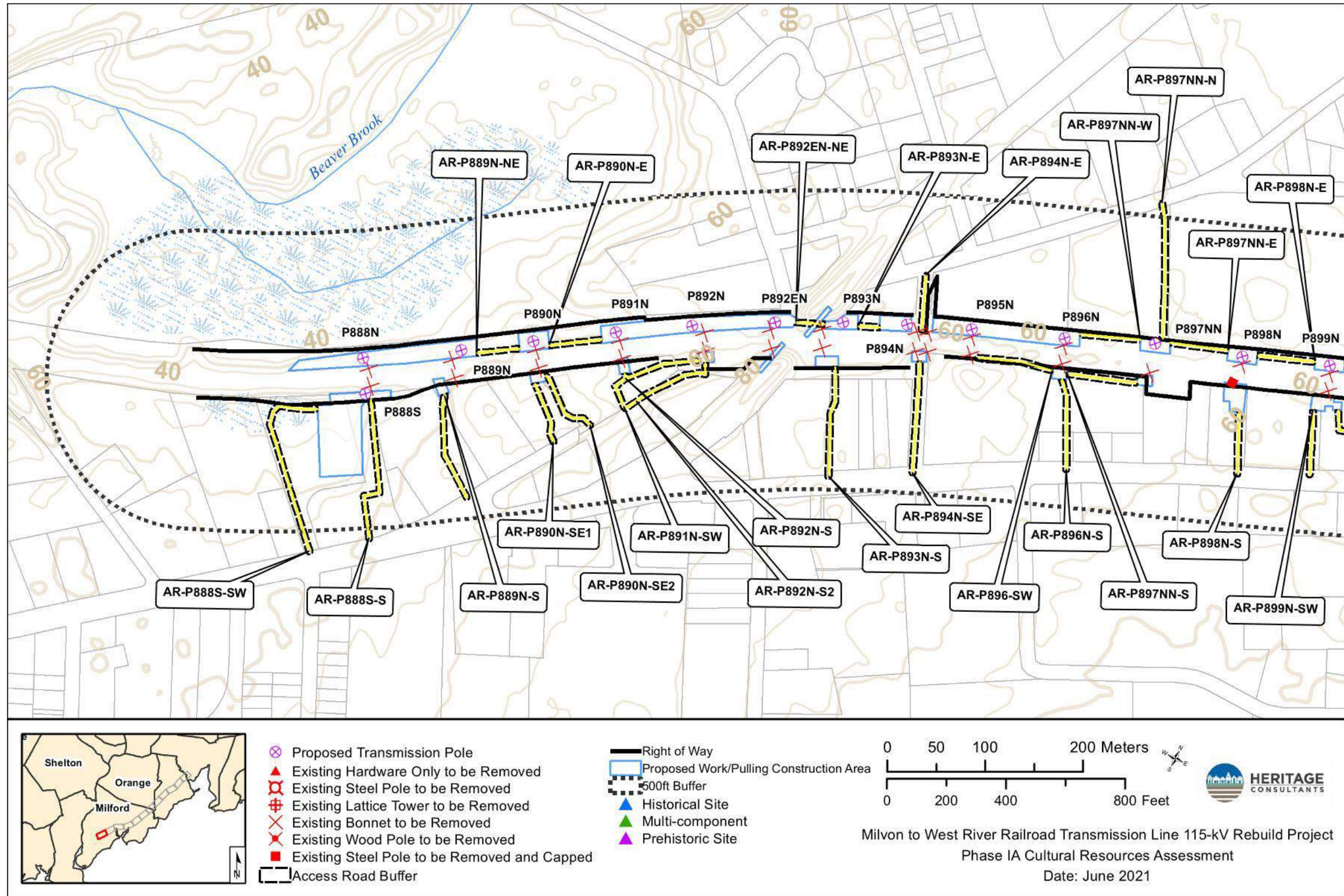


Figure 10; Sheet 1. Digital map showing the locations of previously recorded archaeological sites in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

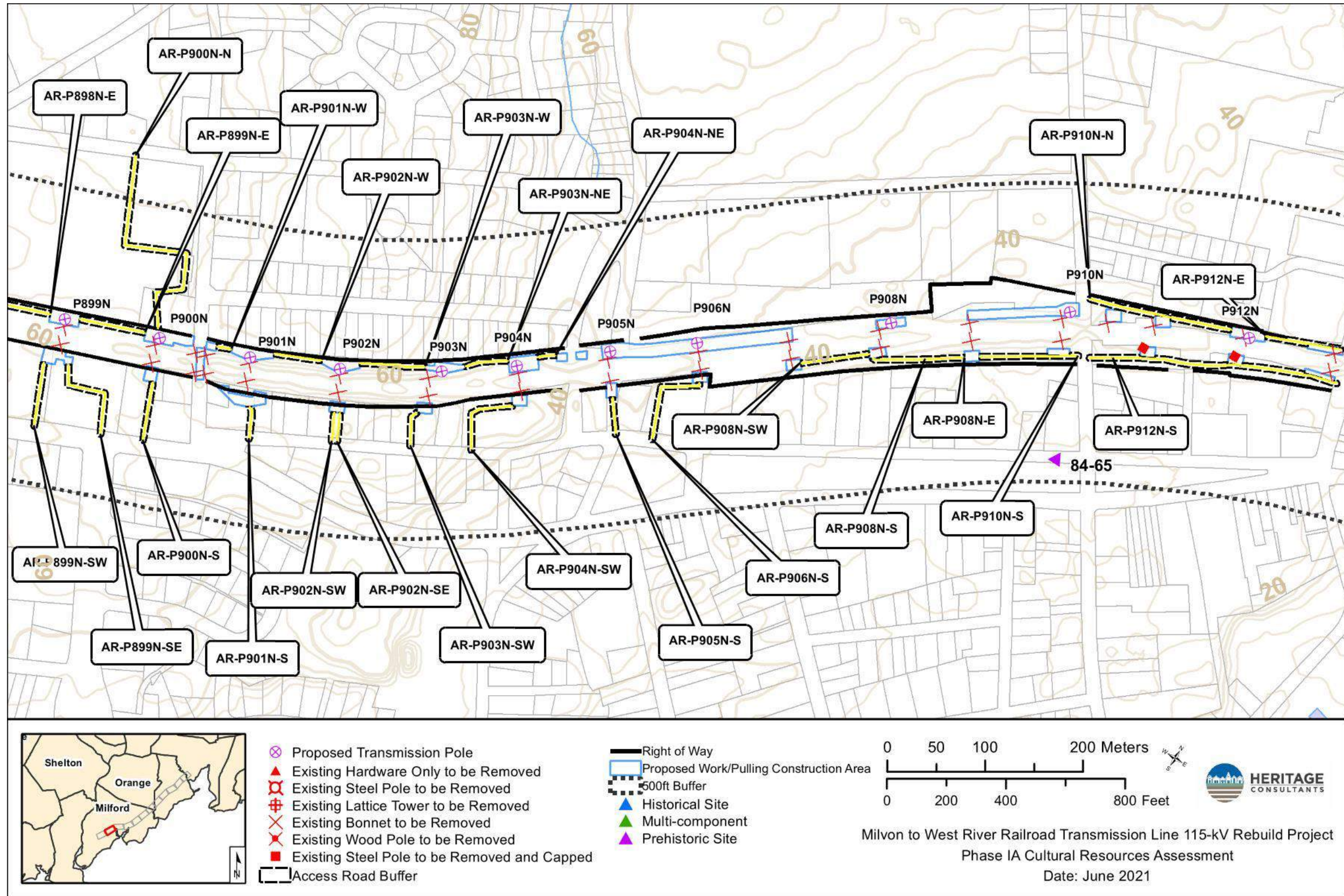


Figure 10; Sheet 2.

Digital map showing the locations of previously recorded archaeological sites in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut.

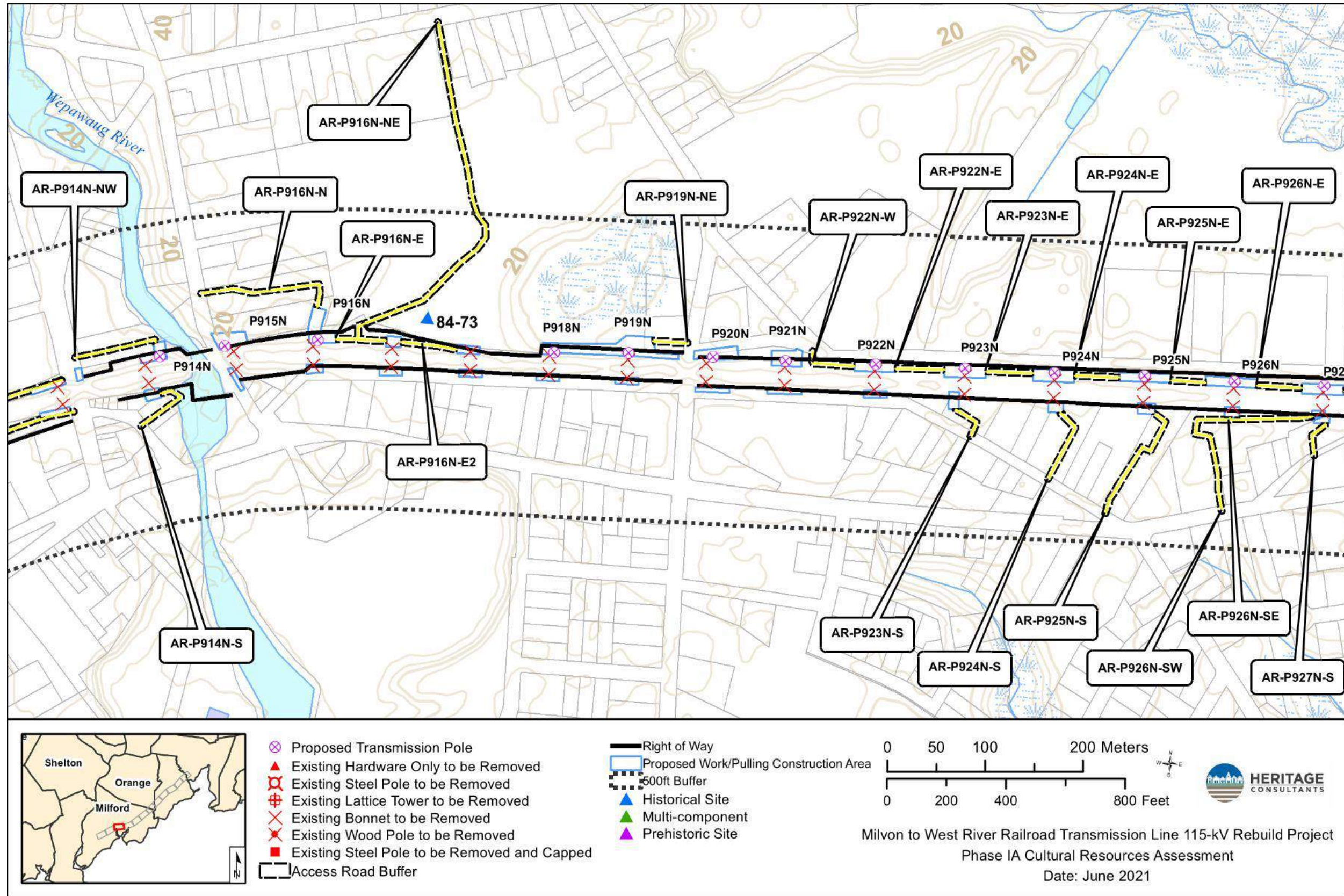


Figure 10; Sheet 3. Digital map showing the locations of previously recorded archaeological sites in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

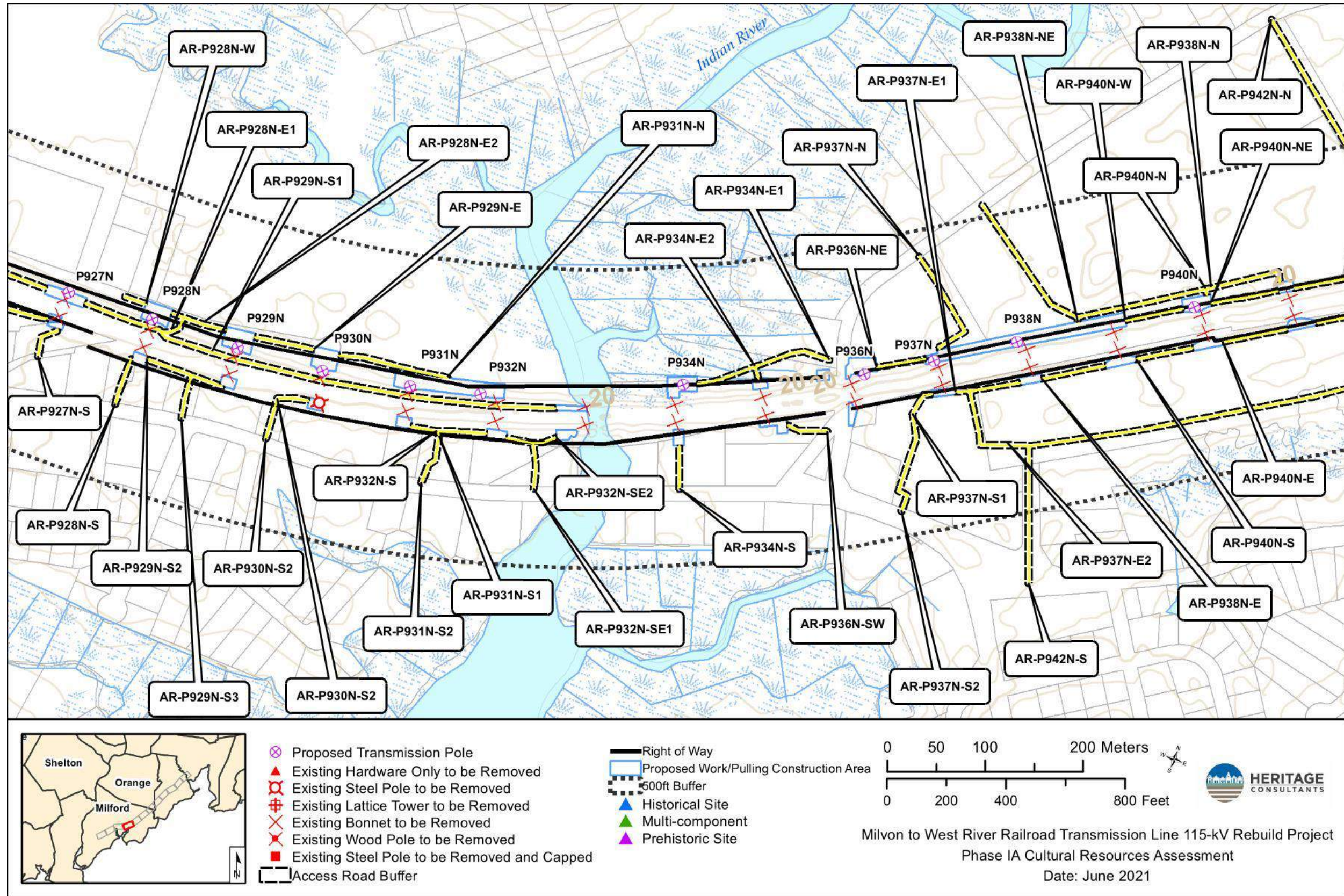


Figure 10; Sheet 4. Digital map showing the locations of previously recorded archaeological sites in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

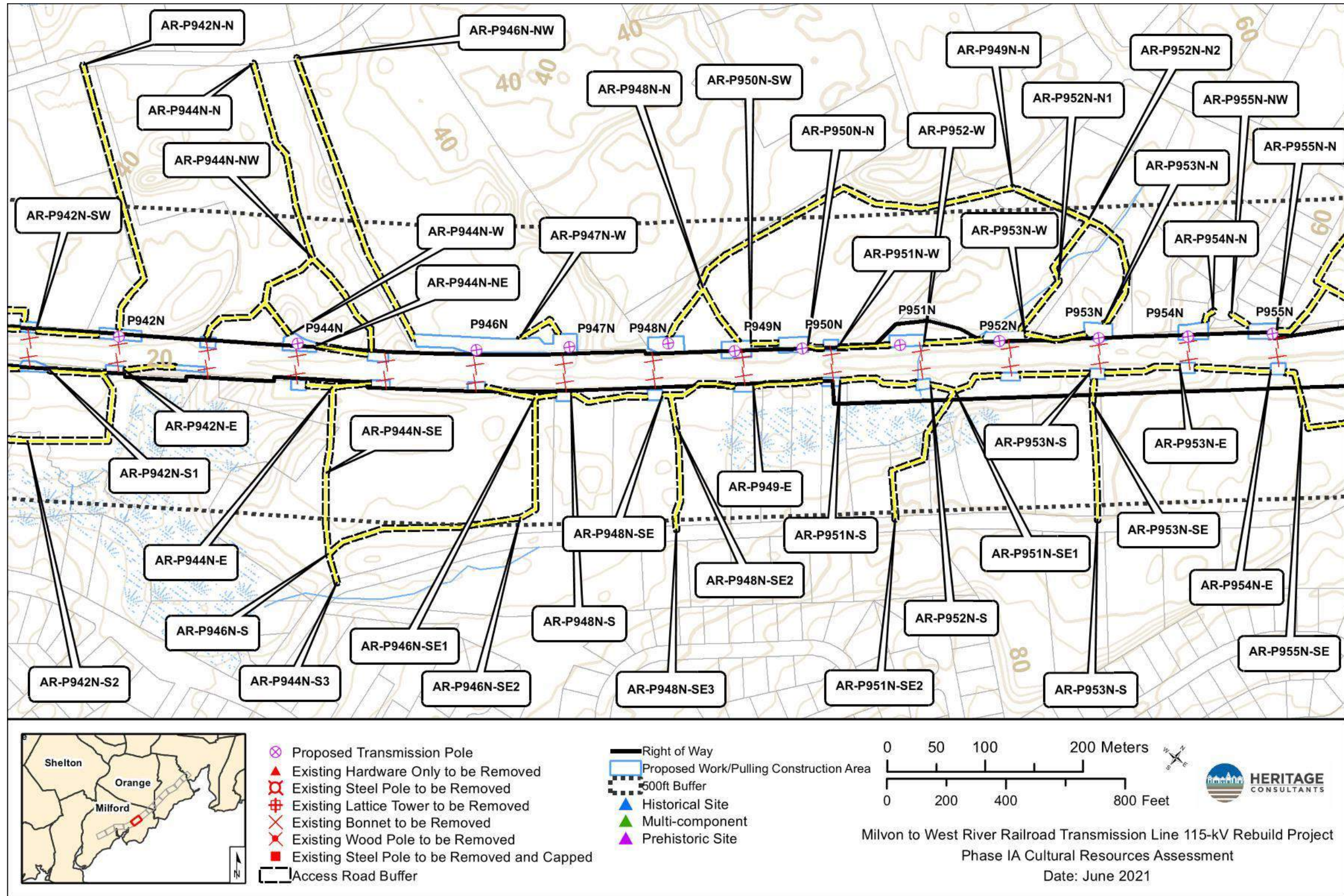


Figure 10; Sheet 5. Digital map showing the locations of previously recorded archaeological sites in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.



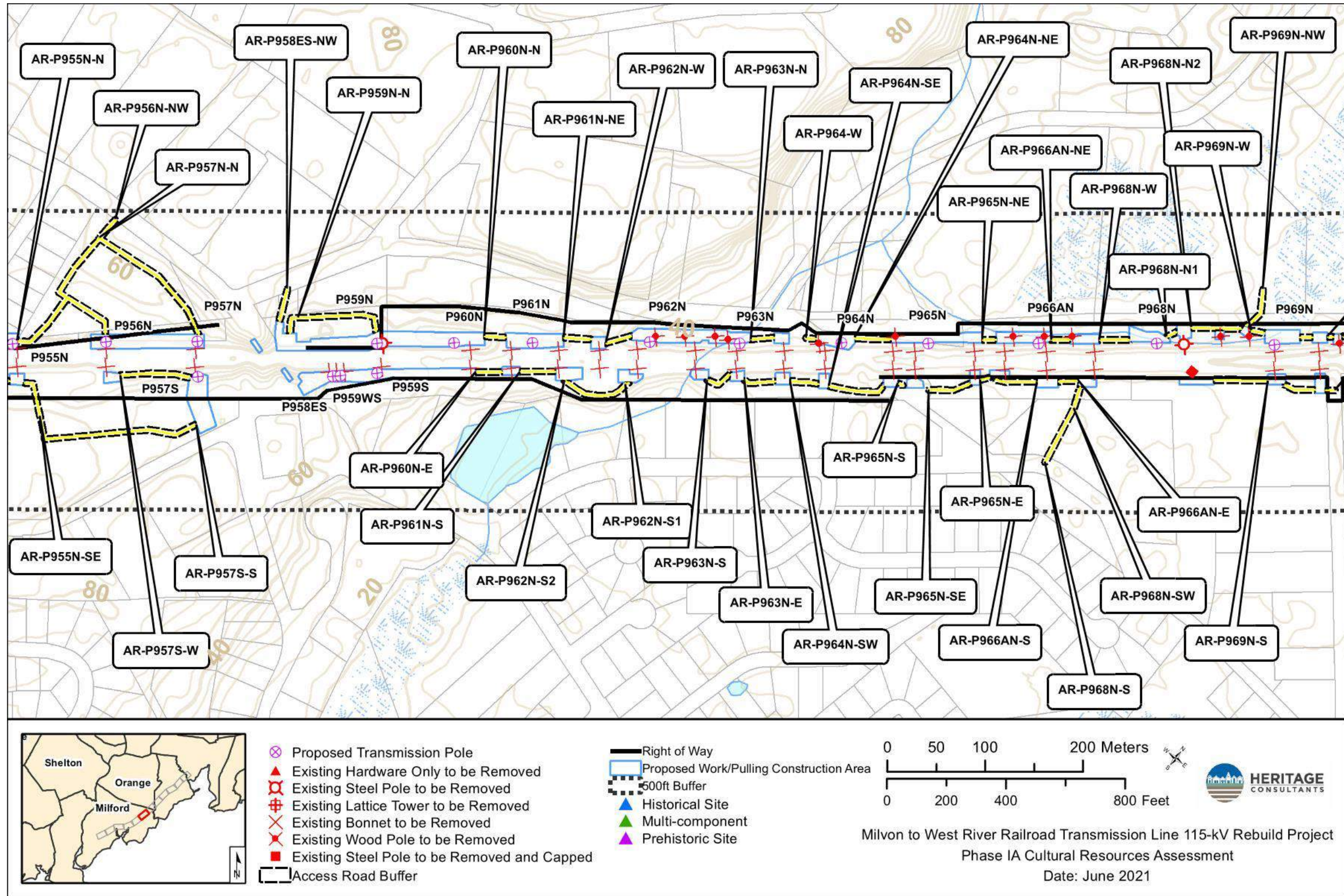


Figure 10; Sheet 6. Digital map showing the locations of previously recorded archaeological sites in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

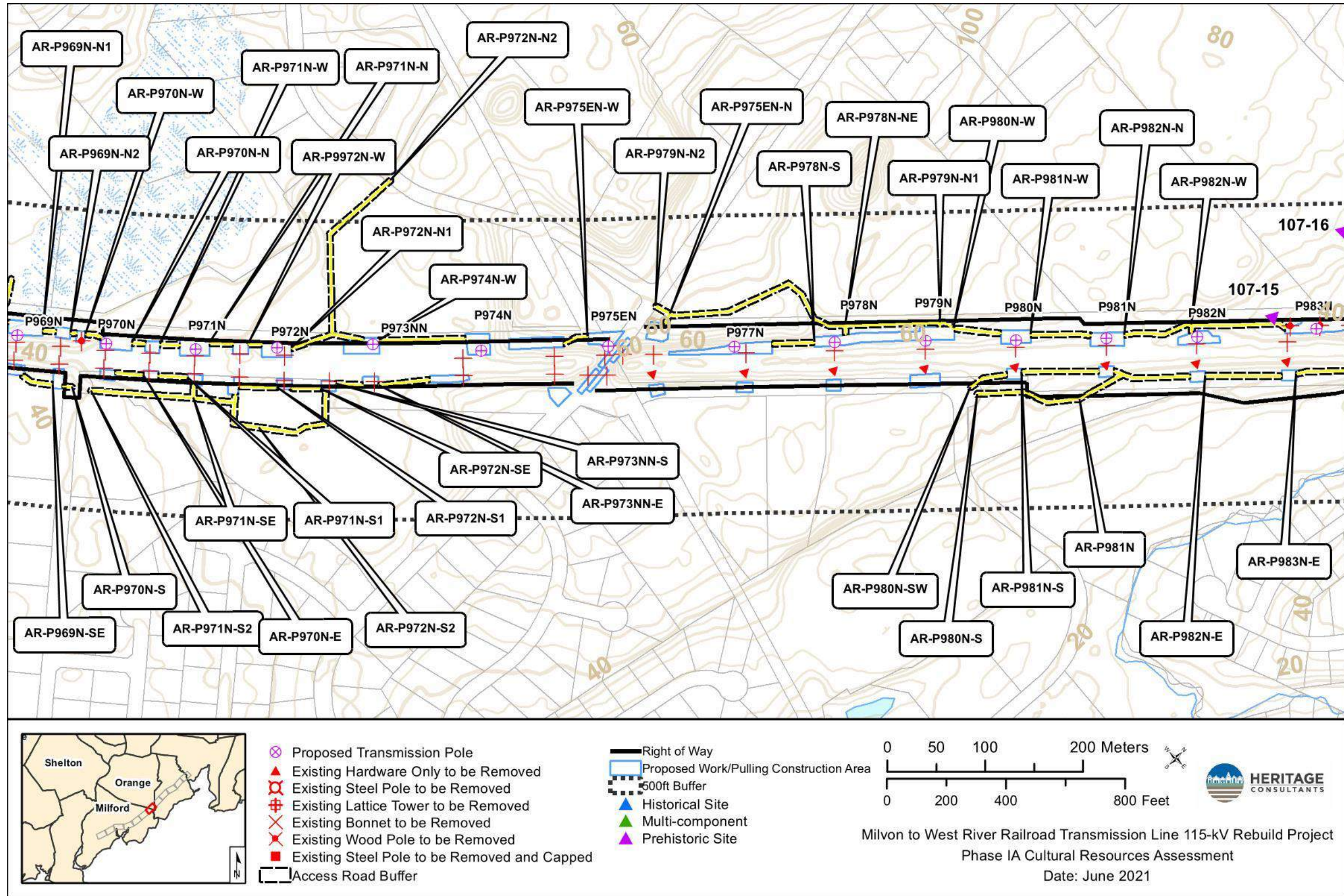


Figure 10; Sheet 7. Digital map showing the locations of previously recorded archaeological sites in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

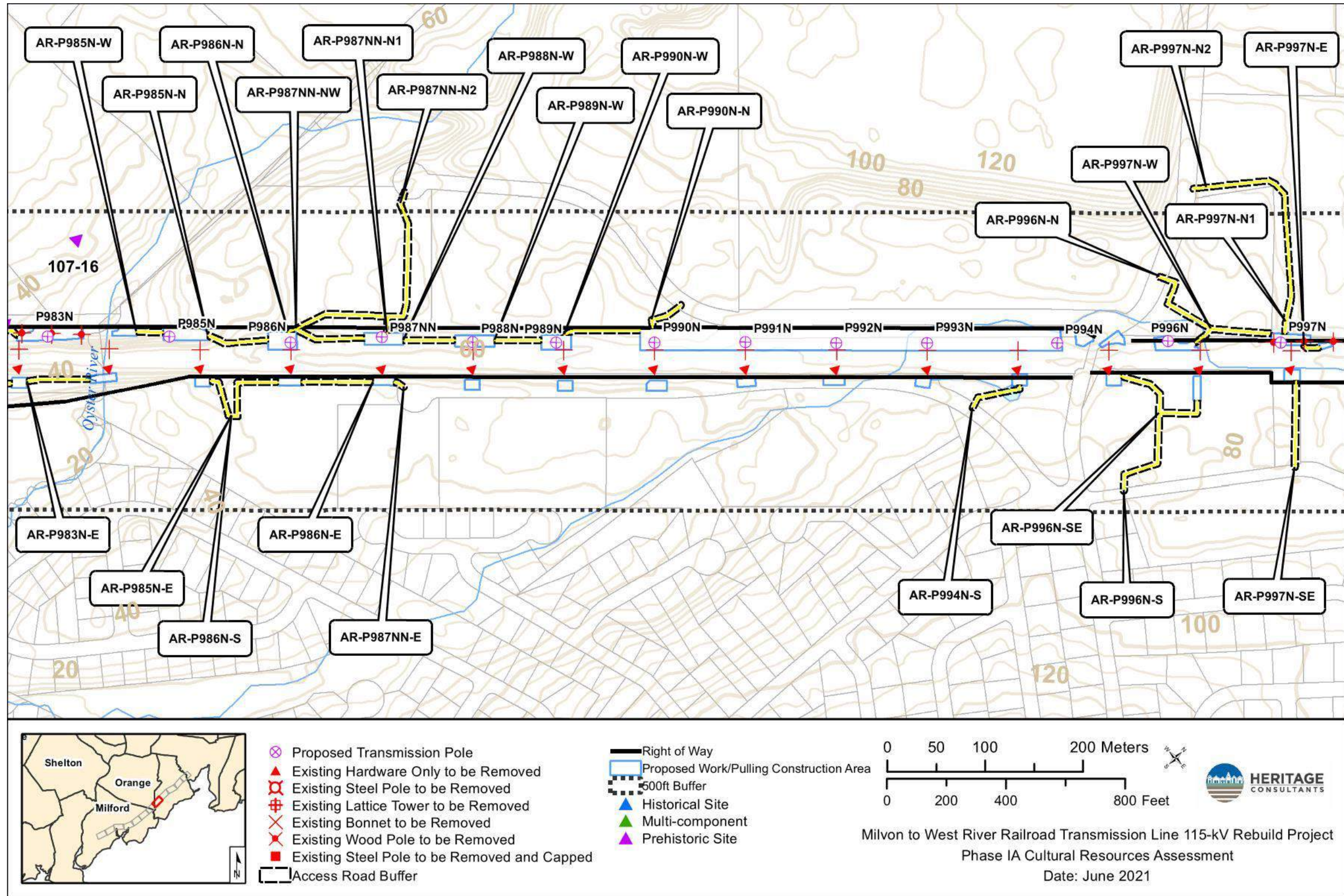


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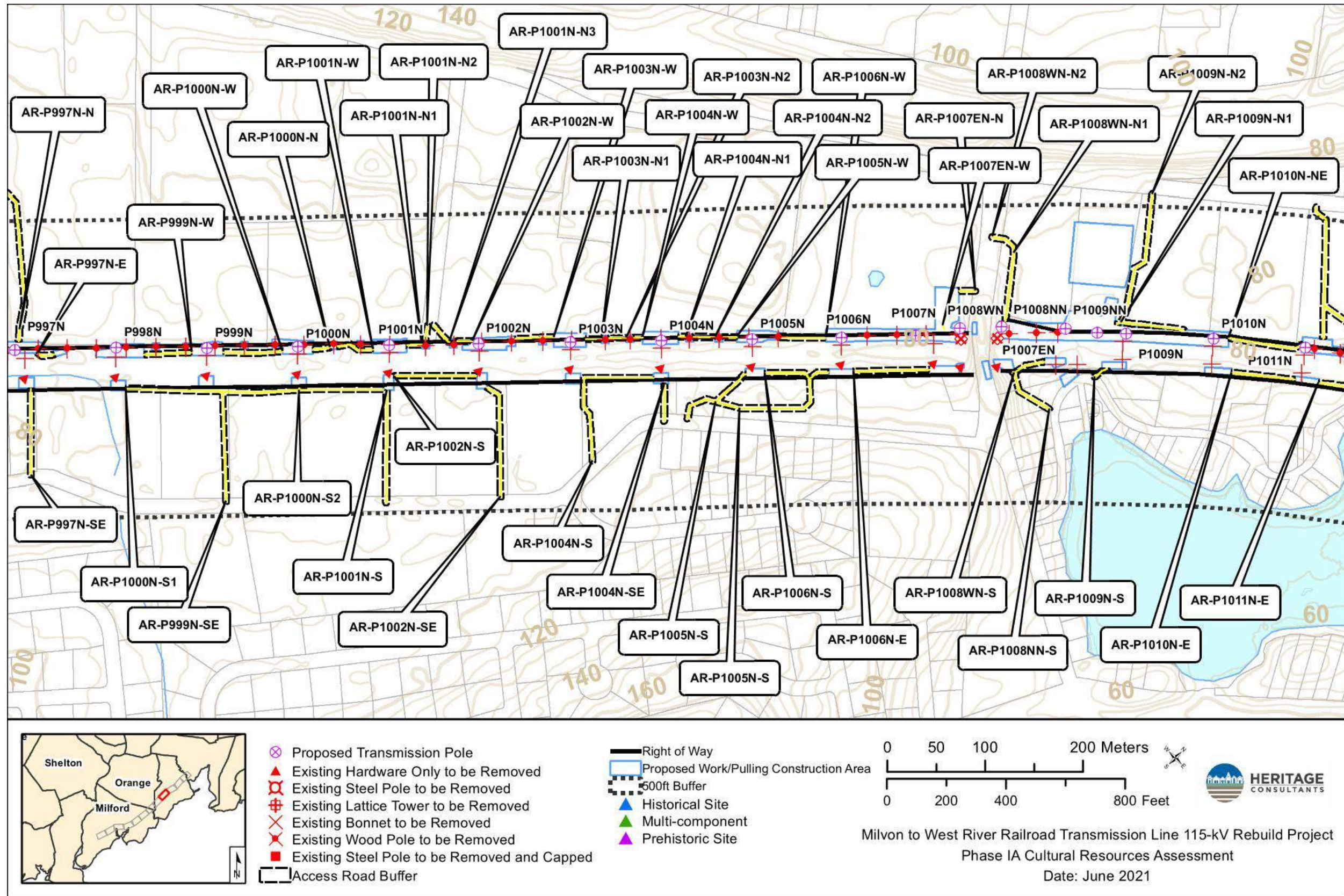


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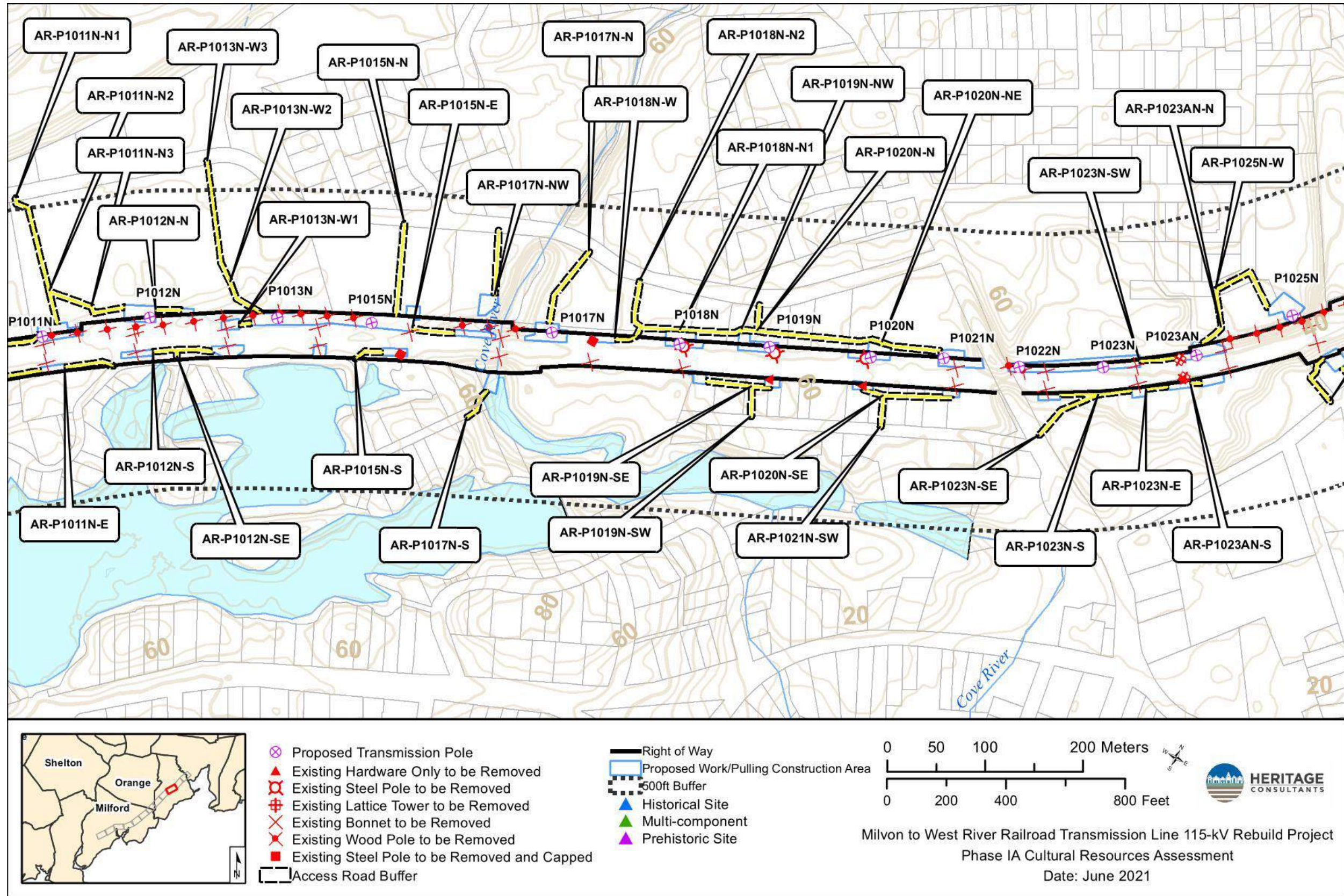


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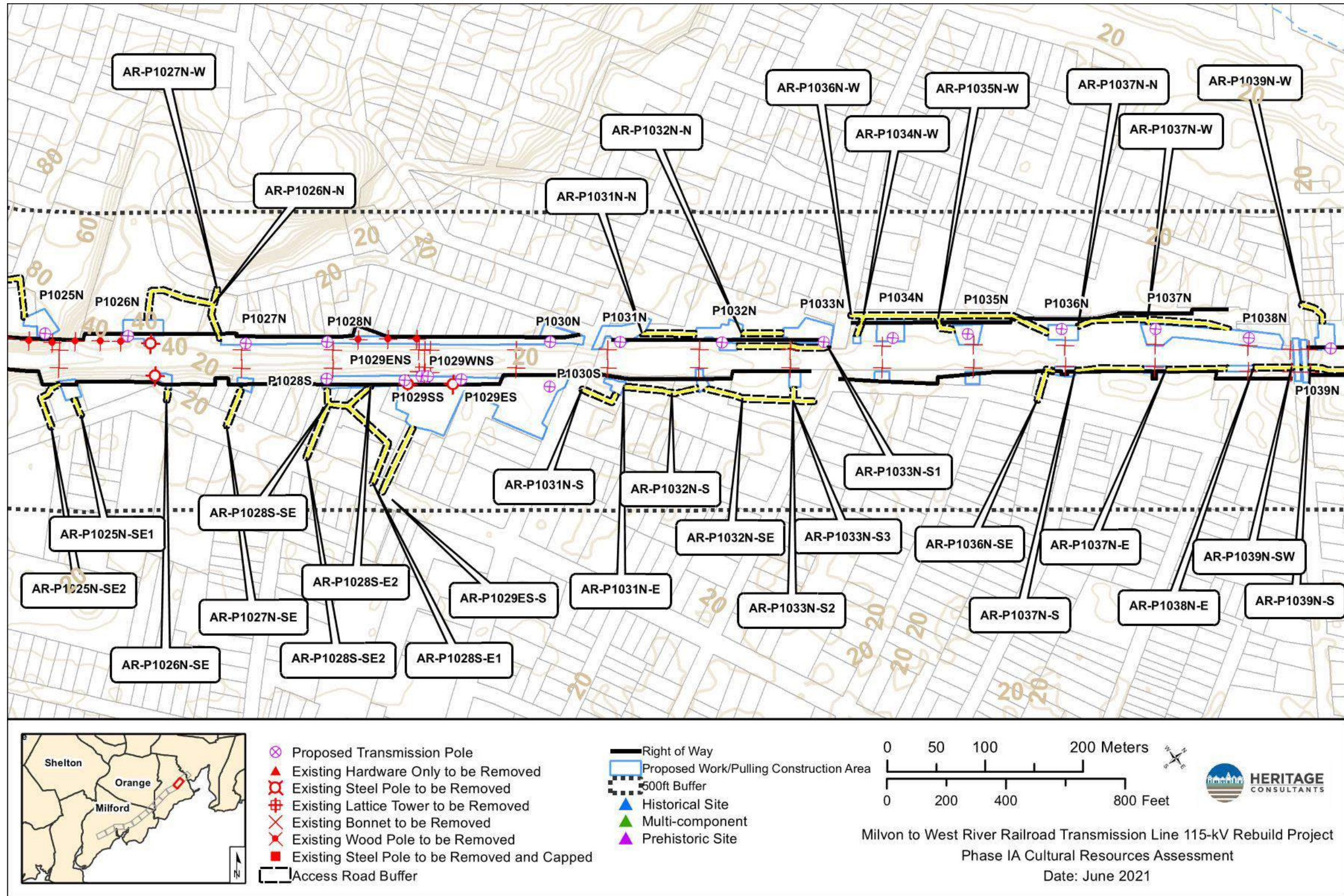
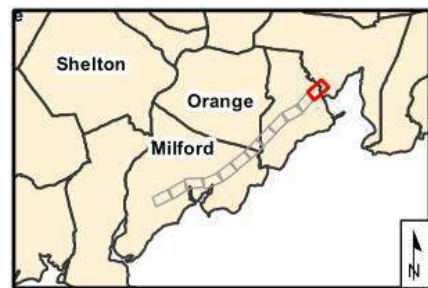
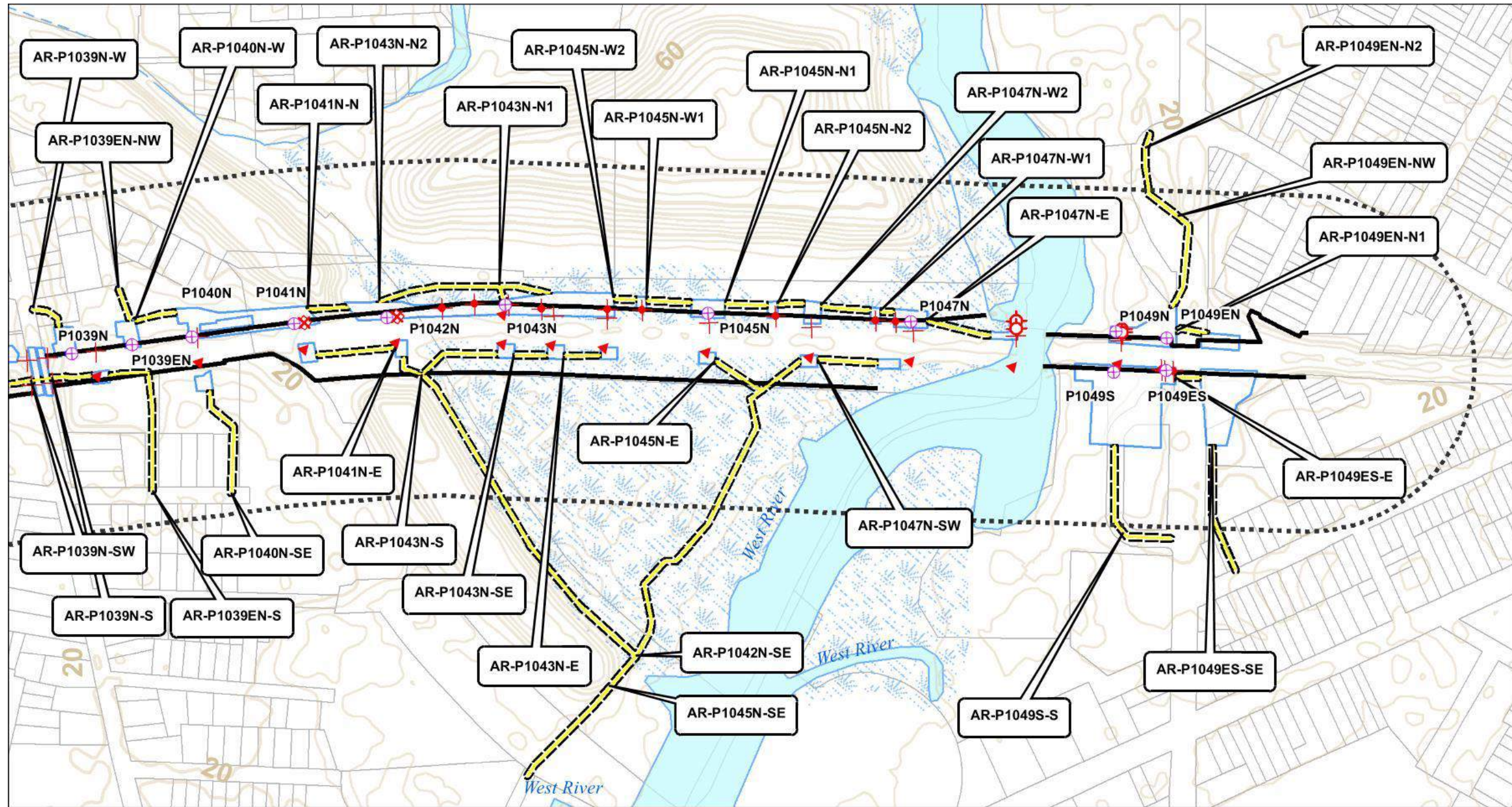
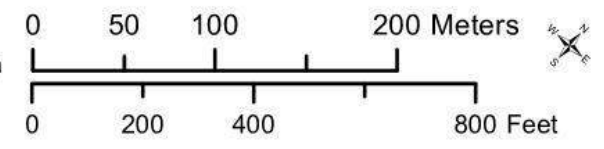


Figure 10; Sheet 11. Digital map showing the locations of previously recorded archaeological sites in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.



- ⊗ Proposed Transmission Pole
- ▲ Existing Hardware Only to be Removed
- ⊠ Existing Steel Pole to be Removed
- ⊞ Existing Lattice Tower to be Removed
- ⊗ Existing Bonnet to be Removed
- ⊗ Existing Wood Pole to be Removed
- Existing Steel Pole to be Removed and Capped
- ▭ Access Road Buffer

- Right of Way
- ▭ Proposed Work/Pulling Construction Area
- ⊞ 500ft Buffer
- ▲ Historical Site
- ▲ Multi-component
- ▲ Prehistoric Site



Milvon to West River Railroad Transmission Line 115-kV Rebuild Project  
 Phase IA Cultural Resources Assessment  
 Date: June 2021

Figure 10; Sheet 12. Digital map showing the locations of previously recorded archaeological sites in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

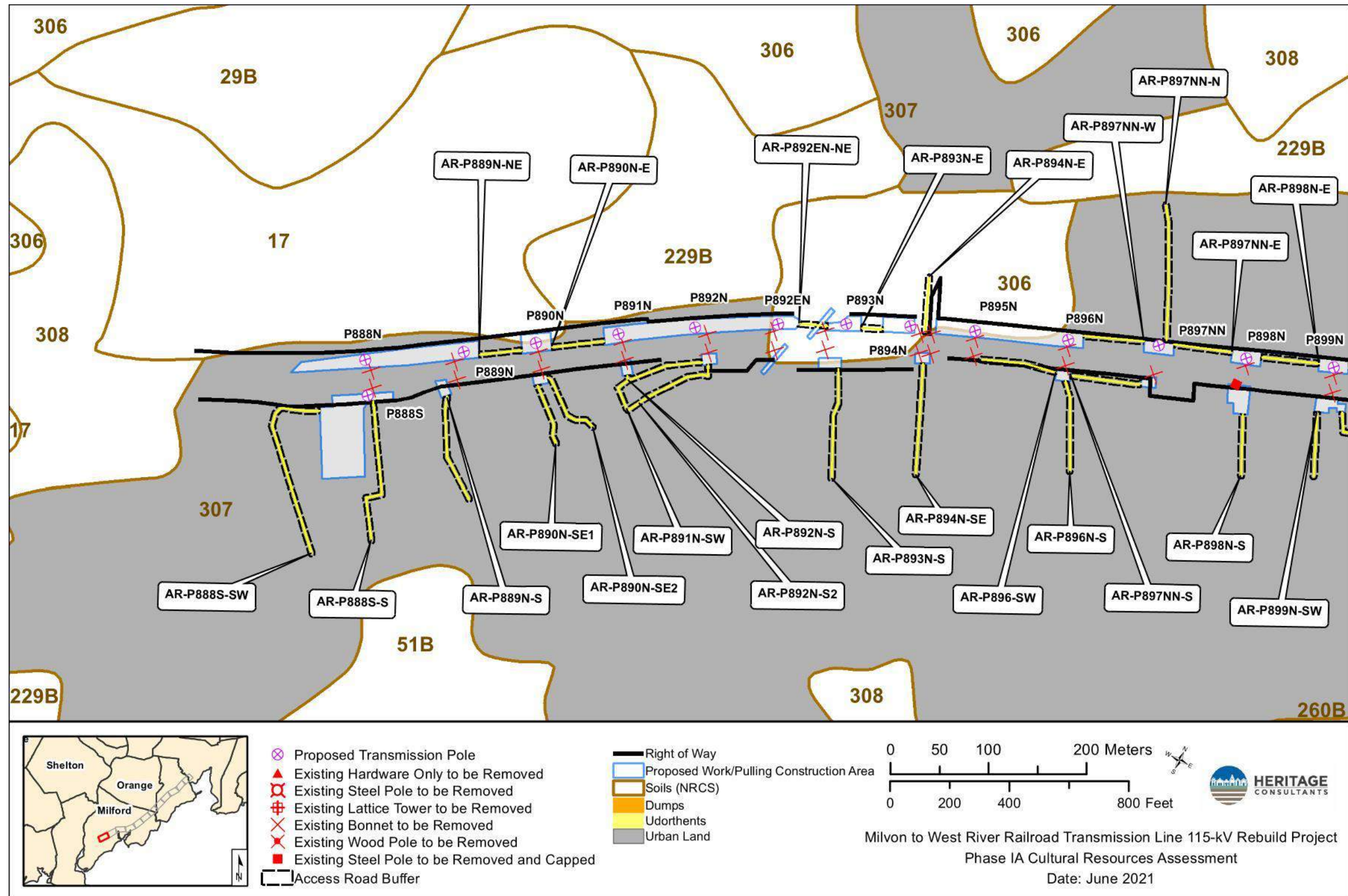


Figure 11; Sheet 1. Digital map showing the various soil types in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.



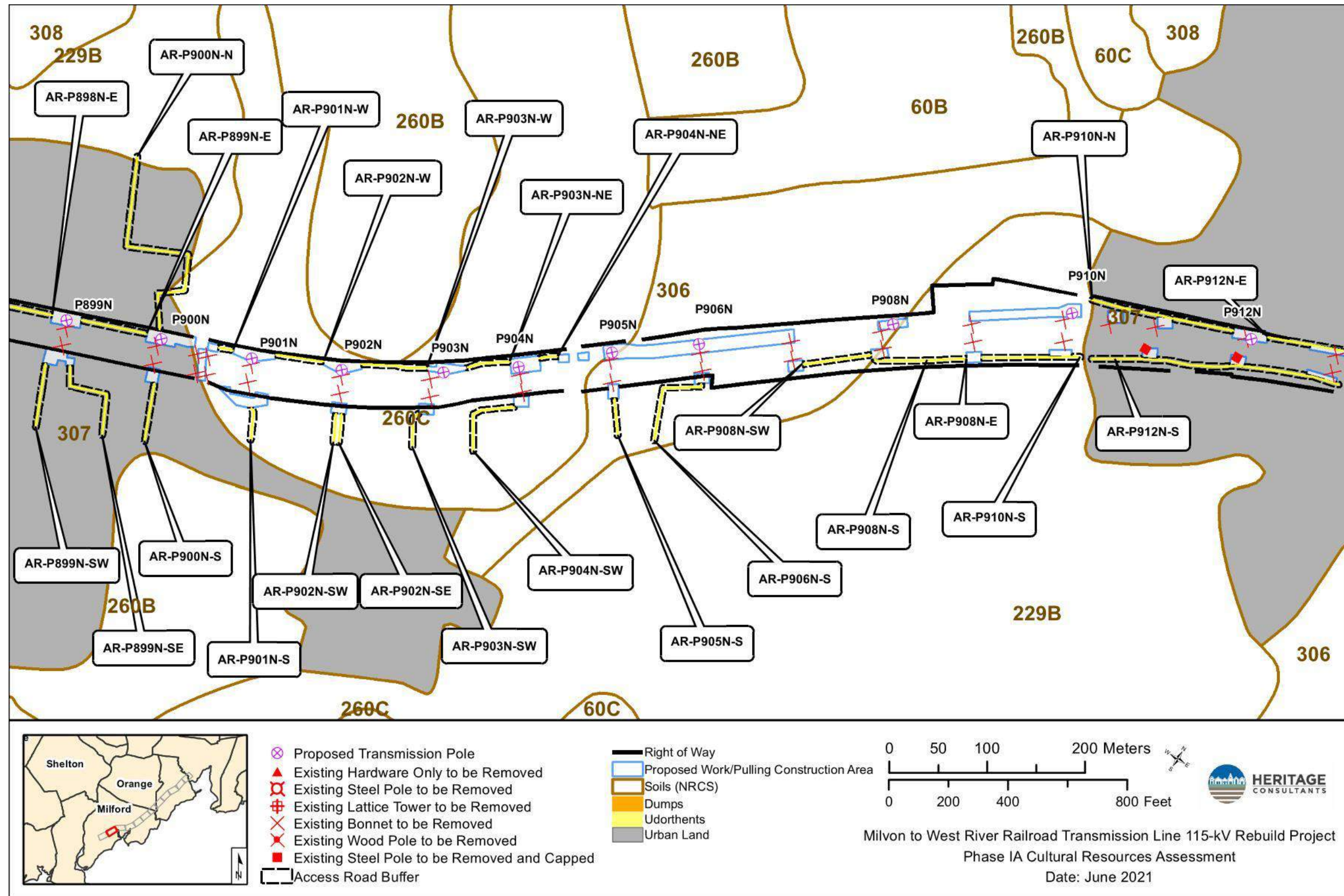


Figure 11; Sheet 2. Digital map showing the various soil types in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

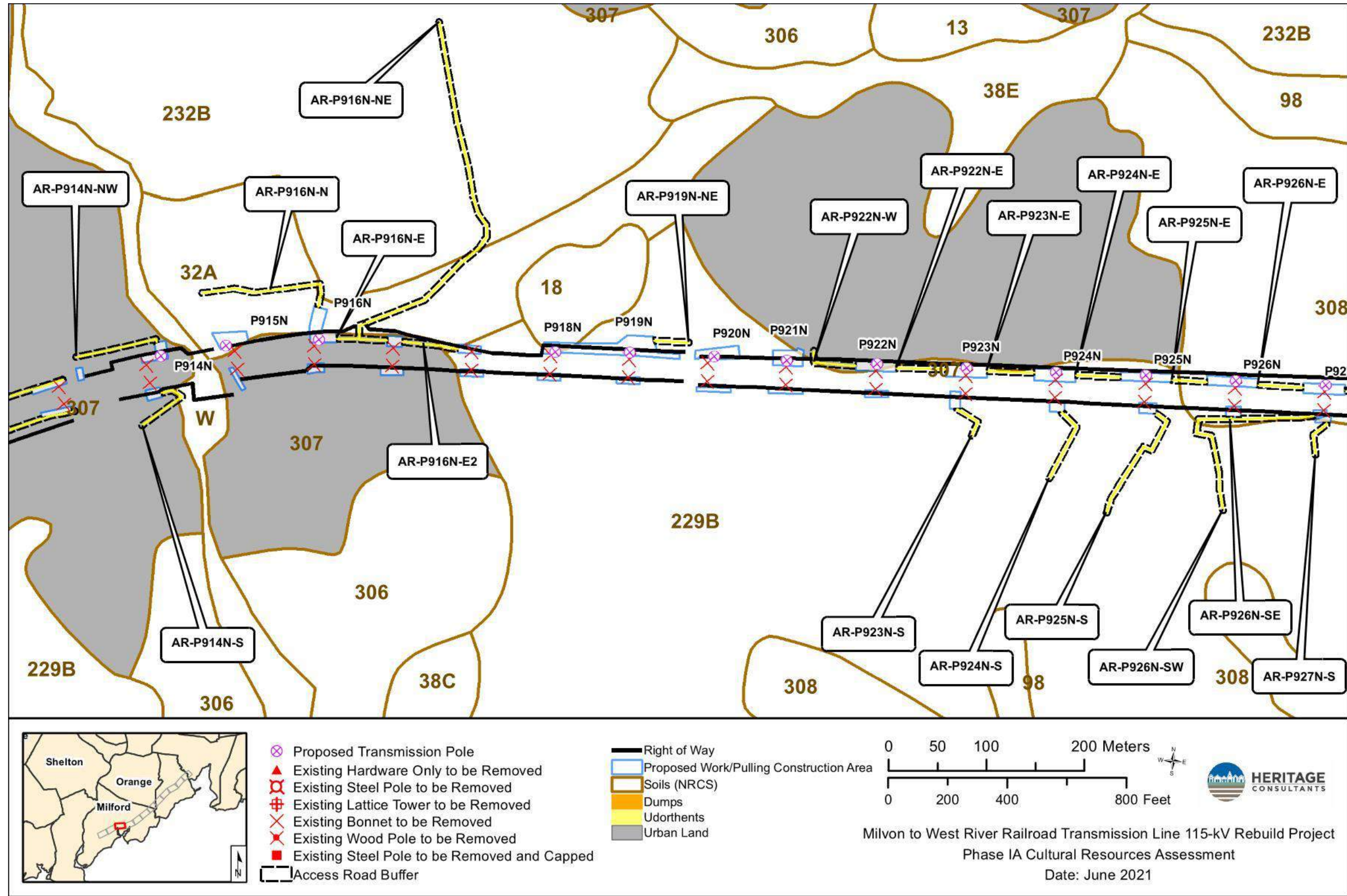


Figure 11; Sheet 3. Digital map showing the various soil types in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

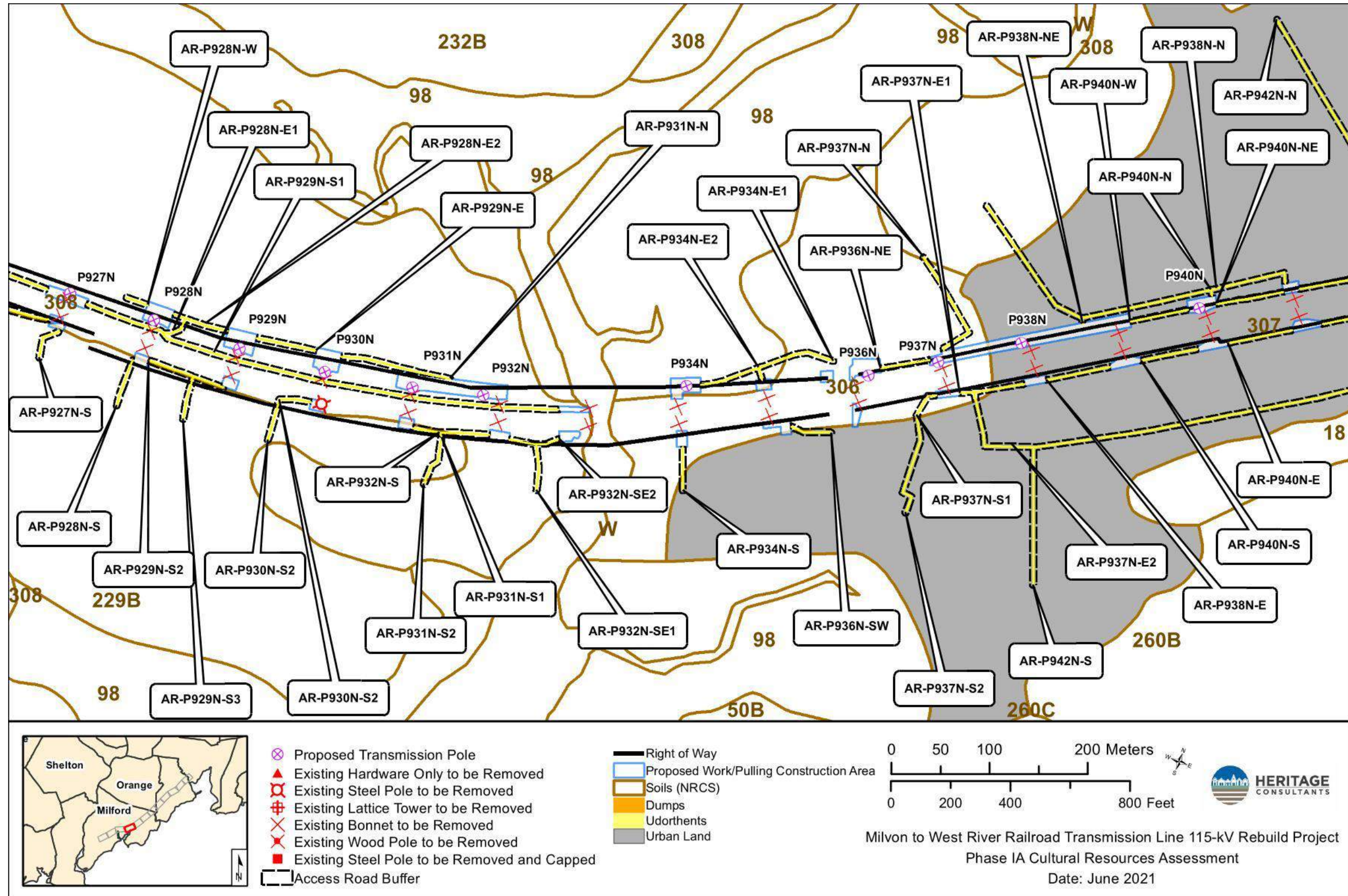


Figure 11; Sheet 4. Digital map showing the various soil types in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

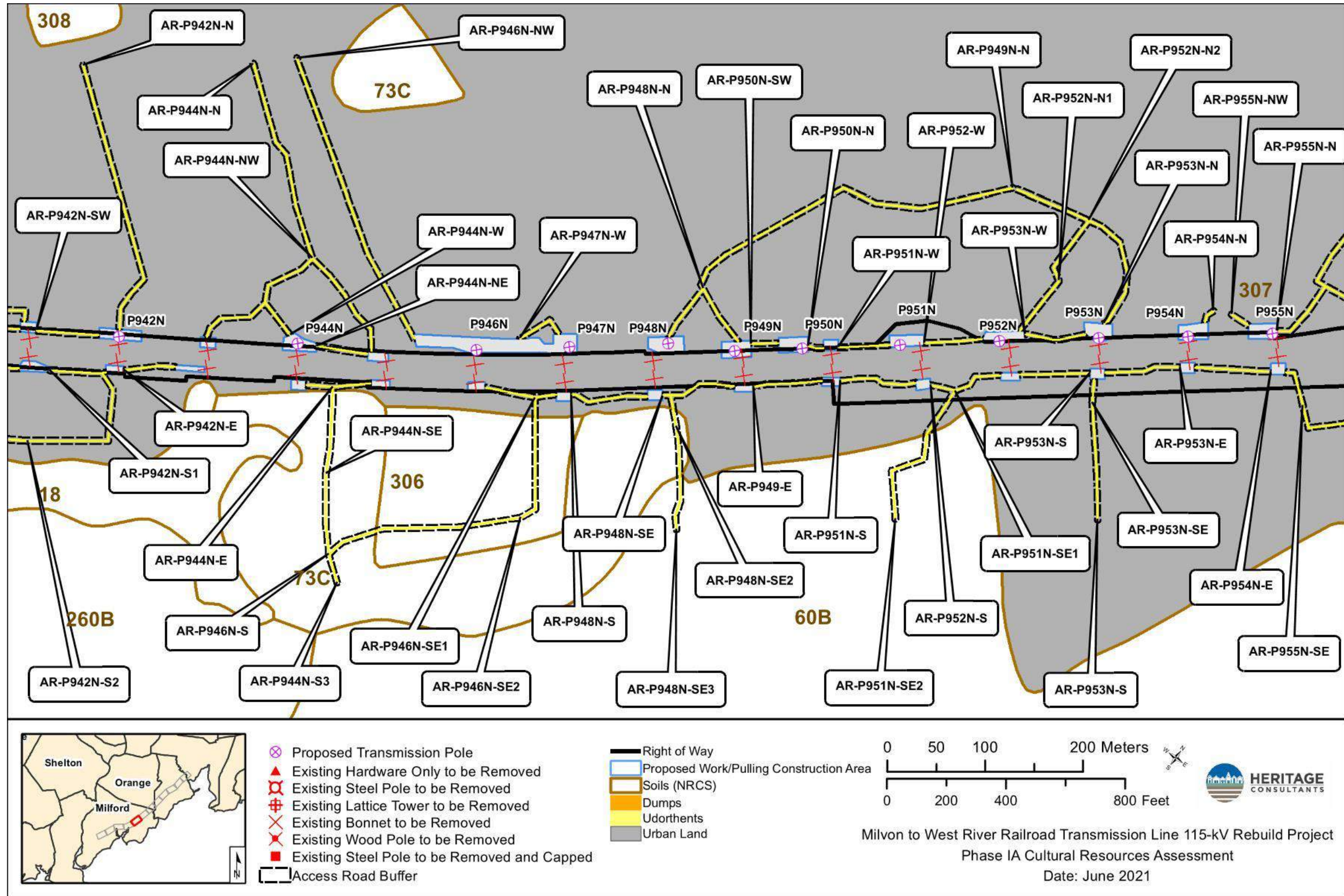


Figure 11; Sheet 5. Digital map showing the various soil types in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

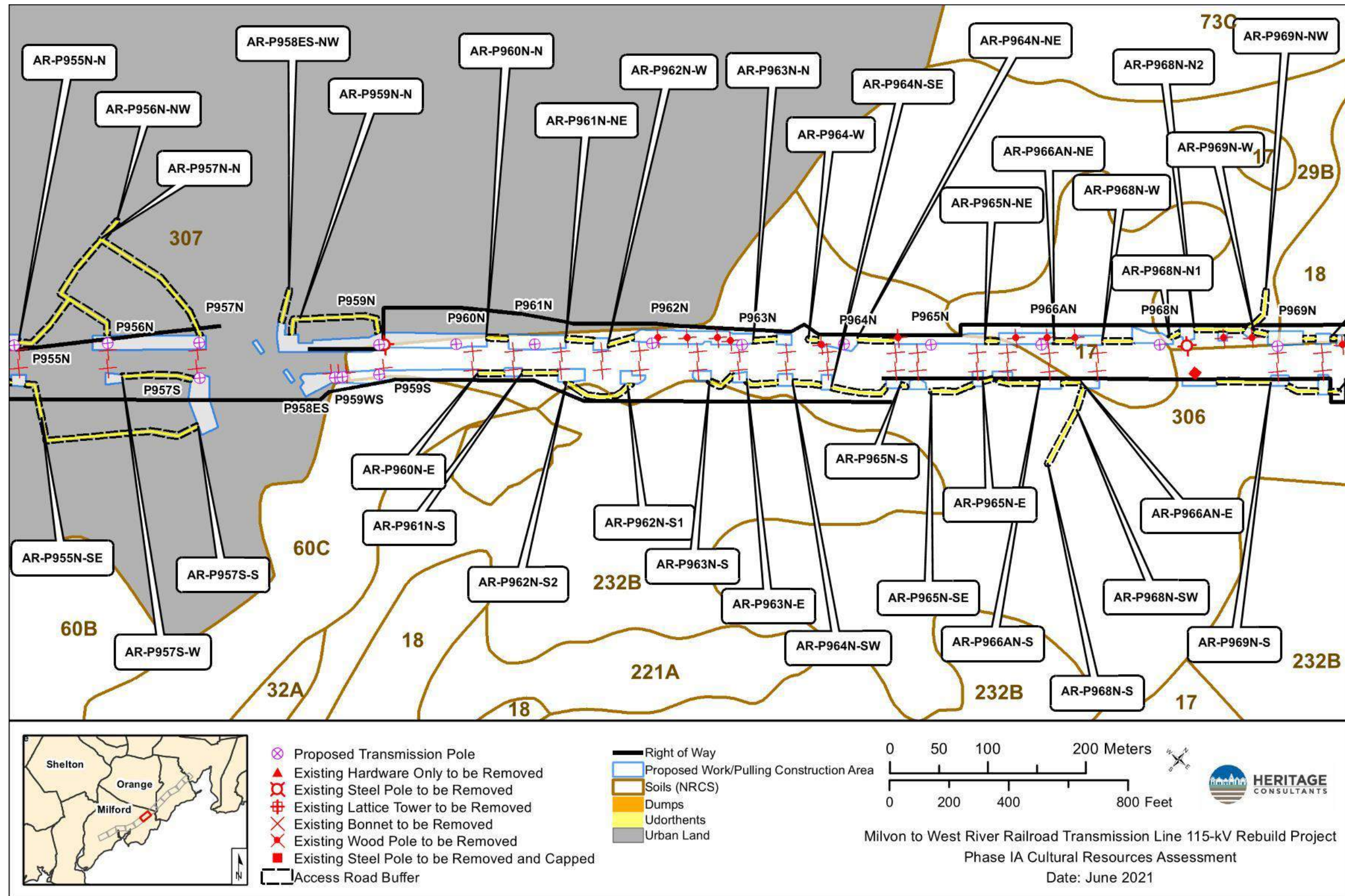


Figure 11; Sheet 6. Digital map showing the various soil types in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

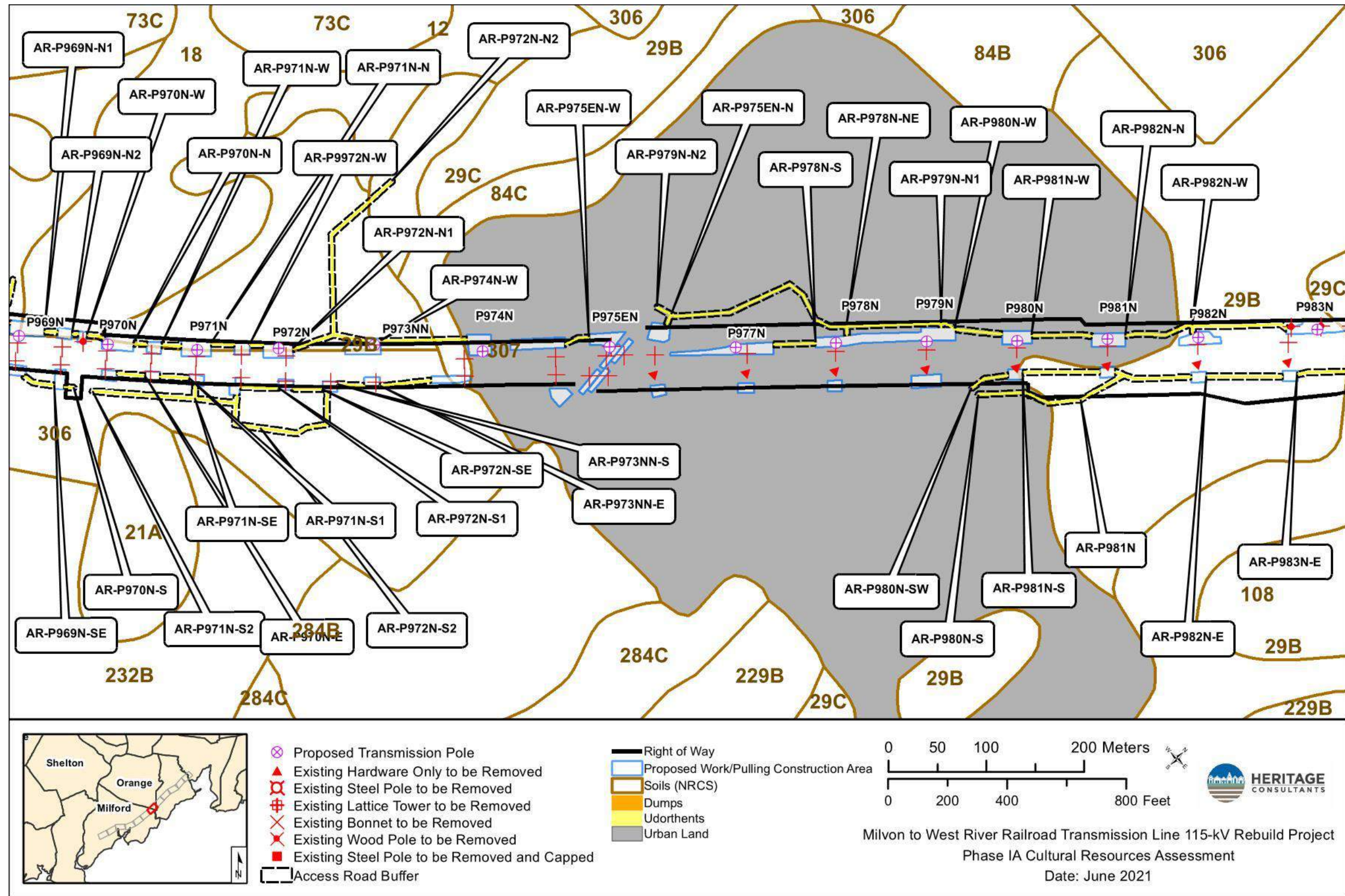


Figure 11; Sheet 7. Digital map showing the various soil types in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

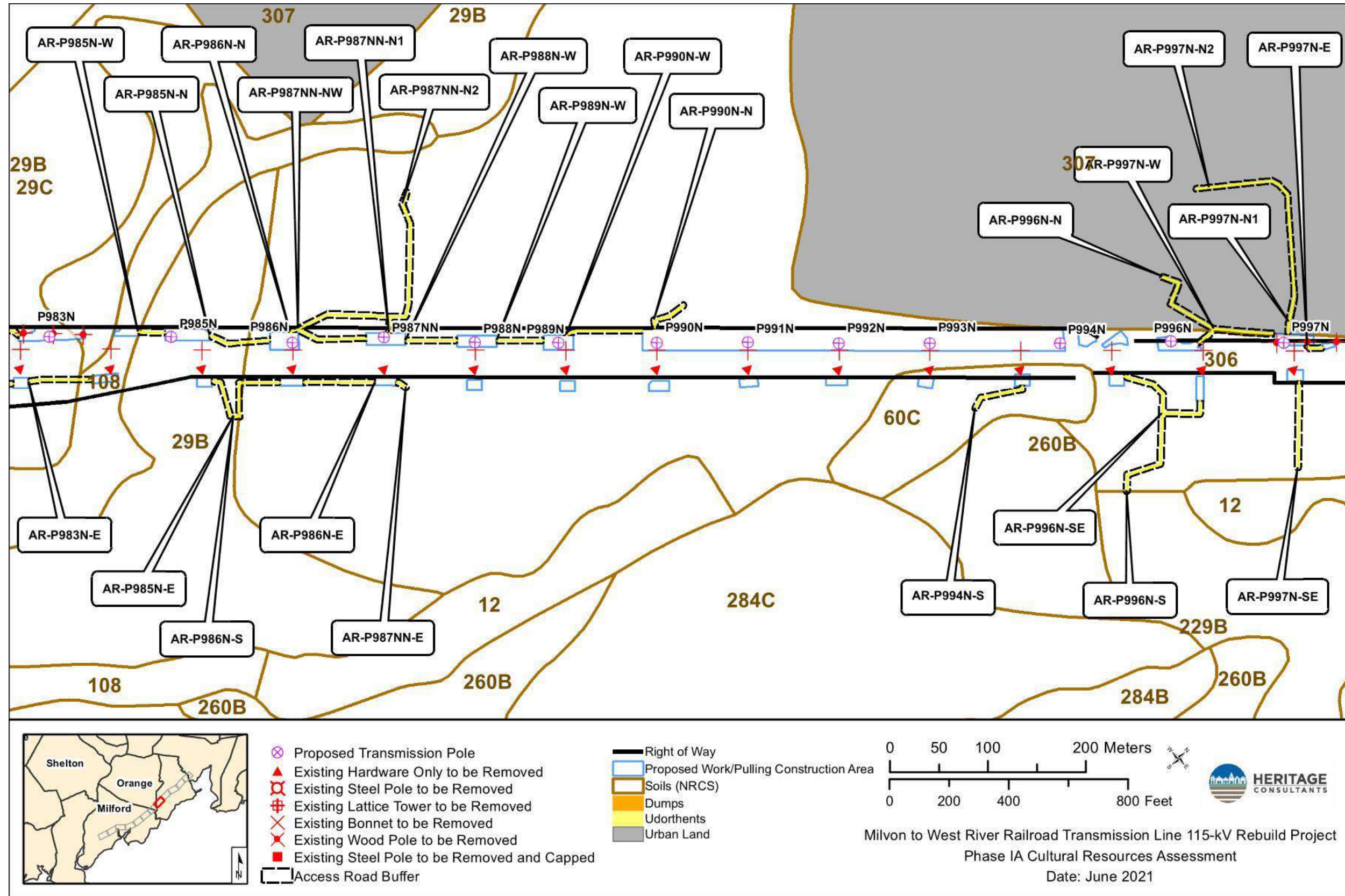


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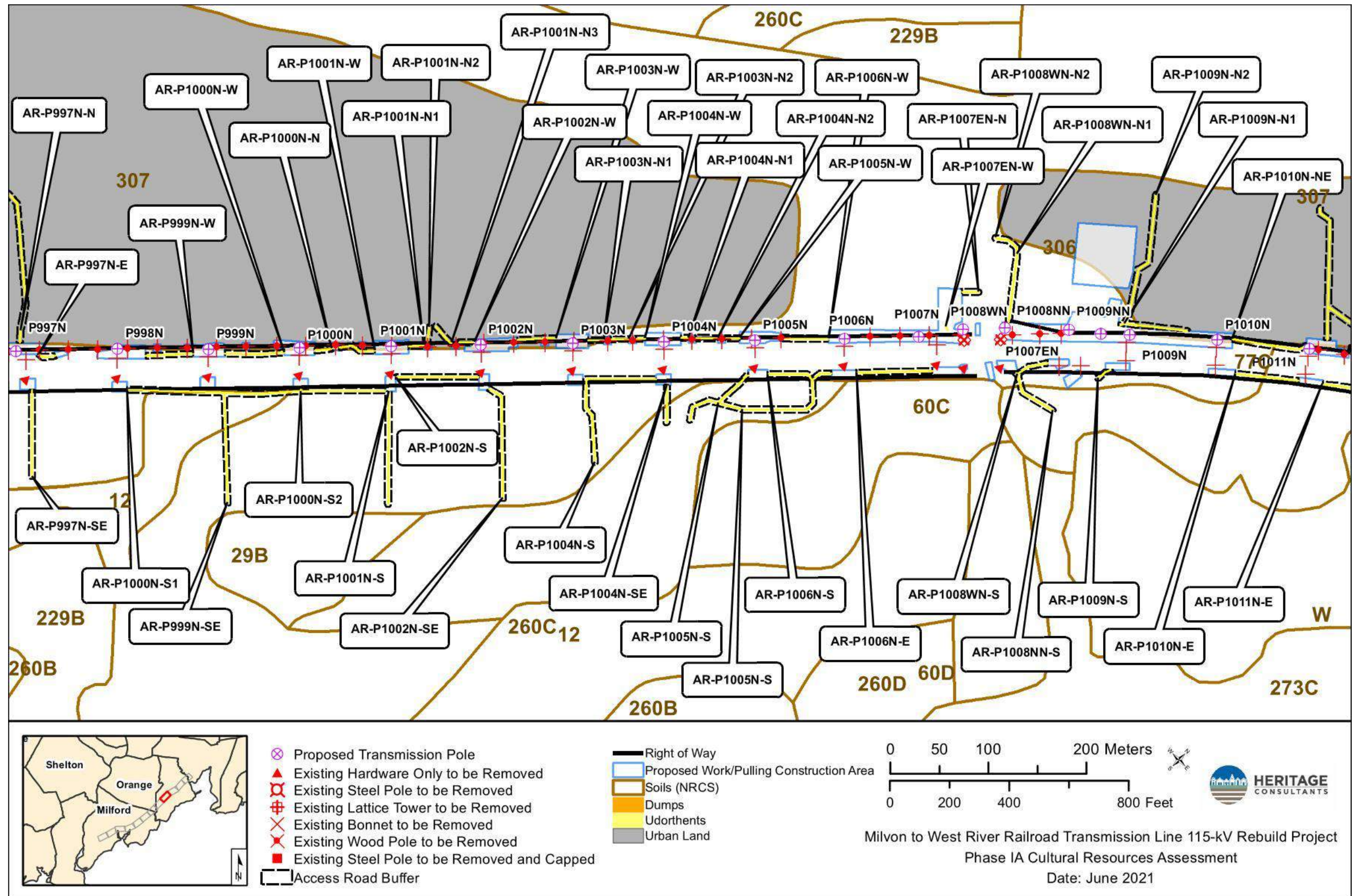


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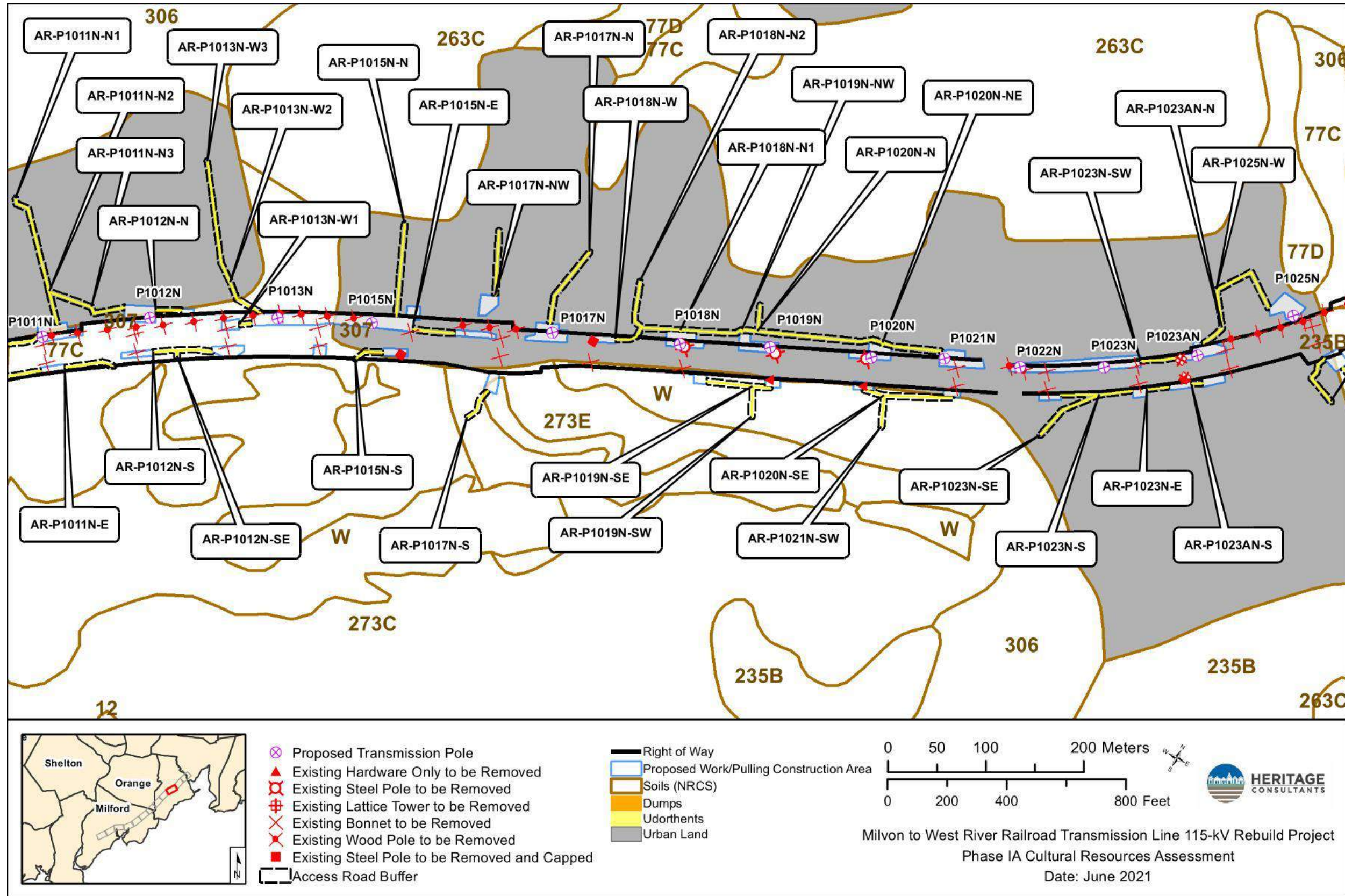


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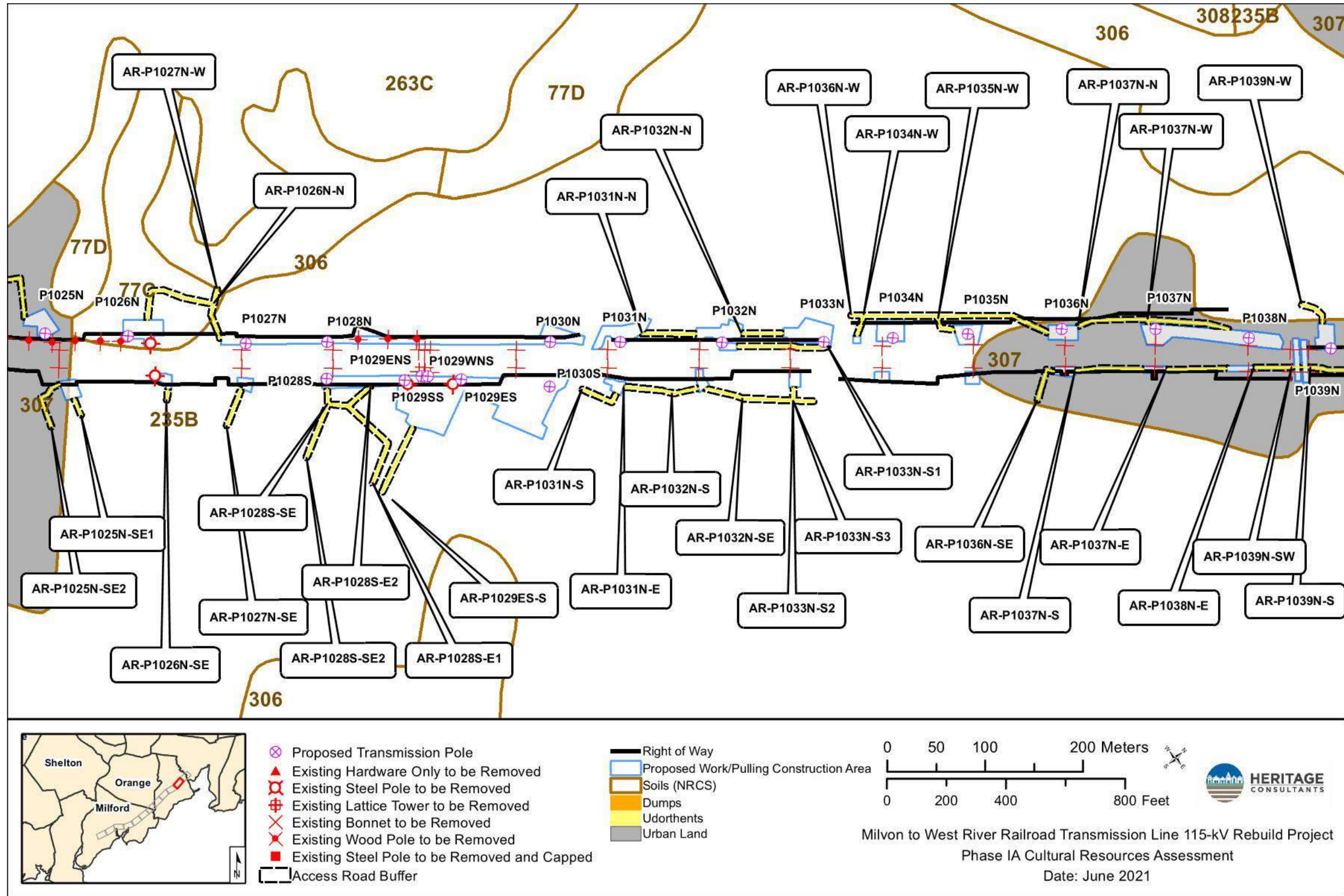
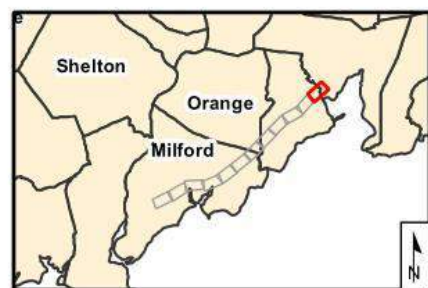
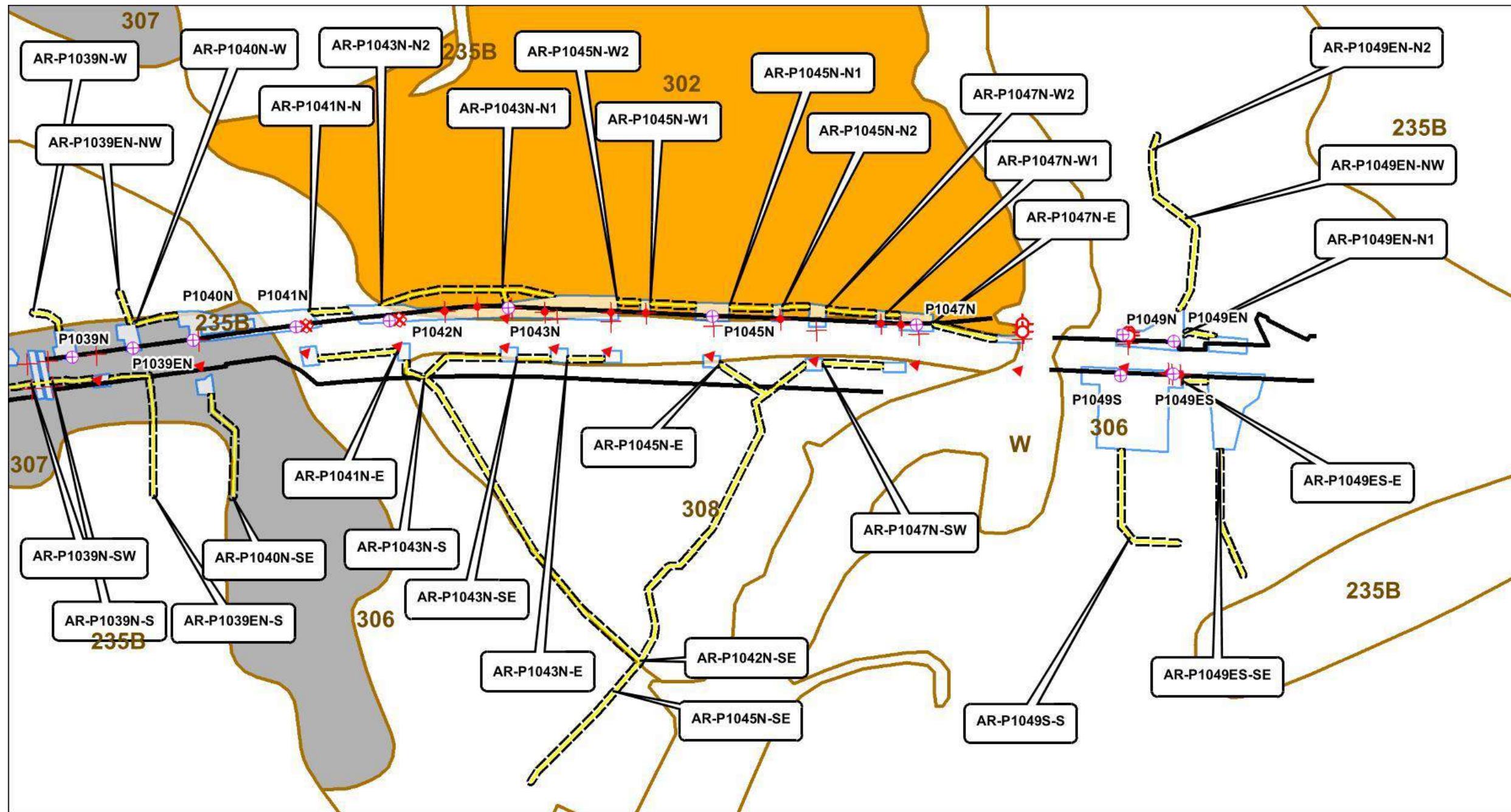
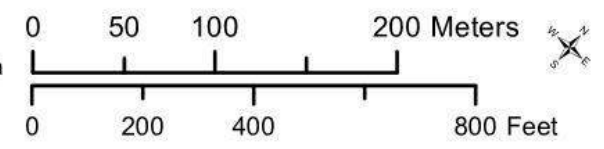


Figure 11; Sheet 11. Digital map showing the various soil types in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.



- ⊗ Proposed Transmission Pole
- ▲ Existing Hardware Only to be Removed
- ⊠ Existing Steel Pole to be Removed
- ⊞ Existing Lattice Tower to be Removed
- ⊗ Existing Bonnet to be Removed
- ⊗ Existing Wood Pole to be Removed
- Existing Steel Pole to be Removed and Capped
- ▭ Access Road Buffer

- Right of Way
- ▭ Proposed Work/Pulling Construction Area
- ▭ Soils (NRCS)
- ▭ Dumps
- ▭ Udorthents
- ▭ Urban Land



Milvon to West River Railroad Transmission Line 115-kV Rebuild Project  
 Phase IA Cultural Resources Assessment  
 Date: June 2021

Figure 11; Sheet 12. Digital map showing the various soil types in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

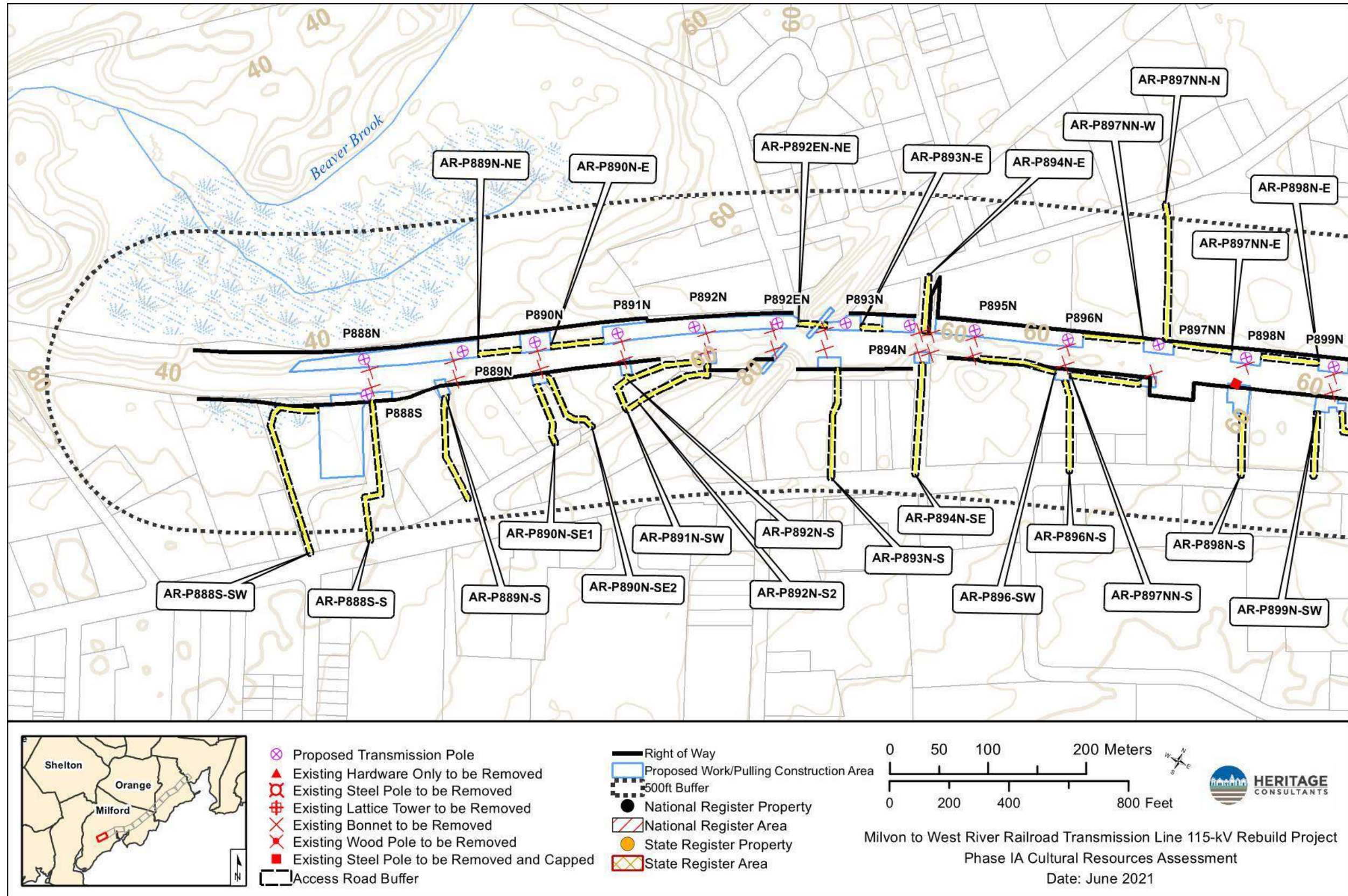


Figure 12; Sheet 1. Digital map showing the locations of National/State Register of Historic Places properties/district in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut.

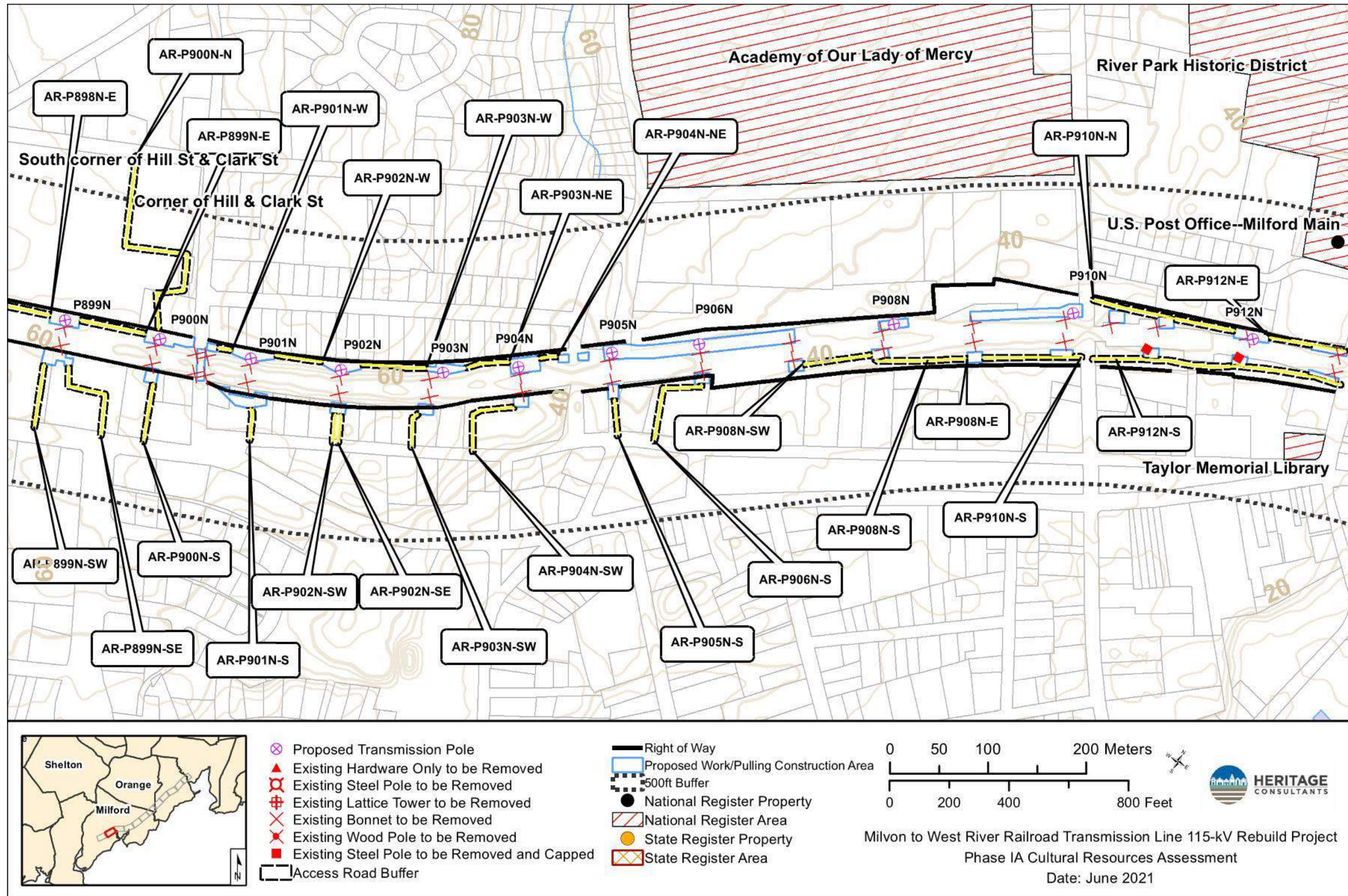


Figure 12; Sheet 2. Digital map showing the locations of National/State Register of Historic Places properties/district in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

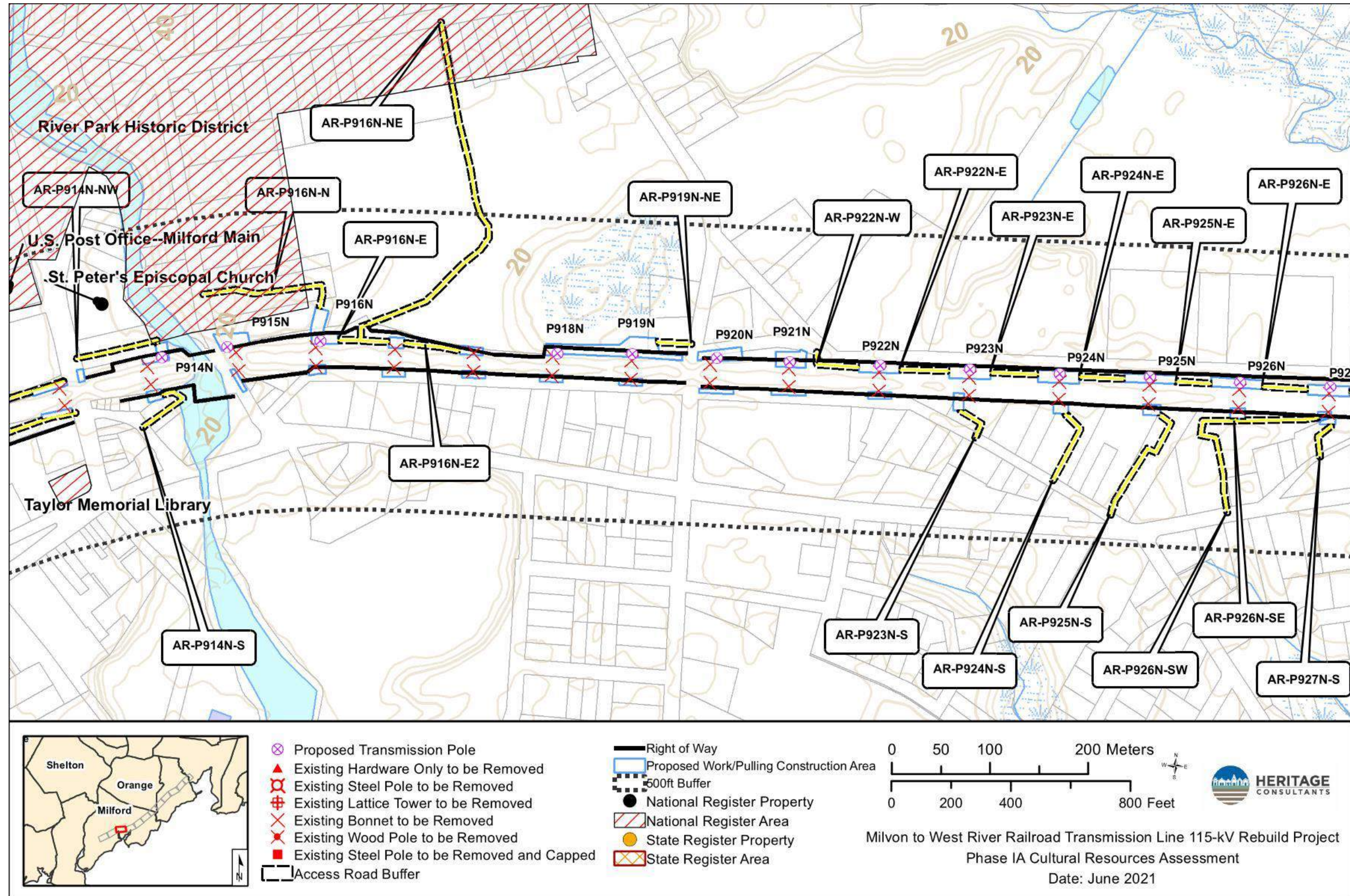


Figure 12; Sheet 3. Digital map showing the locations of National/State Register of Historic Places properties/district in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

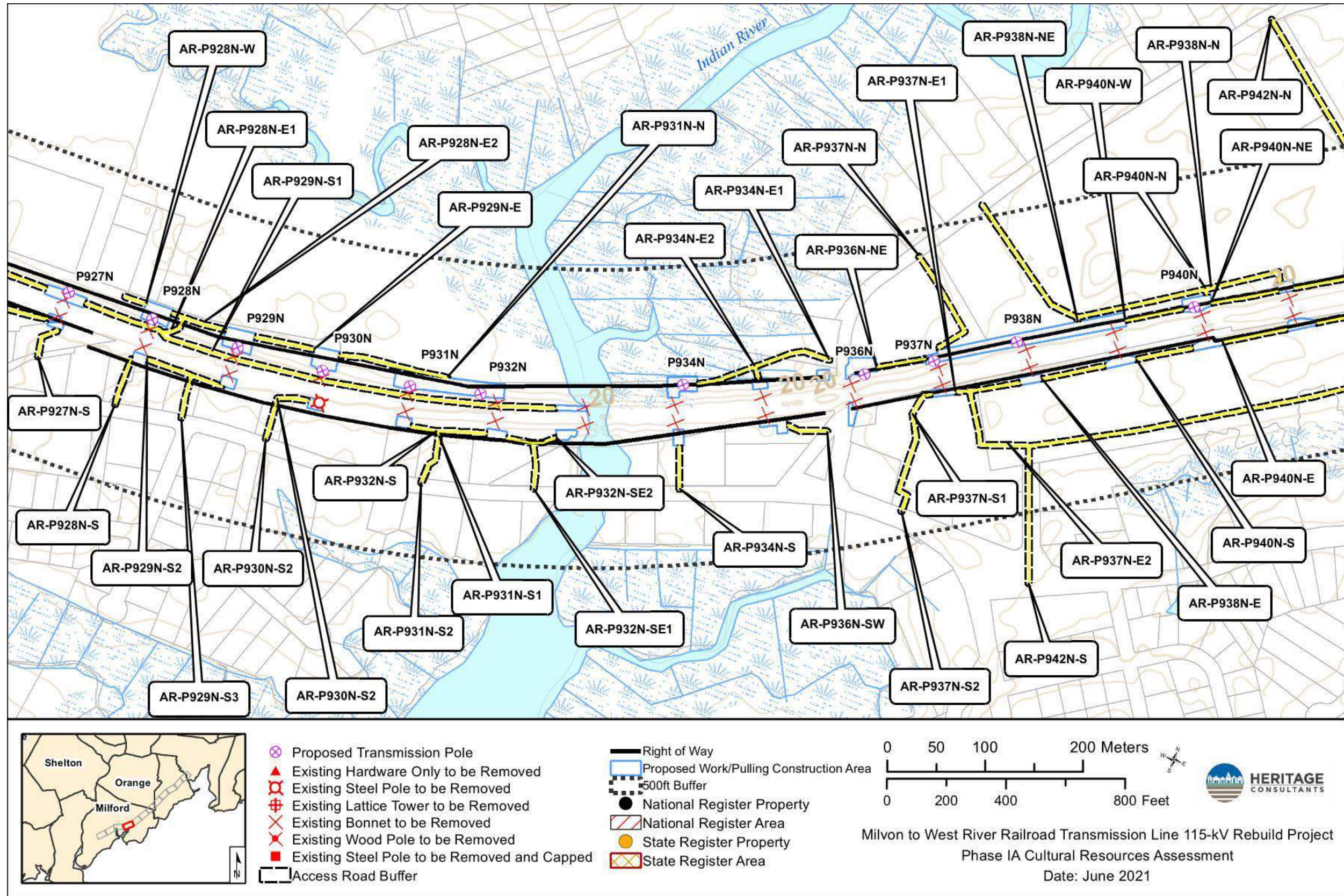


Figure 12; Sheet 4. Digital map showing the locations of National/State Register of Historic Places properties/district in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

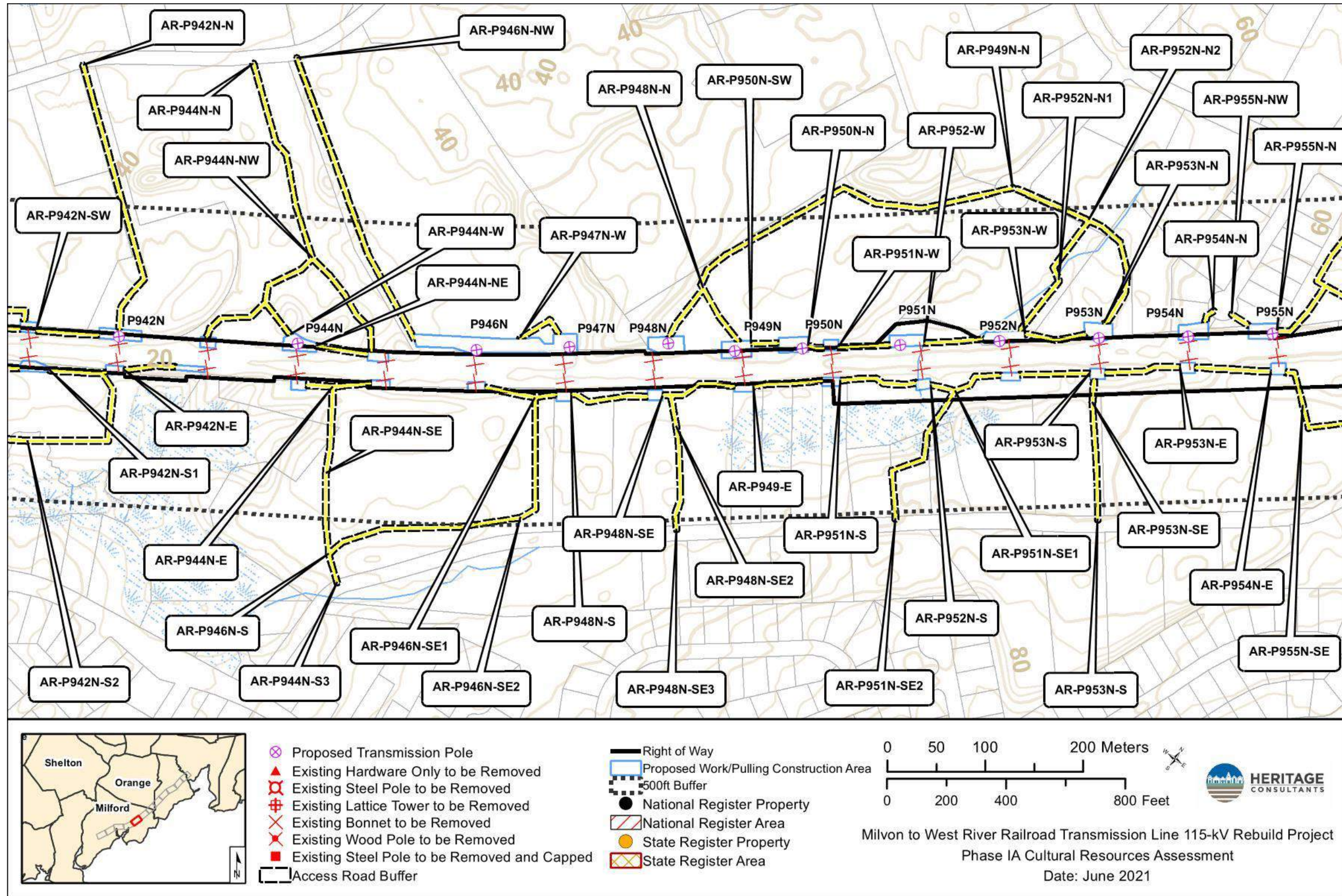


Figure 12; Sheet 5. Digital map showing the locations of National/State Register of Historic Places properties/district in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.



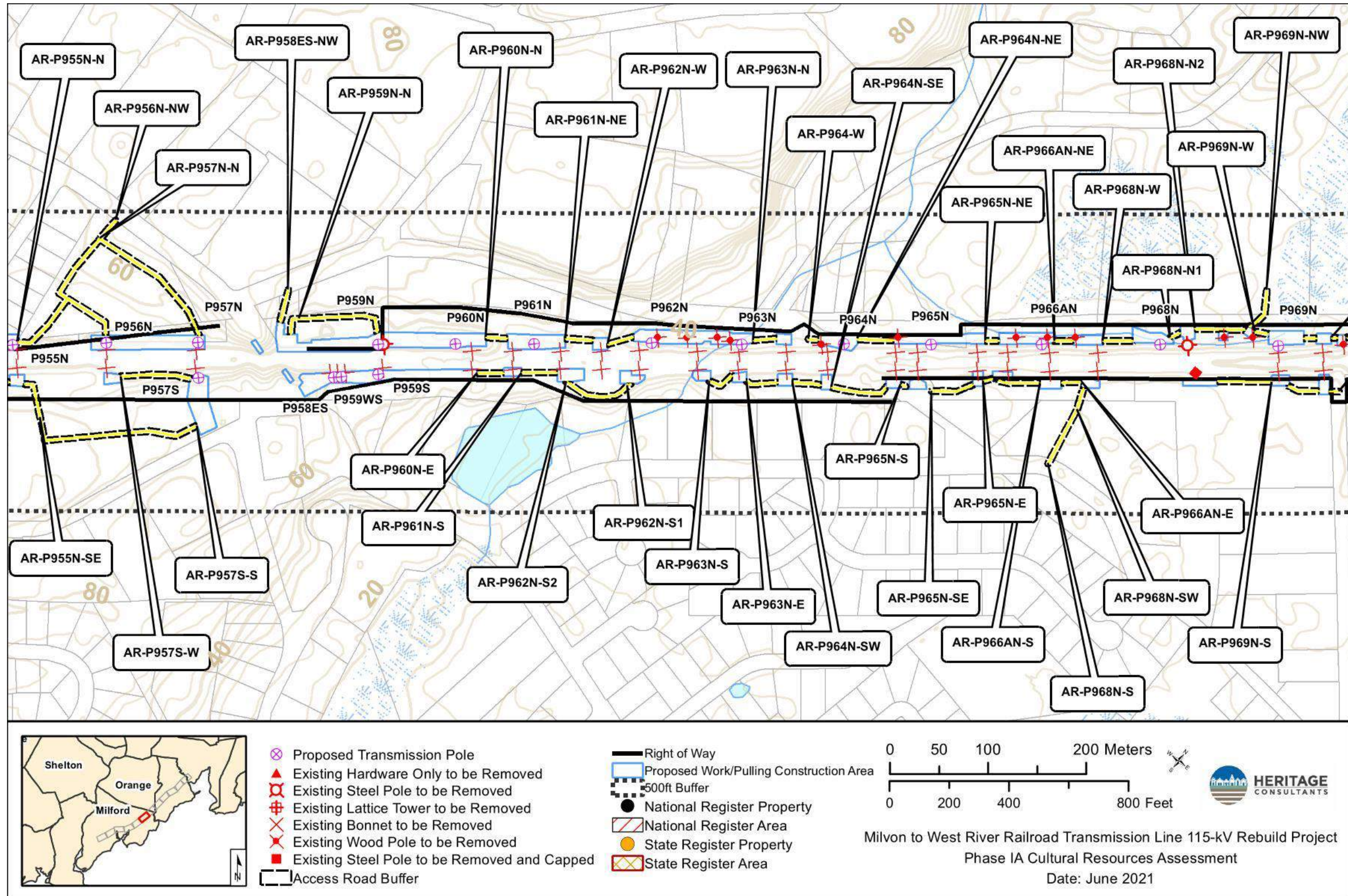


Figure 12; Sheet 6. Digital map showing the locations of National/State Register of Historic Places properties/district in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut.

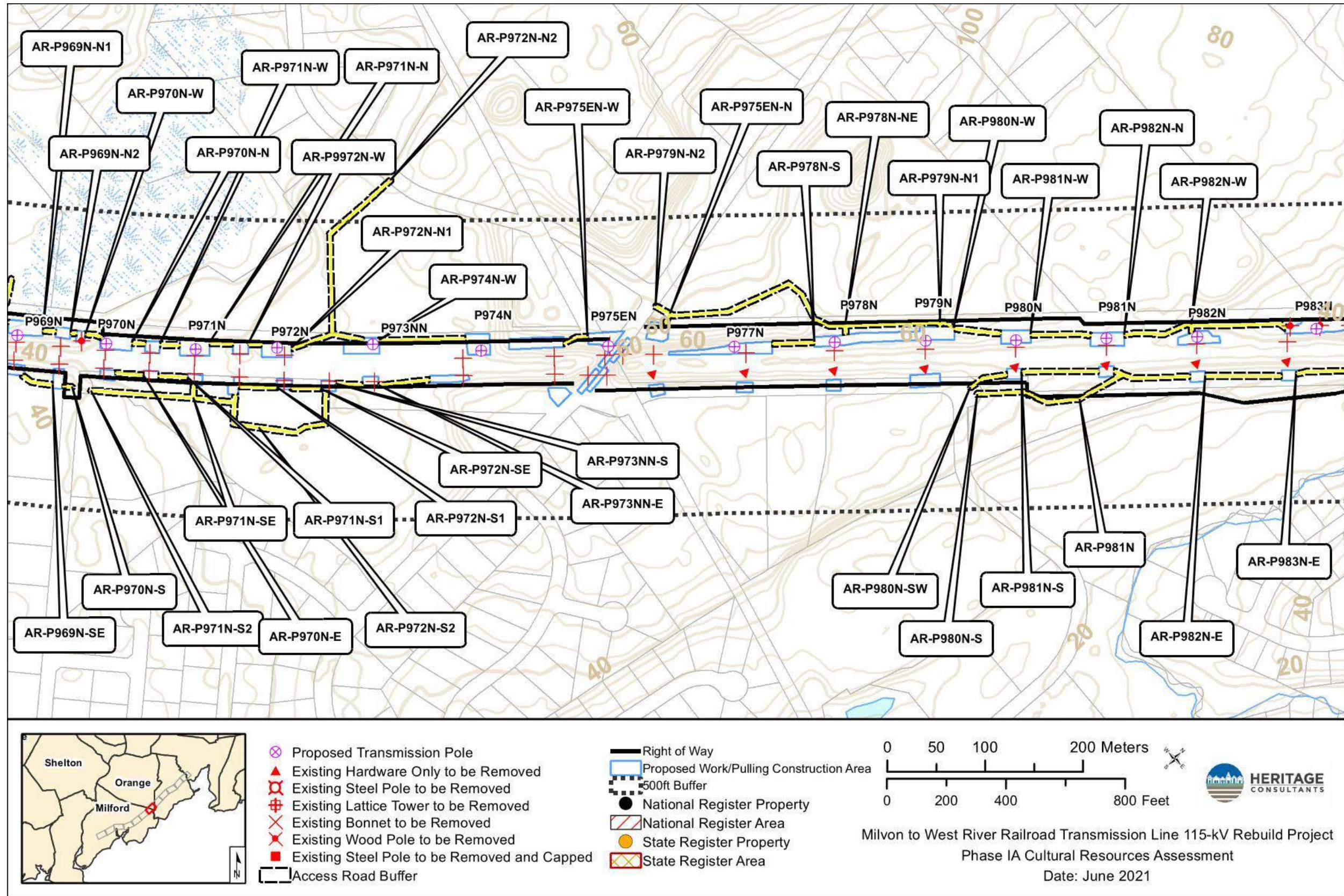


Figure 12; Sheet 7. Digital map showing the locations of National/State Register of Historic Places properties/district in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

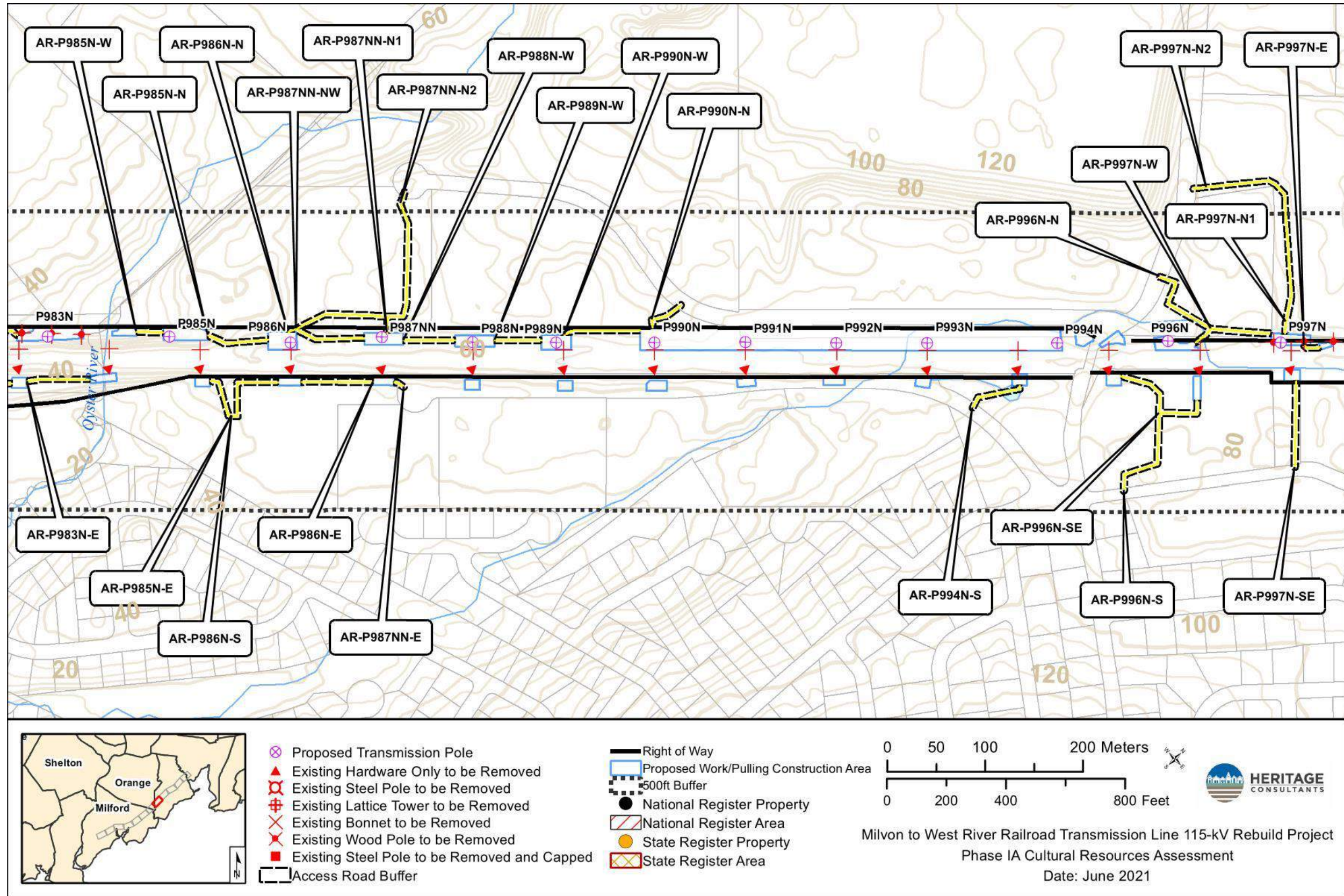


Figure 12; Sheet 8. Digital map showing the locations of National/State Register of Historic Places properties/district in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

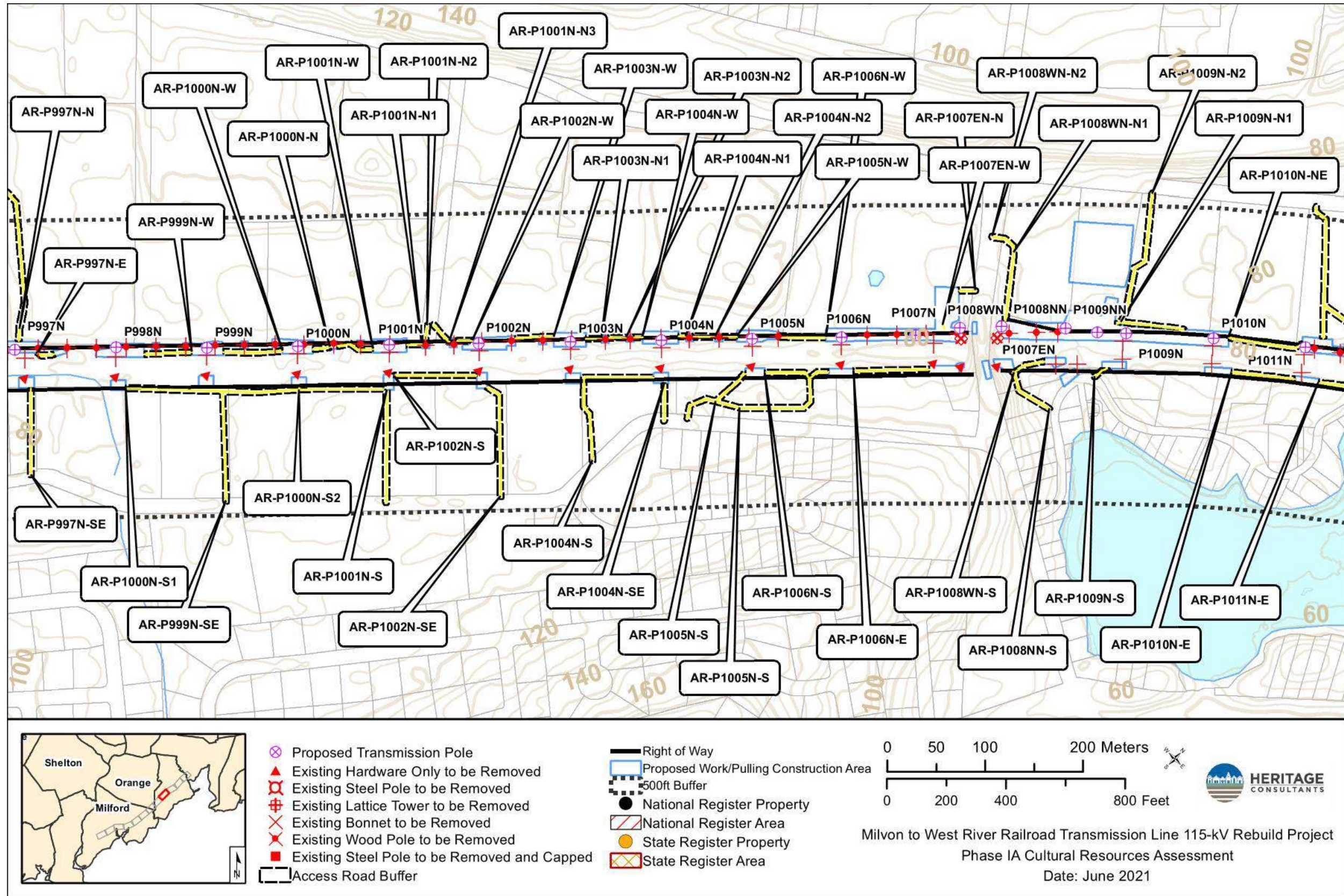


Figure 12; Sheet 9. Digital map showing the locations of National/State Register of Historic Places properties/district in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut. in Milford, Orange, West Haven, and New Haven, Connecticut.

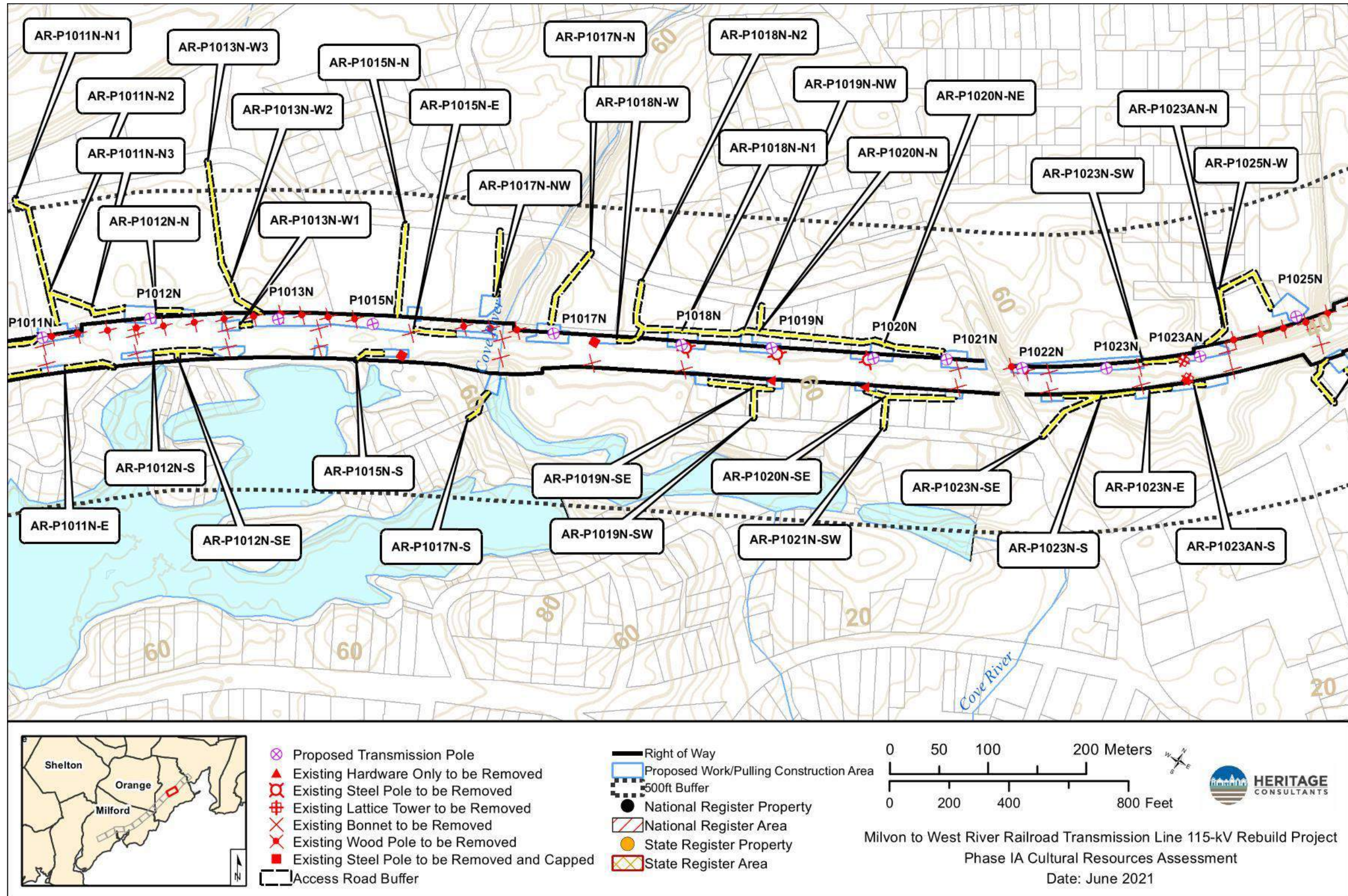


Figure 12; Sheet 10. Digital map showing the locations of National/State Register of Historic Places properties/district in the vicinity of the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project in Milford, Orange, West Haven, and New Haven, Connecticut.

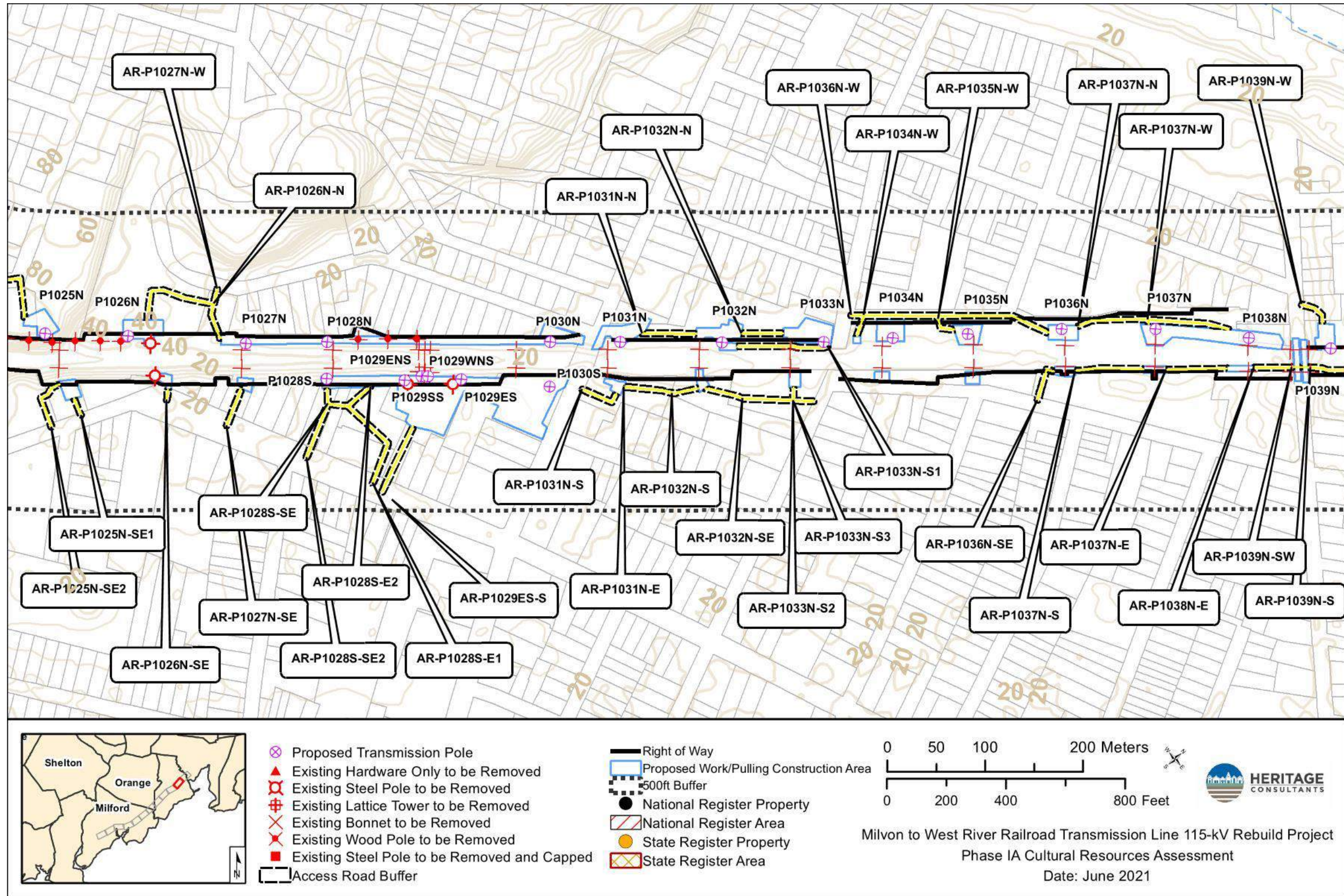


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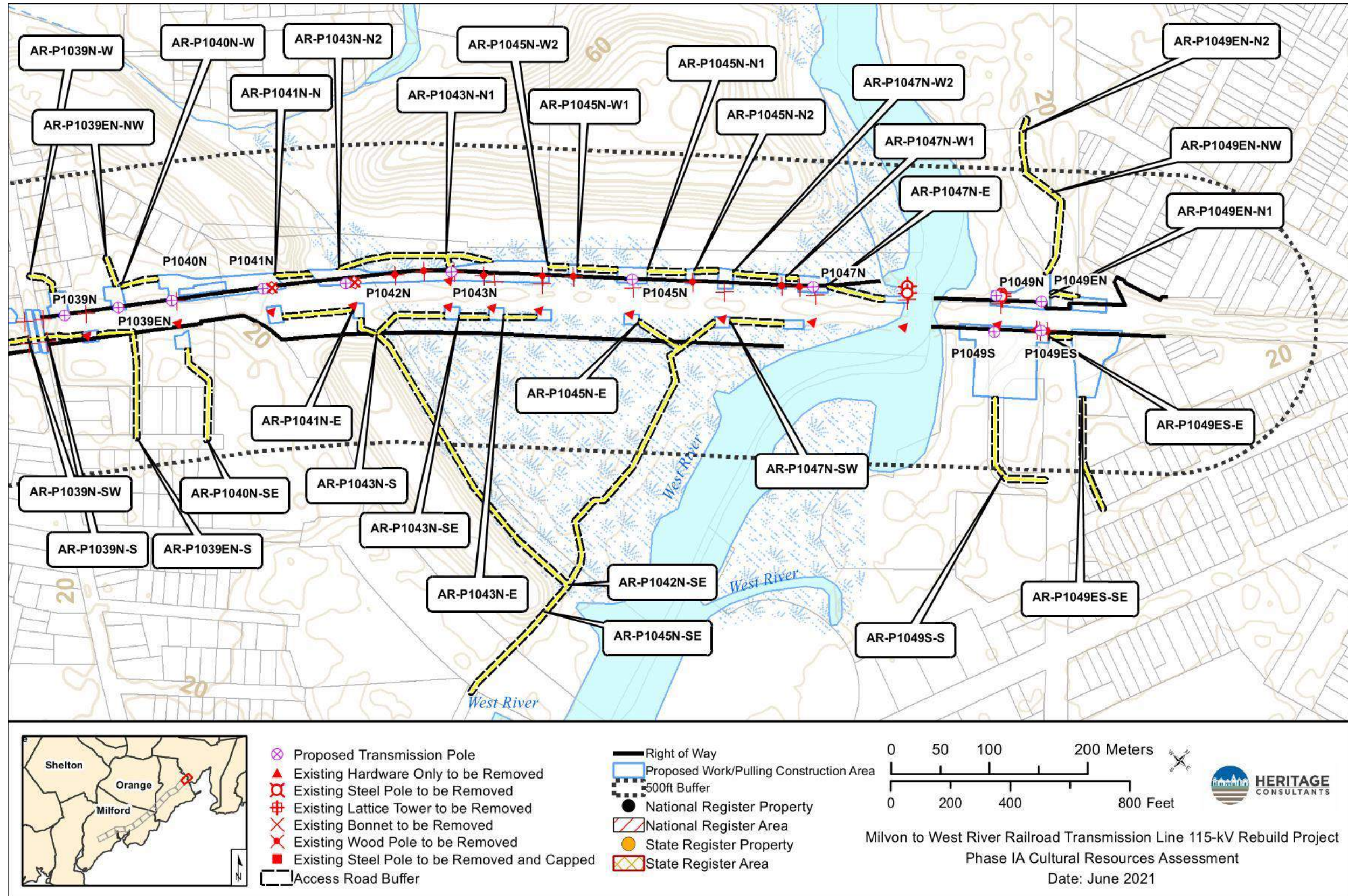


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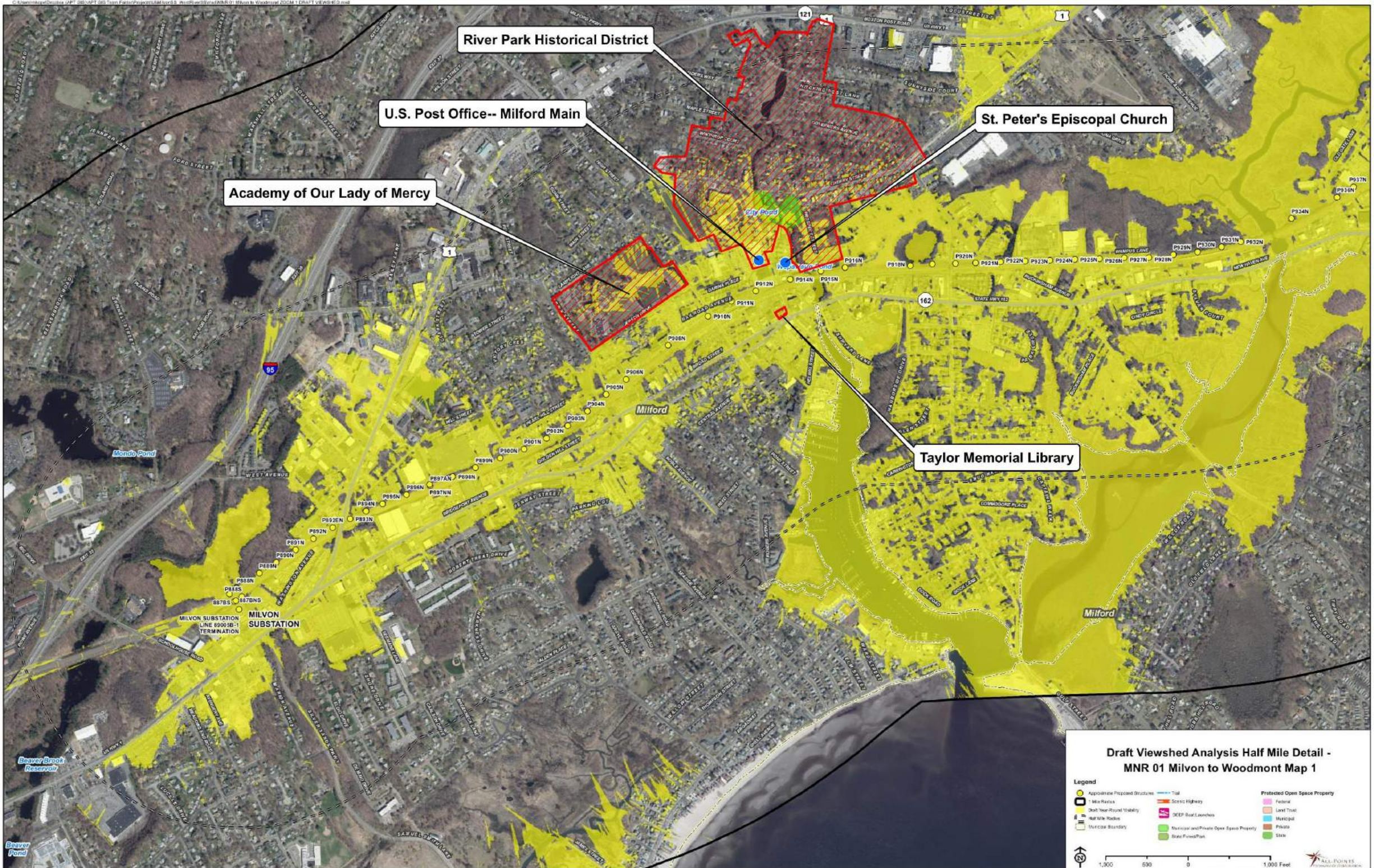


Figure 13. Excerpt from a Draft Viewshed Analysis completed by All-Points Technology Corporation showing National/State Register of Historic Places properties/district in Milford overlaid on the year-round visibility envelope from above-ground elements associated with the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project.





Figure 14. Overview photo of pre-construction conditions along an adjacent section of the existing CT DOT corridor.



Figure 15. Overview photo of post-construction conditions along an adjacent section of the existing CT DOT corridor (post-construction conditions along the existing CT DOT corridor will be similar in nature).



Figure 16. Overview photo showing proposed access road looking north from U.S. Route 1 in Milford.



Figure 17. Overview photo of proposed work/pulling pad location looking southeast from Prospect Street in Milford toward existing CT DOT corridor.



Figure 18. Overview photo of proposed work/pulling pad looking east along the existing CT DOT corridor toward Gulf Street in Milford.



Figure 19. Overview photo taken from proposed work/pulling pad looking northeast toward proposed access road connecting to Gulf Street in Milford.



Figure 20. Overview photo looking East showing proposed access road connecting proposed work pull pad to Gulf Street in Milford.



Figure 21. Overview photo taken from River Street looking east along proposed access road in Milford.



Figure 22. Overview photo taken from New Haven Avenue looking north toward proposed access road in Milford.



Figure 23. Overview photo taken from proposed access road looking west toward proposed work/pulling pad and existing CT DOT corridor in Milford.



Figure 24. Overview photo taken from Higgins Drive in Milford toward proposed access road and work/pulling pad.



Figure 25. Overview photo taken from Elm Street in West Haven looking north toward proposed access road and work/pulling pad.



Figure 26. Overview photo looking south toward proposed work/pulling pad area along the existing CT DOT corridor in Milford.

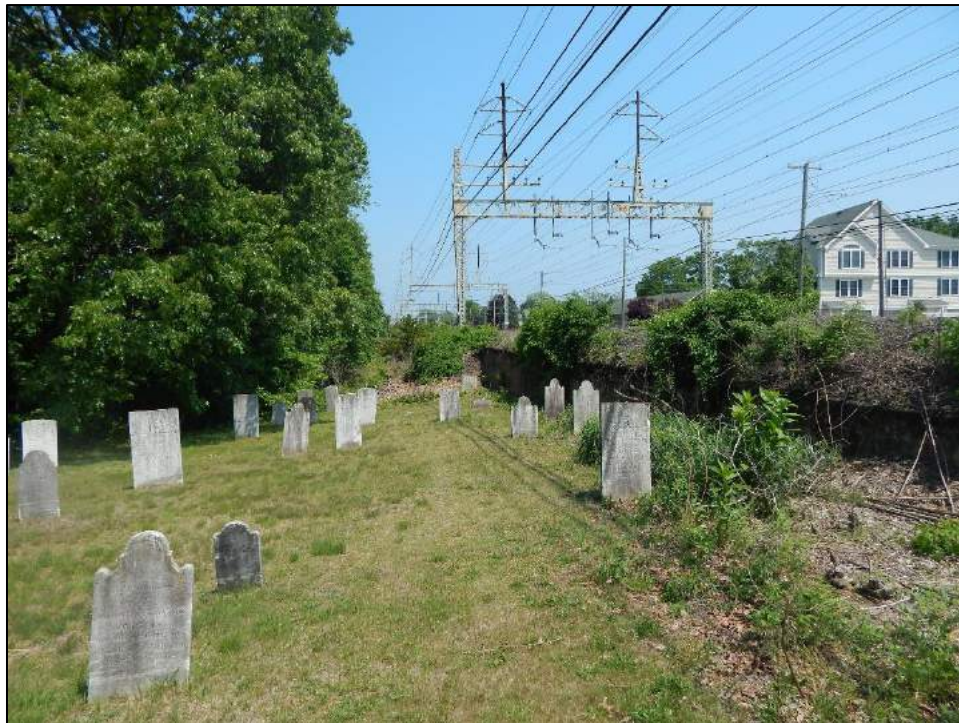


Figure 27. Overview photo looking east along proposed work/pulling pad along the existing CT DOT corridor in Milford (view from Milford Cemetery).





Figure 28. Overview photo taken from Buckingham Avenue looking west toward proposed work/pulling pad along the existing CT DOT corridor in Milford.



Figure 29. Overview photo looking east from proposed work/pulling pad area along the existing CT DOT corridor near Eastern Steel Road in Milford.



Figure 30. Overview photo looking southeast showing proposed work/pulling pad and proposed access road near Anderson Avenue in Milford.



Figure 31. Overview photo looking northeast showing proposed work/pulling pad and proposed access road along the existing CT DOT corridor near Heffernan Drive in West Haven.



Figure 32. Overview photo of existing CT DOT corridor looking southwest from the Allings Crossing Road Bridge crossing in West Haven.



Figure 33. Overview photo taken from the Allings Crossing Road bridge crossing in West Haven. The view is southwest.

## APPENDIX 1

### UI ENGINEERING MEMO

# Pole Height Briefing in Downtown Milford

**UI 115 kV Railroad Project – Milvon to West River**

**Prepared For:**

United Illuminating Company

**Prepared By:**

Westwood Professional Services

1684 S Broad Street, Suite 120

Lansdale, Pennsylvania 19446

(215) 855-7477

Date: July 16, 2021

# Westwood

## 1.0 Project Introduction

The proposed UI 115 kV Railroad Project – Milvon to West River Project (Project) includes the installation new monopoles in Downtown Milford in the area of the Milford Historical District. These new monopoles will support two 115kV circuits and will be located on the north side of the existing CT DOT railroad corridor. The Project also includes the removal of the two existing 115kV circuits from the existing catenary support structures along the CT DOT railroad corridor, inclusive of the 115kV conductors, shield wires, insulators, and bonnets (steel flange columns) that are currently attached to the top of the existing catenary support columns. In total, 22 bonnets will be removed from the north side of the CT DOT railroad corridor and 19 bonnets will be removed from the south side of the CT DOT railroad corridor.

Through the project design evolution, as described in Section 2.0 below, UI deliberately increased the height of poles in order to reduce the number of poles in sensitive areas including the Milford Train Station and the Milford Cemetery along with avoiding conflicts with future plans for development within the City.

## 2.0 Project Design Basis

The initial design basis of the project located the new monopoles 25 feet north of the existing catenary support columns with span lengths of approximately 300 feet. Placing the monopoles directly adjacent to the existing catenary support columns would result in the shortest structure height. Under this initial design basis, the following items were the primary dictators of proposed structure height:

- Required clearance of 15' between the proposed UI 115kV conductors and Metro North electrical facilities
- 12' vertical spacing between the proposed UI shield wire and the top UI 115kV conductor
- 14' vertical spacing between the UI 115kV conductors
- Utilizing monopoles which support both UI 115kV circuits, instead two single circuit lines which would require two monopoles, one on the north and one on the south side of the railroad corridor.

Following this initial design basis, there would 21 monopoles in the area of the Milford Historical District and pole heights would be expected to be up to 105 feet given the existing heights of the Metro North electrical facilities and the related design constraints.

Due to the nature of the area including the existing landscape, sensitive land uses, and community facilities, structure locations had to be shifted from the initial design basis. UI, through its engineering contractor, Westwood, shifted structure locations for the following reasons:

- Conflicts with the surrounding built environment (i.e. buildings, adjacent distribution lines, and roadways)

# Westwood

- Conflicts with underground obstructions identified during non-invasive due diligence subsurface surveys utilizing ground penetrating radar (GPR)
- Constructability Concerns
  - Structures were positioned where possible at either the top or the bottom of the railroad embankment slope to allow for better construction access and for future maintenance access, minimizing positions of monopoles mid-slope.
- Avoiding and minimizing impacts to culturally sensitive resources immediately adjacent to the railroad corridor
  - Milford Cemetery
  - Milford Train Station
- Avoiding conflict with future plans for development near the Milford Train Station in cooperation with the City.

Ultimately, the design of the Project has resulted in 15 monopoles in the area of the Milford Historical District. Of these 15 poles, only nine (9) monopoles will be greater than 105 feet in height (as measured from the existing ground surface).

Structure Number	Pole Height (ft)	Top of Pole Elevation Above Sea Level (ft)
P901N	105	178
P902N	95	166
P903N	90	159
P904N	105	161
P905N	115	169
P906N	120	172
P908N	135	178
P910N	140	175
P912N	125	166
P914N	135	165
P915N	145	167
P916N	135	171
P918N	135	162
P919N	105	130
P920N	105	132

## 3.0 Milford Cemetery

Through the non-invasive due diligence subsurface surveys, UI found multiple unmarked graves and other headstones within 25' of the existing catenary support structures. It was deemed that

# Westwood

avoidance of all below grade impacts was warranted, resulting in an approximately 800' span length between proposed monopoles P916N and P918N, and eliminating one or two structures that existed under the initial design basis.

As span length increases, conductor sag and conductor blowout both also increase resulting in the need for taller poles. To meet all electrical clearances with this larger span length, these two monopoles are required to be 135' tall. At an October 2020 meeting with the City of Milford, the City agreed that minimizing ground disturbance in this area was preferred.

## 4.0 Milford Train Station

Preliminary design plans had up to three structures to be installed in the grassy strip of land separating the Milford Train Station from a parking lot owned by the City of Milford to the north. Through the design process, UI met with the City of Milford numerous times during the process. Through these discussions, UI became aware of design plans for a mixed-use development at 44-64 River Street. UI also became aware of that the City of Milford would like to keep plans open for the development of the parking lots located adjacent to and north of the Milford Train Station. As such, UI decided it was best to avoid the grassy strip. To minimize impacts to the Milford Train Station as a whole, it was decided to utilize 600' spans in this area. To meet all electrical clearances given the limited flexibility in pole placement, the steel monopoles (P910N through P914N) are required to be above 125' in height as noted in the table above.

Due to being located at a lower ground elevation when compared to P914N and P916N, the height of P915N had to be taller so that the pole top elevations could remain approximately the same due so this structure would not experience any uplift forces.

Once P910N was increased to 140' tall, Structures P907N through P909N all had to increase in height by 10 to 35 feet to not experience any uplift forces. This, in conjunction with finding underground conduit at the original location for P909N, resulted in a decision to increase the height of P904N (5') through P906N (25') and P908N (15') in order to remove 2 poles (P907N and P909N).

## 5.0 Conclusion

As we upgrade the electrical transmission system, UI is forward looking in terms of designing this new infrastructure for future climate change and for future development in the area. UI has also taken the steps of having discussions with the City of Milford and this design is a product of those discussions, as we balance the engineering requirements with the surrounding ecological and community development interests. We believe that the reasoning for increased pole heights which minimizes the quantity of required poles, is justified, as explained within this briefing.



**PHASE IB ARCHAEOLOGICAL SURVEY**  
OF A PROPOSED ACCESS ROAD IN ORANGE, CONNECTICUT  
ASSOCIATED WITH THE MILVON-WEST RIVER RAILROAD  
TRANSMISSION LINE 115-KV REBUILD PROJECT

DECEMBER 2021

PHASE IB ARCHAEOLOGICAL SURVEY OF A PROPOSED ACCESS ROAD  
IN ORANGE, CONNECTICUT ASSOCIATED WITH THE MILVON-WEST  
RIVER RAILROAD TRANSMISSION LINE 115-KV REBUILD PROJECT

PREPARED FOR:



THE UNITED ILLUMINATING COMPANY  
100 MARSH HILL ROAD  
ORANGE, CONNECTICUT 06477



P.O. Box 310249  
NEWINGTON, CONNECTICUT 06131

## **ABSTRACT**

This report presents the results of a Phase IB archaeological survey of Access Road AR-P982N-N associated with the proposed Milvon-West River Railroad Transmission Line 115-kV Rebuild Project in Orange, Connecticut. The proposed access road is to be built in the southeastern portion of Orange and it will extend in an east to west direction along the toeslope of the existing Connecticut Department of Transportation railroad corridor. Once constructed, the access road will measure approximately 112 meters (367.5 feet) in length by 4.9 meters (16 feet) in width. The Phase IB archaeological survey was completed on December 6, 2021. A total of 11 of 13 (85 percent) planned survey shovel test were excavated along the centerline of the proposed access road, which was characterized by mostly level topography and deciduous forest growth at the time of survey. Despite the field effort, no significant archaeological deposits were identified. No impacts to cultural resources are anticipated by construction of the proposed access road, and no additional archaeological examination is recommended.

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- Figure 11. Representative view from the central portion of Access Road AR-P982N-N facing southwest.

# CHAPTER I

## INTRODUCTION

This report presents the results of a Phase IB archaeological survey of Access Road AR-P982N-N associated with the proposed Milvon-West River Railroad Transmission Line 115-kV Rebuild Project (the Project) (Figures 1 and 2). Located in the southeastern portion of the town of Orange, Connecticut, the proposed road alignment will be situated in proximity to previously identified archaeological Site 107-15, which was identified during a Phase IA cultural resources assessment survey of the Project completed by Heritage Consultants, LLC (2021). Heritage recommended and completed the Phase IB survey on behalf of The United Illuminated Company (UI) as part of the planning process for the proposed access road. The purpose of the Phase IB investigation was to determine if any evidence of Site 107-15 extended into the project area, and if so, to determine if the archaeological deposits were considered potentially eligible or eligible for listing in the National Register of Historic Places applying the criteria for evaluation (36 CFR 60.4 [a-d]). Heritage completed the fieldwork for this investigation on December 6, 2021. All work associated with this survey was performed in accordance with the *Environmental Review Primer for Connecticut's Archaeological Resources* (Poirier 1987), which is promulgated by the Connecticut State Historic Preservation Office (CT-SHPO).

### **Project Description**

Access Road AR-P982N-N, which will be a permanent construction, will be situated within the existing CT-DOT railroad corridor to the north of the railroad tracks, to the east of Marsh Hill Road, to the south of Interstate I-95, and to the west of Heffernan Drive. The proposed access road will measure approximately 112 meters (367.5 feet) in length by 4.9 meters (16 feet) in width. It will be located alongside the railroad tracks and used to support construction of nearby monopoles that will be installed as part of the Project. At the time of the Phase IB investigation, the survey area was surrounded by deciduous forest, commercial buildings, and the West Campus of Yale University. The survey area contained deciduous forest on mostly level terrain. Elevations throughout the region containing the survey area ranged from 9.1 to 15.2 m (30 to 50 ft) NGVD.

### **Background Research**

The Phase IB archaeological survey consisted of historical research and records reviews that focused on the portion of Orange containing the Access Road AR-P982N-N. Background research included analysis of readily available historical maps and aerial imagery; an examination of the pertinent 1996 USGS 7.5' series topographic quadrangles; and a review of all known archaeological sites and National/State Register of Historic Places property maintained by the CT-SHPO. The intent of this review was to identify all previously recorded cultural resources situated within or immediately adjacent to the proposed access road alignment. This information was used to develop the context for assessing archaeological deposits that may be identified during Phase IB survey. The following chapters provide an overview of the region's natural and prehistoric settings, historical backdrop, and previous cultural resources investigations completed within the vicinity of the proposed access road. They are included to provide contextual information relative to the location of the survey area, its natural characteristics, and the area's prehistoric and historical use and occupation. An overview of the previous cultural resources investigations in the area and a discussion of their results is also provided below.

### **Field Methods Overview**

Field methods employed during the Phase IB survey consisted of pedestrian survey, mapping, photo-documentation, and shovel testing of the proposed access road alignment. The subsurface examination was completed through the excavation of survey shovel tests spaced at 10 meter (32.8 ft) intervals along the centerline of the proposed access road. All shovel tests measured 50 x 50 cm (19.4 x 19.4 in) in size and were excavated until glacially derived C-Horizon soils or immovable objects (boulders, large tree roots) were encountered. Each shovel test was excavated in 10 cm (3.9 in) arbitrary levels within natural soil horizons, and the fill from each level was screened separately. All shovel test fill was screened through 0.635 cm (0.25 in) hardware cloth and examined visually for cultural material. Soil characteristics were recorded using Munsell Soil Color Charts and standard soils nomenclature. Each shovel test was backfilled after it was recorded.

### **Summary of Project Results**

The review of historical maps and aerial images of the project region and files maintained by the CT-SHPO resulted in the identification of two previously recorded archaeological sites recorded within 152 m (500 ft) of the proposed access road. No State/National Register of Historic Places properties/districts were identified in the vicinity. The two archaeological sites included Site 107-16, which is located to the north and away from of the access road area, and Site 107-15, which was identified in the immediate vicinity of Access Road AR-P982N-N. The fieldwork for the Phase IB survey, which was completed on December 6, 2021, included the excavation of 11 of 13 (85 percent) planned survey shovel test pits along the centerline of the proposed access road. The two planned but unexcavated shovel test pits fell within areas of standing water and previous disturbance. Despite completion of the subsurface testing regime, no cultural material or evidence of archaeological features associated with Site 107-15 was identified. As a result, Heritage determined that no impacts to archaeological resources, including Site 107-15, are anticipated by construction of the proposed access road and no additional archaeological examination of the survey area is recommended.

### **Project Personnel**

Heritage Personnel who contributed to the project include David R. George, M.A., RPA, (Principal Investigator); Antonio Medina, B.A. (Operations Manager); Matthew Denno, B.A., (Field Director); Stephen Anderson, B.A., (Geographic Information Specialist); Barbara Sternal, M.A., (Historian); and Elizabeth Correia, M.A., (Laboratory Supervisor).



## CHAPTER II

# NATURAL SETTING

### Introduction

This chapter provides an overview of the natural setting of the region containing survey area in Orange, Connecticut. Previous archaeological research has documented that a few specific environmental factors can be associated with both prehistoric and historical period site selection. These include general ecological conditions, as well as types of fresh water sources and soils present in the region. The remainder of this section provides a brief overview of the ecology, hydrological resources, and soils present within the impact areas and the larger region in general.

### Ecoregions of Connecticut

Throughout the Pleistocene and Holocene Periods, Connecticut has undergone numerous environmental changes. Variations in climate, geology, and physiography have led to the “regionalization” of Connecticut’s modern environment. It is clear, for example, that the northwestern portion of the state has very different natural characteristics than the coastline. Recognizing this fact, Dowhan and Craig (1976), as part of their study of the distribution of rare and endangered species in Connecticut, subdivided the state into various ecoregions. Dowhan and Craig (1976:27) defined an ecoregion as:

“an area characterized by a distinctive pattern of landscapes and regional climate as expressed by the vegetation composition and pattern, and the presence or absence of certain indicator species and species groups. Each ecoregion has a similar interrelationship between landforms, local climate, soil profiles, and plant and animal communities. Furthermore, the pattern of development of plant communities (chronosequences and toposequences) and of soil profile is similar in similar physiographic sites. Ecoregions are thus natural divisions of land, climate, and biota.”

Dowhan and Craig defined nine major ecoregions for the State of Connecticut. They are based on regional diversity in plant and animal indicator species (Dowhan and Craig 1976). Access Road AR-P982N-N is situated within the Western Coastal ecoregion, which is summarized below and followed by a discussion of the hydrology and soils found in and adjacent to the proposed access road.

### Western Coastal Ecoregion

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

### Hydrology in the Vicinity of the Project Area

The proposed access road location is situated within a region that contains several sources of freshwater, including the Oyster River approximately 100 meters (328.1 feet) to the east, Indian Lake and its tributaries

to the north, and the Housatonic River to the west. The Oyster River empties directly into the Long Island Sound to the south. These freshwater sources may have served as resource extraction areas for Native American and historical populations. Previously completed archaeological investigations in Connecticut have demonstrated that streams, rivers, and wetlands were focal points for prehistoric occupations because they provided access to transportation routes, sources of freshwater, and abundant faunal and floral resources.

### **Soils Comprising the Project Area**

Soil formation is the direct result of the interaction of many variables, including climate, vegetation, parent material, time, and organisms present (Gerrard 1981). Once archaeological deposits are buried within the soil, they are subject to various diagenic and taphonomic 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. In contrast, acidic soils help preserve charred plant remains.

The proposed access road alignment contains Agawam fine sandy loams, which are well-drained and typically correlate with prehistoric and historical use and occupation. A descriptive profile for Agawam soils is presented below; it was gathered from the National Resources Conservation Service.

#### Agawam Series

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; and **2C3**--55 to 65 inches; olive (5Y 5/3) loamy sand; single grain; loose; strongly acid.

### **Summary**

The natural setting of the area containing the proposed access road is common throughout the Western Coastal ecoregion. Streams and rivers of this area empty into Long Island Sound. In general, the region was well suited to Native American occupation throughout the prehistoric era. This portion of Orange was also used during the historical era, as evidenced by the abutting railroad that connected industries to the nearby City of New Haven and points to the west, including Bridgeport and New York. Thus, archaeological deposits dating from the prehistoric and historical era may be expected near or within the survey area.

## CHAPTER III

### PREHISTORIC SETTING

#### **Introduction**

Prior to the late 1970s and early 1980s, few systematic archaeological surveys of large portions of the state of Connecticut had been undertaken. Rather, the prehistory of the region was studied at the site level. Sites chosen for excavation were highly visible and located in the coastal zone, e.g., shell middens, and Connecticut River Valley. As a result, a skewed interpretation of the prehistory 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 prehistoric 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 prehistoric 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 prehistory of Connecticut. The remainder of this chapter provides an overview of the prehistoric setting of the region encompassing Access Road AR-P982N-N.

#### **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., 12,000 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 numerous surface finds of Paleo-Indian projectile points throughout the State of Connecticut, only two sites, the Templeton Site (6-LF-21) in Washington, Connecticut and the Hidden Creek Site (72-163) in Ledyard, Connecticut, have been studied in detail and dated using the radiocarbon method (Jones 1997; Moeller 1980). The Templeton Site (6-LF-21) is in Washington, Connecticut and was occupied between 10,490 and 9,890 years ago (Moeller 1980). In addition to a single large and two small fluted points, the Templeton Site produced a stone tool assemblage consisting of graters, drills, core fragments, scrapers, and channel flakes, which indicates that the full range of stone tool production and maintenance took place at the site (Moeller 1980). Moreover, the use of both local and non-local raw materials was documented in the recovered tool assemblage, suggesting that not only did the site's occupants spend some time in the area, but they also had access to distant stone sources, the use of which likely occurred during movement from region to region.

The only other Paleo-Indian site studied in detail in Connecticut is the Hidden Creek Site (72-163) (Jones 1997). The Hidden Creek Site is situated on the southeastern margin of the Great Cedar Swamp on the Mashantucket Pequot Reservation in Ledyard, Connecticut. While excavation of the Hidden Creek Site produced evidence of Terminal Archaic and Woodland Period components (see below) in the upper soil horizons, the lower levels of the site yielded artifacts dating from the Paleo-Indian era. Recovered Paleo-Indian artifacts included broken bifaces, side-scrapers, a fluted preform, graters, and end-scrapers. Based on the types and number of tools present, Jones (1997:77) has hypothesized that the Hidden Creek Site represented a short-term occupation, and that separate stone tool reduction and

rejuvenation areas were present.

While archaeological evidence for Paleo-Indian occupation is scarce in Connecticut, it, combined with data from the West Athens Road and King's Road Site in the Hudson drainage and the Davis and Potts Sites in northern New York, supports the hypothesis that there was human occupation of the area not long after ca. 12,000 B.P. (Snow 1980). Further, site types currently known suggest that the Paleo-Indian settlement pattern was characterized by a high degree of mobility, with groups moving from region to region in search of seasonally abundant food resources, as well as for the procurement of high-quality raw materials from which to fashion stone tools.

### **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, 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 small and produce few artifacts, most of which are not temporally diagnostic. While Early Archaic sites in other portions 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 recognized on the basis of a series of ill-defined bifurcate-based projectile points. These projectile points are identified by the presence of their characteristic bifurcated base, and they generally are made from high quality raw materials. Moreover, finds of these projectile points have rarely been in stratified contexts. Rather, they occur commonly either as surface expressions or intermixed with artifacts representative of later periods. Early Archaic occupations, such as the Dill Farm Site and Sites 6LF64 and 6LF70 in Litchfield County, an area 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.

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

By the onset of the Middle Archaic Period, essentially modern deciduous forests had developed in the region (Davis 1969). It is at this time that increased numbers and types of sites are noted in Connecticut (McBride 1984). The most well-known Middle Archaic site in New England is the Neville Site, which is in Manchester, New Hampshire and studied by Dincauze (1976). Careful analysis of the Neville Site indicated that the Middle Archaic occupation dated from between ca., 7,700 and 6,000 years ago. In fact, Dincauze (1976) obtained several radiocarbon dates from the Middle Archaic component of the

Neville Site. The dates, associated with the then-newly named Neville type projectile point, ranged from 7,740 $\pm$ 280 and 7,015 $\pm$ 160 B.P. (Dincauze 1976).

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

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

The Late Archaic Period in southern New England is divided into two major cultural traditions that appear to have coexisted. They include the Laurentian and Narrow-Stemmed Traditions (Funk 1976; McBride 1984; Ritchie 1969a and b). Artifacts assigned to the Laurentian Tradition include ground stone axes, adzes, gouges, ulus (semi-lunar knives), pestles, atlatl weights, and scrapers. The diagnostic projectile point forms of this time period in southern New England include the Brewerton Eared-Notched, Brewerton Eared and Brewerton Side-Notched varieties (McBride 1984; Ritchie 1969a). 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<sup>2</sup> (5,383 ft<sup>2</sup>). 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 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 prehistory. Originally termed the "Transitional Archaic" by Witthoft (1953) and recognized by the introduction of technological innovations, e.g., broadspear projectile points and soapstone bowls, the Terminal Archaic has long posed problems for regional archeologists. While the Narrow-Stemmed Tradition persisted through the Terminal Archaic and into the Early Woodland Period, the Terminal Archaic is coeval with what appears to be a different

technological adaptation, the Susquehanna Tradition (McBride 1984; Ritchie 1969b). The Susquehanna Tradition is recognized in southern New England by the presence of a new stone tool industry that was based on the use of high-quality raw materials for stone tool production and a settlement pattern different from the “coeval” Narrow-Stemmed Tradition.

The Susquehanna Tradition is based on the classification of several Broadspear projectile point types and associated artifacts. There are several local sequences within the tradition, and they are based on projectile point type chronology. Temporally diagnostic projectile points of these sequences include the Snook Kill, Susquehanna Broadspear, Mansion Inn, and Orient Fishtail types (Lavin 1984; McBride 1984; Pfeiffer 1984). The initial portion of the Terminal Archaic Period (ca., 3,700-3,200 BP) is characterized by the presence of Snook Kill and Susquehanna Broadspear projectile points, while the latter Terminal Archaic (3,200-2,700 BP) is distinguished by the use of 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 still was diffuse in nature, and it was scheduled carefully. Typical food remains recovered from sites of this period consist of fragments of white-tailed deer, beaver, turtle, fish, and various small mammals. Botanical remains recovered from the site area consisted of *Chenopodium* sp., hickory, butternut, and walnut (Pagoulatos 1988:81). Such diversity in food remains suggests at least minimal use of a wide range of microenvironments for subsistence purposes.

### **Woodland Period (2,700 to 350 B.P.)**

Traditionally, the advent of the Woodland Period in southern New England has been associated with the introduction of pottery; however, as mentioned above, early dates associated with pottery now suggest the presence of Vinette I ceramics appeared toward the end of the preceding Terminal Archaic Period (Ritchie 1969a; McBride 1984). Like the Archaic Period, the Woodland Period has been divided into three subperiods: Early, Middle, and Late Woodland. The various subperiods are discussed below.

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

The Early Woodland Period of the northeastern United States dates from ca., 2,700 to 2,000 B.P., and it has 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.

Careful archaeological investigations of Early Woodland sites in southern New England have resulted in the recovery of narrow stemmed projectile points in association with ceramic sherds and subsistence remains, including specimens of White-tailed deer, soft and hard-shell clams, and oyster shells (Lavin and Salwen: 1983; McBride 1984:296-297; Pope 1952). McBride (1984) has argued that the combination

of the subsistence remains and the recognition of multiple superimposed cultural features at various sites indicates that Early Woodland Period settlement patterns were characterized by multiple re-use of the same sites on a seasonal basis by small co-residential groups.

#### Middle Woodland Period (2,000 to 1,200 B.P.)

The Middle Woodland Period is marked by an increase in the number of ceramic types and forms utilized (Lizee 1994a), as well as an increase in the amount of exotic lithic raw material used in stone tool manufacture (McBride 1984). The latter suggests that regional exchange networks were established, and that they were used to supply local populations with necessary raw materials (McBride 1984; Snow 1980). The Middle Woodland Period is represented archaeologically by narrow stemmed and Jack's Reef projectile points; increased amounts of exotic raw materials in recovered lithic assemblages, including chert, argillite, jasper, and hornfels; and conoidal ceramic vessels decorated with dentate stamping. Ceramic types that are indicative of the Middle Woodland Period includes 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 diverse stylistically 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 Prehistory**

The prehistory of Connecticut spans from ca., 12,000 to 350 B.P., and it is characterized by numerous changes in tool types, subsistence patterns, and land use strategies. Much of the prehistoric era is characterized by local Native American groups who practiced a subsistence pattern based on a mixed economy of hunting and gathering wild 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 prehistoric era 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 containing the proposed project area, a variety of prehistoric site types may be expected. These range from seasonal camps utilized by Archaic populations to temporary and task-specific sites of the Woodland era.



## CHAPTER IV

# HISTORICAL OVERVIEW

### Introduction

The proposed access road is located in the southeastern portion of the town of Orange, which in turn is located in New Haven County, Connecticut. The town of Orange was created in 1822 out of land taken from the northern part of the city of Milford and the western part of the city of New Haven. In 1921, the city of West Haven separated from Orange to become its own municipality. Originally an agricultural settlement, today Orange functions as a rural residential community. This chapter presents an overview history of the town of Orange, as well as data more specific to the location of the proposed access road.

### Native American History

The area that is now southwestern Connecticut was traditionally known as “Wepawaug” and was the territory of the Paugussett (or Paugasuck) tribe. During the contact period the Paugussetts maintained four large villages in the area: one on the Wepawaug River where the Paugussett sachem Ansantaway (or Ansantawae) lived at times, one at Poconoc or Milford Point on Long Island Sound, one on the Housatonic River north of the location of the modern-day Washington Bridge, and one at Turkey Hill in what is now western Orange. There were also two smaller villages near the Oyster River in the southwestern part of town at Orange, also on the Housatonic River. These Native Americans depended on fishing for sustenance and trade, but also planted and harvested crops. Ansantaway and his tribe claimed the land between the Housatonic and Oyster Rivers from the southern coast reaching all the way north to present-day Beacon Falls and Bethany.

Though Native Americans did not hold the same beliefs concerning land ownership that the English colonists did, Ansantaway and other tribal members signed a deed in 1639 ceding land in what is now central Milford to colonial settlers (Rockey 1892). An additional piece of land on the north side of that town was sold in 1655, and the land between the East River and New Haven subsequently was purchased in 1659. A section known as “Indian Neck,” which was located between the East River and Long Island Sound, was purchased by the colonists in 1660. With this transaction, the Native Americans reserved a 20-acre planting ground, but in 1661 Ansantaway and his two sons sold this parcel as well. In exchange for the deed, the colonists promised to protect Ansantaway and his family, and the Native Americans stated that this was the last of the land they owned in Milford. These last three deeds were all signed by “Asantway” (Ansantaway), Toutonome, and Akenash, understood to be the sachem and his sons. As was common during the colonial period, this was not enough to settle claims to the area, and in 1682, 10 heirs of “Asantawae” (Ansantaway), who had died in approximately 1676, gave the town a quit-claim deed for the Milford lands to the governor of the colony for a small consideration. After this, two more sales of land to the north were made: one in 1685 by Conquepotama and Ahuntaway, who were leaders of the Paugussett community at what is now Derby, and two more in 1700 and 1702, by these two people and seven others. Most of these later sales included strips of land that were quite narrow in the east-west direction, so that by 1702 part of Milford’s territory extended a long distance northward, to the southern boundary of what is now Naugatuck (Lambert 1838).

In 1680, in accordance with an order by the colony legislature, a committee laid out 100 acres of land for Native Americans living in Milford at the intersection of the Housatonic River and Two Mile Brook (then the boundary between Derby and Milford) (Trumbull 1859). Over time, many of the Milford-area Native Americans moved to join the more westerly Potatucks and other groups further away from the colonial

encroachments. The Potatucks of Newtown and the Schaghticoke from Kent visited the Milford shoreline regularly for fishing until after the Revolutionary War (Lambert 1838). In 1710, there were 12 families residing at Turkey Hill, and a group of similar size lived by the Derby Ferry; a slightly smaller group left "Oranoke" (Oronoque) after they sold their land to the English in 1680. By 1774, there were 71 Native Americans reported living in New Haven County. The last Native American to be buried at the cemetery at Turkey Hill was Betty Taukus, aged 63, who died in 1794. As of ca., 1816, only two families were still residing on the land (Scranton 1816). An 1818 legislative committee reported that although the reservation had been much encroached upon by colonists over the years, it was valued at \$2,500.00 and there were 15 individuals residing there, plus five others who were associated with the group but not resident there at the time of the inquiry (Arnold 2007). By the middle of the nineteenth century, only 10 acres of land were left of the reservation, and "a few" people were still residing there (De Forest 1852: 356). Exactly when the last residents left the reserved land is unknown.

### **Milford in the Colonial and Revolutionary Era**

Milford was founded in 1639 by a group of English people who had briefly settled in New Haven. Led by Reverend Peter Prudden, the group of approximately 50 families moved to their new land at Wepawaug. There they formed their own government in addition to a church. The first settlement was located on the banks of the Wepawaug River and the West River (in nearly the same area as the current population center of Milford) (Labaree 1933; Lambert 1838). Although the town was primarily agricultural in focus, like most other colonial settlements, the shipping of goods by water later became part of the town's prime economic driver and in time several merchant ships traveled from Milford to Boston, New York, or the West Indies for commercial purposes (Lambert 1838).

A 1659 listing recorded 79 heads of families in the town of Milford; in 1696 there were 145 heads of families, and in 1702 there were 180 heads of families. At the time of the first federal census in 1756, the total population was listed as containing 1,633 residents (Scranton 1816; Connecticut Colony 1762). The establishment of the town of Orange began in the 1720s, when a son of a wealthy merchant named Richard Bryan moved to land his father had received in a 1687 land distribution, which consisted of 208 acres north of Milford village. A small village developed nearby, and in 1750 the town of Milford allowed a school to be maintained at "Bryan's Farms" during the winter (Labaree 1933). As of 1774, there were 2,127 inhabitants in Milford (Connecticut 2021a). During the Revolutionary War, a battery was constructed in 1776 on West Point, the west side of the harbor; it was named Fort Trumbull. George Washington passed through the town several times, most notably in 1775 on his way to Cambridge. Two attempted invasions by the British, one in 1777 and one in 1779, were repelled by the forces at Milford (Crofut 1937).

### **Milford and Orange from the Early National Period through the Nineteenth Century**

As of 1790, Milford was still a small town with a total population of just over 2,000 residents (Connecticut 2021a). At that time, most of the inhabitants of Milford were farmers who grew a variety of grain and vegetable crops, as well as hay. On the coast, local residents harvested large numbers of oysters and clams, as well as other kinds of shellfish. They also fished on the river and in the ocean, especially for shad. In addition, Milford had a variety of local industries: a marble works on the Indian River, six grist mills, seven sawmills, four fulling mills, an oil mill, a pottery, two carding machines and one woolen manufacturer. Other items produced in town included leather and leather goods, hats, wagons, furniture, and clothes. The town had 11 grocery and dry goods stores, an apothecary, 10 blacksmiths, three tanneries, two shipyards, and a hatter. There were also a large number of carriage and wagon makers in town, as well as several shoemakers, house carpenters and joiners, and ship carpenters (Scranton 1816). When it came to maritime commerce, during the first part of the

nineteenth century, the small shipping trade that had formerly flourished in Milford was dwindling, and the last firm involved failed in 1821, leaving only a few small boats going regularly to New York. This decline is probably due, in large part, to the silting-up of the harbor. By the 1820s, the main channel was only five feet deep at high tide (Lambert 1838). It was around this time that the eastern section of Milford became incorporated as the town of Orange. Orange's separation from Milford had begun in 1804, when the area became the ecclesiastical society of North Milford (Labaree 1933, Scranton 1816). Then in 1822, North Milford was joined with the nearby parish of West Haven (then part of New Haven) to become Orange (Labaree 1933). By 1830, Orange had a total population of 1,341 residents and most of the town's inhabitants were farmers, though locals had made attempts at mining silver, copper, coal, and asbestos. Despite being joined as one town, as of 1836, the parishes of North Milford and West Haven had not significantly integrated (Barber 1836).

In 1850, at the start of Connecticut's most significant period of industrialization and urbanization, Orange was a small town of less than 1,500 people. At that time, Orange had only three notable manufacturers, which consisted of two woolen mills and a shoe factory (United States Census Bureau 1850). As industry grew and developed, the town thrived and much of the West Haven section was incorporated as a borough in 1873. As of 1892, Orange had 1,016 dwelling houses, 20 manufactories, 1,469 neat cattle, and 11 stores, mostly located in the West Haven section (Rockey 1892). A large button factory had opened in a section called Tyler City in the North Milford region in 1887, but it was closed by 1895 (Hill 1918). Throughout this time, the population steadily grew and by the end of the nineteenth century, Orange had approximately 5,000 inhabitants (Connecticut 2021b).

### **Orange in the Twentieth Century through Present Day**

At the beginning of the twentieth century, Orange was experiencing limited growth. The woolen mills on the Wepawaug River in western Orange had been abandoned. A few industries remained, however,, including a seed-growing farm in central North Milford and a model dairy farm. All of the town's other industries were in the West Haven section. In addition, the majority of Orange's inhabitants, as well as the center of government, were in West Haven. The greater part of the North Milford section consisted of rural countryside suitable for farming (Hill 1918). This meant that when West Haven separated in 1921, it caused a dramatic shift in the town. In 1920, the town of Orange had had 16,614 residents, but in 1930, that number had dropped to 1,530, while at that time West Haven had 25,808 residents (Connecticut 2021c). Before the separation, Orange's principal industries consisted of agriculture and the manufacture of various items, including buckles, church organs, hacksaws, and fireworks (Connecticut 1920). In 1930, Orange's economy was based almost entirely on agriculture, as the manufacturing enterprises that had previously been within its town limits were now located in West Haven (Connecticut 1930). During this time, the population of Orange had risen slowly, until mid-century when it jumped from 3,032 residents in 1950 to 13,524 in 1970 (Connecticut 2021c, 2021d). This increase reflects the suburbanization trend of the latter part of the twentieth century, when people moved outward from cities like New Haven and West Haven. In the case of Orange, this process leveled off after 1970, at which point the economy had shifted from being based in agriculture to other industries, namely printing, woodworking, and home building, as well as the manufacture of items such as burial vaults, truck bodies, cedar furniture, and industrial sheet metal (Connecticut 1970).

By the beginning of the twenty-first century, Orange was a residential community, with approximately 80 percent of land zoned for residential uses (Orange 2015). As of 2021, the town had 13,934 inhabitants and the biggest employment sectors were retail trade as well as hotels and restaurants (AdvanceCT and CTData Collaborative 2021). While manufacturing accounted for only approximately nine percent of jobs, various items were still produced in Orange, including industrial sheet metal,

machine screws, and candy (AdvanceCT and CTData Collaborative 2021; Connecticut 2020). Orange is the location of the corporate headquarters in the United States of the PEZ Candy company. Additionally, PEZ has been producing candy in the town of Orange since the 1970s. The company also opened a visitor center in town in 2011 (PEZ Candy 2021). Other principal industries in Orange include telecommunications, research and development, woodworking, and home building (Connecticut 2020). Limited growth and development are planned for Orange as the town intends to preserve its farmland, and, accordingly, its rural heritage. In addition, the population is projected to increase slowly, to approximately 15,300 residents by 2040 (Orange 2015). Today Orange can be considered primarily a residential suburb that retains its rural character.

### **History of the Area Containing the Proposed Access Road**

As of 1856, the area containing Access Road AR-P982N-N was a sparsely populated rural area to the northwest of the New York & New Haven Railroad and the Oyster River (Figure 3). The area was likely agricultural land to the east of what is now Marsh Hill Road and to the west of what are now Benham Hill Road and Island Lane in modern-day West Haven. A number of farms were situated in the vicinity, though none were close to the access road area. In 1868, the landscape in this part of Orange was much the same (Figure 4). It was a rural zone with farms scattered about and though a few houses had been added by that time, there was not a significant increase in the density of buildings in the surrounding area.

During the twentieth and early twenty-first centuries, the area containing the proposed access road slowly transformed from an agricultural area to a commercial region. As of 1934, the area where Access Road AR-P982N-N will be built was characterized as open farmland to the north of the railroad tracks (Figure 5). Land to the northwest of the access road primarily consisted of cleared fields and much of the land to the southeast was forested. As of 1951, the access road was still in the midst of farmland, although many of the fields were marked by significant tree regrowth (Figure 6). At mid-century, there were still no discernible houses or other buildings located near where Access Road AR-P982N-N will be built. Substantial changes took place during the rest of the century, however, and by 2019, the southeastern tip of Orange was characterized by numerous businesses and housing subdivisions (Figure 7). Currently, the Access Road AR-P982N-N area is unused.

### **Conclusions**

The historical background research indicates that the access road is unlikely to be associated with any significant historical period resources. The surrounding landscape consists of wooded areas and commercial properties, with residential houses just over the border with West Haven. There is the possibility of encountering remains of outbuildings, stonewalls, or other evidence of historical farming on land that had been historically used for agricultural purposes. However, the historical record does not indicate that the access road is on the locations of any known historical residences. Due to its proximity to the Oyster River, there is the possibility of encountering evidence of historical riverine activities, though any archaeological deposits associated with the region are not likely to be considered historically significant.

## CHAPTER V

# PREVIOUS INVESTIGATIONS

### **Introduction**

This chapter presents an overview of previous archaeological research completed within the vicinity of the proposed access road in Orange, Connecticut. This discussion provides the comparative data necessary for assessing the results of the current Phase IB archaeological survey, and it ensures that the potential impacts to all previously recorded archaeological resources located within and adjacent to the proposed access road alignment are taken into consideration. Specifically, this chapter reviews previously identified archaeological sites and National/State Register of Historic Places properties situated within the vicinity of the proposed access road (Figure 7). The discussions presented below are based on information currently on file at the CT-SHPO in Hartford, Connecticut. Both the quantity and quality of the information contained in the original archaeological site and National/State Register of Historic Places properties forms are reflected below.

### **Previously Recorded Archaeological Sites and National/State Register of Historic Places Properties/Districts in the Vicinity of the Proposed Access Road Alignment**

The review of historical maps and aerial images of the project region and files maintained by the CT-SHPO resulted in the identification of two previously recorded archaeological sites on the vicinity of the proposed access road. No National or State Register of Historic Places properties/districts were identified nearby. The two archaeological sites included Site 107-16 to the north of the project area and Site 107-15, which was recorded as intersecting with the proposed access road location. They are described below.

#### Site 107-15

Site 107-15 was identified by Archaeological and Historical Services, Inc., (AHS) in October of 2010 during Phase IB survey of proposed upgrades to the Orange Railroad Station. Shovel testing of the site area yielded a single quartz Lamoka-like projectile point determined to date from the Late Archaic period of Connecticut prehistory, a quartz bifacial retouch flake, 2 bottle glass shards, and 1 window glass shard. These artifacts were identified within a 75 meters<sup>2</sup> (807 feet<sup>2</sup>) area located 250 meters (820 feet) to the east of Marsh Hill Road and 100 meters (328 feet) to the west of Oyster River in Orange, Connecticut. According to AHS, no disturbance aside from plowing for agriculture was noted within the site area. AHS suggested that Site 107-15 contained archaeological deposits that may be eligible for listing on the National Register of Historic Places applying the criteria for evaluation (36 CFR 60.4 [a-d]). Phase II testing and evaluation of this site was never completed. As mentioned above, the Site 107-15 was thought to be located either within or in close proximity to the proposed access road alignment.

#### Site 107-16

Site 107-16 also was identified by AHS, Inc., during Phase IB survey of the proposed Orange Railroad Station in October of 2010. The Phase I survey effort resulted in the recovery of a single quartz drill and 1 unidentified charred botanical fragment. According to the submitted site form, the prehistoric occupation encompassed a 25 meter<sup>2</sup>(269 feet<sup>2</sup>) area located on a terrace located 250 meters (820 feet) to the east of Marsh Hill Road and 70 meters (230 feet) to the west of Oyster River. While AHS could not determine the date occupation for the site or its type, it was recommended that Phase II testing and evaluation of Site 107-16 be completed to determine its National Register of Historic Places eligibility applying the criteria for evaluation (36 CFR 60.4 [a-d]). Phase II testing and evaluation of this site was never completed. Site 107-16

is located well to the north of the proposed access road and will not be impacted by construction associated with the Project.

## CHAPTER VI

### METHODS

#### **Introduction**

This chapter describes the research design and field methods used to complete the current Phase IB archaeological survey of the Access Road AR-P982N-N alignment in Orange, 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 is provided below.

#### **Research Design**

The Phase IB archaeological survey was designed to identify all prehistoric and historical period cultural deposits located within the proposed access road alignment. Fieldwork for the project was comprehensive in nature and project planning considered the distribution of previously recorded archaeological sites located near the proposed access road, as well as an assessment of the natural qualities of the survey area. The methods used to complete this investigation were designed to provide complete and thorough coverage of all portions of the survey area and included pedestrian survey, systematic subsurface testing, detailed mapping, and photo-documentation.

#### **Field Methods**

Following the completion of all background research, the proposed access road alignment was subjected to Phase IB survey utilizing pedestrian survey, photo-documentation, GPS recordation, and systematic subsurface testing. The pedestrian survey portion of this investigation included visual reconnaissance of all areas located within and immediately adjacent to the proposed access road. The subsurface examination was completed through the excavation of 11 of 13 (85 percent) planned survey shovel test pits spaced at 10 meter (32.8 foot) intervals along the centerline of the proposed access road (Figure 8). The planned but unexcavated shovel test pits fell within areas characterized by standing water and previous disturbance.

During survey, each shovel test measured 50 x 50 centimeters (19.7 x 19.7 inches) in size and each was excavated to a depth of at least 50 centimeters below surface (19.7 inches below surface) or until glacially derived C-Horizon or wet soils 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 0.635-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.

#### **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

This chapter presents the results of the Phase IB archaeological survey of proposed Access Road AR-P982N-N in Orange, Connecticut, which will be used during the installation of monopoles as part of the Project. The goals of the investigation included completion of the following tasks: 1) a contextual overview of the region's prehistory, history, and natural setting (e.g., soils, ecology, hydrology, etc.); 2) a literature search to identify and discuss previously recorded archaeological sites in the vicinity of the survey area; 3) a review of readily available historical maps and aerial imagery depicting the proposed access road in order to identify potential historical resources and/or areas of past disturbance; 4) pedestrian survey and photo-documentation of the proposed access road alignment; and 5) subsurface examination of the survey area. All fieldwork was performed in accordance with the *Environmental Review Primer for Connecticut's Archaeological Resources*, which is promulgated by CT-SHPO (Poirier 1987).

### Results of the Phase IB Survey

As discussed in Chapter I, Access Road AR-P982N-N will be built within the northern portion of the existing CT-DOT railroad corridor and to the north of the railroad tracks, to the east of Marsh Hill Road, to the south of Interstate I-95, and to the west of Heffernan Drive in Orange, Connecticut. According to Project plans, the proposed access road will extend in an east to west direction for approximately 112 meters (367.5 feet) alongside the toeslope of the railroad corridor, and it will measure 4.9 meters (16 feet) in width once constructed. At the time of survey, the project area was characterized by deciduous forest on mostly level terrain (Figures 10 and 11).

The Phase IB survey consisted of pedestrian survey, subsurface testing, and mapping of the project area. The subsurface testing regime resulted in the excavation of 11 of 13 (85 percent) planned survey shovel tests along the length of the access road (Figure 9). A typical shovel test profile exhibited three soil horizons in profile and extended to a terminal depth of 84 centimeters (33.1 inches) below surface. The uppermost layer was recorded as the Ap-Horizon (plow zone); it consisted of a layer of very dark gray (10YR 3/2) fine sandy loam that reached from 0 to 42 centimeters below surface (0 to 16.5 inches below surface). The underlying B-Horizon (subsoil) was classified as a deposit of strong brown (7.5YR 4/6) silty clay that ranged in depth from between 42 and 71 centimeters below surface (16.5 and 28 inches below surface). Finally, the glacially derived C-Horizon reached from 71 centimeters below surface (28 inches below surface) to the termination of the shovel test pit at 84 centimeters below surface (33.1 inches below surface).

The Phase IB field work resulted in the collection minor amounts of coal and a single metal washer from Shovel Tests 9 and 10, respectively (see Figure 9). These items were found at depths ranging to 0 to 30 centimeters (0 to 11.9 inches) below surface and originated from the disturbed plow zone deposit. The recovered artifacts were not substantial in number, nor were they identified in association with any historical features (e.g., foundation, wells, privies, etc.). Further, Phase IB survey of the proposed access road did not result in the collection of any prehistoric artifacts or any below ground cultural features that may have originated from the Late Archaic or any other prehistoric occupation of previously identified Site 107-15. Thus, the Phase IB survey revealed that archaeological deposits associated with Site 107-15 do not extend into the proposed access road alignment and the site will not be impacted by



construction. Therefore, no additional archaeological investigation of the Access Road AR-P82N-N area is recommended and no special techniques are required during construction of the road alignment.

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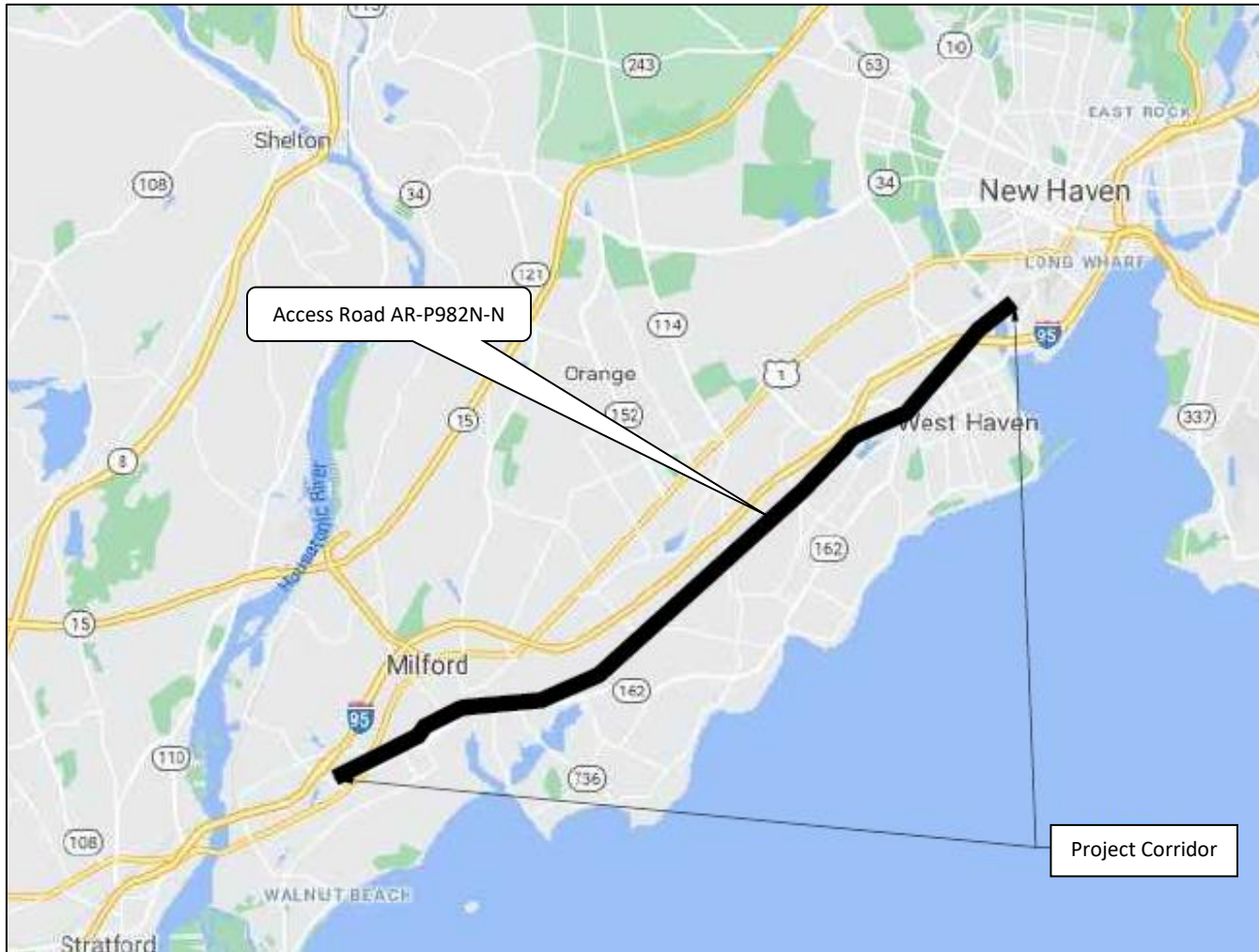


Figure 1. Location of Access Road AR-P982N-N associated with the proposed Milvon-West River Railroad Transmission Line 115-kV Rebuild Project in Orange, Connecticut.

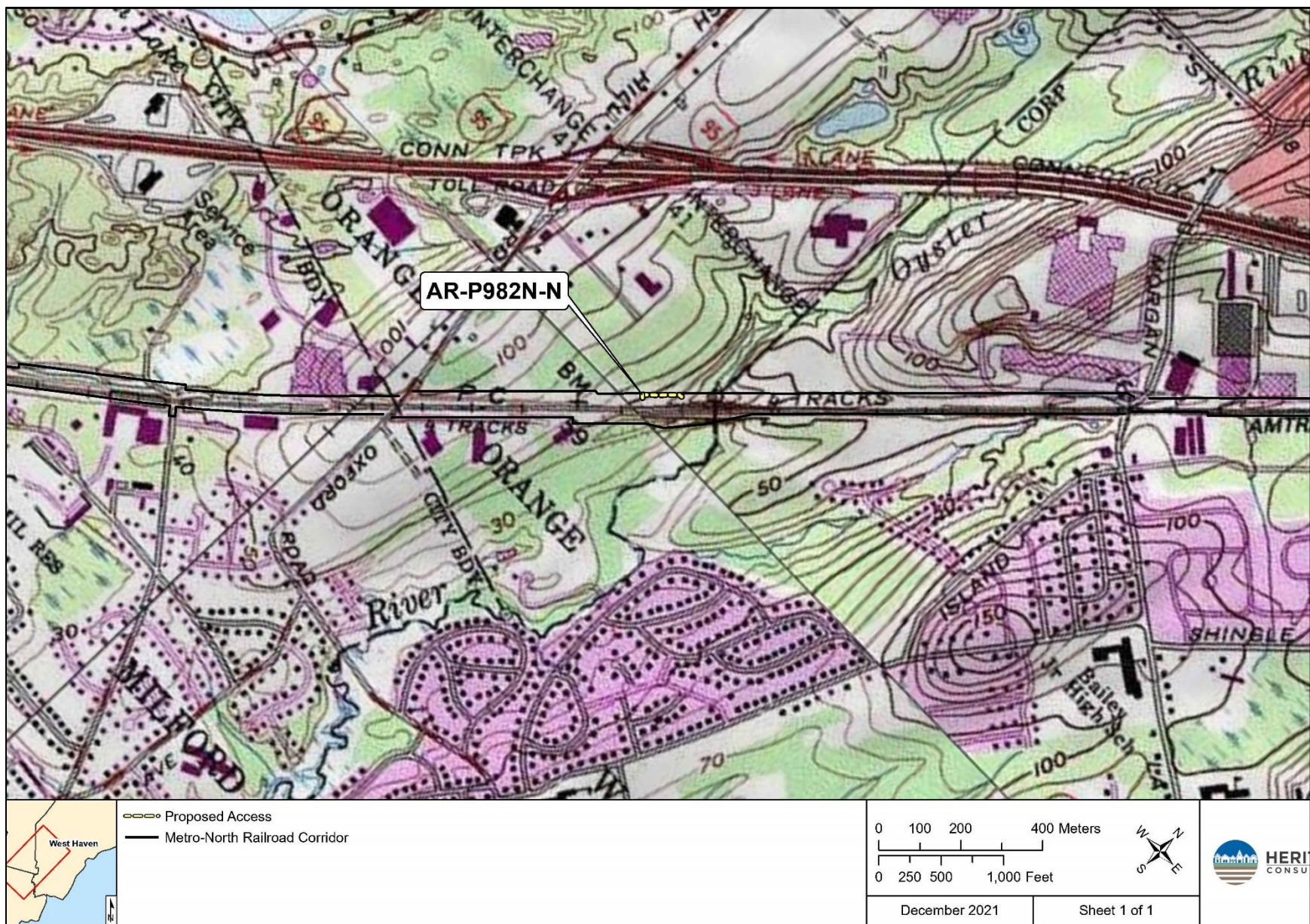


Figure 2. Excerpt from a 1996 USGS 7.5' series topographic map showing the location of Access Road AR-P982N-N.

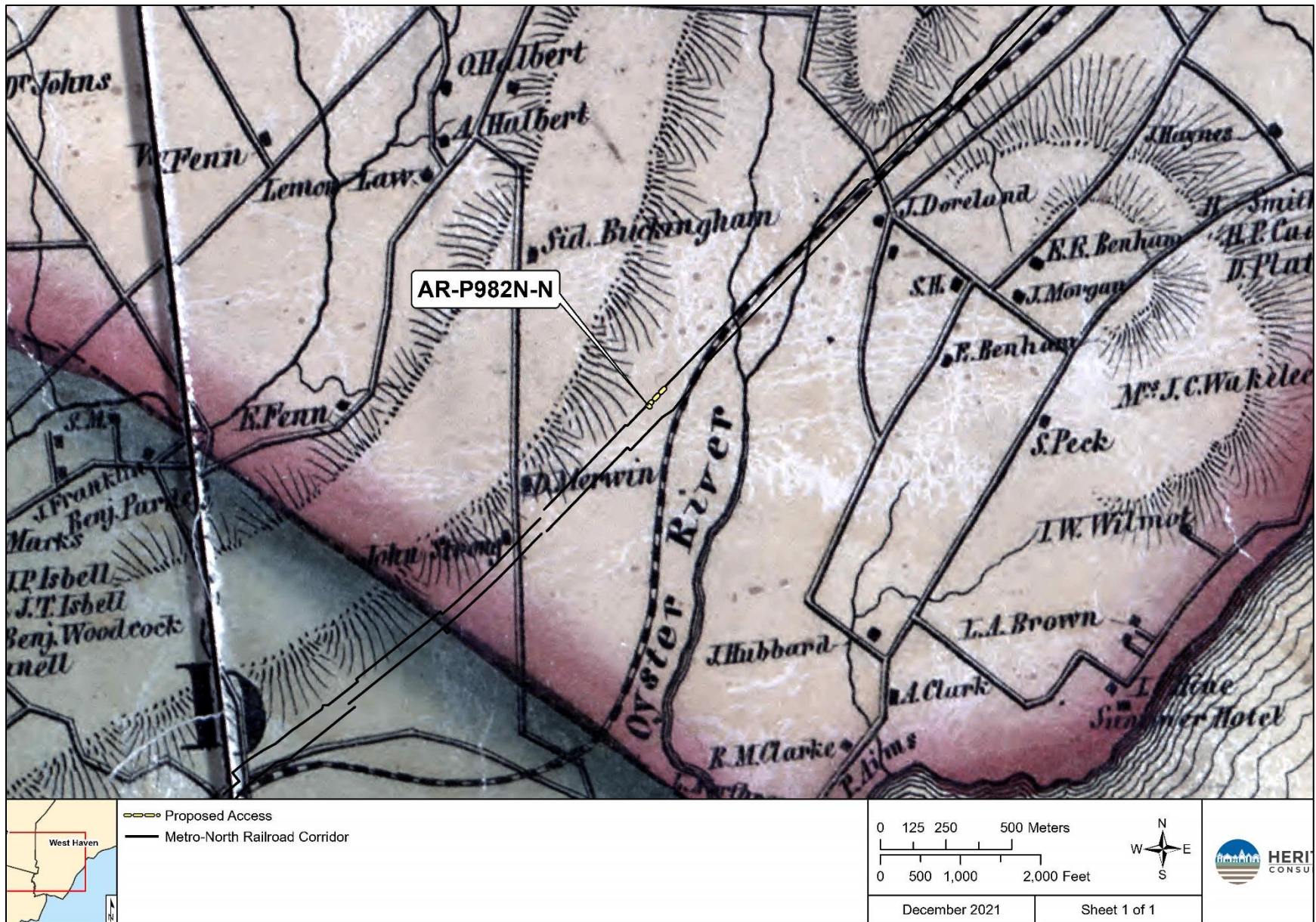


Figure 3. Excerpt from an 1856 map showing the location of Access Road AR-P982N-N.

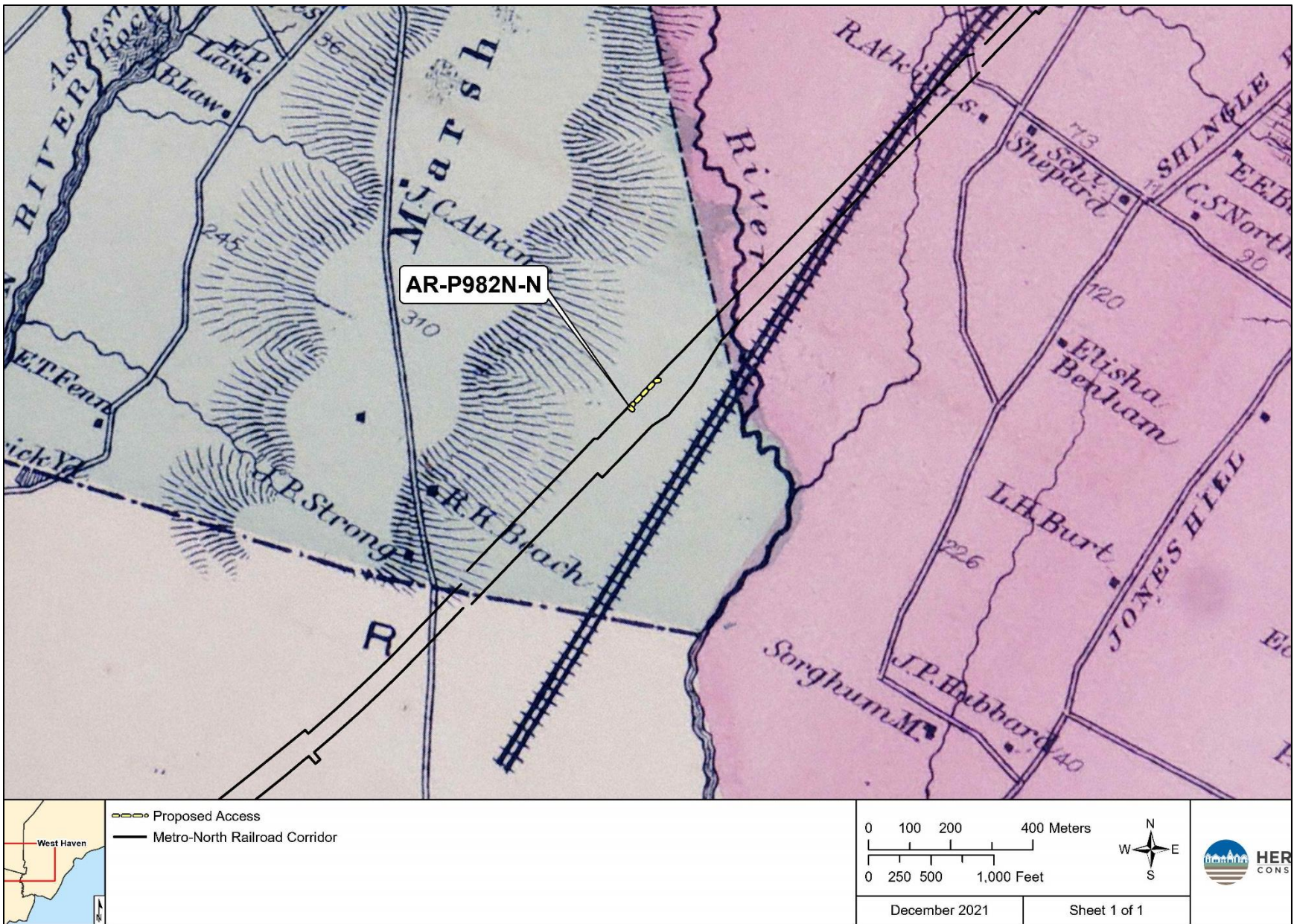


Figure 4. Excerpt from an 1868 map showing the location of Access Road AR-P982N-N.

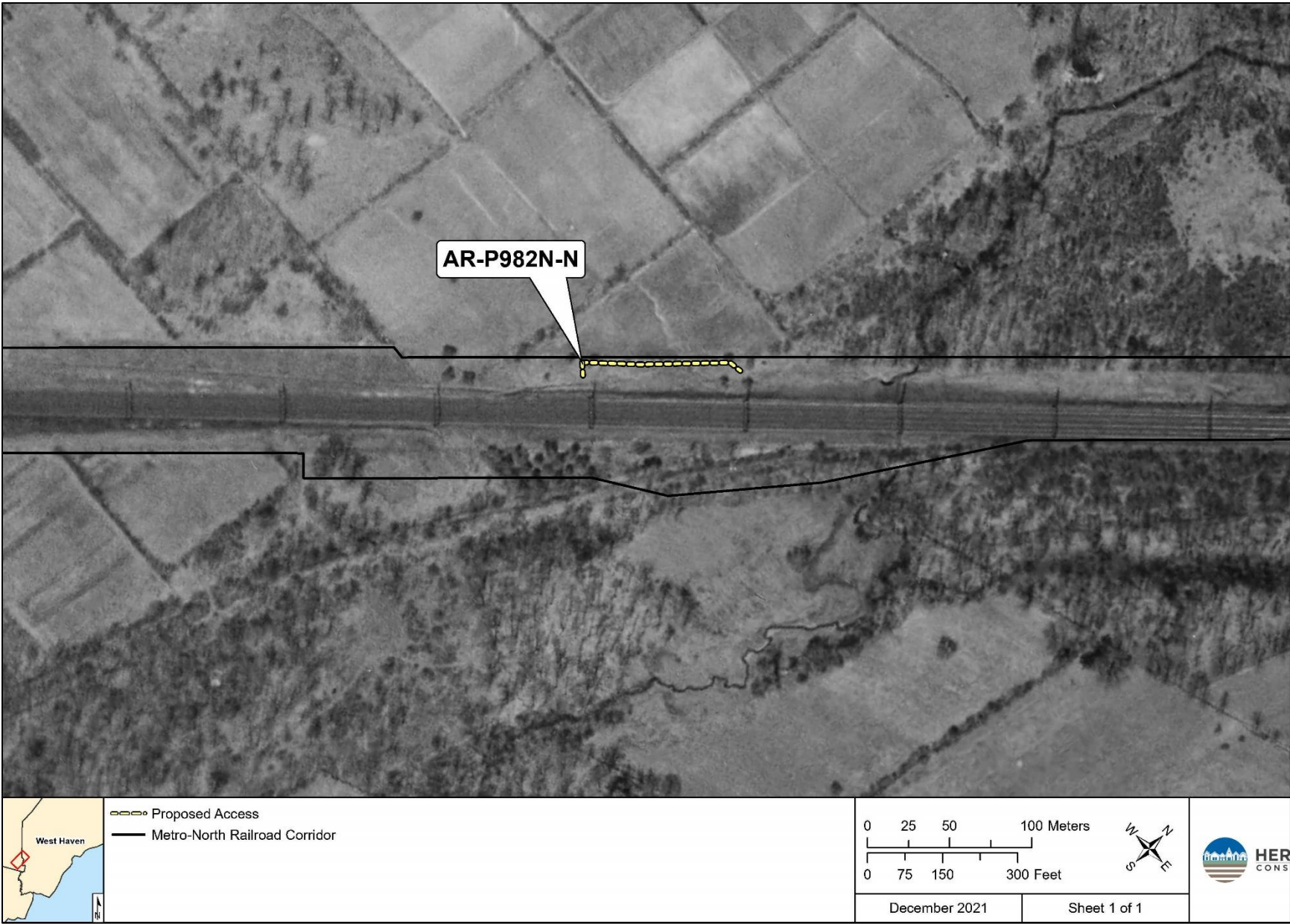


Figure 5. Excerpt from a 1934 aerial image showing the location of Access Road AR-P982N-N.



Figure 6. Excerpt from a 1951 aerial image showing the location of Access Road AR-P982N-N.



Figure 7. Excerpt from a 2019 aerial image showing the location of Access Road AR-P982N-N.

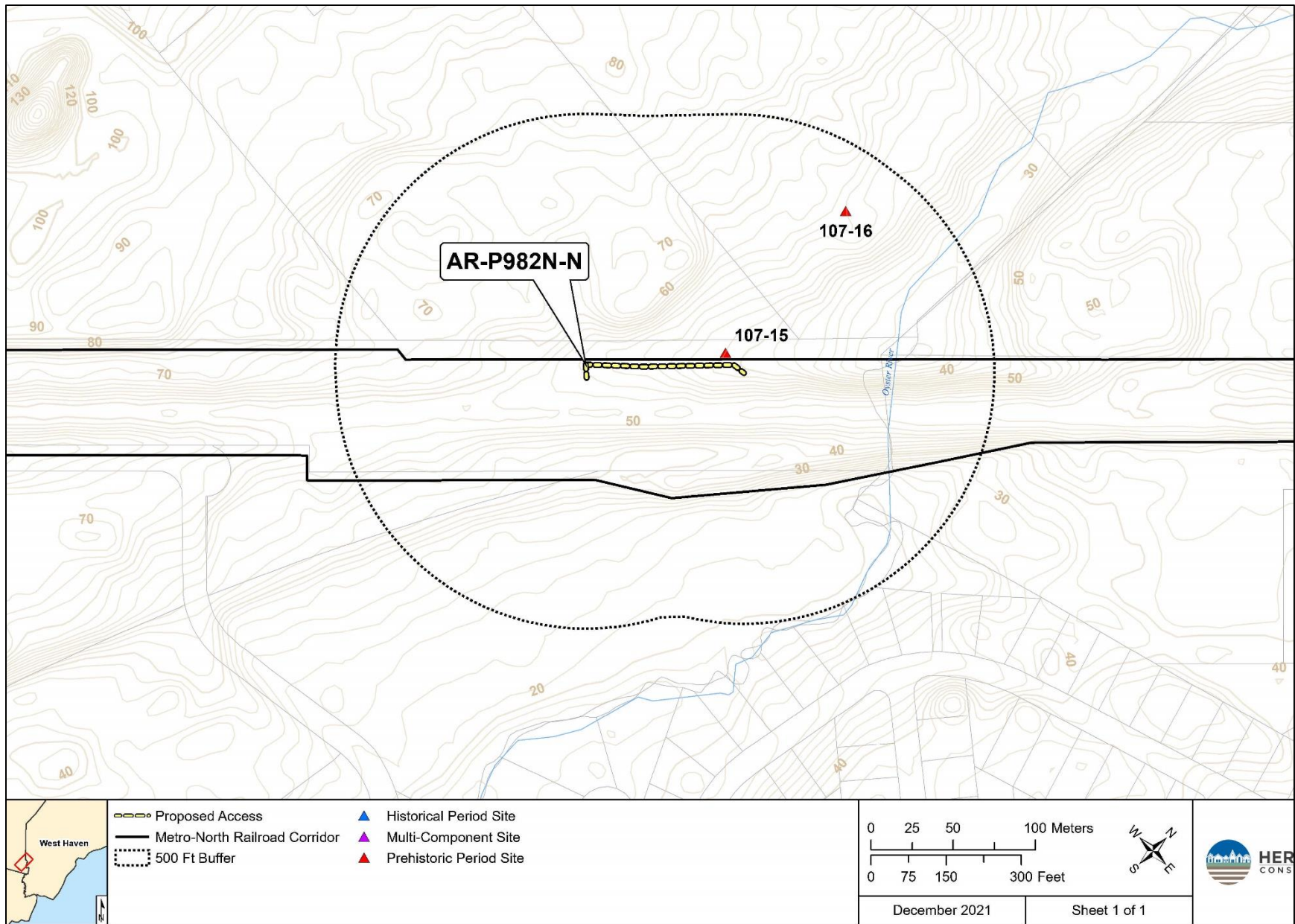


Figure 8. Digital map showing the location of archaeological sites within 152.4 m (500 ft) of Access Road AR-P982N-N.





Figure 9. Digital map showing the location of shovel tests excavated along the proposed access road AR-P982N-N.



Figure 10. Representative view from the central portion of Access Road AR-P982N-N facing northeast.



Figure 11. Representative view from the central portion of Access Road AR-P982N-N facing southwest.