REPORT

ARCHAEOLOGICAL SENSITIVITY ASSESSMENT
CP243 INTERLOCKING NORWALK AND WESTPORT, CONNECTICUT
State Project No. 0301-0181

Prepared for

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By

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ABSTRACT AND MANAGEMENT SUMMARY

The State of Connecticut, through the Connecticut Department of Transportation (CTDOT), is constructing a new universal interlocking along the Metro North New Haven Railroad Line (NHL) east of the East Norwalk Station in Norwalk, Connecticut. CTDOT is constructing a new universal interlocking along the New Haven Line (NHL) east of the East Norwalk Station in Norwalk, Connecticut (CP-243; State Project No. 0301-081). Construction of a new universal interlocking at CP-243 and system upgrades from the South Norwalk Station to east of the Saugatuck River in Westport will improve operations along the NHL, including the ability of the Metro-North system to accommodate Express-Local train overtakes and limited headways between trains. The CP-243 project will help facilitate the construction of rail infrastructure projects on the NHL, particularly related to track outages, while maintaining rail service through the area.

The new interlocking will include track realignment and crossovers and new track switches from approximately Strawberry Hill Avenue to the Norwalk-Westport town line [corresponding to Milepost (MP) 43.0-43.5]. New signals will be installed from the South Norwalk Station (including CP-241) in South Norwalk to approximately 500 feet east of the Saugatuck River in Westport, for a distance of approximately 3.5 miles and will include signal houses (two, each at approximately 10’ x 20’). One signal house will be installed along the south side of the tracks southeast of Madison Street in South Norwalk, and one signal house will be installed along the south side of the tracks in East Norwalk in the vicinity of Goldstein Place. New fiber optic upgrades to support signaling equipment for the new interlocking will be installed through the project area, and depending upon location, will be located aerially, within track ballast, attached to bridges, and also in submarine cables crossing the Saugatuck and Norwalk rivers.

The project will receive state funding, requiring it to comply with the Connecticut Environmental Policy Act (CEPA), which mandates consideration of possible impacts to significant historic and archaeological resources. Additionally, the project will receive funding from the Federal Transit Administration (FTA), requiring consultation with the State Historic Preservation Office (CTSHPO) regarding possible impacts to significant historic and archaeological resources under Section 106 of the National Historic Preservation Act and Section 4(f) of the Department of Transportation Act.

This report presents the results of an archaeological sensitivity assessment of the areas to be impacted by the CP-243 Interlocking project. The report was prepared by Archaeological and Historical Services, Inc. (AHS) under contract to HNTB Corporation. Above-ground historic resources such as buildings and structures are addressed in a companion AHS report *(*Clouette and Vairo 2016).

The Area of Potential Effects (APE) for archaeological resources was delineated as the railroad right-of-way (ROW); the construction and access easement parcel at 10 Norden Place, Norwalk; the portions of the Norwalk River and shoreline areas adjacent to the Walk Bridge in Norwalk; and the portions of the Saugatuck River and shoreline areas adjacent to the Saga Bridge in Westport, wherein project actions will occur. The limits of the interlocking within the railroad ROW extend from approximately Strawberry Hill Avenue to the Norwalk-Westport town line, which corresponds to Milepost (MP) 43.0 – 43.5. The construction easement extends from Norden Place east to the planned access road immediately east of existing catenary

structure 555. The limits of the fiber optic and signal upgrades within the ROW extend from the South Norwalk Train Station to approximately 500 feet east of the Saugatuck River in Westport.

AHS researched basic environmental sources on hydrology, geology and soils, the files of recorded archaeological sites at the Office of State Archaeology (OSA) and CTSHPO, relevant cultural resource management reports and archaeological publications, historic maps, local histories, and primary documents. This research provided a context for assessing the archaeological sensitivity of the APE.

As the proposed action will take place almost entirely within the existing railroad right-of-way footprint, in general the APE is considered to have little or no potential for intact terrestrial historic-period or pre-colonial archaeological resources. Extensive disturbance associated with the construction and modification of the rail line has likely destroyed or deeply buried any pre-Colonial archaeological deposits within the ROW. Based on the results of the assessment survey, AHS determined that the construction and access easement parcel at 10 Norden Place, Norwalk, located on the north side of the ROW on the site of the former Northup-Grumman plant, may possess archaeological potential; archaeological testing is recommended in this area prior to ground disturbance.

The archaeological sensitivity of underwater and shoreline portions of the APE in the locations of the proposed submarine cable trenches in the Saugatuck and Norwalk rivers will be assessed through a combination of bathymetric, vibracore, and hand-auger data, along with data gathered from pedestrian survey of shorelines and intertidal areas within the APE. If the submarine trench portions of the APE are determined to possess archaeological sensitivity, additional underwater and bankline archaeological assessments will be required to accurately assess project impacts.

The conclusions and recommendations herein are the opinion of the archaeological consultant. Actual determinations of National Register eligibility and assessment of effects are properly part of the ongoing consultative process among FTA, CTDOT, CTSHPO and other stakeholders.

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I. INTRODUCTION AND SCOPE OF WORK

A. Introduction

The State of Connecticut, through the Department of Transportation (CTDOT), is constructing a new universal interlocking along the Metro-North New Haven Line (NHL) east of the East Norwalk Station in Norwalk and Westport, Connecticut (CP-243; State Project No. 0301-081). The proposed project, known as the CP-243 Interlocking Project, will improve operations along the NHL, including the ability of the Metro-North system to accommodate Express-Local train overtakes and limited headways between trains. The CP-243 project will help facilitate the construction of rail infrastructure projects on the NHL, particularly related to track outages, while maintaining rail service through the area. In addition to the interlocking, the project includes signaling system upgrades from the South Norwalk Station to a point just east of the Saugatuck River in Westport.

Work will take place almost entirely within the footprint of the existing railroad right-of-way (ROW). The new interlocking will include track realignment and crossovers, new track switches, drainage improvements, and track sub-ballast and ballast reconstruction from approximately Strawberry Hill Avenue to a point a short distance east of the Norwalk-Westport town line [corresponding to Milepost (MP) 43.0-43.5] (Figures 2a-2i). The proposed project also includes construction of a new access road to the ROW through the parcel at 10 Norden Place, Norwalk, and a construction easement that overlaps the parcel's parking areas.

The existing signaling system from the South Norwalk Station (including CP-241) to the east side of the Saugatuck River in Westport will be upgraded, including new signals, wire and cable replacement, conduit and duct bank installations, and all signal transformer installations and connections. Two small metal signaling equipment enclosures, 10' by 20' in plan, will be installed within the ROW. Except in the case of submarine cables crossing the Saugatuck and Norwalk rivers (Figures 3 and 4) and three railroad bridges, where new fiber-optic conduits will be attached to the bridges, the signalling upgrades will be installed below-grade in the ballasted ROW embankment or carried by overhead structures.

The submarine cables for both waterway crossings will consist of four individual, four-inch diameter armored cables placed a minimum of seven feet below the mudline in accordance with Connecticut Department of Energy and Environmental Protection and federal navigation channel permit requirements (Figures 3 and 4). The CP-243 Interlocking Project is being conducted in coordination with ongoing catenary, signal and fiber optic upgrades on the NHL.

At the Saugatuck River, an approximately 180-foot-long permanent submarine cable will be located on the south side of the Saugatuck River (Saga) Bridge. In the vicinity of the Saga Bridge and leading up to the movable span, the cables will be carried overhead on the existing Overhead Contact System (OCS) structures that are supported by the fixed approach spans to the west of the Saga movable span, prior to transitioning to submarine cable. The limit of the submarine cable placement is approximately from the rest pier on the west to the fixed approach span pier immediately east of the bascule pier on the east (Figure 3).

At the Norwalk River, an approximately 250-foot-long temporary cable crossing will be located on the north side of the existing Walk Bridge. A permanent submarine cable, enclosing Metro-North power, signal, and communication cables, will replace the temporary crossing and will be installed during the Walk Bridge Replacement Project, State Project No. 0301-0176. In the vicinity of Walk Bridge, the cables will be carried overhead on the existing OCS structures that are supported by the fixed-approach spans on both the east and west sides of the Norwalk

River. At the OCS termination structures on the fixed approach spans that are adjacent to the east and west ends of the existing swing span, the cables will drop vertically along the OCS structures to the north side of the bridge and transition to the submarine cables at the swing span rest piers. The limit of the submarine cable placement is approximately from the swing span rest pier on the west to the adjacent swing span rest pier on the east.

Open excavation methods will be used to install the submarine cables. Approximately 900 cubic yards (cy) of sediments will be excavated from the Norwalk River and approximately 700 cy of sediments will be excavated from the Saugatuck River. The temporary storage and transport of the excavated sediment may require the use of barges at the Saugatuck and Norwalk rivers, prior to its off-site disposal. To facilitate the excavation, backfill, and installation of cables, removal of several wood piles at the pivot pier and rest pier fender systems will be required at both bridge sites.

Work will take place almost entirely within the footprint of the existing railroad right-of-way (ROW), with the exception of the submarine trenches in the Saugatuck and Norwalk rivers (Figures 3 and 4) and an acess and staging area in the vicinity of 10 Norden Place adjacent to the interlocking (Figure 5). Planned work in the access/staging area includes construction of an access road, access stairways, signal cabinets, traction power improvements, and fencing. The existing pavement will be disturbed only in the location of the proposed driveway. Fiber optic and signaling work will occur along a 3.5-mile stretch within the project area, but this work will not impact archaeological resources as it will be located aerially or within track ballast. The Area of Potential Effect (APE) for archaeological resources is depicted on Figure 1.

The project will receive state funding, requiring it to comply with the Connecticut Environmental Policy Act (CEPA), which mandates consideration of possible impacts to significant historic and archaeological resources. In addition, funding will be provided by the Federal Transit Administration (FTA), requiring the project to comply with the National Environmental Policy Act (NEPA), Section 106 of the National Historic Preservation Act of 1966 (Pub. L. No. 89-665), as amended (Pub. L. No. 96-515), and Section 4(f) of the United States Department of Transportation Act. These federal laws require consultation with the State Historic Preservation Office (CTSHPO) regarding possible project-related impacts to historical and archaeological resources listed in or eligible for listing in the National Register of Historic Places (NRHP).

This report presents the results of an archaeological sensitivity assessment, or Phase IA survey, of the areas to be impacted by the construction of the CP-243 Interlocking. The report was prepared by Archaeological and Historical Services, Inc. (AHS), the project's historic preservation consultant. AHS performed the work under contract to HNTB Corporation, the engineering firm that is evaluating alternative designs for replacing or rehabilitating the bridge. Above-ground historic resources such as buildings and structures are addressed in a companion AHS report, *Historic Resources Evaluation Report CP-243 Interlocking, Norwalk and Westport, Connecticut* (Clouette and Vairo 2016).

The archaeological assessment survey was conducted in accordance with the CTSHPO's *Environmental Review Primer for Connecticut's Archaeological Resources* (hereafter *Primer*), *The Standard Requirements for Cultural Resource Survey Work Mandated through CTDOT, OEP* (March 2014), and the Secretary of Interior's *Standards and Guidelines for Archaeology and Historic Preservation*.

B. Scope of Work

As defined by the *Primer*, the purpose of a Phase IA survey is the collection of data sufficient to assess the archaeological sensitivity of a project area (i.e., the potential of the project for containing significant buried archaeological resources); assessing the potential impacts to potential significant archaeological resources; recommending additional studies, if necessary, to identify specific archaeological sites rather than broader areas of archaeological sensitivity; and developing strategies for avoiding or mitigating impacts to potential significant archaeological resources. This report addresses only the archaeological aspects of the APE. An assessment of historic resources in the APE, such as buildings and structures, has also been conducted by AHS, and the results of that survey are presented in a separate report (Clouette and Vairo 2016).

The tasks of the archaeological assessment survey include researching the past environmental and historical development of the APE, researching previously documented archaeological resources in the vicinity, and conducting a windshield survey to collect sufficient information to delineate portions of the parcels that may be sensitive for pre-colonial Native American sites. A review of historical maps was also conducted in order to compile a capsule history of documented land use in the project area and to assess the potential of the APE to contain historic-period archaeological resources related to past use of the land. While Phase IA assessment surveys often include preliminary subsurface investigation in the form of hand-powered soil cores, no subsurface investigation was conducted for the current project due to access issues, time constraints, the potential for buried utilities, and the existing rail line.

The report is organized as follows: Chapter II presents the methodology. Chapter III presents a summary of the environmental history and conditions in the APE. Chapter IV provides the pre-colonial Native American background history of the project area, including a discussion of previously identified Native American sites in the APE vicinity. Chapter V outlines the post-European contact history of the APE vicinity, including a review of historic maps, and provides a discussion of previously documented historic archaeological sites in the project area vicinity. Chapter VI addresses the archaeological sensitivity of the project area and includes AHS' recommendations for the APE.

B. Delineation of the Area of Potential Effects (APE)

For archaeological resources the APE was delineated so as to include the railroad ROW; the construction and access easement parcel at 10 Norden Place; the portions of the Norwalk River and shoreline areas adjacent to the Walk Bridge; and the portions of the Saugatuck River and shoreline areas adjacent to the Saga Bridge, wherein ground-disturbing project actions will occur. The project limits within the railroad ROW extend from approximately Strawberry Hill Avenue to the Norwalk-Westport town line, which corresponds to Milepost (MP) 43.0 – 43.5. The construction easement extends from Norden Place east to the planned access road immediately east of existing catenary structure 555 (Figures 2a-2i, 3-5).

The new fiber optic upgrades to support signaling equipment for the new interlocking will be installed from the South Norwalk Station (including CP-241) to the east side of the Saugatuck River in Westport. With the exception of the submarine cables in the Norwalk and Saugatuck Rivers the upgrades will be located aerially or within track ballast. This work will have no impact on buried archaeological resources and is therefore not addressed in this report.

II. METHODOLOGY

The files of recorded archaeological sites at the Office of State Archaeology (OSA) and CTSHPO were researched. Relevant cultural resource management reports and archaeological publications were reviewed to help develop a pre-colonial Native American and historic context preparatory to assessing the potential for significant buried archaeological sites to be present in the APE. Environmental sources on hydrology, geology, and soils were reviewed to establish an understanding of the natural environment that existed prior to urbanization and to also help understand the level of disturbance in the APE.

Historic maps, local histories, and primary documents were researched to establish a historic-period context and aid in identifying archaeologically sensitive areas in the APE. Aerial photographs helped refine the assessment of archaeological sensitivity.

No subsurface testing in the form of hand-powered soil cores was conducted in the APE as part of the assessment survey, due to access issues, time constraints, the potential for buried utilities, and the active railroad ROW, which made testing impractical at this time.

III. ENVIRONMENTAL CONTEXT OF THE PROJECT AREA

Research on the environmental setting is essential to assessing the pre-colonial archaeological sensitivity of the APE. Native Americans were often drawn to particular environments and landforms. Background research on the physiographic setting, geology, hydrology, and soils in the project area was conducted using published sources and soils data compiled by the Natural Resources Conservation Service (NRCS).

A. Geology and Topography

Bedrock in the town of Norwalk consists of schist and gneiss of the Hartland and Gneiss Dome belts, which form part of the greater Connecticut Valley Synclinorium (Rodgers 1985). These metamorphosed sedimentary and igneous rocks formed during the Middle to Early Paleozoic age (350-500 million years Before Present [BP]) as oceanic terrain that was subsequently deformed and metamorphosed by the collision of crustal plates that formed Pangaea. The process reversed during the Mesozoic Era (ca. 235 million years BP), causing rift basins to form as Pangaea fragmented. The eastern edge of the Hartland Gneiss Dome belts is bounded by the younger Newark (rift basin) terrane of the central Connecticut basin.

During the last glacial maximum (ca. 18,000 ^{14}C[1] BP), the project area was beneath the Connecticut Valley Lobe of the Laurentide Ice Sheet as it deposited its terminal moraine, which constitutes Long Island (Uchupi et al. 2001). The glacier retreated from what is now the Connecticut coastline at ca. 17,500 ^{14}C BP, leaving proglacial Lake Connecticut in its wake. Impounded by Long Island and the Harbor Hill Moraine (on the east side of Long Island Sound), this lake occupied most of what is now Long Island Sound until it drained rapidly at ca. 15,500 ^{14}C BP. According to eustatic shifts, the Long Island Sound basin was slowly inundated during the early to middle Holocene, gradually reducing the gradients of streams and rivers along the paleocoastline. Sea level stabilized along the coast of southern New England by ca. 4000 BP, which facilitated the development of highly productive marshlands and floodplains (Lavin 1988). Rich salt marshes and smaller estuarine environments, in locations such as the lower Norwalk River, likely developed during the Late Holocene.

The town of Norwalk is located on Connecticut's Coastal Slope, which is characterized by relatively gentle topography and an average elevation drop of about 50 feet per mile (Bell 1985). Connecticut's rocky and jagged coastline is, in part, a reflection of this relatively steep incline. The natural breakwaters formed by Long Island and Fisher's Island hinder the development of straight-bordered barrier beaches and also contribute to the uneven coastline. The major river basins that empty into Long Island Sound here tend to be long and straight with few branches because they are confined to north-to-south bedrock channels carved by glacial ice that have become "drowned" by post-glacial sea-level rise. Soils in the Coastal Slope from New Haven westward are particularly fertile because they contain a significant proportion of glacially deposited lime that originated from the Marble Valleys to the north.

B. Hydrology

The project area is located between the Norwalk River and Saugatuck River watersheds in the towns of Norwalk and Westport in southwestern Connecticut. Historically, both rivers

[1] ^{14}C identifies this as a radiocarbon date. Radiocarbon dating is a form of radiometric dating used to determine the age of organic components in ancient materials, on the basis of the half-life of carbon 14 and a comparison between the ratio of carbon-12 to carbon-14 in the sample and the known ratio in living organisms.

served as important transportation routes for people and goods, and they remain important to the present day. The Norwalk River has been repeatedly dredged to facilitate boat traffic; the Saugatuck River, however, may not have been subjected to dredging.

The 1835 Coast Survey (Figure 6) and the 1895 USGS topographic map of Norwalk (Figure 7) show the rail line crossing a wetland in the eastern part of the APE, in what is today a wooded, undeveloped area. This portion of the APE remains wet, with poorly drained soils (see below). The 1934 aerial photograph shows a stream running through the construction and access easement portion of the project area (Figure 8). Wetland resources available in this area may have made it attractive to pre-colonial-period Native American foragers.

C. Soils

The soils in the west half of the interlocking portion of the CP-243 Interlocking APE are characterized as Urban Land and Udorthents-Urban Land Complex soils (NRCS 2016). The Natural Resource Conservation Service (NRCS) (2005) defines Urban Land as areas with a specific percentage of pavement, driveways, and buildings (i.e., impervious cover). Such areas may contain intact soils, fill or Udorthents soils, or some combination of those soil types, below impervious surfaces. Udorthents are found on areas that have been cut or filled two feet or more. While it is possible that areas of undisturbed soils exist within these larger categories, Urban Land and Udorthents soils are generally considered to have low archaeological potential, as archaeological sites found within such sediments often lack integrity. However, in situations where areas have been simply filled rather than cut and filled, intact soils and archaeological deposits may exist below the fill or impervious cover. The soils on the east and west banks of the Saugatuck and Norwalk rivers, in the vicinity of the proposed submarine trenches, are also characterized as Udorthents and Urban land soils.

The central section of the interlocking portion of the APE contains a mix of Charlton-Urban Land complex and Hollis-Chatfield Rock Outcrop complex soils, along with Udorthents and Urban Land soils. East of that area, the APE borders an undeveloped wooded landscape. The soils mapped in the wooded area, which include primarily Scarboro Muck and Timakwa and Natchaug series, indicate that the area is likely quite wet. These soils are poorly drained and form in depressions, drainage ways, outwash terraces, and outwash deltas.

IV. PRE-COLONIAL, CONTACT AND HISTORIC-PERIOD NATIVE AMERICAN CONTEXT

Although a relatively large number of Native American archaeological sites have been identified in coastal Connecticut, the understanding of pre-colonial cultures in the area remains incomplete. Only a small percentage of the recorded sites along the coast have undergone professional archaeological investigations. Many of the sites were recorded and excavated by avocational archaeologists and many others were destroyed by extensive modern development of coastal areas. Information from several important sites, investigated by avocational and/or professional archaeologists (Coffin 1937, 1938, 1940, 1946, 1951; Glynn 1953; Lavin 1988; Praus 1942; Russell 1942), has contributed to our understanding of Native lifeways in coastal areas. Important coastal sites include Grannis Island in New Haven Harbor (Glynn 1953; Lavin 1988), the Old Lyme Shell Heap (Lavin 1988), Mago Point in Waterford (McBride 1984), Fort Shantok and Shantok Cove in Montville (Salwen 1966; Salwen and Ottesen 1972; Williams 1972), the Thomas Site in Groton (Butler 1946), and the Davis Farm Site in Stonington. A number of regional archaeological surveys have also been conducted in coastal areas of Connecticut, and have provided a great deal of information on the nature and distribution of archaeological sites in these areas (McBride 1984).

The following section provides a summary of the regional and local culture history, based on the current local archaeological record for Connecticut and the greater Northeast. The era predating the arrival of Europeans, which lasted roughly 11,000 years, is subdivided into several major periods coinciding with broad technological and settlement patterns observed in the archaeological record.

A. Paleoindian Period (11,000-9,500 BP)

In the Northeast, the Paleoindian Period dates from 11,000 to 9,500 BP, as measured in radiocarbon years, and coincides with the final glacial period, known as the Younger Dryas. Following a brief warming trend in the region, the Younger Dryas marked a return to colder, glacial conditions and ice-sheet re-expansion in portions of eastern North America (McWeeney 1999).

The earliest archaeological evidence for human occupation in New England dates to approximately 11,000 BP (Spiess et al. 1998) and in Connecticut to around 10,200 BP (Moeller 1980, Jones 1999). Paleoindian sites are characterized by distinctive lithic tools kits that include fluted points and unifacial tools such as side- and end-scrapers. Data reflecting Paleoindian Period land-use patterns and subsistence activities in the Northeast is relatively scarce (Spiess et al. 1998). It is assumed that Paleoindian people exploited a wide range of food resources, including large and small game, fish, wild plant foods, and perhaps extinct megafauna (Meltzer 1988; Jones 1998). Most archaeologists also believe that caribou played a significant, if seasonal, role in the Paleoindian subsistence strategy. Settlement patterns during this period are poorly understood. The range of identified sites includes large base camps, small residential camps, and small, task-specific loci. Taken all together, the archaeological evidence suggests a settlement system based on small, highly mobile social groups exploiting dispersed seasonally available resources.

Few intact Paleoindian sites have been found in Connecticut. According to former State Archaeologist Nicholas Bellantoni, about 50 fluted points have been recovered as isolated finds across Connecticut (Bellantoni 1995), but only two sites have been investigated and published in detail: the Templeton Site in Washington (Moeller 1980, 1984) and the Hidden Creek Site on the Mashantucket Pequot Reservation in Ledyard (Jones 1997). More recently, excavations were conducted at the Ohomowauke Paleoindian Site, which is also located on the Pequot reservation, but the analysis of this site is still in the preliminary stages (Singer 2013). A handful of other sites have received more cursory attention. In 2005, a probable Paleoindian component was identified in the Route 7/15 Interchange in Norwalk, north of the project area (Jones et al. 2005). The scarcity of identified Paleoindian sites suggests a low population density during this period. The small size of most Paleoindian sites and the high degree of landscape disturbance over the past 10,000 years likely contribute to poor site visibility.

B. Archaic Period (9,500-2,700 BP)

The Archaic Period dates from 9,500 to 2,700 BP in the Northeast and it marks a period of dynamic and shifting subsistence and settlement patterns, but the general trend is one of generalist hunter-gatherer populations utilizing a variety of seasonally available resources. The period is subdivided into the Early, Middle and Late Archaic periods on the basis of associated changes in environment, projectile point styles, and inferred adaptations (Snow 1980; McBride 1984). Each sub-period is discussed briefly below.

B1. The Early Archaic Period (9,500-8,000 BP)

Pollen evidence from swamp cores indicates a gradual warming and drying trend beginning around 10,000 BP (McWeeney 1999). By this time Pleistocene megafauna had been replaced by modern cool-temperate game species such as moose, muskrat, and beaver. Deer populations likely increased in abundance at the end of this period, when oak began to dominate upland forests. As the climate stabilized, plant and animal resources may have become more abundant and predictable, enabling Early Archaic populations to exploit a wider range of seasonal resources. Early Archaic sites are poorly represented in the regional archaeological record and this likely reflects continued low population densities. The dearth of Early Archaic sites may be due in part to changing environmental conditions which have deeply buried, inundated, or destroyed many early sites, or to the difficulty of recognizing some Early Archaic assemblages (Funk 1997; Jones 1998; Forrest 1999).

Archaeologists have recovered Early Archaic stone tool assemblages from several sites in the Northeast. The recovered data suggest that this period can be characterized by a number of distinct traditions. The most poorly understood period, that between 9,500 and 9,000 BP, appears to reflect both local Late Paleoindian and intrusive southern Piedmont Tradition Early Archaic influences. A quartz lithic industry in which projectile points are extremely rare occurs locally between roughly 9,000 and 8,500 BP. The Sandy Hill Site on the Mashantucket Pequot Reservation demonstrates this pattern (Forrest 1999, Jones and Forrest 2003). The site represents a local expression of a much broader techno-complex referred to as the Gulf of Maine Archaic Tradition (Robinson et al. 1992). Sandy Hill produced evidence of multiple semi-subterranean living structures and a variety of plant-food remains, including abundant cattail roots and hazelnuts.

Archaeological evidence indicates a shift in Early Archaic period technology about 8,500 years ago, marked by the arrival of an apparently intrusive temperate forest-adapted culture that utilized bifurcate-based projectile points typically manufactured from non-regional materials (Jones 1998, 1999). The Dill Farm Site in East Haddam is one of the best-documented bifurcate sites in Connecticut (Pfeiffer 1986). Archaeological investigations at this site identified cooking/refuse features, quartz flakes, retouched tools, bifurcate-based projectile points, and subsistence remains, including charred nuts and mammal bone associated with a radiocarbon date of 8560 +/- 270 BP. Bifurcate points are documented throughout the state, though most appear to represent isolated finds without apparent associated artifacts. Bifurcate points are commonly manufactured from rhyolite, probably originating from a Boston Basin source or Hudson Valley chert, but few are made from local lithic materials such as quartzite.

B2. The Middle Archaic Period (8,000-6,000 BP)

Based on pollen evidence, the climate became warmer and drier during the Middle Archaic period and alluvial terraces developed along the state's major river systems (Jones 1999; Jones et al. 2008). This period marks the establishment of most modern nut tree species, which provided a new and abundant food resource for both human foragers and game animals such as bear, deer, and turkey. Evidence of Middle Archaic period occupation in Connecticut is more widely documented than for the preceding periods and it suggests adaptation to local resources during a period of population increase (McBride 1984; Jones 1999). Archaeological evidence of grooved axes suggests that wood became an increasingly important raw material during the Middle Archaic, while the presence of pebble net-sinkers and plummets on some regional sites implies a growing reliance on marine and riverine resources (Dincauze 1976; Snow 1980). Despite their relative abundance, sites in Connecticut have yielded limited information on Middle Archaic subsistence and land-use patterns (Jones 1999). Archaeological assemblages are characterized by the presence of Neville and Stark projectile points and large flake tools usually manufactured from local materials such as quartzite. The Middle Archaic settlement pattern appears to have been seasonally oriented toward large upland interior wetlands (McBride 1984; Jones 1999) and the data suggest seasonal re-use of such locales over long periods of time. The Dill Farm Site and the sites around Great Cedar Swamp on the Mashantucket Pequot Reservation reflect this pattern (Jones 1999, 2002). The limited number of Middle Archaic period coastal and riverine sites may be due to rising sea levels that have resulted in deep alluvial burial.

B3. Late Archaic Period (6,000-2,700 BP)

The Late Archaic period in the Northeast is characterized by an essentially modern distribution of plant and animal populations. Based on archaeological evidence for population increase, burial ritual, and long-distance exchange networks, the Late Archaic Period is often considered a time of cultural fluorescence (Dincauze 1975; Snow 1980; Ritchie 1994; Cassedy 1999). This period is one of the best-documented temporal sequences in southern New England, and is characterized by three major cultural traditions: the Laurentian (ca. 5,500-4,500 BP), the Narrow-stemmed (ca. 4,500-3,500 BP), and the Terminal Archaic (ca. 3,800-2,700 BP). Late Archaic sites are common throughout the state, although the period between ca. 6,000 and 5,000 BP remains poorly documented. During most of this period, settlement strategies revolved around large, seasonally revisited settlements located in riverine areas and along large wetland terraces, and smaller, more temporary special-purpose sites in the interior and uplands (Ritchie 1969; McBride 1984; Cassedy 1997, 1999). The nature and distribution of sites suggest aggregation during summer months, with seasonal dispersal into smaller groups during the cold weather (McBride and Dewar 1981). In general, the Late Archaic appears to represent a continuation of the land-use and resource acquisition patterns observed during the Middle Archaic.

The Laurentian Tradition (Ritchie 1965) was originally thought to reflect a hunting and fishing culture with origins in the upper St. Lawrence Valley. In Connecticut, its local manifestations may simply represent the adoption of Laurentian technological traits by local residents (Hoffman 1990; Ives 2009). The settlement pattern appears to reflect a central-based wandering pattern (*sensu* Beardsley et al. 1956) in which numerous small communities exploited a wide variety of settings (Snow 1980:230). In southern New England, Laurentian sites are more common in the interior than along the coast. This pattern suggests that Laurentian groups were primarily adapted to upland and riverine environments, with more limited exploitation of coastal areas on a seasonal basis (e.g., Snow 1980, Kingsley and Roulette 1990). Laurentian sites are characterized by a distinctive tool kit which includes diagnostic side-notched and corner-notched projectile points, often found in association with adzes, axes, gouges, ulus, and slate knives.

The transition to the Small- or Narrow-stemmed phase of the Late Archaic includes notable changes in lithic raw material use. During this phase, the use of quartzite declines significantly and quartz becomes by far the most commonly used material. This pattern has promoted the argument that population increase at this time restricted the availability of even regionally available resources like quartzite. The Narrow-stemmed phase is characterized by the development of a new quartz cobble technology that focused on the reduction of cobble cores into useful blanks for the production of projectile points, especially the narrow-stemmed forms. It is not known whether restrictions on raw material access drove the development of this new technology or if the technology drove raw material selection. Archaeologically identifiable features are more common on sites from this period and include broad fire-cracked rock pavements, earth ovens, and some fire-cracked rock hearths.

Narrow-stemmed phase sites are the most abundant of any period represented in Connecticut. The more notable Narrow-stemmed sites in Connecticut's coastal zones include the Archaic Midden Site in Haddam and the Grannis Island Site in New Haven (Glynn 1953; Lavin 1988). The Archaic Midden Site has been partially submerged by rising sea levels and is only visible at low tide. This may be typical of many Late Archaic sites in the region, indicating the potential of encountering sites under salt marshes or in coves or bays. Recent research interprets the Cover River Site in West Haven to represent a seasonal base camp associated with the Narrow Stemmed Tradition (Cuzzone et al. 2009).

The Terminal Archaic period appears to mark a transition in settlement and perhaps subsistence strategies (Dincauze 1975). A number of technological innovations appear during this period, including the manufacture and use of steatite bowls and the rare production of cord-marked and grit-tempered pottery. The use of quartz declined during this period, while the exploitation of regionally available quartzites increased. Imported chert and other non-local lithics such as argillite, rhyolite, and felsite are found in high proportions in Terminal Archaic lithic assemblages. This pattern appears to indicate renewed social and economic contact with a broader region. Fire-cracked rock features are often associated with this period and likely reflect intensive food-processing activities. Identified site locations suggest that settlement was focused on expansive lacustrine and wetland areas and upper river terraces, rather than floodplains (McBride and Dewar 1981). The interior and uplands appear to have been less extensively used during this period (McBride 1984), though this may be a reflection of small, difficult-to-locate logistical hunting sites. The Terminal Archaic period also marks the appearance of human cremation burials (Dincauze 1968; Robinson 1996; Leveillee 1999). These cultural attributes may represent intrusive peoples or ideas, but the debate over the possibility of migration remains active (see, for example, Robinson 1996: 38-39).

C. The Woodland Period (2,700-450BP)

The Woodland Period is characterized by the increased use of clay pottery, celts, and exotic raw materials, as well as the introduction of bow-and-arrow technology, smoking pipes and horticulture (Lavin 1984; Feder 1984, 1999). An increase in site size and complexity suggests a trend toward greater sedentism and social complexity, probably the result of a growth in the population base, particularly at the end of this period (McBride and Dewar 1987; Lavin 1988; Jones 2002). The Woodland Period has been traditionally subdivided into Early, Middle, and Late periods on the basis of ceramic styles, settlement and subsistence patterns, and political and social developments (Ritchie 1969, 1994; Snow 1980; Lavin 1984). Despite these changes, most recent scholars see the Woodland as a period well-rooted in the traditions and lifeways of the preceding Archaic period (Feder 1984, 1999).

C1. Early Woodland Period (2,700-2,000 BP)

Most documented sites in Connecticut containing Early Woodland components are situated along the coast or at the mouths of major rivers such as the Quinnipiac, Connecticut, Thames, and Mystic, although a number of interior upland locations have also been recorded. The Early Woodland Period remains poorly understood, and sites from this period are less well-represented in the archaeological record than sites from the preceding phases of the Late Archaic. This leads some to argue for a probable population decline during the Early Woodland (Fiedel 2001). On the other hand, the apparent dearth of Early Woodland sites may simply reflect the biases of site-recognition strategies (Juli and McBride 1984). Direct association of Narrow-stemmed projectile points with Woodland Period radiocarbon-dated contexts (Herbster and Chereau 1999, 2001, 2003; Herbster 2004), as well as the stratigraphic association of Narrow-stemmed points with Woodland types (Lavin and Russell 1985; Cuzzone and Hartenberger 2009), suggest the possibility that Woodland Period assemblages are frequently misidentified as Late Archaic. The observed change in site patterning from the previous periods may also be a reflection of shifting settlement strategies that promoted the formation of larger, but fewer, seasonal aggregation camps (Jones 2002). Research suggests that year-round habitation of some sites was established by the late Early Woodland period (Ceci 1980; Bernstein 1990).

Early Woodland regional complexes are generally characterized by stemmed, tapered, and side-notched (Meadowood) point forms and preforms, often of Onondaga chert; thick, grit-tempered, cord-marked ceramics; tubular stone pipes; burial ritual; and indications of long-distance trade/exchange networks (Lavin 1984; Juli 1999). It is possible that incipient horticulture focused on native plant species such as goosefoot (*Chenopodium sp.*) had begun by this time (George 1997). The existence of stone pipes also suggests that tobacco was being traded into the region, if not locally produced, by the Early Woodland.

Despite the rarity of Early Woodland sites, a number of very large, deep pit features attributed to this period have been found across southern New England. These pits may represent nut-storage facilities and clusters of these features could indicate repeated use of nut-gathering locations by families, perhaps with established rights to certain groves. This would represent a break from presumed earlier patterns based on more mobile kin-based social units with relatively open access to local areas (Jones 2002).

C2. Middle Woodland Period (2,000-1,200 BP)

The Middle Woodland Period is characterized by increased diversity in ceramic style and form, continued examples of long-distance exchange (especially of jasper), and at its end, the introduction of tropical cultigens (Dragoo 1976; Snow 1980; Juli 1999). Much of our current knowledge of the Middle Woodland Period in southern New England is extrapolated from Ritchie's (1994) work in New York State. Ritchie noted an increased use of plant foods such as goosefoot (*Chenopodium sp.*), which he suggested had a substantial impact upon social and settlement patterns. George (1997) reiterated this hypothesis for the Middle Woodland of Connecticut. Ritchie also noted an increase in the frequency and size of storage facilities during the Middle Woodland period, which may reflect a growing trend toward sedentism (Ritchie 1994; Snow 1980). At this time, jasper tool preforms imported from eastern Pennsylvania appear to have been entering the region through broad, formalized exchange networks (Luedtke 1987).

In Connecticut, Middle Woodland sites are relatively rare outside of coastal and near-coastal contexts. Archaeological evidence of settlement patterns suggests an increased frequency of large sites adjacent to wetlands and tidal marshes along the Connecticut River, a decline in large upland occupations, and a corresponding increase in upland temporary camps (McBride 1984). This pattern may reflect a reduction in residential mobility that is likely related to the development, by 2,000 BP, of modern tidal marshes and estuaries in low-lying riverine areas. The tidal marshes would have supported a wide variety of terrestrial and aquatic animal and plant resources, allowing longer residential stays (McBride 1984).

C3. Late Woodland Period (1,200-450 BP)

The Late Woodland Period is characterized by population aggregation in villages along coastal and riverine locales; more intensive use of maize, beans, and squash; changes in ceramic technology, form, style, and function; the eventual establishment of year-round villages; and the use of the upland-interior areas by small, domestic units or organized task groups on a temporary and short-term basis. The settlement pattern suggests a trend toward intensified settlement in larger villages and hamlets in coastal and riverine areas. It has been hypothesized that these changes can be attributed to the introduction of maize, beans, and squash, but the importance of cultigens in the diet of southern New England groups, especially those with access to coastal resources remains unclear (Ceci 1980; McBride 1984; McBride and Dewar 1987; Bendremer and Dewar 1993; Ritchie 1994; Chilton 1999). Although sites clearly demonstrate the use of tropical cultigens in the Connecticut River valley, wild plant and animal resources were still a primary component of the aboriginal diet. The use of imported cherts increased over time in the Connecticut River valley, suggesting possible social, economic, and/or political ties to the Hudson Valley region. Affinities in pottery styles also suggest western ties at the end of this period (Feder 1999).

D. Contact and Historic-Period Native American Context

Between 1520 and 1650, initial European settlement in southern New England had a significant impact on Native American groups in Connecticut and profoundly altered the pre-Contact geopolitical landscape. In the Late Woodland and early Contact periods, indigenous settlement focused on or adjacent to the floodplains of major rivers and tributaries, reflecting the importance of agricultural activities, fishing, and access to transportation and communication routes (Pagoulatos 1990). After AD 1600, contact with Europeans likely catalyzed documented shifts in settlement and subsistence strategies, including the intensification of maize agriculture. Planting in the spring required a focused, cooperative kin-based effort, while the capture of anadromous fish at waterfalls and choke-points brought together households as it had for millennia. From late summer through winter, small household groups from larger village-based communities continued to use upland areas for hunting, trapping, and gathering. The introduction of a market economy, related to the development of a large-scale fur-trading industry, led to rapidly shifting alliances and power struggles between the various Native American groups in Connecticut. At the same time, Native communities struggled to maintain traditional lifeways as epidemic diseases decimated populations (Carlson et al 1992). Encroachment by newly arrived European settlers also contributed to the rearrangement of the physical and social landscape.

The explorations of Giovanni da Verrazanno in 1524 and Adriaen Block in 1614 are the most often noted examples of early contact between the region's Native population and Europeans, although it is likely that numerous less well-documented fishermen and traders infiltrated the waters of Long Island Sound and interacted with Native populations throughout the 16^{th} century. For the interior tribes, contact with Europeans took longer. By the end of the Pequot War in 1637, however, rapid colonization and sales of land by Native sachems to English colonists were well underway. In the decade that followed, new towns were quickly established and an estimated 20,000 English settled Connecticut during the Great Migration (1629-1642).

At the time of European contact in the early 17^{th} century, the project area vicinity was inhabited or at least utilized by Native Americans. It is likely that the Native people in the area identified as Norwalke, a subset of the larger Siwanoy band that occupied southwestern Connecticut and adjacent portions of present-day New York State.

Norwalk falls within the Western Coastal Slope region–a historical-geographical context defined by the Connecticut Historical Commission in 1996 (Lavin and Mozzi 1996). English occupation here began in the mid-17th century, when a number of land deeds were negotiated with Native American leaders. Local natives suffered a process of dispossession that involved the definition of land reservations within the boundaries of present-day Bridgeport, Fairfield, Orange, Stratford, and Westport. Due to their relatively small sizes, these reservations were not well-suited to supporting large populations through foraging or agriculture. Consequently, some Indians relocated to communities upriver. Others joined ethnically admixed communities that formed in the state's developing coastal urban centers, where careers in the maritime and service industries were available. None of the original Indian reservations exist today, all having been passed into non-Indian ownership by the mid-19^{th} century.

E. Previously Identified Pre-Colonial Archaeological Sites

Review of the state files of recorded archaeological sites at CTSHPO and OSA indicate that there are 31 pre-colonial period archaeological sites and one site that contains both pre-colonial and historic-period components, located within one mile of the CP-243 Interlocking APE, the Saga Bridge, and Walk Bridge (Figure 1). The majority of the known sites (N=26) are documented only as points on a map, with no additional information. These sites include 103-13, 103-20 – 103-24, 103-26 – 103-28, 103-43, 103-45, 158-18 – 158-20, 158-22, 158-23, 158-29, 158-51 – 158-54, 158-70, 158-73, and 158-78 – 158-80.

More information is available about the five remaining pre-colonial sites within a mile of the APE. Site 103-25, the Sasqua Hill/Duck Pond Site, is located about 0.3 miles south of the project area. The site was first identified and excavated by Ted Jostrand in 1962, and again a few years later by B.W. Powell (Powell 1965, 1971). On the site form, Jostrand described the site as "a midden and campsite area with burials" and estimated that the site comprised an area approximately 10,500 feet in length. The site area is currently occupied by a residential subdivision. It is unknown if any of the site remains; much of it has likely been destroyed by development. The Ted Jostrand #6 Site (103-35) is located approximately 0.3 miles north of the western portion of the APE, immediately north of Interstate 95. The site, which was identified through the identification of surface finds in a bulldozed area, is described as a probable campsite with thin shell pits and very few lithic artifacts. The Indian River Site (158-2) is located about 0.2 miles southeast of the eastern terminus of the APE on both sides of Eno Lane in a residential subdivision. The site is recorded as a large-scale occupation that dates to the Late Archaic and Early and Late Woodland periods and covers an area of about five acres. Recovered cultural materials include over 200 lithic tools including quartz bifaces, Sylvan side-notched projectile points, bone, shell, and pottery. The site was surface-collected and excavated as construction of the subdivision progressed in the late 1970s.

Site 158-24, the Ivy Brook Site, is located approximately one mile north of the eastern end of the APE. The site, which dates to the Late Woodland period, was identified in 1983 by the Westport Archaeological survey. Recovered artifacts include a quartz Levanna projectile point and a quartz flake. Site 158-64, the Brown Site, is located a short distance southeast of Site 158-24 (Figure 1) in a residential area. The site, which was identified in 1989, was interpreted as a Late Archaic period campsite related to the seasonal exploitation of estuarine resources. Recovered artifacts include quartz flakes and a flint Steubenville lanceolate projectile point.

Site 158-99, the Longshore Club Park Site, is located about 0.6 miles southeast of the eastern terminus of the APE on Hendricks Point, on the east side of the mouth of the Saugatuck River. The site comprises a Late Archaic period camp or village site with a shell midden and the remains of a 19th-century farm. In 1989, when the site was first documented, it was situated between a residential area to the north, Long Island Sound to the south and by a public golf course to the east. Recovered artifacts, which included quartz lithic material, a quartz Brewerton projectile point, shell, and bone, suggested the site served as a seasonal or semi-permanent occupation at the mouth of the Saugatuck River.

Finally, historic maps of the project area vicinity also indicate that there may have been a Late Woodland/Contact Period palisaded Indian Fort just southeast of Walk Bridge. The location of the fort is noted on the 1847 Hall map (Figure 9) and the 1867 Beers map (Figure 10) and based on a 1689 deed for a piece of land along the Norwalk River from John Gregory to his son, Thomas. The land was described as "Lying on the West side of the Norwalke Towne plot, 2 acres—bounded East by the common land banke; West, Norwalk River; South, by the point of common land where the Indian fort formerly stood; North, by Thomas Betts' Marsh Meadow" (Hall 1847: 21). The area comprising the former fort has been filled, but it is possible that portions of the site may have been capped by fill, rather than destroyed.

F. Potential for Pre-Colonial Archaeological Resources in the APE

The environmental setting and data from state archaeological sites files suggests that the project area vicinity is highly sensitive for pre-colonial archaeological resources. However, as the proposed action will take place almost entirely within the existing railroad ROW footprint, this part of the APE is considered to have little or no potential for intact archaeological resources. Extensive disturbance associated with the construction and modification of the rail line has likely destroyed or deeply buried any pre-colonial archaeological deposits within the ROW.

The construction and access easement parcel portion of the APE, on the site of the former Northup-Grumman plant, 10 Norden Place, Norwalk, may possess greater archaeological potential. The 1934 Fairchild aerial photograph (Figure 8) shows a stream running through the construction and access easement portion of the APE. Wetland resources available in this area may have made it attractive to pre-colonial-period Native American foragers. Much of the construction and access easement appears to be paved parking lot in both the 1965 aerial photograph (Figure 11) and today. This suggests that relatively undisturbed, capped soils and possibly archaeological deposits may exist below the pavement.

Underwater portions of the APE in the Norwalk and Saugatuck rivers have the potential to contain submerged archaeological resources related to the past use of the rivers and shoreline areas by Native Americans. Such resources might include submerged evidence of fishing or transportation such as fishing-related artifacts, fish weirs, or intentionally sunken canoes. In 1896, the U.S. Army Corps of Engineers (USACE) created a four foot-deep channel in the Saugatuck River to facilitate navigation. The channel extends from the Connecticut Turnpike (Route 95) bridge at Saugatuck to Westport Harbor, where it divides into two smaller stub channels, which are also four feet deep. The left stub channel has a width of 54 feet, and the right channel has a width of 40 feet. Additionally, to improve navigation, in 1898 USACE removed boulders from the channel in the area between the Route 95 bridge and Westport Harbor. If no additional alterations, such as dredging, have been made to the river channel, the potential for intact cultural resources is likely moderate-high, as much of the late 19th century USACE work was relatively shallow.

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V. HISTORIC-PERIOD CONTEXT

Historical background research was conducted in order to compile a capsule history of documented land use in the project area and to provide a context for assessing the potential of the APE to contain historic-period archaeological resources. The research included a review of local histories, historical maps, and aerial photographs (Figures 6-15), as well as the OSA and CTSHPO archaeological site files.

A. Norwalk: Settlement to the Mid-19th Century

The area that became Norwalk was purchased in two transactions, one in 1640 and one in 1641, from a Norwalke sachem named Mahackemo. Daniel Patrick bought a large tract on the west side of the Norwalk River in April 1640, and Roger Ludlow bought land on the east side of the river in February 1640/41. Ludlow's land, which extended north from the coast so far as a man could walk in a day, was paid for with "eight fathoms of wampum, six coats, ten hatchets, ten hoes, ten knifes, ten scissors, ten jew's harps, ten fathoms tobacco, three kettles of six hands about, and ten looking glasses." Actual settlement by the English did not begin until 1649, when the families of Richard Olmstead and Nathaniel Ely arrived from Hartford. Other families soon followed, and Norwalk was incorporated as a town in 1651.

Initially, the English occupied the southern end of the territory, nearest Long Island Sound. The original focus of English settlement was along present-day East Main Street in East Norwalk, a short distance east of the project area, where the settlers laid out house lots, built a meetinghouse, and established a burying ground. The area along the river was described in early deeds as "marsh meadows," low-lying tidal areas suited for harvesting salt hay but probably not much else. By the end of the 17th century and certainly by the early years of the 18th century English settlement reached the northern part of Norwalk.

As was common throughout most of Connecticut during the colonial period, the inland area of Norwalk appears to have been occupied by widely scattered family farms eking out a modest living from the soil. The swift waters of the nearby Norwalk River, powered the sawmills, gristmills, and fulling mills needed to sustain the agricultural economy, and local craftsmen provided other necessary services, such as blacksmithing. For several generations, most families in Norwalk pursued a generalized, near-subsistence agriculture to earn their living, although many also likely incorporated some fishing and other maritime activities into their seasonal round.

Shortly before the Revolutionary War, Norwalk emerged as the hub of a growing regional agricultural market. Access to Norwalk Harbor allowed local merchants to replenish their stock with goods from New York, Boston, Charleston, and Barbados. Farmers brought raw goods to Norwalk's merchants in exchange for products such as books, fabrics, sugar, molasses, and spices. Infrastructure around the harbor began to develop. Maritime enterprise was limited, however, by the relatively shallow harbor, which could only accommodate 30- to 40-ton vessels; by comparison, New London's harbor could accommodate 300-ton ships (Ray and Stewart 1979: 71).

In the early 19th century, a division began to emerge between the older established area at the head of navigation and Old Well, as South Norwalk was then known. By 1840, South Norwalk housed a large working-class population who worked in potteries, hat factories, carriage shops, and silversmith shops. Built along the deepest part of the harbor, it was a prime shipping location, with Quintard's Wharf at the foot of Marshall Street as the center of operations. Soon commercial buildings began to line Marshall and Ann streets, and South Norwalk surpassed Norwalk proper as the premier port. Manufacturing in South Norwalk prospered. For a time, hat-making was the most prominent industry; by the mid-19th century, Norwalk's hatters employed over 2,000 workers.

Conversely, East Norwalk largely remained a farming community. During the middle of the 19th century, South Norwalk citizens were known to keep small farms on the open land east of the river (Ray and Stewart 1979: 159), but only gradually did commercial and industrial development spread from South Norwalk across the river.

B. Later 19th-Century Development of South Norwalk and East Norwalk

Initial railroad surveys that showed a drawbridge on the Norwalk River drew concern from Norwalk residents, who feared that river traffic would be impeded. Despite some opposition, the New York & New Haven Railroad was able to complete its line and began full service to Norwalk in 1848. With the addition of a second line to Danbury in 1852, South Norwalk quickly became a busy railroad center. After the establishment of the railroads, South Norwalk quickly surpassed the upriver part of Norwalk as a commercial and industrial center. A large commercial district lined Washington Street and continued along South Main and North Main Street, housing a variety of shops, offices, and small-scale industrial enterprises. Large-scale industry along the tracks included the Norwalk Lock Company, the Norwalk Iron Works, and various hat and corset factories, along with lumber companies and oyster enterprises.

Development in East Norwalk was hampered by the fact that the area did not have a train station until 1885. While there was a densely settled area clustered around the wooden Washington Street Bridge linking East Norwalk and South Norwalk, there was relatively little development on the east side of the river, other than a cluster of residences located south of the project area along Maple Avenue (now Winfield Street) and Bridge and Howard streets (Figure 9). After a crossing over the rail line was put into place at Bridge Street in the early 1890s, development began to spread north of the tracks.

C. 20th Century Development in the Project Area Vicinity

Development slowly began to move away from the bridge area in the late 19th to early 20th centuries. Along the east bank of the Norwalk River on Seaview Avenue, a row of stylish year-round and summer residences were built, and by the first decade of the 20th century, houses lined Maple Avenue (now Winfield Street), Howard Street, and Woodside Avenue in the vicinity of the project area. In 1916, a lace factory was constructed immediately north of the rail line at 1 Regent Street by American LaDentelle, Inc., which specialized in the production of Cluny Lace (Price & Lee 1918: 311). The plant is now home to the handbag retailer Dooney & Bourke. A decade later, one of the city's largest employers, the Crofut and Knapp hat factory, relocated to Van Zant Street in East Norwalk. It had over 1,800 employees and produced over 1.5 million hats annually. This helped bolster growth of residential development east of the river and several new streets were put in place by the 1920s.

A major change came to East Norwalk in 1960, when Norden Systems, a major aviation-electronics company, constructed a large plant north of the railroad ROW on Helen Street (10 Norden Place today). The plant was expanded in 1972 and 1988, but it closed in 2014 when its lease expired.

D. The New York, New Haven & Hartford Railroad (NY, NH & H)

The NY, NH & H was formed in 1872 by a merger of the Hartford & New Haven Railroad (chartered in 1833), and the New York & New Haven Railroad (chartered in 1844). Over the next several years, the railroad absorbed other lines through merger, purchase, or long-term lease, until it controlled virtually all the rail transportation in southern New England, including both of the lines through Norwalk. The railroad's service area was one of the country's most densely-populated and fastest-growing industrial regions, and both passenger and freight operations were exceptionally profitable.

In the 1890s, the entire main line between New York and New Haven was widened to four tracks. In addition to increasing capacity, the project was intended to eliminate grade-level crossings, particularly in Connecticut's bustling commercial and industrial centers. In major cities such as Stamford, Norwalk, and Bridgeport, the four-tracking was accompanied by raising the entire rail line above street level, necessitating long, stone-walled viaducts in many areas, and dozens of new bridges were needed to carry the tracks over and under local roadways.

In response to legislation that banned steam trains in New York City, the NY, NH & H undertook the country's first electrification of a railroad's main line. Catenary bridges were installed at 200-to-300-foot intervals along the line to carry traction power and signals; for many years the railroad operated its own power-generation plant at Cos Cob in Greenwich. The example of the NY, NH & H influenced all subsequent railroad electrifications, including the Pennsylvania Railroad's New York to Washington route. In addition to its technological importance, the railroad had profound economic and social effects, sustaining commercial and industrial enterprises throughout its service region and creating some of the state's first instances of suburban commuter communities.

In the years just before and after World War II, the importance of rail transportation was diminished by competition from highways. The Merritt Parkway (Route 15), a four-lane limited-access divided highway, paralleled the rail line in the mid-1930s, followed by the Connecticut Turnpike (Interstate 95) in the late 1950s. The railroad's freight and passenger revenue declined as people traveled more by automobile and industries shipped products by truck. In 1968, the NY, NH & H was reorganized as part of the Penn Central merger of the Pennsylvania and New York Central railroads. Combining three railroads, each on the brink of collapse, created an economically unstable entity, and Penn Central soon declared bankruptcy. For a time, the Consolidated Rail Corporation (Conrail), formed in 1976, provided both commuter and freight service along the line, with intercity trains operated by the National Passenger Railroad Corporation (Amtrak). Metro-North was created in 1983 when the Metropolitan Transit Authority, a quasi-public New York agency, partnered with CTDOT to take over commuter service from Conrail.

E. Review of Historic Maps

Early historic maps of Norwalk focus on the area along the Norwalk River, which was the original locus of settlement. The project area vicinity remained sparsely developed into the 20th century. The 1856 Chase map (Figure 12) shows the rail line in the project area and what is now Old Saugatuck Road to the south, but at that time there was little other development in the vicinity of the APE. By 1867 (Figure 13), Winfield Street (Route 136) had been established, but only one residence is shown in the project area vicinity. By 1895, a few additional structures are pictured along this road (Figure 7). The 1899 Landis and Hughes bird's eye view of Norwalk

(Figure 14) depicts increased development in the vicinity of the western end of the interlocking portion of the APE along Maple Avenue.

Development in the project area vicinity accelerated during the 20^{th} century. A 1931 map of Norwalk (Figure 15) shows a proliferation of residential streets south of the western end of the portion of the APE along the rail line. The 1934 Fairchild aerial photograph (Figure 8) shows that the area surrounding the eastern two-thirds of the interlocking portion of the APE remained largely undeveloped, although there were two houses located at the northern boundary of the east part of the construction and access easement. The 1934 aerial shows a stream running through the project area in the present construction and access easement parcel and additional wet areas in the undeveloped eastern portion of the APE. The Dolph and Stewart map of Fairfield County (Figure 16) shows that by 1942, some residential development had occurred north of the APE in the western part of the interlocking portion of the project area. By 1965 (Figure 11), the west half of the project area vicinity was heavily developed. In 1960, Norden Systems, a major aviation-electronics company, constructed a large plant north of the railroad ROW on Helen Street (10 Norden Place today) in what is presently the construction and access easement.

Today, the vicinity of much of the interlocking portion of the APE is developed. Land uses include residential neighborhoods, commercial and industrial development, particularly along the rail line and Route 95, and park, conservation, and recreation land. The railroad right of way overpasses one roadway and is overpassed by two roadway bridges at Triangle Street and North Bridge Street, located in the western third of the project area. The eastern third of the project area borders an undeveloped wooded landscape, which includes a few wetland areas.

E. Previously-Recorded Historic-Period Sites in the Project Area Vicinity

A review of the state archaeological site files at CTSHPO and OSA indicates that there are two historic-period archaeological sites documented within one mile of the CP-243 Interlocking APE (Figure 1). Site 103-17, the Neptune Site, is located just east of the APE. The Neptune Site is described as the first (unofficial) landfill area for South Norwalk and is believed to date from the early 19th century to the early 20th century It is possible that landfilling activities are related to the filling of marshy portions of the project area, depicted on historic maps. The Neptune Site was identified by a collector who surface-collected and "pot-hunted" the site using a metal detector and shovel. Reported artifacts included medicine and beverage bottles from local stores. When the site was recorded in 1982 it measured roughly 30 by 55 feet and cultural materials were visible around the perimeter. The site was situated between wetlands on the east, the marina to the north, the river to the west, and sterile mud to the south. It is possible that remnants of this site may still exist. This is also the historic-mapped location of a Native American fortification.

The second site, the Longshore Club Park Site (158-99), contains both pre-colonial and historic-period components. The site is located about 0.6 miles southeast of the eastern terminus of the APE on Hendricks Point on the east side of the mouth of the Saugatuck River. The site comprises a Late Archaic period component and a 19^{th}-century farmstead with an extant farm house that occupied the land prior to the development of the Longshore Club Park Cabins public recreation facility.

F. Potential for Historic-Period Archaeological Sites in the APE

Review of historic maps indicates that the majority of the APE vicinity along the rail line remained largely undeveloped into the 20^{th} century, suggesting that there is little potential for historic-period archaeological resources in that portion of the APE. The 1934 aerial photograph does show two houses located at the northern border of the eastern part of the construction and access easement, under what became part of the parking lot after the construction of Norden Systems in 1960. It is possible that archaeological deposits related to these structures remain below the pavement.

Underwater portions of the APE in the Norwalk and Saugatuck rivers have the potential to contain submerged archaeological resources related to the past use of the rivers and shoreline areas in the historic period. Such resources might include shipwrecks, submerged sections of wharves, ballast dumps, scuttled boats, or other features related to past industries along the river.

VI. CONCLUSIONS AND RECOMMENDATIONS

An archaeological sensitivity assessment was conducted of the CP-243 Interlocking APE, which includes the active railroad ROW which extends from a point just east of the Stanley Street crossing (and east of existing catenary structure 545) to a point west of existing catenary structure 566 (Figures 2a-2i), a construction easement at 10 Norden Place (Figure 5), and the submarine cable trenches in the Saugatuck and Norwalk rivers (Figures 3 and 4). The construction easement extends from Norden Place east to the planned access road immediately east of existing catenary structure 555. Based on a review of the environment, archaeology, and history of the APE and project area vicinity, the sensitivity of the project area for pre-colonial Native American and historic-period archaeological resources was assessed.

Fiber optic upgrades to support signaling equipment for the new interlocking will be installed from the South Norwalk Station (including CP-241) to the east side of the Saugatuck River in Westport. With the exception of the submarine cables in the Norwalk and Saugatuck Rivers the upgrades will be located aerially or within track ballast. This work will have no impact on buried archaeological resources and was therefore not addressed in this report.

A. Interlocking Portion of the APE

As the proposed action will take place almost entirely within the existing railroad right-of-way footprint, in general the APE is considered to have little or no potential for intact terrestrial historic-period or pre-colonial archaeological resources. Extensive disturbance associated with the construction and modification of the rail line has likely destroyed or deeply buried any pre-Colonial archaeological deposits within the ROW. The construction and access easement parcel, located on the north side of the ROW on the site of the former Northup-Grumman plant, may possess greater archaeological potential. The 1934 aerial photograph (Figure 8) shows a stream running through this area, which may have made it attractive to pre-colonial-period Native American foragers. The 1934 aerial also depicts two houses at the northern border of the eastern part of the construction and access easement, under what became part of the parking lot of Norden Systems when it was built in 1960 (Figures 8 and 8a). Much of the construction and access easement appears to be paved parking lot in both the 1965 aerial photograph (Figure 11) and today. This suggests that relatively undisturbed, capped soils and possibly archaeological deposits may exist below the pavement. Project plans call for localized grading and filling to create a driveway portion in this parcel. The pavement covering the remainder of the parcel will not be disturbed as it will be used to park construction vehicles. Archaeological testing in the form of geoprobes and/or pre-construction monitoring in the driveway portion of the construction and access easement parcel is recommended to determine if buried archaeological resources are present (Figure 17).

New signals will be installed from the South Norwalk Station (including CP241) in South Norwalk to approximately 500 feet east of the Saugatuck River in Westport, for a distance of approximately 3.5 miles and will include two 10-x-20-foot signal houses. New fiber optic upgrades to support signaling equipment for the new interlocking will be installed through the project area, and depending upon location, will be located aerially, within track ballast, attached to bridges, and also in submarine cables crossing the Saugatuck and Norwalk rivers. With the exception of the submarine cables, this work will have no impact on buried archaeological resources.

B. Saugatuck River Submarine Trench

Potential impacts to underwater and shoreline archaeological resources in the Saugatuck River in the location of the proposed submarine cable trench will be assessed through a combination of bathymetric, vibracore, and hand-auger data, along with data gathered from pedestrian survey of shorelines and intertidal areas within the APE (Figure 18). Once collected, the data will be analyzed to determine the potential for intact cultural resources in the underwater and shoreline portions of the project area. These methods are adequate for evaluating the presence and/or potential for subsurface cultural materials, reconstructing paleogeography, evaluating depositional environments, and potentially recording changes in historical land use. If the submarine trench portion of the APE is determined to possess archaeological sensitivity, then additional underwater and bankline archaeological assessments will be required to accurately assess project impacts. As stated above, USACE created shallow channels and removed boulders from the Saugatuck River in the late 19th century. If there have been no additional alterations to the river, such as dredging, it likely has very high archaeological potential.

C. Norwalk River Submarine Trench

Potential impacts to underwater and shoreline archaeological resources in the Norwalk River in the location of the proposed submarine cable trench will be assessed through a combination of bathymetric, vibracore, and hand-auger data, along with data gathered from pedestrian survey of shorelines and intertidal areas within the APE. The collection of these data is already planned as part of the Walk Bridge Replacement Project (State Project No. 0301-0176) (Figure 19). Once collected, the data will be analyzed to determine the potential for intact cultural resources in the underwater and shoreline portions of the project area. These methods are adequate for evaluating the presence and/or potential for subsurface cultural materials, reconstructing paleogeography, evaluating depositional environments, and potentially recording changes in historical land use. If the submarine trench portion of the APE is determined to possess archaeological sensitivity, then additional underwater and bankline archaeological assessments will be required to accurately assess project impacts.

VII. REFERENCES

Beardsley, R.K, P. Holder, A.D. Krieger, B.J. Meggers, J.B. Rinaldo, and P. Hutsche
1956 Functional and Evolutionary Implications of Community Patterning. Seminars in Archaeology: 1955. *Society for American Archaeology, Memoir* 11: 129-155.

Beers, Frederick W.
1867 *Atlas of New York and Vicinity*. New York: Beers, Ellis & Soule.

Bell, Michael
1985 *The Face of Connecticut.* Bulletin 110, State Geological and Natural History Survey of Connecticut. Hartford, CT: Connecticut Department of Environmental Protection.

Bellantoni, Nicholas
1995 *Distribution of Paleoindian Cultural Material in Connecticut*. Paper presented at the Archaeological Society of Connecticut Annual Spring Meeting.

Bendremer, Jeffrey and Robert Dewar
1993 The Advent of Maize Horticulture in New England. In *Corn and Culture in the Prehistoric New World, University of Minnesota Publications in Anthropology, No 5*, edited by Sissel Johannessen, Christine A. Hastorf. Boulder, CO: Westview Press.

Bernstein, David J.
1990 Prehistoric Seasonality Studies in Coastal Southern New England. *American Anthropologist* 92(1):96-115.

Butler, Eva
1946 The Brush or Stone Memorial Heaps of Southern New England. *Bulletin of the Archaeological Society of Connecticut* 19:3-12.

Carlson, Catherine, George Armelagos, and Ann Magennis
1992 Impact of Disease in the Precontact and Early Historic Populations of New England and Maritimes. *In Disease and Demography in the Americas*, edited by J. Verano and D. Ubelaker. Washington, D.C.: Smithsonian Institution Press.

Cassedy, Daniel F.
1997 *From the Erie Canal to Long Island Sound: Technical Synthesis of the Iroquois Pipeline Project, 1989-1993*. Atlanta, GA: Garrow and Associates, Inc.

1999 The Archaic Florescence: The Late and Terminal Archaic Periods of Connecticut as Seen From the Iroquois Pipeline. *Bulletin of the Archaeological Society of Connecticut* 62: 125-139.

Ceci, Lynn
1980 Maize Cultivation in Coastal New York: The Archaeological, Agronomical and Documentary Evidence. *North American Archaeologist* 1(1): 45-74.

Chace, J., Jr., W. J. Barker, and N. Hector.
1856 *Clark's Map of Fairfield County, Connecticut.* Philadelphia, PA: Richard Clark.

Chilton, Elizabeth
1999 Mobile Farmers of Pre-Contact Southern New England: The Archaeological and Ethnohistorical Evidence. In *Current Northeast Paleoethnobotany,* edited by J. Hart, pp. 157-176. Albany, NY: New York State Museum, No. 494.

Clouette, Bruce and Stacey Vairo
2016 *Historic Resources Evaluation Report CP-243 Interlocking, Norwalk and Westport, Connecticut.* Storrs, CT: Archaeological and Historical Services, Inc.

Coffin, Claude
1937 A Prehistoric Shell Heap at the Mouth of the Housatonic. *Bulletin of the Archaeological Society of Connecticut* 5: 10-19.

1938 An Indian Village at Cedar Ridge, Upper White Hills, Shelton, Connecticut. *Bulletin of the Archaeological Society of Connecticut* 7: 9-11.

1940 Excavations in Southwest Connecticut. *Bulletin of the Archaeological Society of Connecticut* 10: 33-50.

1946 Final Work at the Eagle Hill Site 1937-43. *Bulletin of the Archaeological Society of Connecticut* 19: 18-36.

1951 The Eagle Hill Ridge Site—Laurel Beach, Milford. *Bulletin of the Archaeological Society of Connecticut* 25: 25-54.

Cuzzone, H., and B. Hartenberger
2009 Late Archaic and Late Woodland occupations at Cove River, West Haven: New Data on Subsistence and the Narrow Point Tradition. *Bulletin of the Archaeological Society of Connecticut* 71: 17-39.

Dincauze, Dena F.
1968 Cremation Cemeteries in Eastern Massachusetts. *Papers of the Peabody Museum of Archaeology and Ethnology* 59(1). Cambridge, MA: Harvard University.

1975 The Late Archaic Period in Southern New England. *Arctic Anthropology* 12(2): 23-24.

1976 *The Neville Site: 8000 Years at Amoskeag Falls.* Peabody Museum Monographs 4. Cambridge, MA: Harvard University.

Dolph & Stewart
1931 *Atlas of Fairfield County.* New York, NY.

1942 *Atlas of Fairfield County*. New York, NY.

Dragoo, D.W.
1976 Some Aspects of Eastern North American Prehistory: A Review 1975. *American Antiquity* 41:3-27.

Fairfield Aerial Survey
1934 Aerial photographs of Connecticut. Connecticut State Library, Hartford.

Feder, Kenneth
1984 Pots, Plants, and People: The Late Woodland Period of Connecticut. *Bulletin of the Archaeological Society of Connecticut* 47: 99-112.

1999 The Late Woodland Revisited: The Times, They Were A-Changin' (But Not That Much). *Bulletin of the Archaeological Society of Connecticut* 62: 155-174.

Fiedel, Stuart
2001 What Happened in the Early Woodland? *Archaeology of Eastern North America* 29: 101-142.

Forrest, Daniel T.
1999 Beyond Presence and Absence: Establishing Diversity in Connecticut's Early Holocene Archaeological Record. *Bulletin of the Archaeological Society of Connecticut* 62: 79-99.

Funk, Robert E.
1997 Holocene or Hollow Scene? The Search for the Earliest Archaic Cultures in New York State. *The Review of Archaeology* 17(1): 11-24.

George, David
1997 Late Prehistoric Archaeobotony of Connecticut: Providing a Context for the Transition to Maize Agriculture. *Bulletin of the Archaeological Society of Connecticut* 60: 13-28.

Glynn, F.
1953 The Pilot's Point Submerged Sites. *Bulletin of the Archaeological Society of Connecticut* 27: 11-29.

Herbster, H.
2004 *Technical Report, Archaeological Data Recovery Program, East Pasture Site (19-DK-238), Aquinnah, Massachusetts*. Pawtucket, RI: The Public Archaeology Laboratory, Inc.

Herbster, H., and S.G. Chereau
1999 *Fieldwork Completion Report, Archaeological Data Recovery Program within the Herring Creek Archaeological District, Wampanoag Aquinnah Shellfish Hatchery (WASH) Project, Aquinnah, Massachusetts*. Pawtucket, RI: The Public Archaeology Laboratory, Inc.

2001 *Technical Report, Data Recovery Program, Lot 5/6 Site (19-DK-138), Lot 6 Building Envelope, Squibnocket Ridge, Chilmark, Massachusetts*. Pawtucket, RI: The Public Archaeology Laboratory, Inc.

2003 *Technical Report, Intensive (Locational) Archaeological Survey and Data Recovery Program, Gerhard Site, Aquinnah Massachusetts*. Pawtucket, RI: The Public Archaeology Laboratory, Inc.

Hoffman, Curtis R.
1990 *People of the Fresh Water Lake.* New York: Peter Lang Publishing, Inc.

Ives, Timothy H.
2009 *Large Pit Feature Formation and Use at the Late Archaic Preston Plains Site in Southeastern Connecticut*. Paper presented at the 74th annual meeting of the Society for American Archaeology, Atlanta.

Jones, Brian D.
1997 The Late Paleoindian Hidden Creek Site in Southeastern Connecticut. *Archaeology of Eastern North America* 25: 45-80.

1998 *Human Adaptation to the Changing Northeastern Environment at the End of the Pleistocene: Implications for the Archaeological Record*. Ph.D. dissertation, University of Connecticut. University Microfilms, Ann Arbor, No. 9906705.

1999 The Middle Archaic Period in Connecticut: The View From Mashantucket. *Bulletin of the Archaeological Society of Connecticut* 62: 101-123.

2002 Continuity vs. Change During the Last Three Millennia at Mashantucket. *Northeast Anthropology* 64: 17-29.

Jones, Brian and Daniel Forrest
2003 Life in a Postglacial Landscape: Settlement-Subsistence Change During the Pleistocene-Holocene Transition in Southern New England. In *Geoarchaeology of Landscapes in the Glaciated Northeast,* edited by David L. Cremeens and John P. Hart. New York State Museum Bulletin 497: 75-90.

Jones, Brian, Ross Harper, Mary Harper and Bruce Clouette
2005 *Report: Phase III Data Recovery at Site 103-49, Route 7/15 Interchange, Norwalk, Connecticut*. State Project No. 102-269. Storrs, CT: Archaeological and Historical Services, Inc.

Juli, Harold
1999 Current Perspectives on Early and Middle Woodland Archaeology in Connecticut. *Bulletin of the Archaeological Society of Connecticut* 62: 141-153.

Juli, Harold D. and Kevin A. McBride
1984 The Early and Middle Woodland Periods of Connecticut Prehistory: Focus on the Lower Connecticut River Valley. *Bulletin of the Archaeological Society of Connecticut* 47:89-98.

Kingsley, R.G., and B.R. Roulette
1990 *The Joyner Site: Late Archaic-Early Woodland Adaptations and Cultural Dynamics in Conanicut Island, Rhode Island*. John Milner Associates.

Landis and Hughes
1899 *Norwalk, South Norwalk, and East Norwalk, Conn.* Panoramic map. New York, NY.

Lavin, Lucianne
1984 Connecticut Prehistory: A Synthesis of Current Investigations. *Bulletin of the Archaeological Society of Connecticut* 47: 5-40.

1988 Coastal Adaptations in Southern New England and Southern New York. *Archaeology of Eastern North America* 16:101-120.

Lavin, Lucianne and Lyent W. Russell
1985 Excavation of the Burwell-Karako Site: New Data on Cultural Sequences and Artifact Typologies in Southern New England. *Bulletin of the Archaeological Society of Connecticut* 48: 45-87.

Lavin, Lucianne and Marina E. Mozzi
1996 *Historic Preservation in Connecticut, vol. 1*. "Western Coastal Slope: Overview of Prehistoric and Historic Archaeology and Management Guide." Unpublished manuscript prepared for the Connecticut Historical Commission, State Historic Preservation Office, Hartford, CT.

Leveillee, Alan
1999 Transitional Archaic Ideology as reflected in Secondary Burials at the Millbury III Cremation Complex, *Archaeology of Eastern North America*, 27 (1999).

Luedtke, Barbara E.
1987 The Pennsylvania Connection: Jasper in Massachusetts Archaeological Sites. *Bulletin of the Massachusetts Archaeological Society* 48(1): 37-47.

McBride, Kevin A.
1984 *Prehistory of the Lower Connecticut River Valley*. Unpublished Doctoral Dissertation, University of Connecticut.

McBride, Kevin A. and Robert Dewar
1981 Prehistoric Settlement in the Lower Connecticut River Valley. *Man in the Northeast* 22: 37-66.

1987 Agriculture and Cultural Evolution: Causes and Effects in the Lower Connecticut River Valley. In *Emergent Horticultural Economies in the Eastern Woodlands*, edited by W. Keegan, pp. 305-328. Center for Archaeological Investigations, University of Illinois, Carbondale.

McWeeney, Lucinda
1999 A Review of Late Pleistocene and Holocene Climate Changes in Southern New England. *Bulletin of the Archaeological Society of Connecticut* 62: 3-18.

Meltzer, David J.
1988 Late Pleistocene Human Adaptations in Eastern North America. *Journal of World Prehistory* 2(1): 1-52.

Moeller, Roger W.
1980 *6LF21: A Paleo-Indian Site in Western Connecticut*. American Indian Archaeological Institute, Washington, Connecticut.

1984 Regional Implications of the Templeton Site for Paleo-Indian Lithic Procurement and Utilization. *North American Archaeologist* 5(3): 236-246.

Natural Resource Conservation Service (NRCS)
2005 *Urban Soil Primer*. Natural Resources Conservation Service, United States Department of Agriculture. PDF available online at http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052835.pdf. Accessed 6/25/2015.

2016 Web Soil Survey. Natural Resources Conservation Service, United States Department of Agriculture. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed 2/29/2016.

Pagoulatos, Peter
1990 Terminal Archaic "Living Areas" in the Connecticut River Valley, *Bulletin of the Archaeological Society of Connecticut*, No. 53: 59-72.

Pfeiffer, John
1986 Dill Farm Locus 1: Early and Middle Archaic Components in Southern New England. *Bulletin of the Archaeological Society of Connecticut* 49: 19-35.

Powell, Bernard W.
1965 On The Recovery Of Burial Number Two At The Sasqua Hill Site, East Norwalk, Connecticut. *Pennsylvania Archaeologist* 35(1):25-33.

1971 First Site Synthesis and Proposed Chronology for the Aborigines of Southwestern Connecticut. *Pennsylvania Archaeologist* 41(1-2):30-37.

Praus, Alexis
1942 Excavations at the Old Lyme Shell Heap. *Bulletin of the Archaeological Society of Connecticut* 13: 3-66.

Price & Lee Company
1910-1916 *Norwalk Directory*. New Haven, CT.

Ray, Debra Wing and Gloria Stewart
1979 *Norwalk Being an Historical Account of that Connecticut Town*. Norwalk Historical Society.

Ritchie, William A.
1965 *The Archaeology of New York State.* Garden City, NY: Natural History Press.

1969 *The Archaeology of Martha's Vineyard*. Garden City, NJ: The Natural History Press.

1994 *The Archaeology of New York State, Revised Edition of 1965)*. Fleischmanns, NY: Purple Mountain Press.

Robinson, Brian S.
1996 Archaic Period Burial Patterning in the Northeast. *The Review of Archaeology, Special Issue* 17(1): 33-44.

Robinson Brian, Peterson Jim and Ann Robinson (editors)
1992 *Early Holocene Occupation in Northern New England*, Occasional Publications in Maine Archaeology 9. Augusta, ME: Maine Historic Preservation Commission.

Rodgers, John
1985 Bedrock Geological Map of Connecticut: Connecticut Geological and Natural History Survey, Scale 1:125,000.

Russell, Lyent W.
1942 The Menunketisuck Site, Westbrook, Connecticut. *Bulletin of the Archaeological Society of Connecticut* 14:4-57.

Salwen, Bert
1966 European Trade Goods and the Chronology of the Fort Shantok Site. *Bulletin of the Archaeological Society of Connecticut* 34:5-39.

Salwen, Bert and Ann Ottesen
1972 Radiocarbon Dates for a Windsor Occupation at the Shantok Cove Site. *Man in the Northeast* 3:8-19.

Selleck, Charles M.
1901 *Norwalk after 250 Years*. South Norwalk, CT: Norwalk Historical and Memorial Library Association, 1901.

Singer, Zachary
2013 *Ohomowauke: A Middle Paleoindian Site in Southeastern Connecticut*. Paper presented at the 80th Annual Meeting of the Eastern States Archaeological Federation, Portland, Maine.

Snow, Dean
1980 *The Archaeology of New Englan*d. New York: Academic Press.

Spiess, Arthur E., Deborah B. Wilson and James Bradley
1998 Paleoindian Occupation in the New England-Maritimes Region: Beyond Cultural Ecology. *Archaeology in Eastern North America* 26: 201–64.

Uchupi, Elazar, Driscoll, Neal, Ballard, Robert D., and Bolmer, S.T.
2001 Drainage of Late Wisconsin Glacial Lakes and the Morphology and Late Quaternary Stratigraphy of the New Jersey - Southern New England Continental Shelf and Slope: *Marine Geology* 172:117-145.

Williams, Lorraine E.
1972 *Fort Shantok and Fort Corchaug: A Comparative Study of 17th Century Culture Contact in the Long Island Sound Area*. Unpublished Ph.D. Dissertation, New York University.

APPENDIX I

Figures

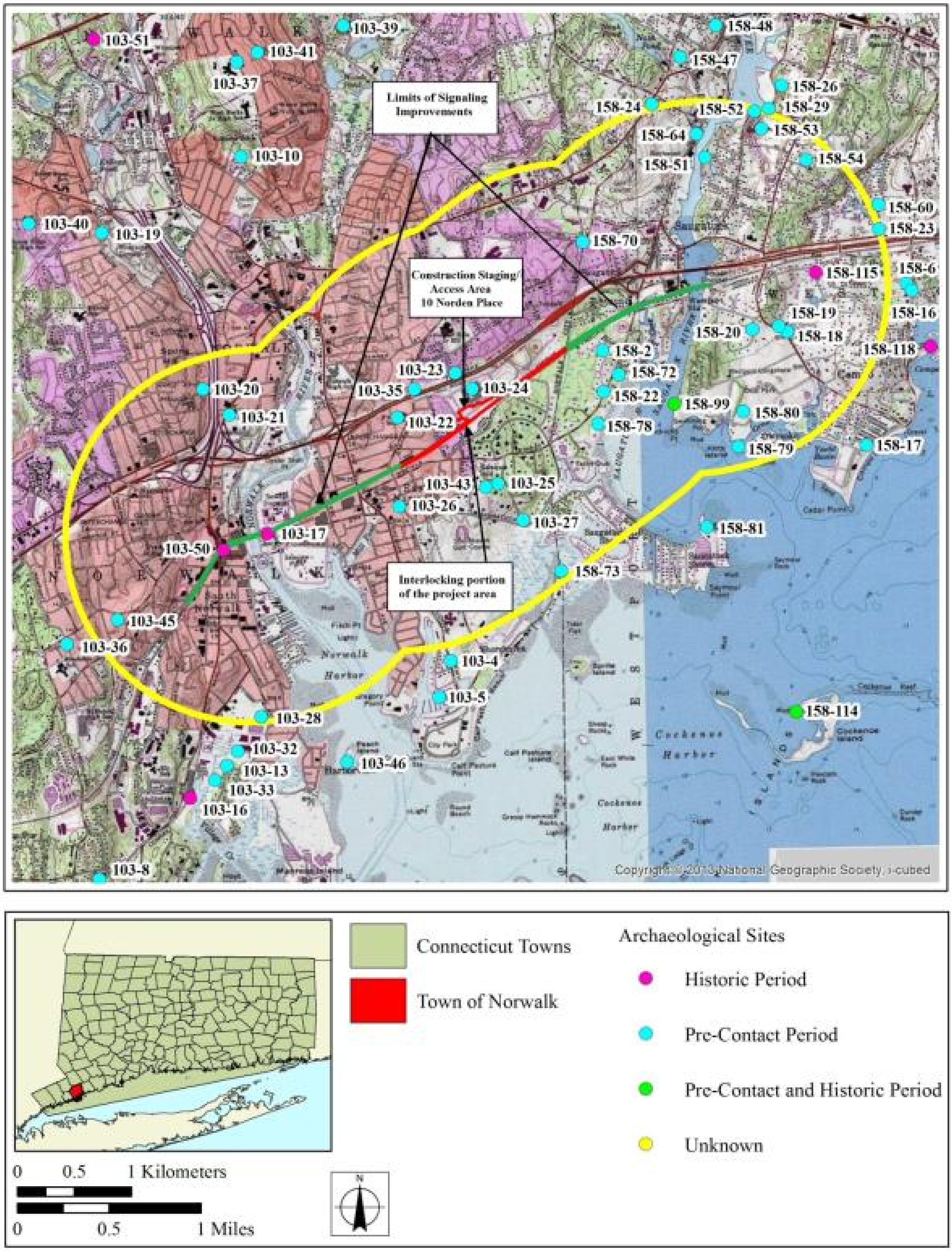


Figure 1: Location of the APE on USGS Norwalk South Quadrangle, showing documented archaeological sites within a one-mile radius.

Figure 2a: Project Plans, page 1 of 9.

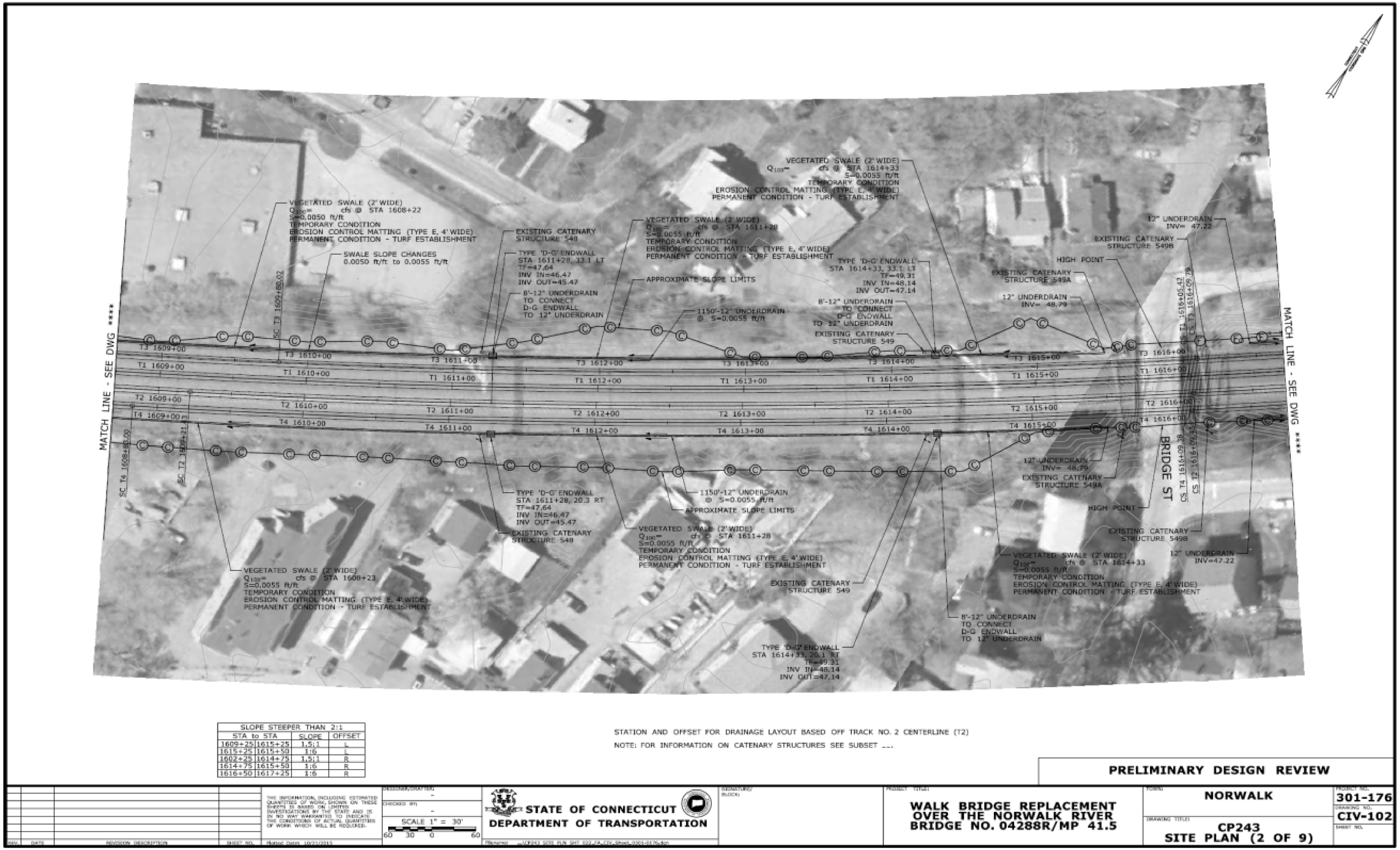


Figure 2b: Project Plans, page 2 of 9.

SLOPE STEEPER THAN 2:1			
STA to STA		SLOPE	OFFSET
1616+75	1617+75	1.5:1	L
1619+25	1621+25	1.5:1	L
1621+75	1625+25	1.5:1	L
1616+50	1617+25	1:6	R
1617+25	1618+25	1.5:1	R
1618+25	1620+75	1:6	R
1620+75	1621+25	1.5:1	R
1621+25	1624+25	1:6	R

Figure 2c: Project Plans, page 3 of 9.

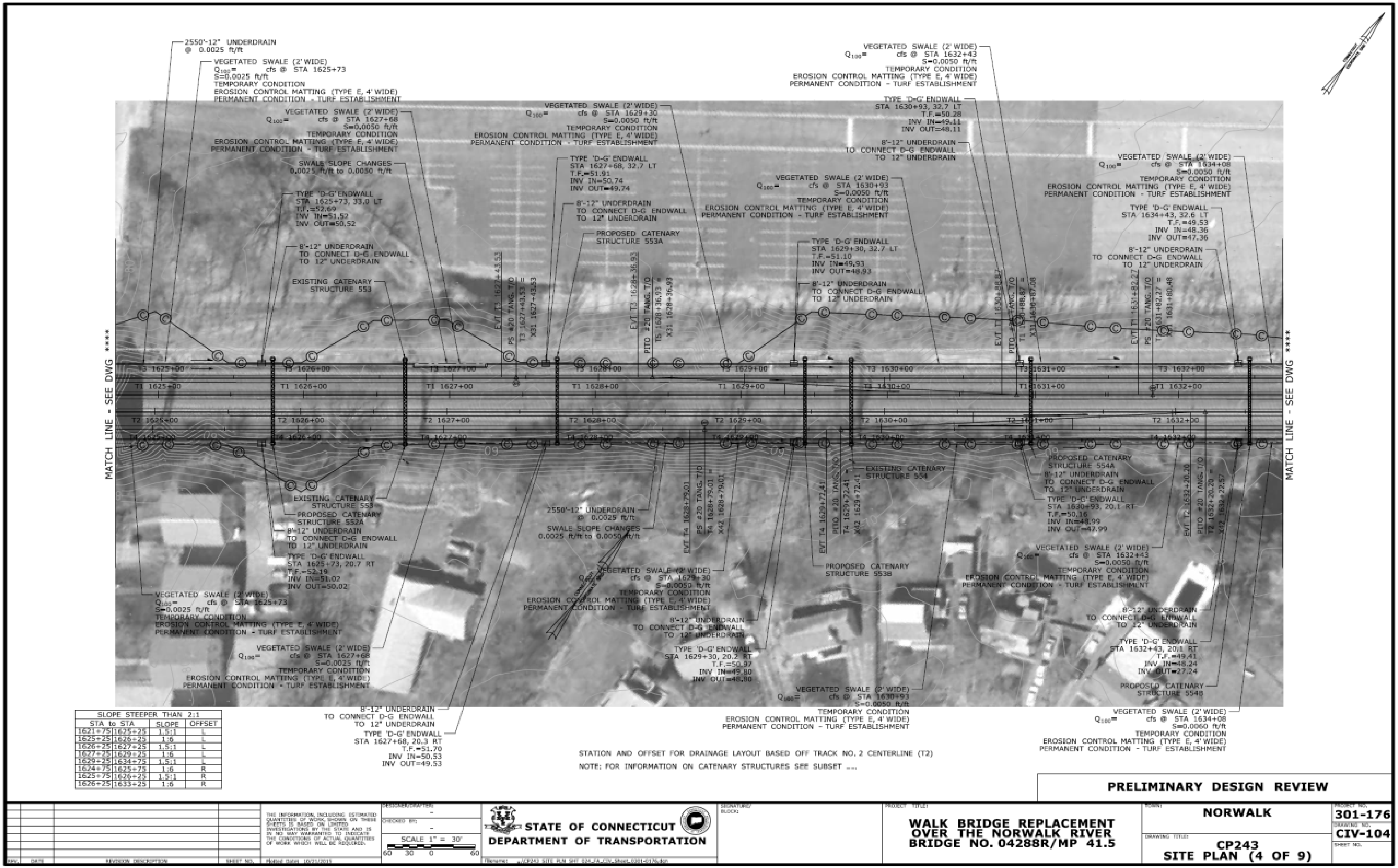


Figure 2d: Project Plans, page 4 of 9.

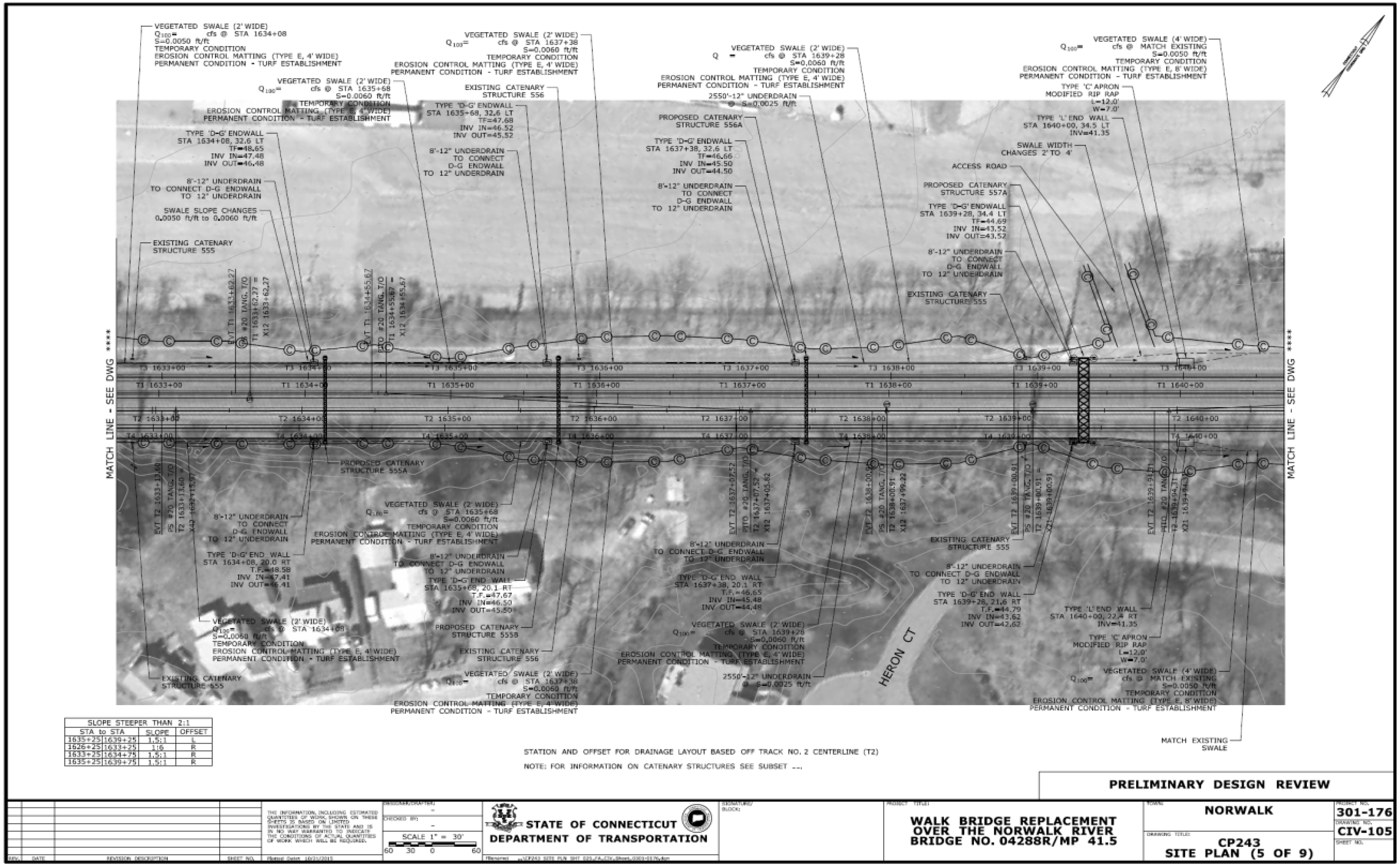


Figure 2e: Project Plans, page 5 of 9.

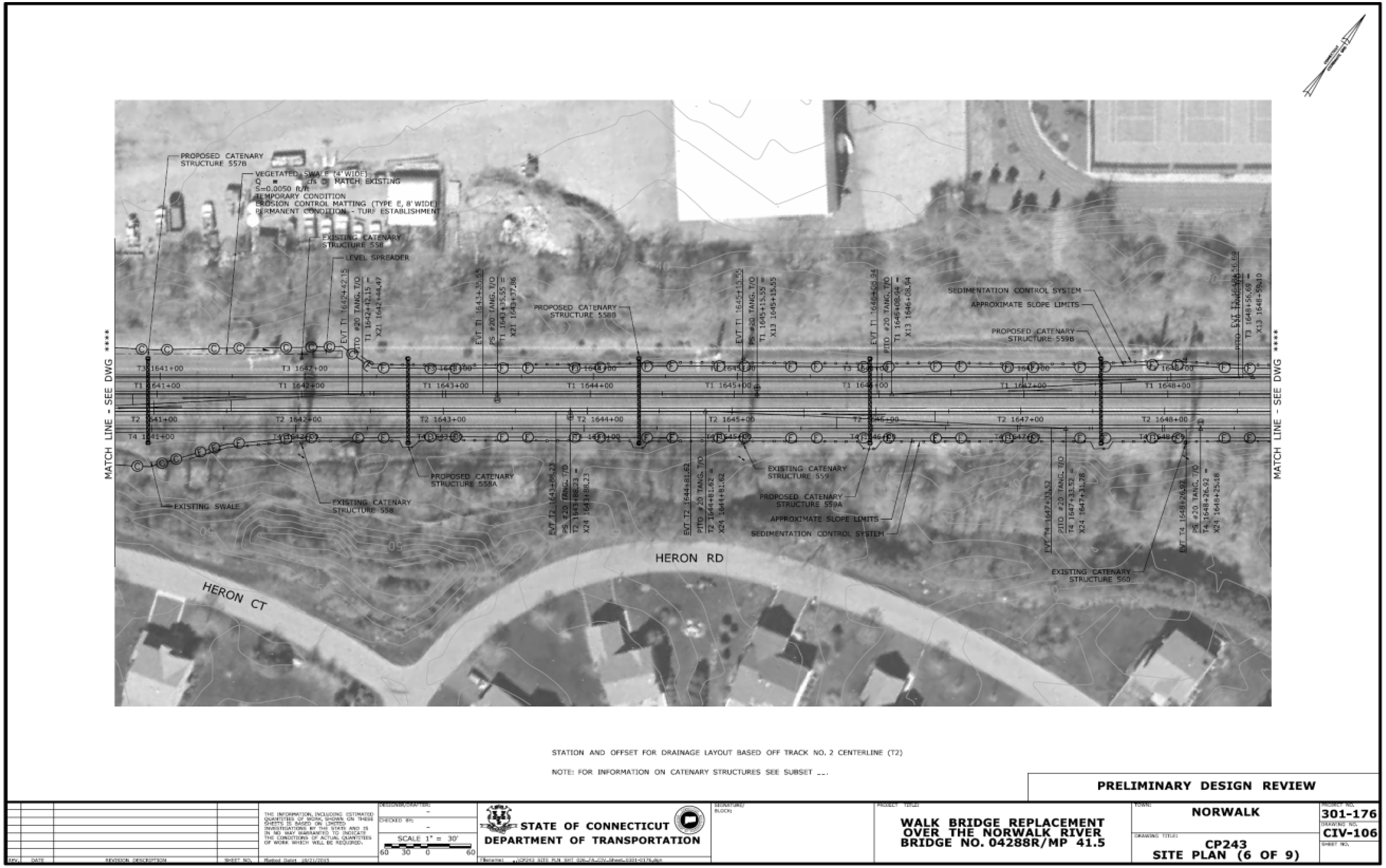
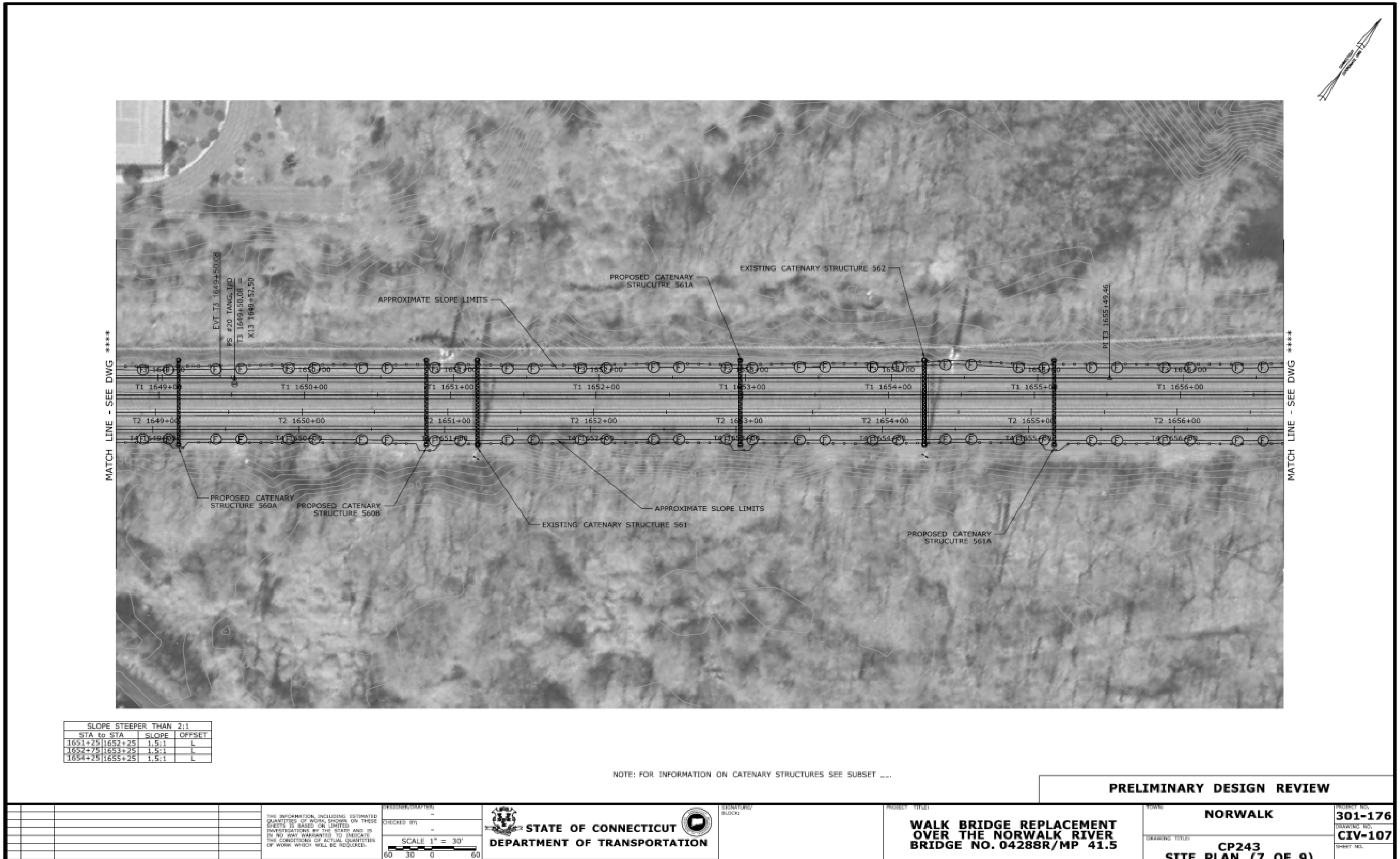


Figure 2f: Project Plans, page 6 of 9.



SLOPE STEEPER THAN 2:1			
STA to STA		SLOPE	OFFSET
1651+25	1652+25	1.5:1	L
1652+75	1653+25	1.5:1	L
1654+25	1655+25	1.5:1	L

Figure 2g: Project Plans, page 7 of 9.

Figure 2h: Project Plans, page 8 of 9.

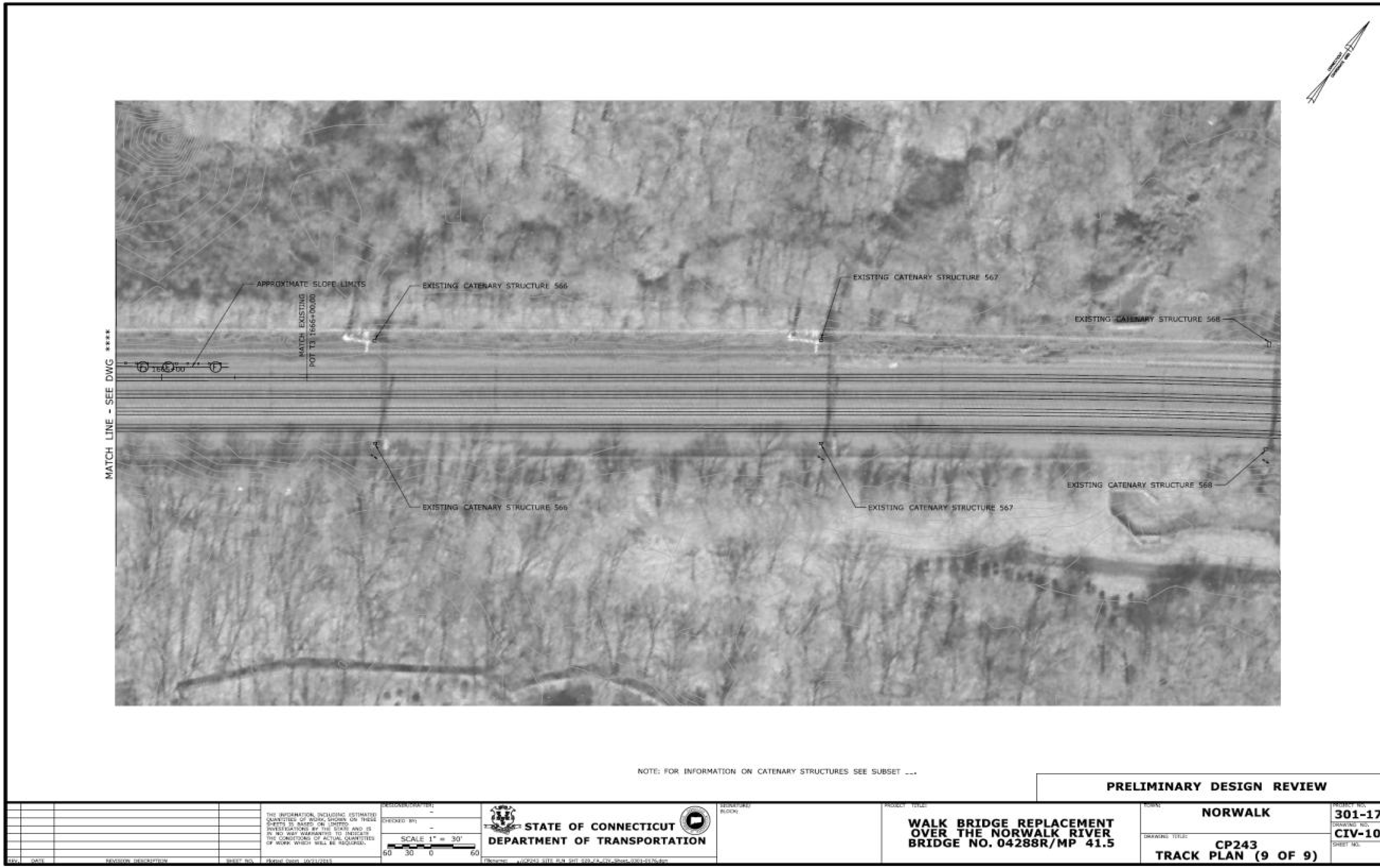


Figure 2i: Project Plans, page 9 of 9.

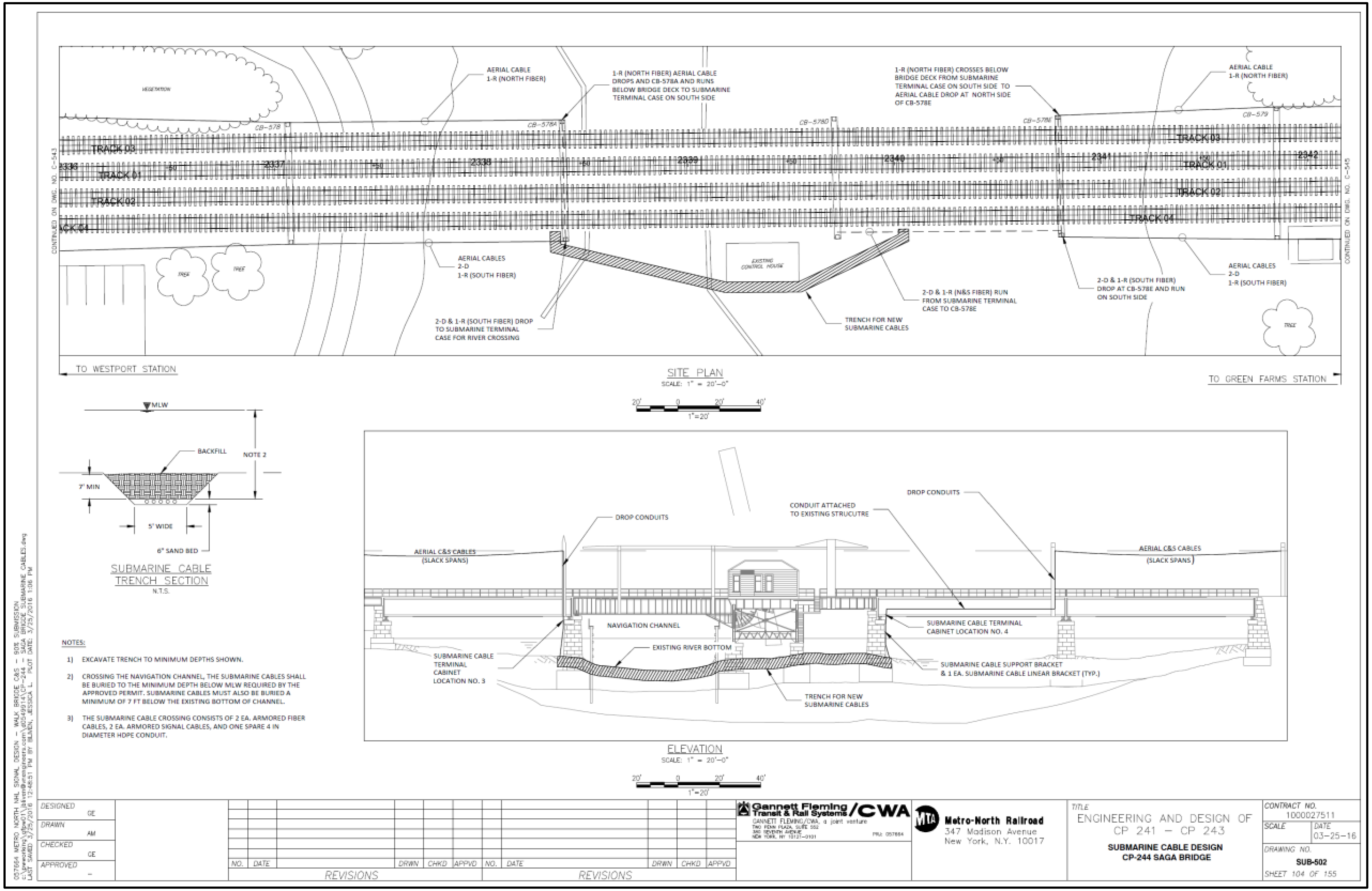


Figure 3: Schematic, submarine trench, Saugatuck River.

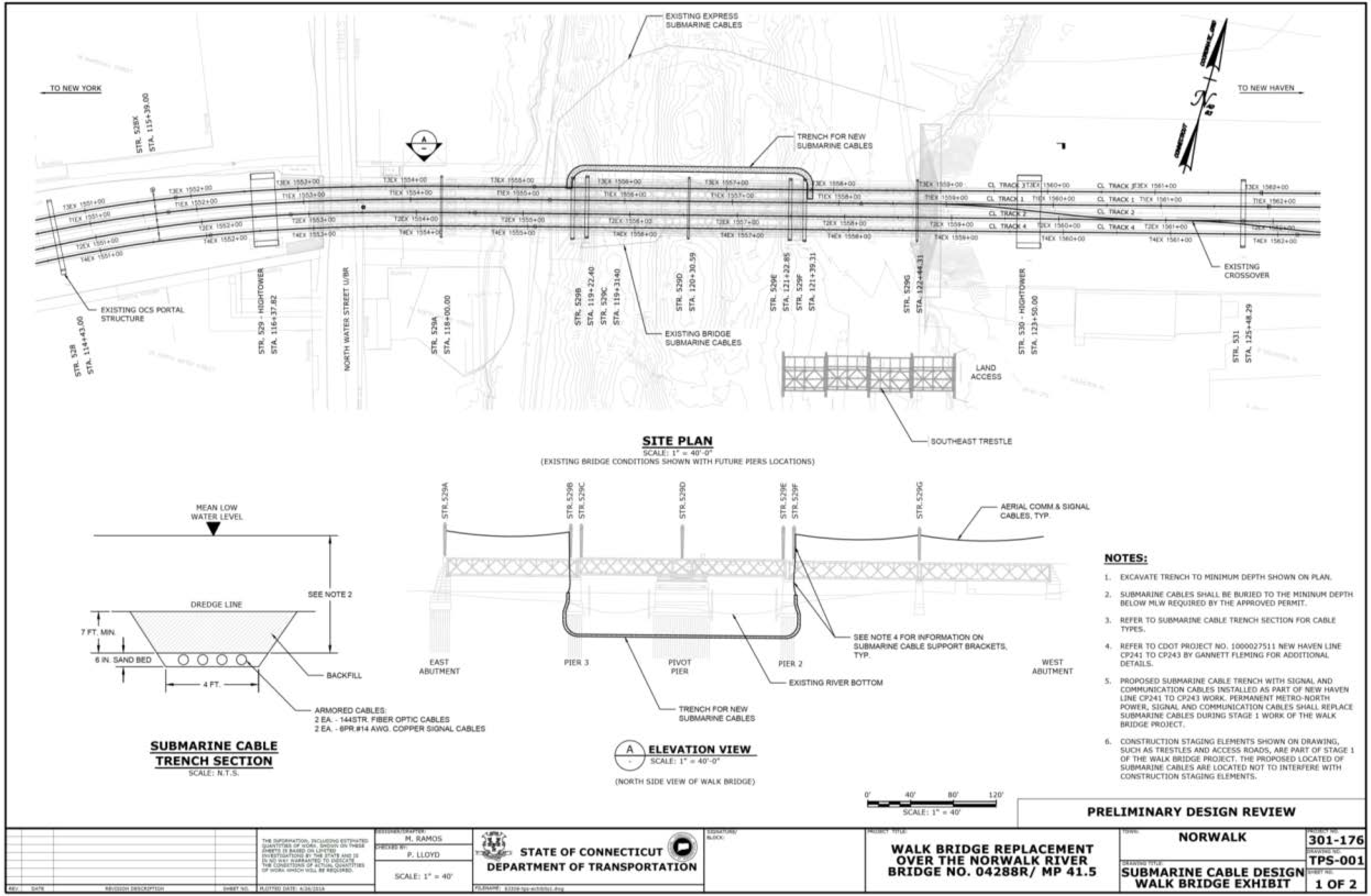


Figure 4: Schematic, submarine trench, Norwalk River.

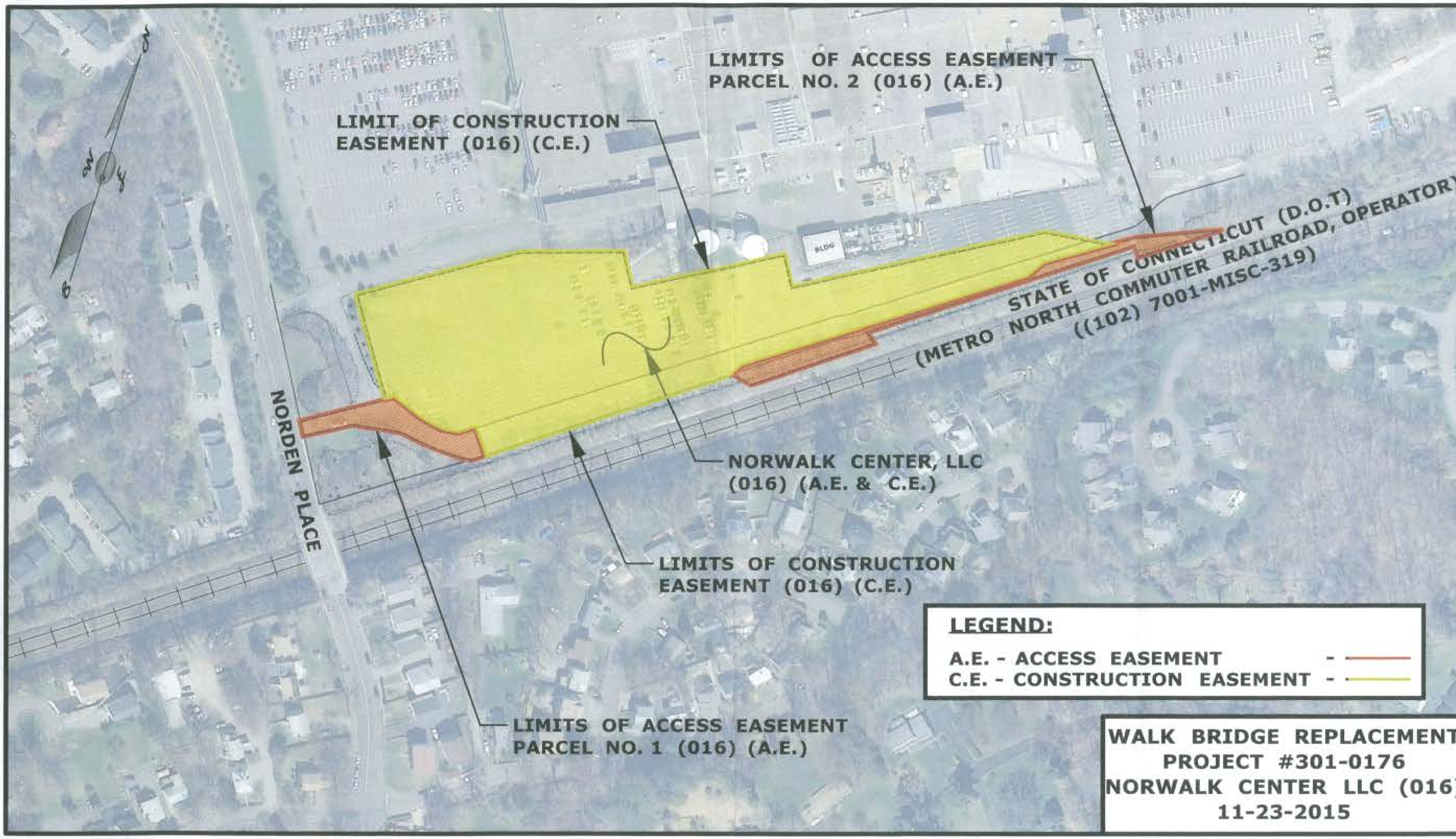


Figure 5: Construction and Access Easement portion of the APE.

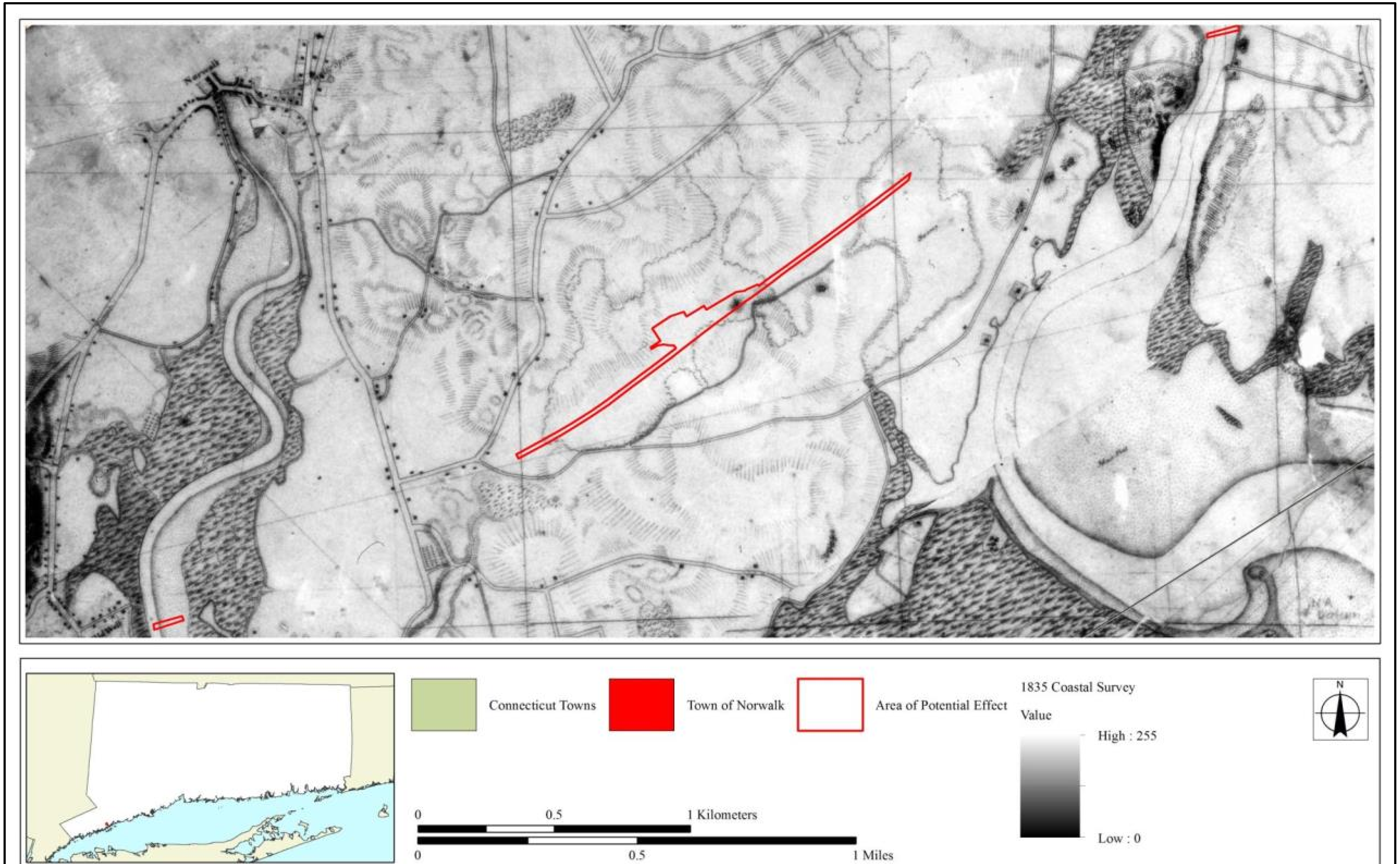


Figure 6: 1835 Coast Survey map, showing the Interlocking and submarine cable portions of the APE.

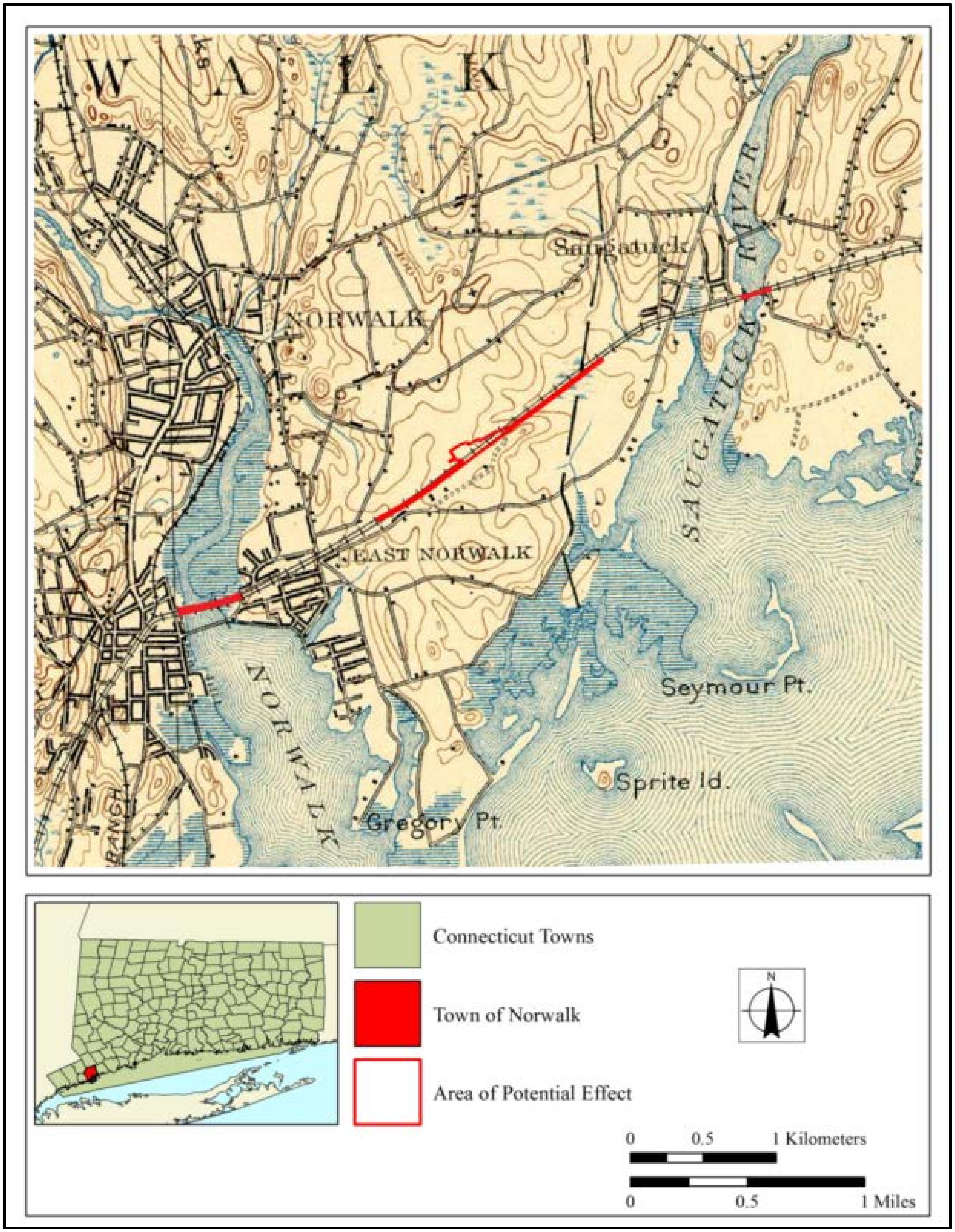


Figure 7: Interlocking and submarine cable portions of APE, shown on 1895 USGS topographic map.

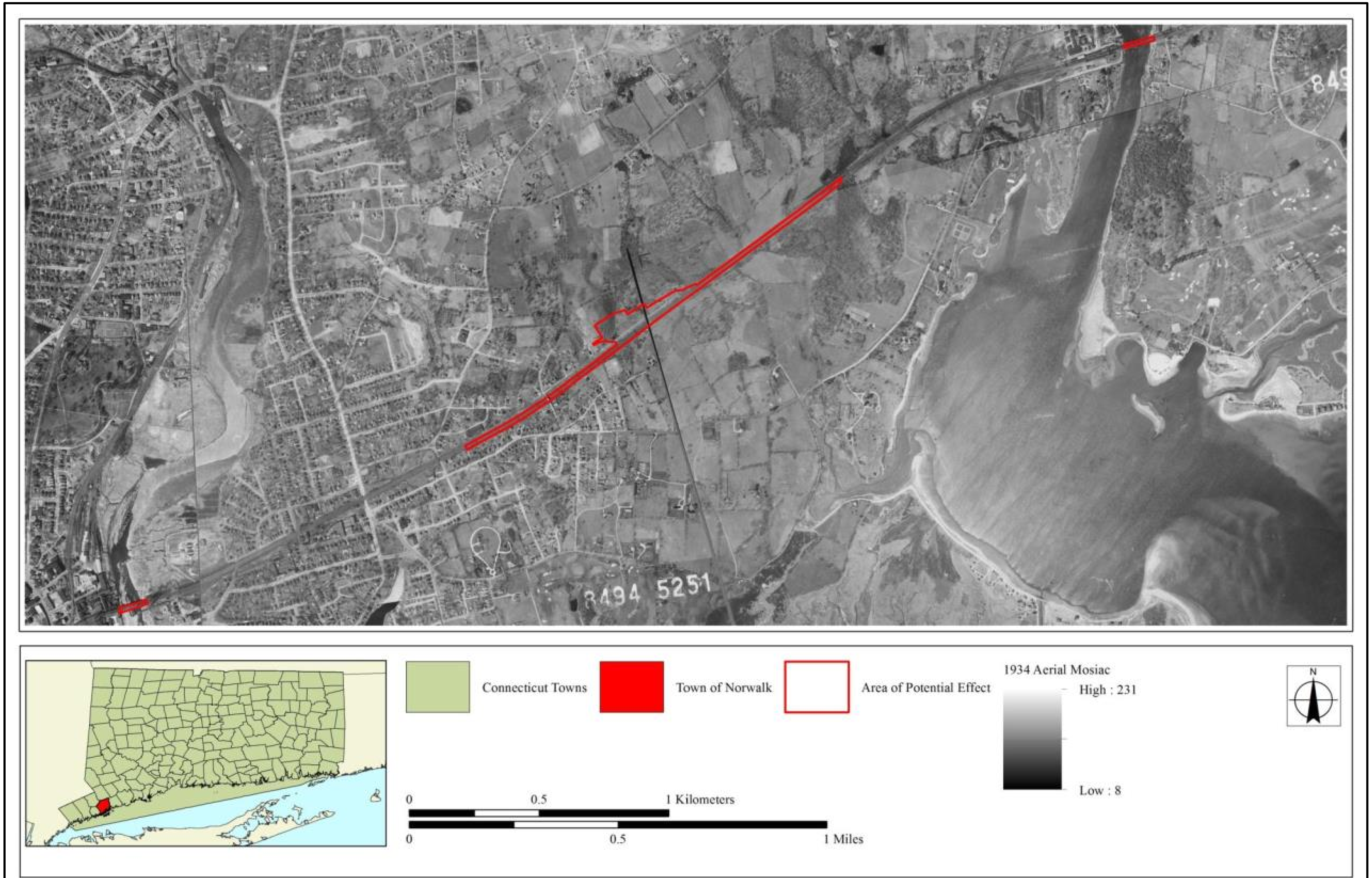


Figure 8: Interlocking and submarine cable portions of the APE, shown on 1934 Fairchild series aerial photograph.

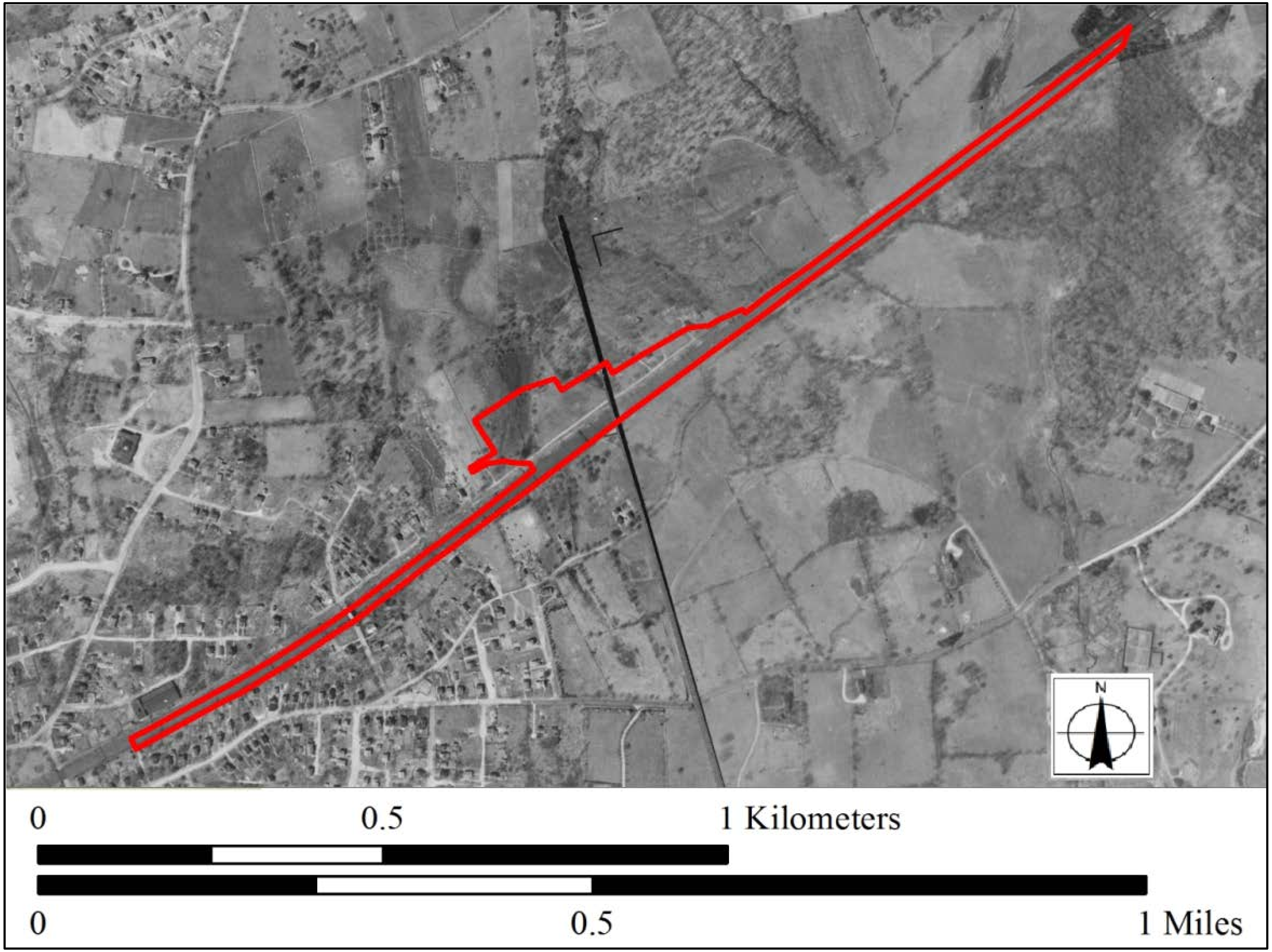


Figure 8a: Detail of 1934 Fairchild aerial photograph, showing the Interlocking portion of the APE.

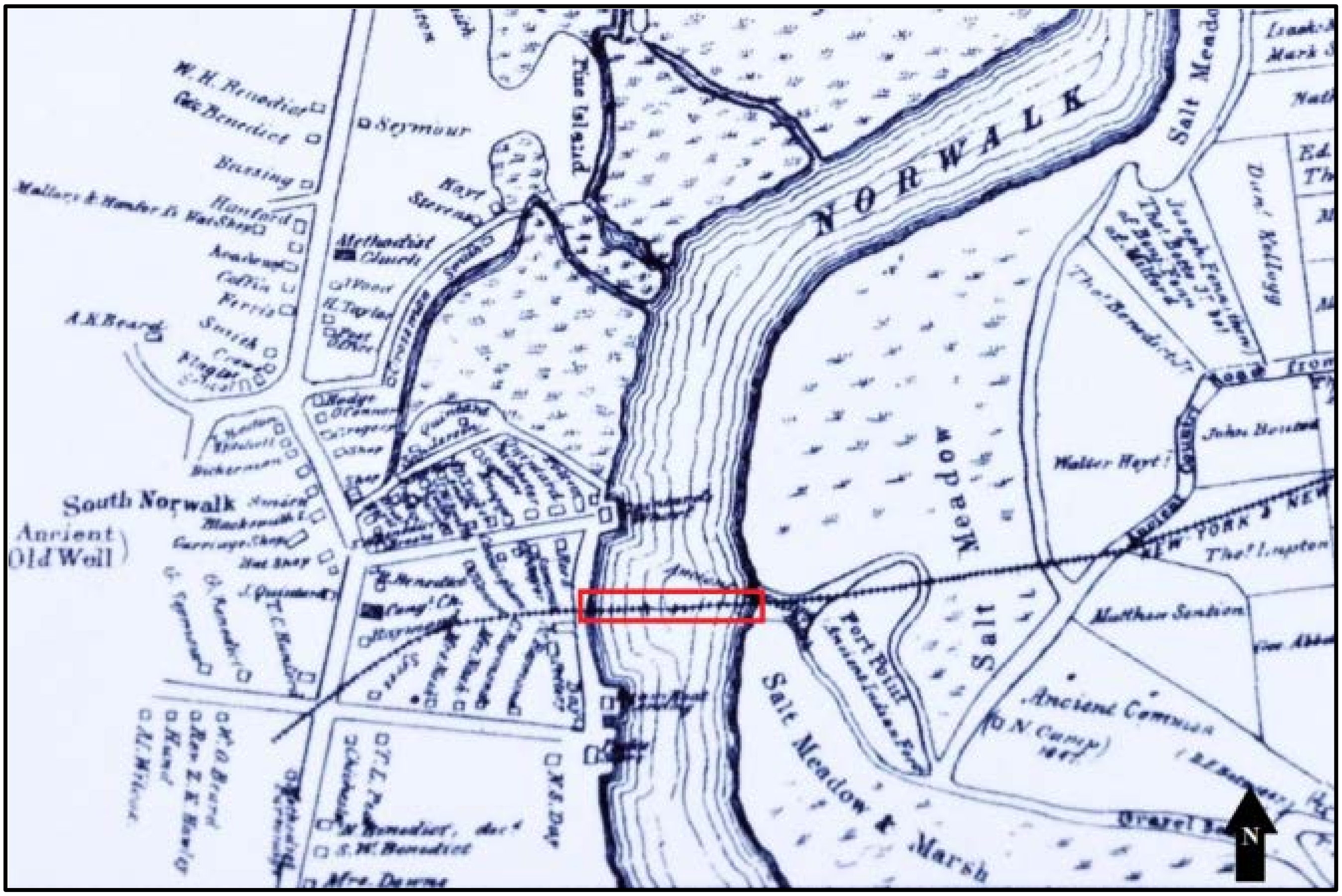


Figure 9: Detail of the 1847 Hall map of Norwalk, showing the location of the railroad bridge in red and the location of the former Native American Fort east of the bridge.

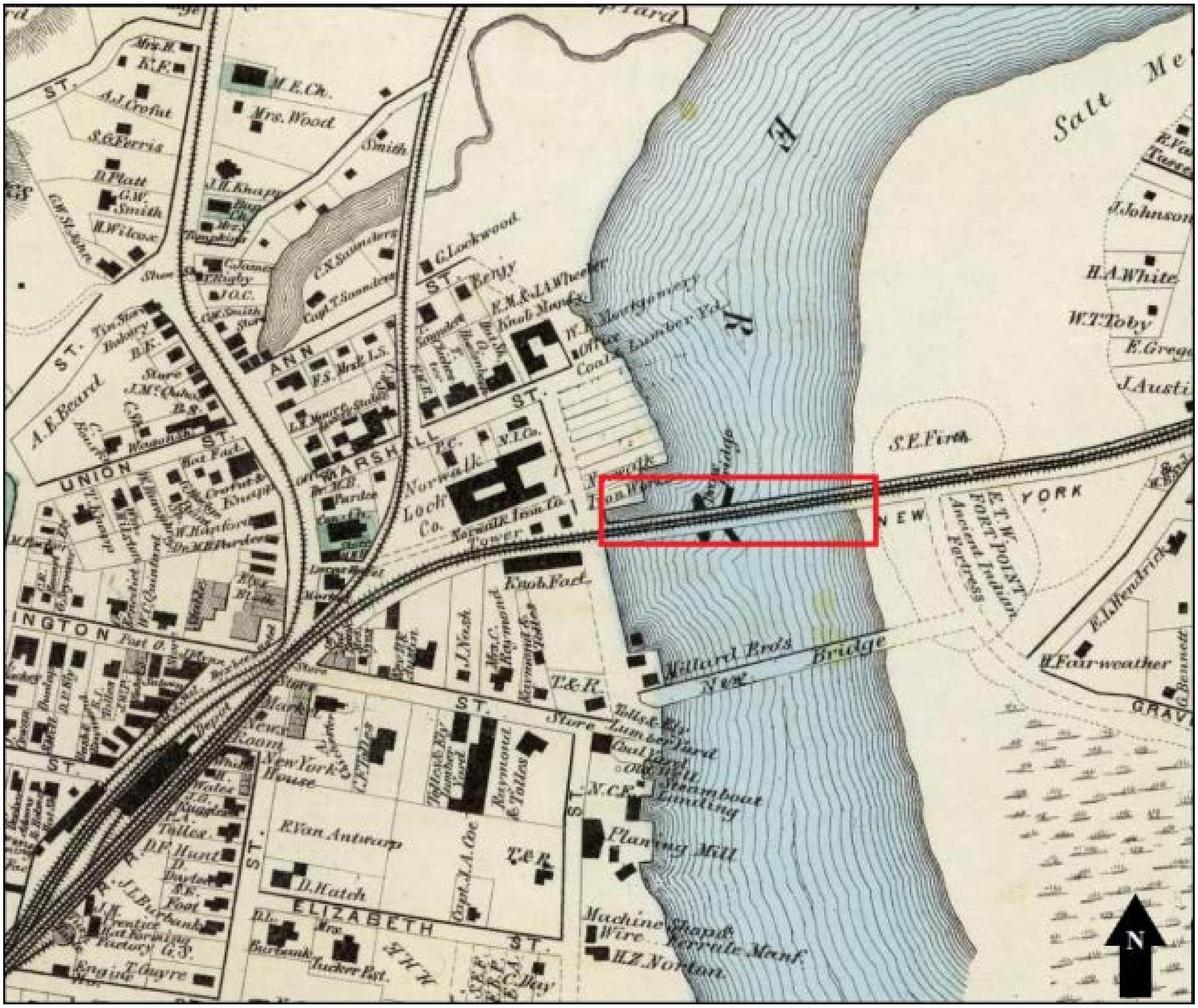


Figure 10: Detail of the 1867 map of Norwalk, showing the location of the railroad bridge in red and the location of the former Native American Fort east of the bridge.

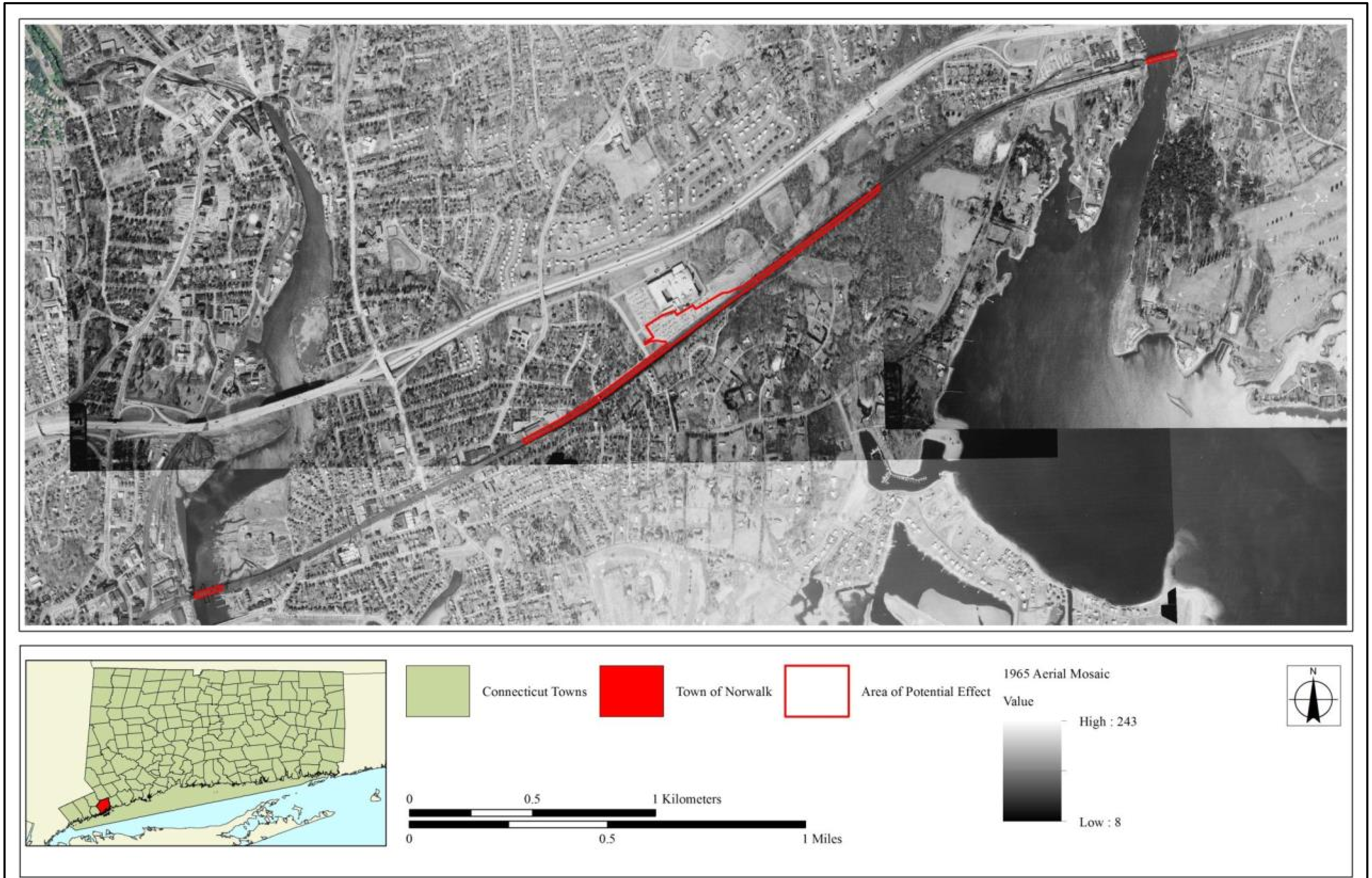


Figure 11: Interlocking and submarine cable portions of APE, shown on 1965 aerial photograph.

Figure 12: 1856 Chase map of Fairfield County, showing the locations of the Interlocking and submarine cable portions of APE.

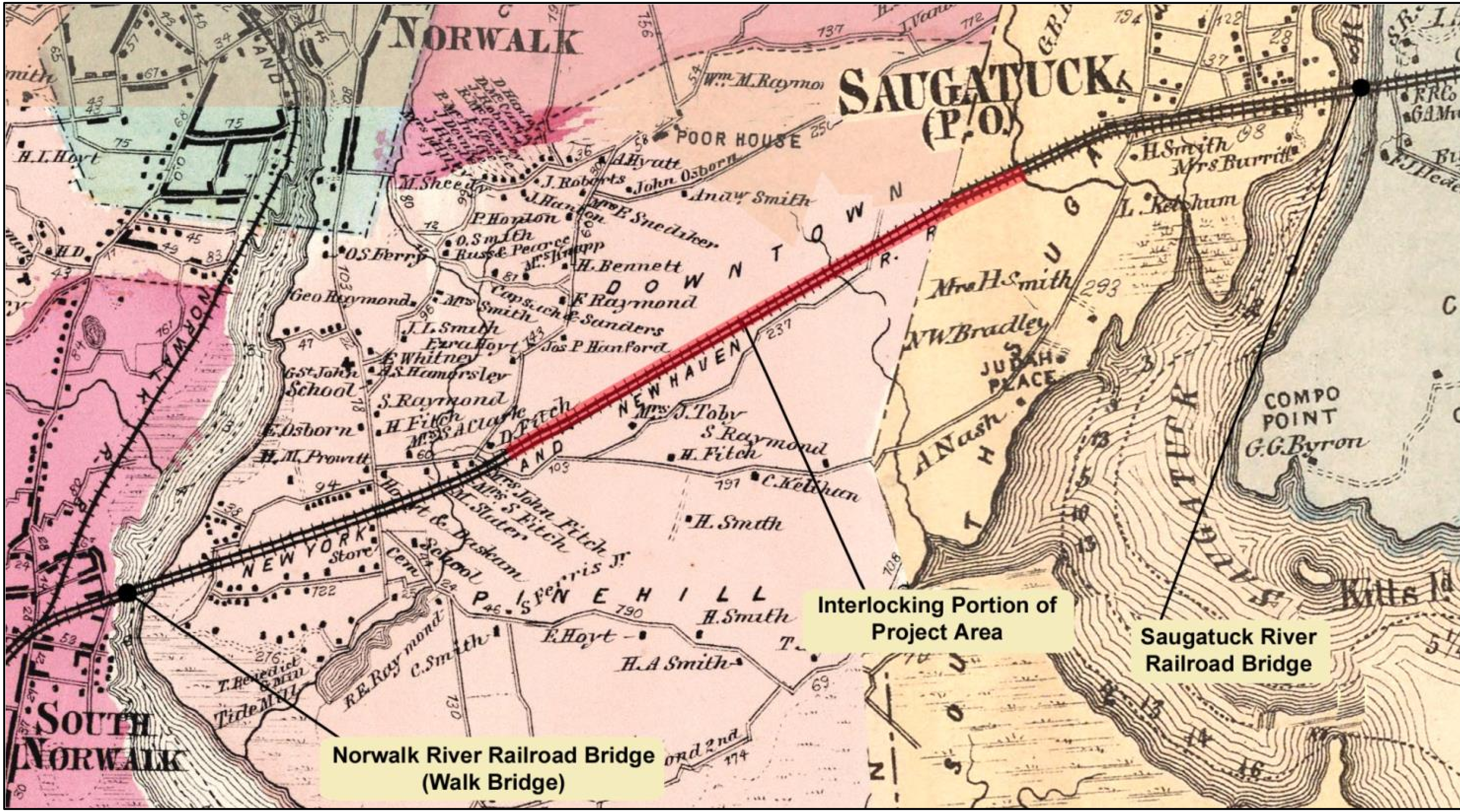


Figure 13: Interlocking and submarine cable portions of APE, shown on the 1867 Beers atlas.

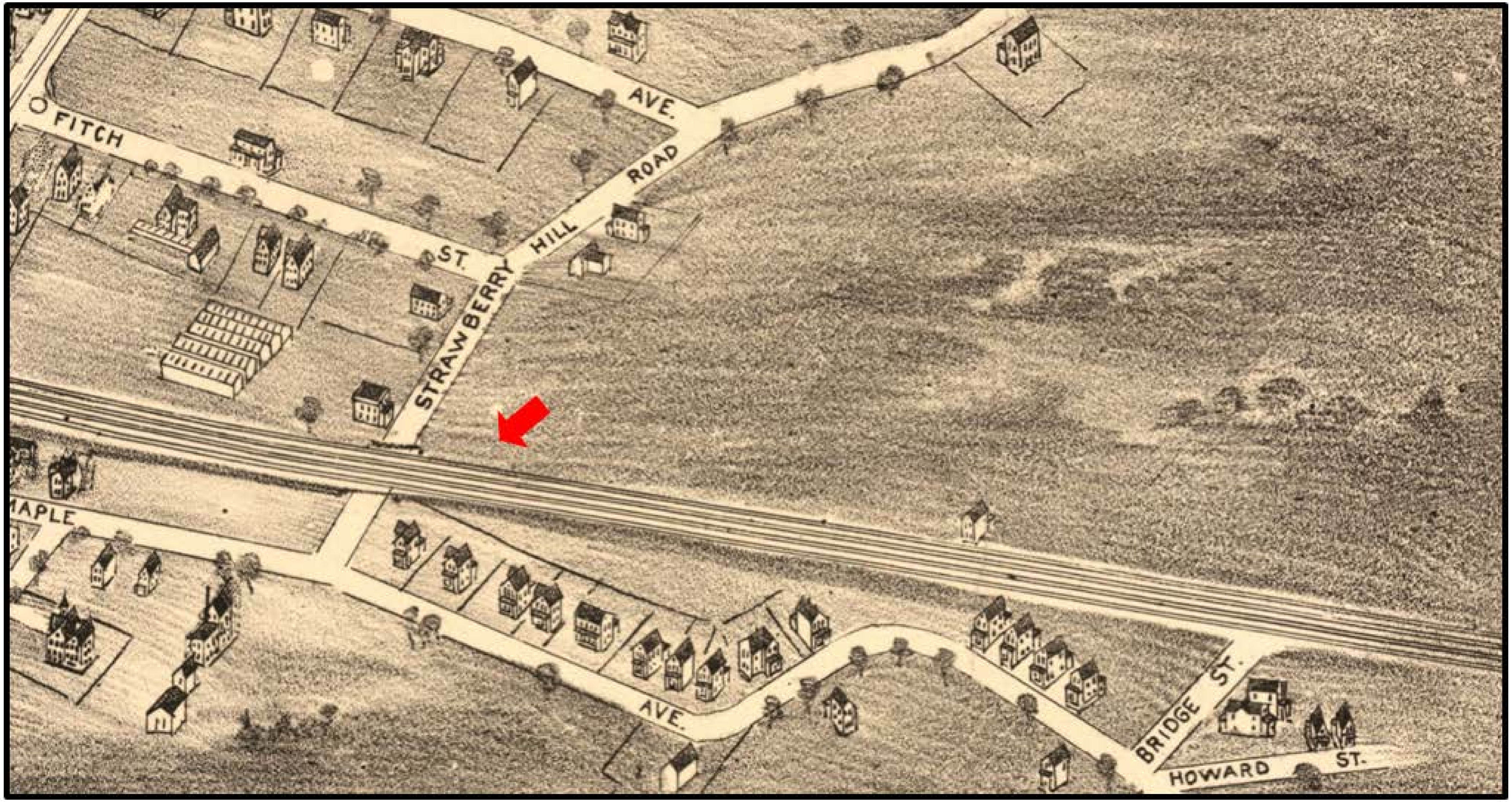


Figure 14: Landis & Hughes 1899 bird's-eye view, showing the western boundary of the interlocking portion of the APE just east of Strawberry Hill Road (arrow).

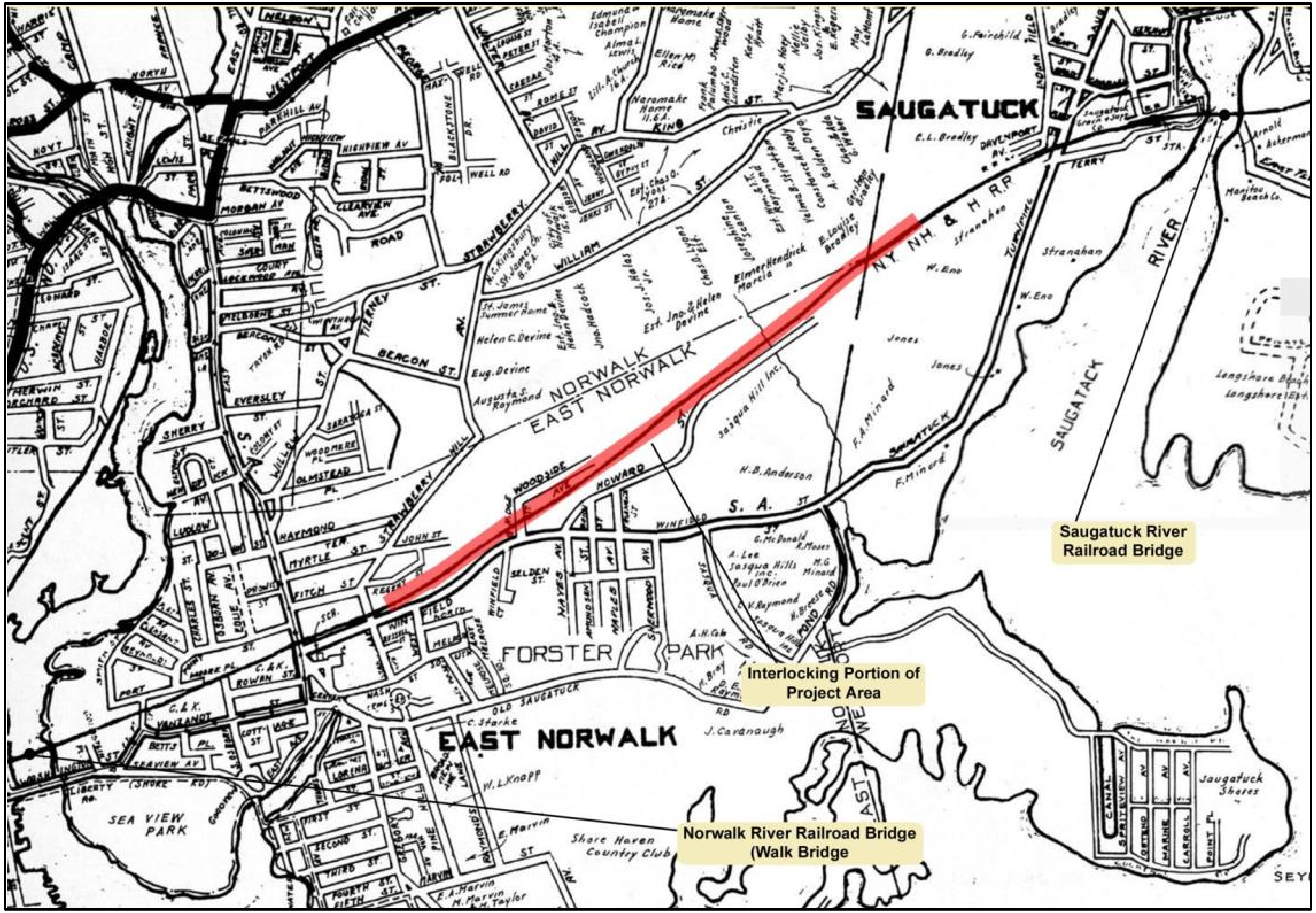


Figure 15: 1931 Dolph and Stewart map of Fairfield County, showing the development of streets in the vicinity of the project area by 1931.

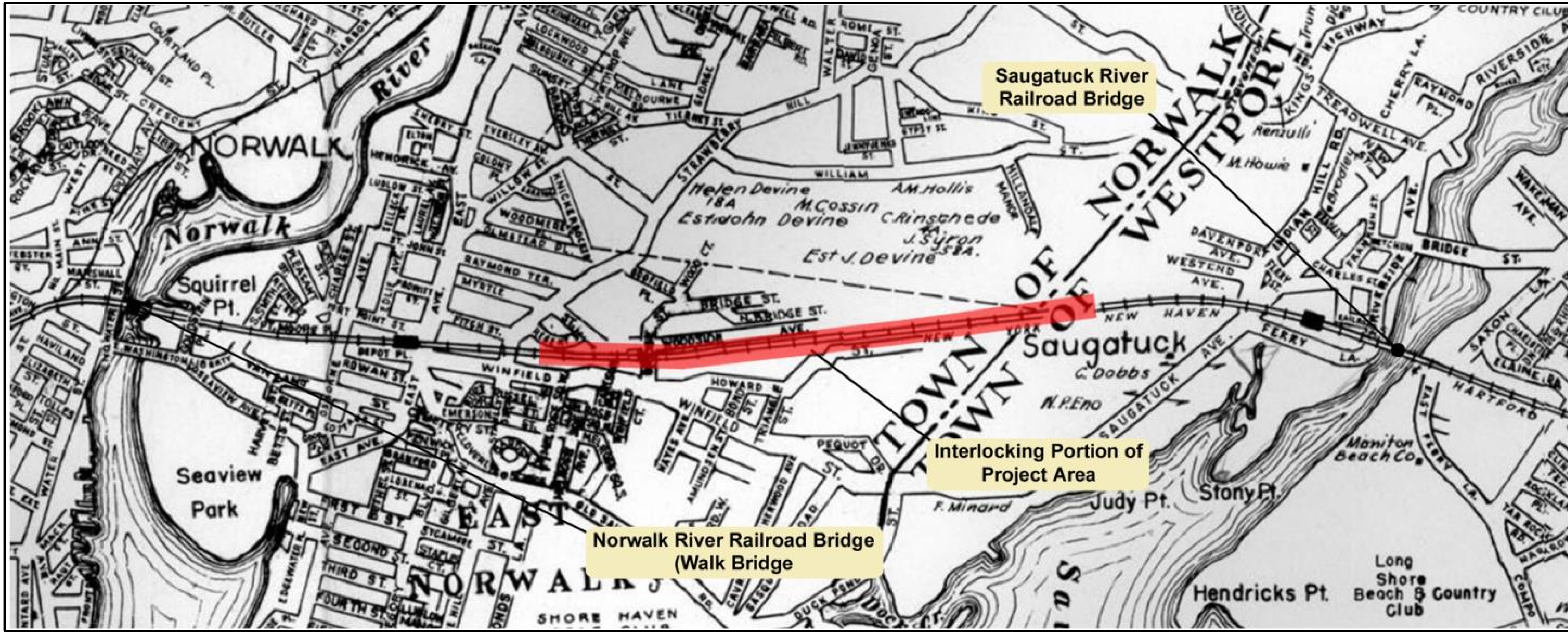


Figure 16: 1942 Dolph and Stewart map of Fairfield County, showing the project area vicinity.

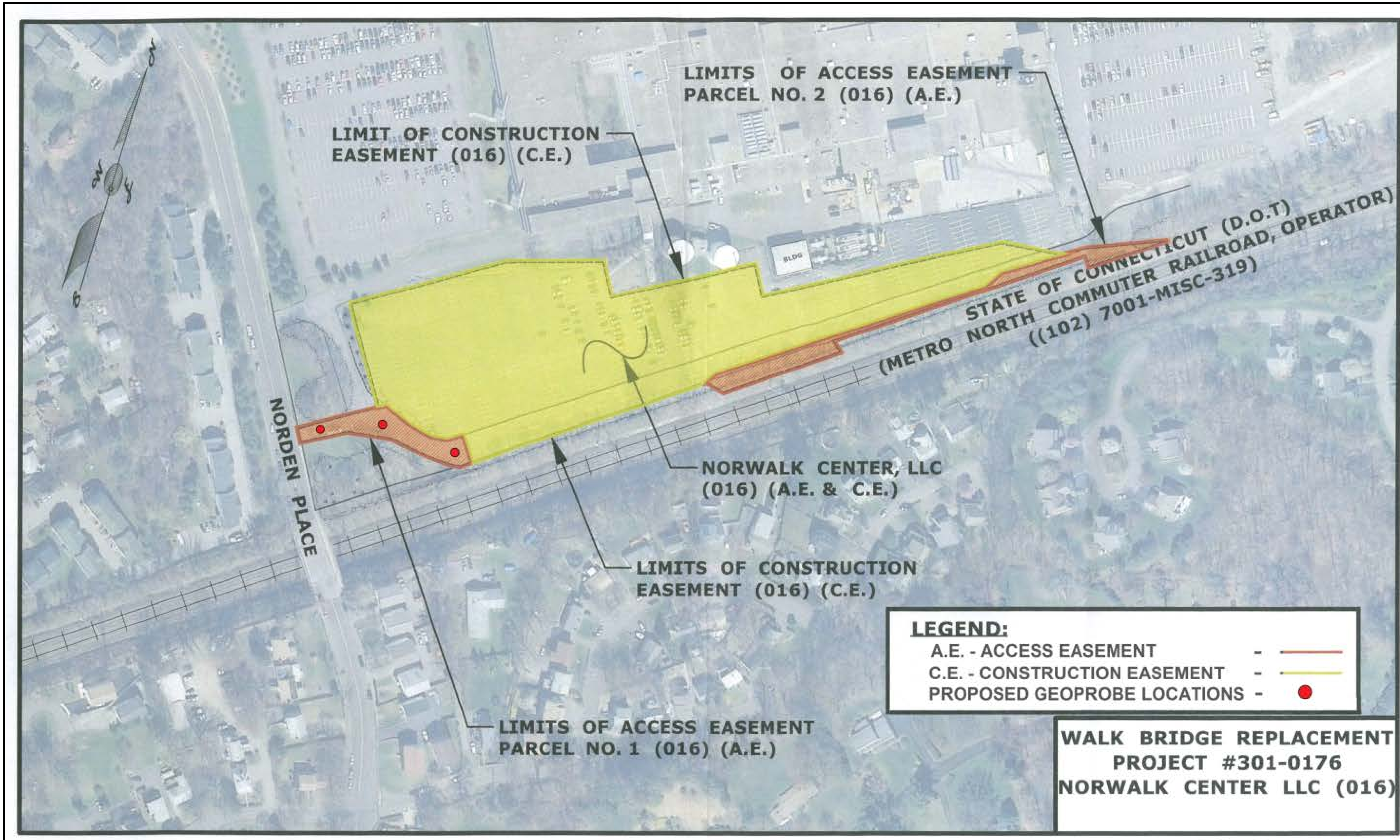


Figure 17: Proposed geoarchaeological coring location in the access road portion of the 10 Norden Place construction and access easement, C.P. 243.

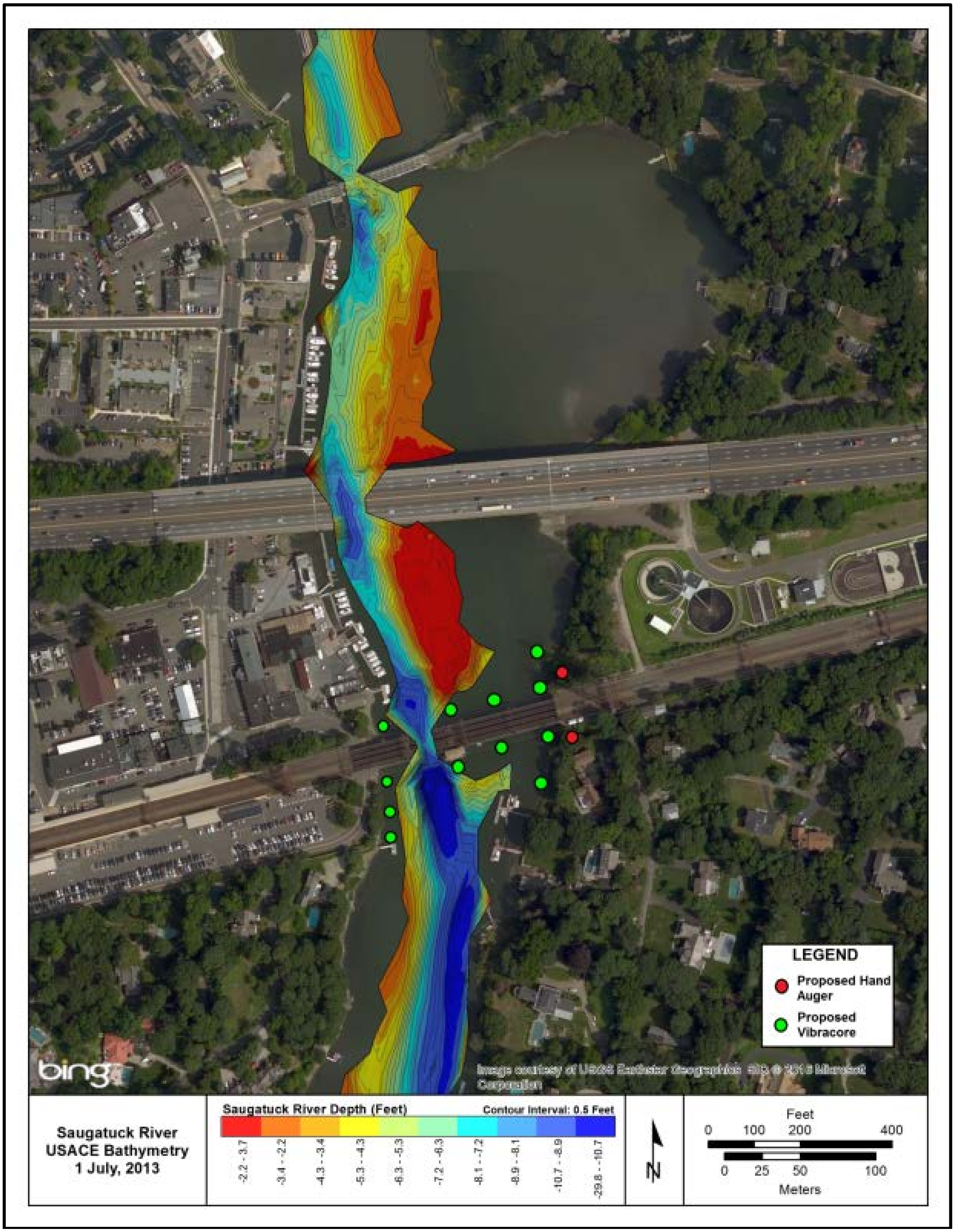


Figure 18: Proposed geoarchaeological coring locations for Saga Bridge Area of Potential Effect.

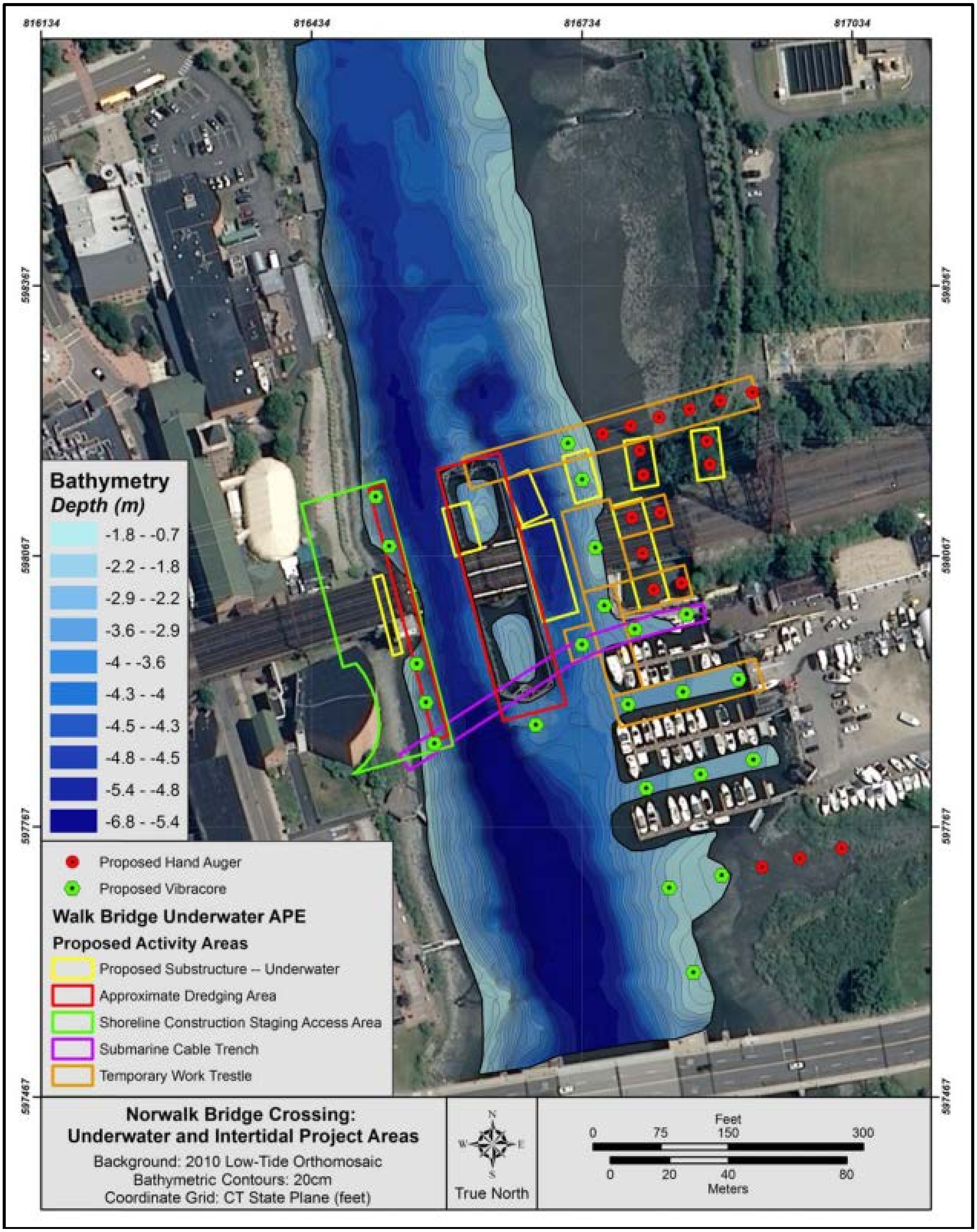


Figure 19: Proposed geoarchaeological testing locations for Walk Bridge Area of Potential Effect,