



ARCHAEOLOGICAL DOCUMENTARY STUDY

Contract No. 53340001

WEST THAMES ST. PEDESTRIAN BRIDGE

MAY 2013



PREPARED FOR:



PREPARED BY:



Archaeological Documentary Study

West Thames Pedestrian Bridge

Borough of Manhattan, City and County of New York, New York

Prepared for

New York City Economic Development Corporation

Prepared by

**Jean Howson and Richard L. Porter
The RBA Group, Inc.**

May 2013

Management Summary

Phase of Survey: Phase IA

Location: Borough of Manhattan, New York County, New York – West Street at West Thames and Joseph P. Ward Streets.

Survey Area: East and west access points/supports and central support for bridge

USGS Quadrangle: Jersey City, NJ

Results: Potential impacts to significant archaeological resources, including landfill/landfill retaining structures and the Hudson River Bulkhead; no feasible testing or monitoring strategy; mitigation of potential effects through public outreach recommended.

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Date of Report: May 2013

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1. INTRODUCTION

The proposed West Thames Street Pedestrian Bridge and Removal of Rector Street Temporary Pedestrian Bridge project areas are located in the Borough of Manhattan, City and County of New York, New York (Figures 1 through 3). The City of New York Economic Development Corporation (EDC), in coordination with the Lower Manhattan Development Corporation and the Battery Park City Authority, proposes to construct a pedestrian bridge over West Street (Route 9A) between Joseph P. Ward Street adjacent to the Brooklyn Battery Tunnel Exit Roadway and the promenade south of West Thames Street. The purpose of the West Thames Street Pedestrian Bridge is to replace the existing temporary Rector Street Pedestrian Bridge, which was constructed as an interim crossing of West Street after September 11, 2001. The Rector Street Pedestrian Bridge will be removed as part of this project.

This Archaeological Documentary Study has been prepared pursuant to a request from the New York City Landmarks Preservation Commission (LPC) resulting from their Environmental Review of preliminary documents submitted in March, 2013. LPC cited the potential for remains from 18th and 19th Century occupation on the project site. A request for environmental review was also submitted to the New York Office of Parks, Recreation and Historic Preservation (OPRHP). The OPRHP response is included here as Appendix A.

A conceptual design of the West Thames Street Pedestrian Bridge was developed by Weidlinger Associates and WXY Architecture. Excerpts from the Schematic Design Report prepared by the Weidlinger Associates team are provided below in Appendix B. The design includes the following (see Figure 1.4 and Appendix B):

- a stairway and elevator connection along Joseph P. Ward Street;
- a lenticular truss bridge constructed from the northeast corner of Joseph P. Ward Street and West Street to the southwest corner of West Thames Street and Little West Street with a single mid-span pier placed in the median of West Street; and
- An elevator and a stairway and a stairway running south from the bridge between Little West Street and the adjacent dog run.

Subsurface impacts from bridge construction will be at the east and west access points and at the support with the West Street median. At these locations construction of foundations up to 6 feet deep is proposed. Foundations will be supported with 10-inch diameter micro-pilings drilled to glacial till or bedrock. Project engineers have stated that some micropilings may be angled so as to provide adequate support, and thus will extend beyond the foundation footprints.

2. BACKGROUND RESEARCH

2.A. File Search

National Register of Historic Places

National Register listed and eligible properties and sites in the project vicinity are shown on Figure 5 and listed in Table 1. Two *National Register eligible archaeological sites* are immediately adjacent to the project area.

- Hudson River Bulkhead, west of the western foundation for the proposed bridge. Information on the Hudson River Bulkhead and its eligibility is contained in the Building-Structure Inventory Form on file at OPRHP (Raber 1997). The section on the west side of the current project area is a Type IV Bulkhead, which is the latest type (1920-1960); its eligibility is explained as follows:

Even the latest type...similar to relieving-platform designs used elsewhere in the ports of New York and other cities, remains significant as part of the [Docks] Department's long sequence of bulkhead designs. The masonry bulkhead appear well-documented in surviving drawings, descriptions of construction methods... and possibly in surviving original specifications. It is possible, however, that the surviving structures include undocumented details reflecting minor adaptations to bottom or other site conditions. Such undocumented details in the masonry or timber bulkheads could meet Criterion D (Raber 1997:10).

The bulkhead is the subject of a monitoring and recordation protocol that was developed for the Route 9A Reconstruction project (Sopko 2005).

- Pier 7 Complex Site, located immediately across West Thames Street from the proposed bridge (Lenardi 2011). The Pier 7 Complex Site includes a portion of the Hudson River Bulkhead.

Previously recorded sites

There are no recorded Pre-Contact sites within the project area or just to the east along what would have been the shoreline of lower Manhattan in the later Pre-Contact and Contact Period (see discussion of environmental setting below). Several locations (former small islands, knolls, and headlands) identified through an analysis of boring data as having potential sensitivity for inundated prehistoric sites – which would now lie beneath the landfill – are sited further south and north along the West Street corridor (Historic Conservation and Interpretation, Inc. 1983:41-63; Hartgen Archaeological Associates and Historical Perspectives, Inc. 1990:V-11, V-13). The closest of these locations, near the present-day intersection of Morris and West Streets (Area #1

Table 1.
National Register Listed and Eligible Resources
 (see map on page 16)

Map label	Name	Address	NR Status	OPRHP NR or USN #;	NYC Landmark	LP#
A	New York Evening Post Building	75 West St.	Listed	00NR01653		
B	19 Rector Street	19 Rector St./ 88 Greenwich St.	Listed	02NR01912		
C	21 West Street	19-21 West St.	Listed	98NR01402	X	01999
D	Wall Street Historic District		Listed			
1	Hudson River Bulkhead	West St. (9A) from Battery Place to W. 59 th St.	Eligible	06101.009182		
2	Barrett Building/40 Rector St.	40 Rector St./ 57-69 West St.	Eligible	06101.014511		
3	Former St. George's Syrian Roman Catholic Church	103 Washington St.	Eligible	06101.001534	X	02167
4	Frasch Building	56 West St./ 33 Rector St.	Eligible	06101.007218		
5	94 Greenwich St. House	94 Greenwich St.	Eligible	06101.001533	X	02218
6	94-96 Greenwich St.	94-96 Greenwich St.	Eligible	06101.013374	(see above)	
7	Battery Garage	56 Greenwich St.	Eligible	06101.013375		
8	Robert and Anne Dickey House	67 Greenwich St.	Eligible	06101.001531	X	02166
9	Brooklyn Battery Tunnel	Governor's Island, Battery Pl., Greenwich St., Washington St.	Eligible	06101.018351		
10	Downtown Athletic Club Building	18 West St.			X	02075
11	Whitehall Building	17 Battery Pl.	Eligible	06101.001318	X	02056
12	Pier 7 Complex Site	West Thames Park	Eligible	06101.018120		
●	Lamp posts	various	Eligible	06101.009462, 9464, 9465, 9466, 9467, 9468, 9469, 9470	X	01961

in the Historic Conservation and Interpretation, Inc. 1983 study) was possibly an island 5,000 to 6,500 years ago, and is now 30' below sea level and buried by landfill.

The above-noted Hudson River Bulkhead and Pier 7 Complex Site, both recorded by SHPO as eligible for National Register listing, are the only historic period archaeological sites located adjacent to the project area.

Previous cultural resource surveys

The project area has been evaluated previously for the NYSDOT Route 9A and Route 9A Reconstruction projects (and their predecessor, the West Side Highway/Westway). In addition, resources that extend into the project area were evaluated for the World Trade Center redevelopment project. The following documents, listed chronologically, pertaining to these projects have been consulted:

West Side Highway Cultural Resource Survey Archaeological Work Program: Cultural Resources Research (Historic Conservation and Interpretation, Inc. 1983)

Route 9A Reconstruction Project Draft Archaeological Assessment Report, Battery Place to Harrison Street (Hartgen Archeological Associates and Historical Perspectives Inc. 1990)

Route 9A Reconstruction Project Revised Draft Contextual Study: Sunken Ships and Landfill Retaining Devices (Hartgen Archeological Associates and Historical Perspectives Inc. 1992a)

Route 9A Reconstruction Project Contextual Study: Wharves and Piers (Hartgen Archeological Associates and Historical Perspectives, Inc. 1992b)

Route 9A Reconstruction Project, Manufacturing Historic Context (Louis Berger & Associates, Inc. 1993)

Route 9A Reconstruction Project Final Environmental Impact Statement. Appendix C: Cultural Resources (Allee King Rosen & Fleming, Inc. and Hartgen Archeological Associates 1994)

Route 9A Reconstruction Project Cultural Resources Summary Report (Vollmer Associates and Allee King Rosen & Flemming, Inc. 1996)

Buildings and Structures Inventory Form for the NYC Hudson River Bulkhead (Raber 1997).

World Trade Center Memorial and Redevelopment Plan Draft Generic Environmental Impact Statement (2004)

Route 9A Final Supplemental Environmental Impact Statement (2005)

Archaeological Monitoring, Treatment, and Data Recovery Plan for NYC Hudson River Bulkhead... (Sopko 2005)

Cultural Resources Survey Report of Archaeological Monitoring, Treatment, and Data Recovery for NYC Bulkhead and World Trade Center Site...(Lenardi 2011)

The 1990 Route 9A Reconstruction Archaeological Assessment indicated that the only potential sensitivity within the stretch of that project corridor between Morris and Rector Streets was for the nineteenth century piers which may have become part of the landfill beneath West and Marginal Streets. The 232 piers, wharves and pier sheds, including Site # 139 within the present project area, that were identified in the further Route 9A studies were eliminated from further consideration for archaeological potential due to lack of archaeological visibility and lack of research potential (Hartgen Archaeological Associates and Historical Perspectives, Inc. 1990, 1992b; Vollmer Associates and Allee King Rosen & Flemming, Inc. 1996).

Additional archaeological investigations conducted in proximity to the current project area include a study of the Exchange Project Site, located one block south of Joseph P. Ward Street (Geismar 1987), specific studies conducted for the World Trade Center Memorial and Redevelopment Project (Historical Perspectives, Inc. 2003, 2004; AKRF, Inc. 2009); and the South Ferry Terminal Project (The Louis Berger Group, Inc. 2003, 2004; Dallal et al. 2012). None of these archaeological investigations extended into the APE for the current project. They provide additional background, however, on archaeological issues in the area. Although the Battery Tunnel would have destroyed archaeological resources in its path, Geismar (1987) noted the potential for waterfront and landfill retaining structures such as wharf cribbing within undisturbed locations flanking the tunnel blower building, as well as potential for early historic and even prehistoric resources on the block just east of the Battery Garage, which possibly overlapped the edge of an original shoreline bluff or beach. World Trade Center studies conducted by Historical Perspectives, Inc. (2003, 2004) and AKRF (2009) identified potential for landfill retaining structures as well as for domestic shaft features such as cisterns, privies, and wells that might have extended beneath later building basements. The latter are typically present within the rear portions of lots developed prior to the availability of utilities. The Dallal et al. (2012) South Ferry study describes the archaeological investigation of the Battery Wall and Whitehall Slip, and includes a thorough assessment of cultural resources work undertaken to date on waterfront landfill-retaining structures (2012:4-70 to 4-107).

2.B. Environmental setting

The West Thames Street Bridge project area is in a densely developed urban setting, along a major transportation corridor (Route 9A) passing through residential and commercial districts of lower Manhattan, where access ramps enter and exit the mid-20th century Brooklyn-Battery Tunnel (Figure 3; Plates 1 through 10). This setting belies the location's environmental history – it was under the Hudson River at the time of European settlement. Filling began in the 1760s and continued in the 1830s, 1850s, and 1870s. The process of making land along the Hudson

River continued into the late 20th century with the construction of Battery Park City (see Figures 5 through 23 for historic map sequence through 1950).

The Contact Period shoreline of Manhattan, however, was relatively recent in geological terms. Sea level at the time the ice sheets retreated from the area was approximately 300' lower than that of historic times. The project area would have been well inland, and the river channel would have been further west. The river valley would be drowned beginning around 15,000 years ago. Sites that are now 30' below sea level would have been islands around 6,500 years ago; before that, they would have been small hills on the mainland. One such site, located near present-day Morris and West Streets, was probably a small hill, possibly next to a pond, around 7,200 to 6,500 years ago, after which it became an island as the shoreline moved eastward (Historic Conservation and Interpretation, Inc. 1983:56). Such sites would have been attractive for prehistoric occupation. By 5,000 years ago, however, they would be inundated by the expanding Hudson River estuary.

Borings (see Figure 24) indicate that in the project area a stratum of organic silt and clay underlies the fill at depths of approximately 12' at the east end dipping to 28' at the far west end just inside the bulkhead. The silt and clay layer is in turn underlain by alluvial sands and glacial outwash sands and glacial till above bedrock. There is no geological evidence of a pre-inundation shoreline promontory, island, or knoll in this location.

2.C. Pre-Contact Context and Sensitivity

As noted, the project area is fully within historic landfill, having been under water from about 5,000 years ago. Occupation of the general area prior to that time is likely. Previous studies have located possible sensitive locations beneath the fill, but none of these locations are within the present project area, which was not on a former hill or island (Historic Conservation and Interpretation, Inc. 1983:48 and Hartgen Archaeological Associates and Historical Perspectives, Inc. 1990:10-20). Due to the projected low-lying contour, to long-term inundation, to sequential episodes of pier and bulkhead construction and filling, and dredging of the former slips, the survival beneath the fill of any traces of early occupants here is unlikely.

2.D. Historic Context and Sensitivity

Shoreline history: bulkheads, piers, and landfill

The project area is within landfill that extended Manhattan's Hudson River shoreline westward beginning in the 1760s and continuing through the late 20th century. Specifically, the east end of the bridge is within blocks of land granted by the city for filling and development in 1839; the location of the central support for the bridge was in the river between piers and was filled in the first decade of the 20th century; and the west end was in a pier shed built adjacent to the fill forming West Street circa 1873, then filled in in 1928/29. Landfill is considered

archaeologically sensitive in this part of the city. It can contain buried early piers, former bulkheads, and scuttled ships, as well as structures such as cribbing built to hold the fill (see discussions of landfill structures in Geismar 1983; Louis Berger & Associates 1987, 1990; Hartgen Archeological Associates and Historical Perspectives, Inc. 1990, 1992a ; Parsons Brinkerhoff et al. 2004; and most recently Dallal et al. 2012).

As shown on a map of 1817 (Figure 6), the earliest pier in the project area (#5) extended west from present-day Washington Street into the river, approximately along present-day Joseph P. Ward Street. This pier would be re-numbered as number 6 by 1824 (Hartgen Archeological Associates and Historical Perspectives, Inc. 1990 [citing 1824 Hooker Map]). Some portions of the blocks between Washington Street and West Street began to be filled in by 1827 (Ewen 1827-1830); the one in the present project area was granted in 1839 (see Figure 11) but apparently not filled in until 1845 (Figures 7 and 8). The 1846 Burr map (Figure 8) shows Pier 6 extending west from West Street along the same approximate alignment as the earlier pier. The 1850 Smith survey (Figure 9) shows the proposed project area extending into the river between Piers 5 and 6. There would have been a bulkhead along the west side of West Street at this time, though the official bulkhead line established in 1857 was further out (west of the street, as shown on Figure 11).

Maps of the 1850s and 1860s show no change to the configuration of the waterfront in the project area. The next major alteration was the construction of the Pennsylvania Railroad Pier Complex (Piers 4 and 5 with a large connecting pier shed) in circa 1873 (Figure 11). A new bulkhead line had been established in 1871, and the Pennsylvania's pier shed extended west to this line. The pier shed was on pilings, however, so a bulkhead would not have been constructed at the new bulkhead line in this location at this time. The Rector Street Section of bulkhead, which abutted the pier shed immediately to the north, was constructed circa 1903 (Lenardi 2011; see Hoag 1906 for a history and discussion of New York's regulation of the waterfront and bulkheads up to that time). Between 1899 and 1905, the area behind the 1871 bulkhead line to the north and south of the Pennsylvania's pier shed was filled in to create a new, wider marginal (wharf) street – the stretch of West Street in front of the Pennsylvania's pier would remain a very narrow thoroughfare, creating a bottleneck for another 25 years. A 1924 aerial photograph (Figure 19) shows the configuration of Marginal and West Streets in relation to the Pennsylvania's pier complex at that time.

In 1928 the Pennsylvania Railroad's Pier Complex was demolished, and construction of the company's new Pier 3 (which replaced Piers 4 and 5) was underway the following year (Figures 20 and 21). Most of the former footprint of the large old pier shed was filled and incorporated into Marginal Street, though a narrow concrete pier shed was built between the west side of Marginal Street and the bulkhead line. At this time the bulkhead that runs along the line established in 1871 would have been built (to the west of the west end of the proposed bridge - south of the 1903 Rector Street Section of bulkhead documented by Lenardi [2011]). The bulkhead at this location is classified as Type IV, a concrete bulkhead with timber relieving platform, as was typically constructed from 1920-1960 (Raber 1997; see sketch on Figure 24).

Beginning in the late 1960s, piers along the west side of Manhattan were removed and a massive landfill operation began, using material excavated for the World Trade Center, to be followed by

construction of Battery Park City. By 1973 the piers and associated structures south of present-day West Thames Street, including in the current project area, had been demolished, and by the following year landfilling here was underway.

Sensitivity – bulkheads, piers and landfill: The mid-19th-century fill may contain remains of the first pier that extended along present-day Joseph P. Ward Street, other unrecorded fill retaining structures or deposits, and remains of the mid-19th-century bulkhead. Later fill, which formed part of Marginal Street in the former footprint of the Pennsylvania Railroad warehouse, may contain pilings or other features. The Type IV bulkhead structure, built in 1929 at the 1871 bulkhead line, which lies just to the west of the west end of the proposed bridge, may be extant below the present landscaping. *The Area of Potential Effect of the micropilings proposed for the pedestrian bridge is sensitive for remains of waterfront infrastructure, including the Hudson River Bulkhead. The latter may be penetrated if angled micro-pilings are used in this location.*

Historic buildings within project footprint

East end of the proposed bridge:

After being filled in in 1845, the lots at numbers 45 and 46 West Street were quickly developed. Buildings are shown here on fire insurance maps of 1852 (Perris 1852, not reproduced here) and 1857 (Figure 10). A potash factory, later to become the B.T. Babbitt Soap Factory, had appeared on the block, and number 46 may have been part of this industrial complex, as it is listed as hazardous on the 1857 map. The soap works had all but surrounded the buildings at numbers 45 and 46 by 1885 (Figures 12 and 13). The 1894 Sanborn (Figure 14) indicates a brick 4-story building at number 45 with both a store and dwelling, and a brick or stone 5-story building at number 46, with an elevator in the southwest corner, used as a warehouse (possibly for the soap factory). Based on their footprints, which match those shown on the 1852 through 1857 fire insurance maps, these are the original structures. The 1905 Sanborn Map provides additional details: the one at number 46 had a basement, and had definitely been incorporated into the Babbitt Soap Works factory (used for “storage”).

Between 1911, when the soap factory was gone (Bromley 1911), and 1913, the structure at number 46 was replaced or substantially remodeled – from 1913 on it was labeled on maps as a 3-story building (Sanborn Map Company 1913). Buildings adjacent to the south of and behind numbers 45 and 46 had been torn down by 1915 (see Figure 17 – new buildings went up in 1929 at number 44 and on the lots behind 45 and 46, but the other cleared lots would remain empty). The 1923 Sanborn map indicates that the buildings at both 45 and 46 had basements (Sanborn Map Company 1923). Number 45 housed the Bowling Green Neighborhood Association in that year, while number 46 was commercial, containing dry paints. A photograph from 1925 shows the rear of number 45 with the cleared lots behind and to the south, and suggests this building did indeed have a basement level (Figure 18). The West Street facades of the two buildings are shown in 1927 and 1937 photographs reproduced in Figure 22. The two buildings were demolished, along with the new building that had been built at number 44, when the Brooklyn Battery Tunnel was constructed in the 1940s (Figure 23). After the tunnel opened in 1950, Crystal Street, later renamed Joseph P. Ward Street, would be opened in the block between Washington and West Streets where the buildings once stood.

West end of the proposed bridge:

As noted above, by 1873 the Pennsylvania Railroad had constructed a pier complex comprising Piers 4 and 5 and a large connecting pier shed along West Street. This pier shed was situated between the west side of West Street and the 1871 bulkhead line. It may have consisted of several adjoining structures: the 1879 Taylor view shows a total of 5 adjoining buildings with fronts on West Street (Figure 12). The large central building had 2 identical bays (with a sawtooth roof line), and the flanking buildings to the north and south were not-quite mirror images of each other. Some artistic license may have been taken in rendering the facades, as all of the earlier and later maps showing the pier shed indicate it was a single structure with a wider footprint, but the arrangement of bays roughly agrees with later detailed fire maps. The Taylor view depicts the south facade of the structure, showing that it was on pilings – the entire pier shed was doubtless built similarly to the covered piers extending into the river. Some details on the building's superstructure are available from maps of 1893 (Robinson 1893), 1894 (reproduced here in Figure 15), and 1905 (Sanborn Map Company 1905). It had a wide central bay flanked by two bays each on the north and south, was clad with corrugated iron, and had plank flooring. The roof, which was labeled as gravel in 1894 and as composition (asphalt shingle) and frame truss in 1905, had numerous skylights. In one year, 1893, the Pennsylvania Railroad was leasing the northernmost bay of the pier shed to the Baltimore & Ohio Railroad Continental Line (Robinson 1893). As shown on the 1924 aerial photograph (Figure 19), the building still had six bays. It fronted the original, narrow West Street, and its northern side was now abutting Marginal Street, which had been filled in before 1905.

As noted above, the Pennsylvania Railroad pier shed was demolished in 1928 and replaced by paved fill (Marginal Street) and a narrower concrete pier shed between the street and the bulkhead (Figures 20 and 21). This shed and Pier 3 were leased by the United Fruit Company circa 1939. The structures were demolished circa 1973 for construction of the massive landfill of Battery Park City.

Sensitivity – buildings and associated deposits: The buildings erected on Block 17, Lots 16 and 17 (numbers 45 and 46 West Street) in the late 1840s may have had back yard infrastructure, but the footprint of the proposed pedestrian bridge is at the front portion of the lots, beneath the buildings. The building at number 46, used for commercial/industrial purposes from the 1850s, and the one at number 45, which was used as a residence as well as a storefront, both had basements. The building at 46 was substantially altered or replaced circa 1912. *There is little or no potential for deposits associated with pre-development use of the filled lots, or with the 19th-century occupants of the buildings, within the east end of the project area.* At the west end of the proposed pedestrian bridge, the 1873 Pennsylvania Railroad pier shed was constructed on pilings and stood on the east side of the 1871 bulkhead line. Its footprint was filled in following demolition in 1928. A narrow, concrete pier shed along the west side of Marginal Street was constructed as part of the new Pier 3 complex in 1929. The current project's west end footprint is within the interior of this later shed. There is little or no potential for significant remains of the 1973 pier shed within the relatively shallow foundation footprint of the proposed bridge. *The deeper Area of Potential Effect for the micropilings proposed for the pedestrian bridge is sensitive for remains of the 1873 Pennsylvania Railroad pier shed, specifically pilings.*

2.E. Prior Disturbance

Mid-19th-century construction at the east end of the proposed bridge would have disturbed the 1840s landfill to approximately 8 feet below the surface. The buildings that stood on the front part of Block 17, Lots 16 and 17 were demolished in the 1940s for construction of the Brooklyn-Battery Tunnel.

Prior disturbances to remnants of the original (1873) Pennsylvania Railroad Pier Shed include its demolition in 1928, with subsequent filling and construction of the bulkhead, Pier 3, a new concrete pier shed, and a section of Marginal Street. The 1929 pier shed was demolished for construction of the Battery Park City landfill in the early 1970s. The reconstruction of Route 9A in the late 1990s and the reconstruction following 9-11 involved various further disturbances for installation and subsequent removal of catch basins, utilities and landscape features, including most recently the concrete dog run and redesigned landscaping adjacent to the west end of the proposed bridge (Figures 24 through 28).

Prior disturbances to the deeper landfill are from installation of utilities and construction of the depressed ramp to the Battery Tunnel, which curves beneath West Street across the project area (see Figures 3 and 25). The deepest of the utilities is a 78" Intercepting Sewer, which runs under West Street at a depth of 19' and is built on pilings extending to bedrock. It is paralleled by 48", 20", and 12" water lines. A number of branching water lines are located at the intersection of West Thames and Joseph P. Ward Streets. Catch basins that were located near the west end of the proposed bridge were removed as part of the Route 9A Reconstruction Project. Gas and electric lines are also present below grade, though at shallower depths. Despite these deep disturbances, undisturbed portions of the landfill remain within the project Area of Potential Effect.

3. CONCLUSIONS AND RECOMMENDATIONS

It is the conclusion of this Archaeological Documentary Study that the proposed West Thames Street Pedestrian Bridge will potentially impact one archaeological resource that has been determined to meet eligibility criteria for inclusion in the National Register of Historic Places and is a potential New York City Landmark, the Hudson River Bulkhead. It is further concluded that the project may impact as-yet unknown resources, such as old piers, cribbing, bulkheads, and other objects contained in landfill dating to the 1840s and later.

These archaeological resources are subject to potential project effects from the installation of the support micro-pilings for the pedestrian bridge (see Appendix B). A 1929 section of the Hudson River Bulkhead lies to the west of the west end of the bridge, and may be penetrated by micropilings drilled at angles. Historic landfill and landfill retaining structures may lie deeply buried beneath the east, central, and west supports of the bridge. The micro-pilings will extend deeper into the landfill than any prior disturbances except for the pilings for the 78" Intercepting Sewer. Construction of the foundations at the east and west ends and central support for the proposed bridge is not likely to impact significant historic resources due to prior disturbance.

The use of micro-pilings was adopted so as to minimize potential impacts to potentially historically sensitive subsurface remains. The nature of the anticipated impacts –drilling for the 10-inch diameter micropilings – rules out conventional archaeological testing or monitoring.

Because the proposed project is federally funded, an Environmental Review submission was made to the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) for State Historic Preservation Officer comments. The response is included below in Appendix A. Due to the infeasibility of conducting archaeological testing of the APE for the micropilings, educational outreach was suggested as a means of mitigating any possible Adverse Effects from the undertaking.

It is recommended, as per the suggestion of the OPRHP, that signs be created for installation on or adjacent to the bridge, that will explain the process of landfilling along the Hudson River in this part of Manhattan. The signs should be designed with text and graphic content geared to the general public, drawing on the information produced for recent projects nearby and the current project.

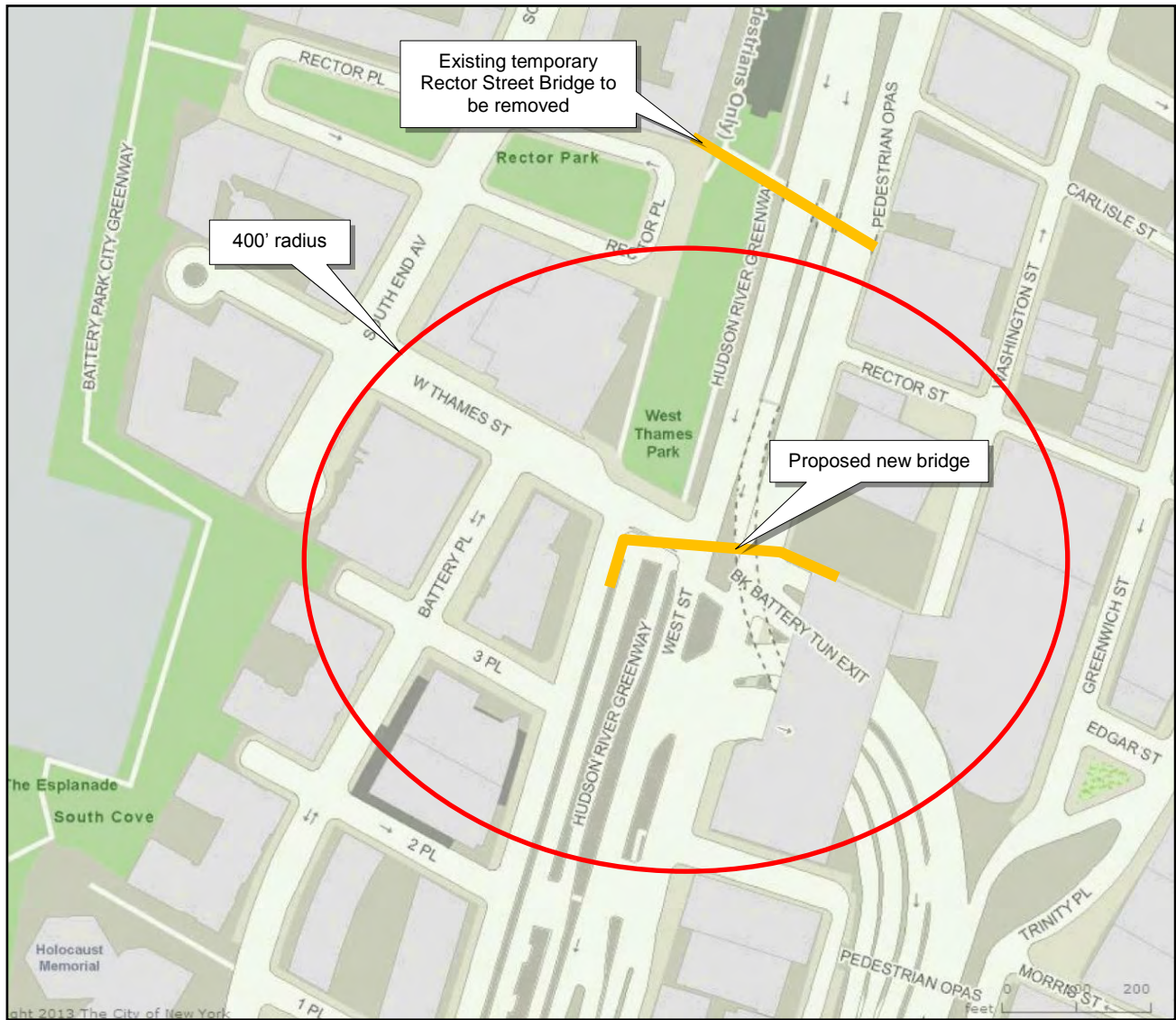


Figure 2. Project locations with 400-foot radius around proposed new construction.

2005 Certified Sanborn Map

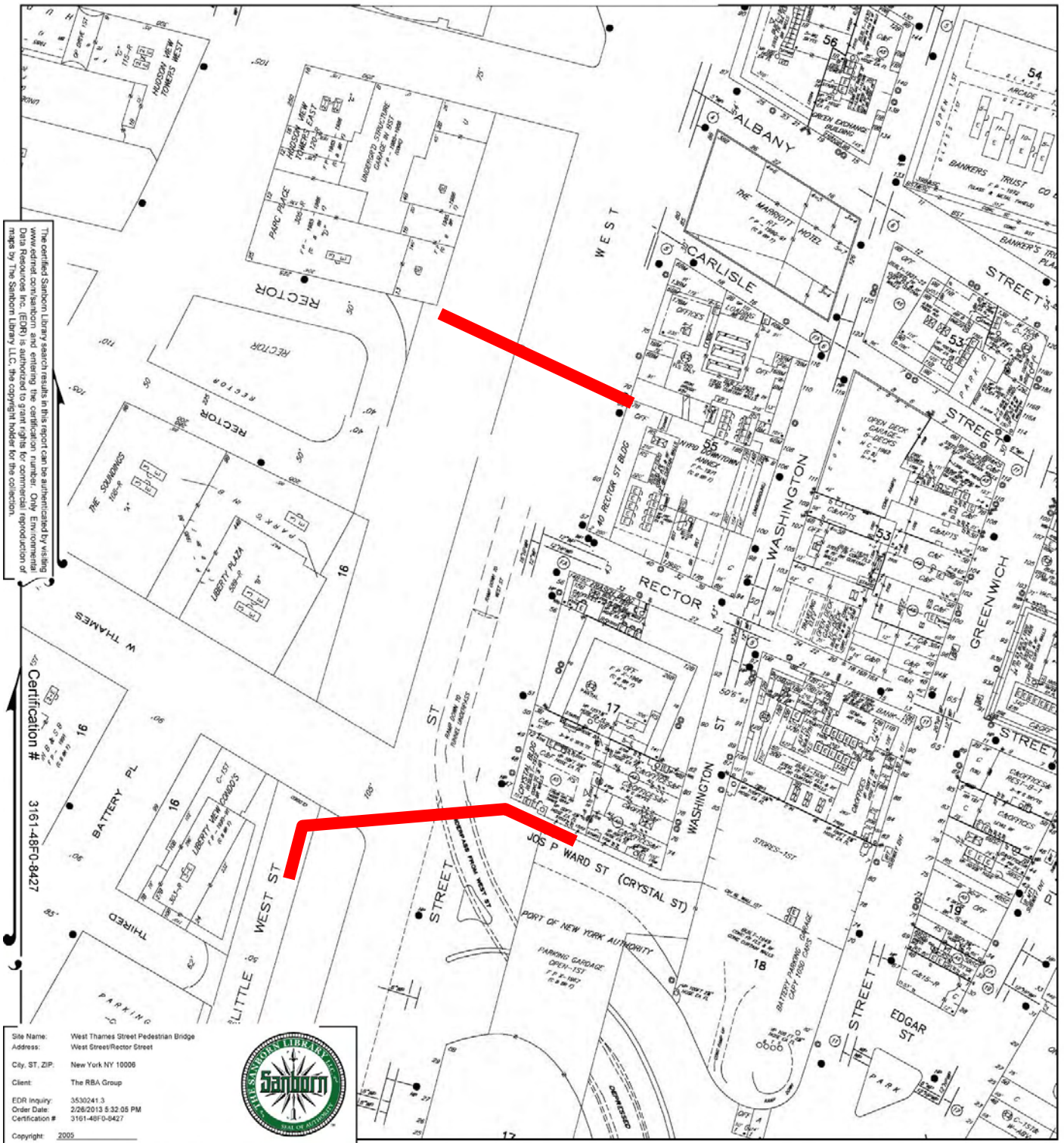


Figure 3. Project Location, 2005 Sanborn Map.

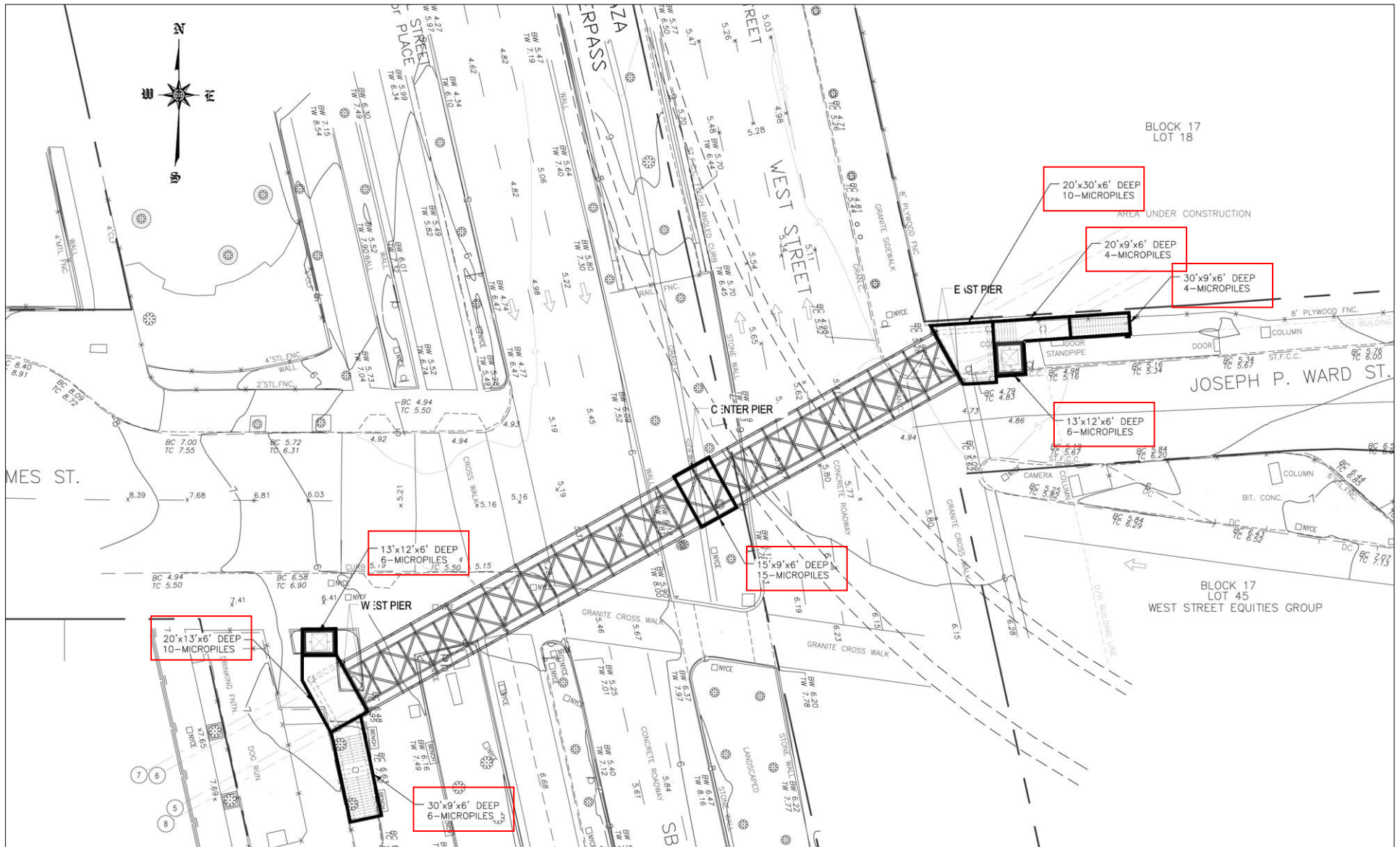


Figure 4. Detail of Disturbance Plan, Proposed West Thames Street Pedestrian Bridge. Source: Weidlinger Associates, Inc., Schematic Design Report (see Appendix B).

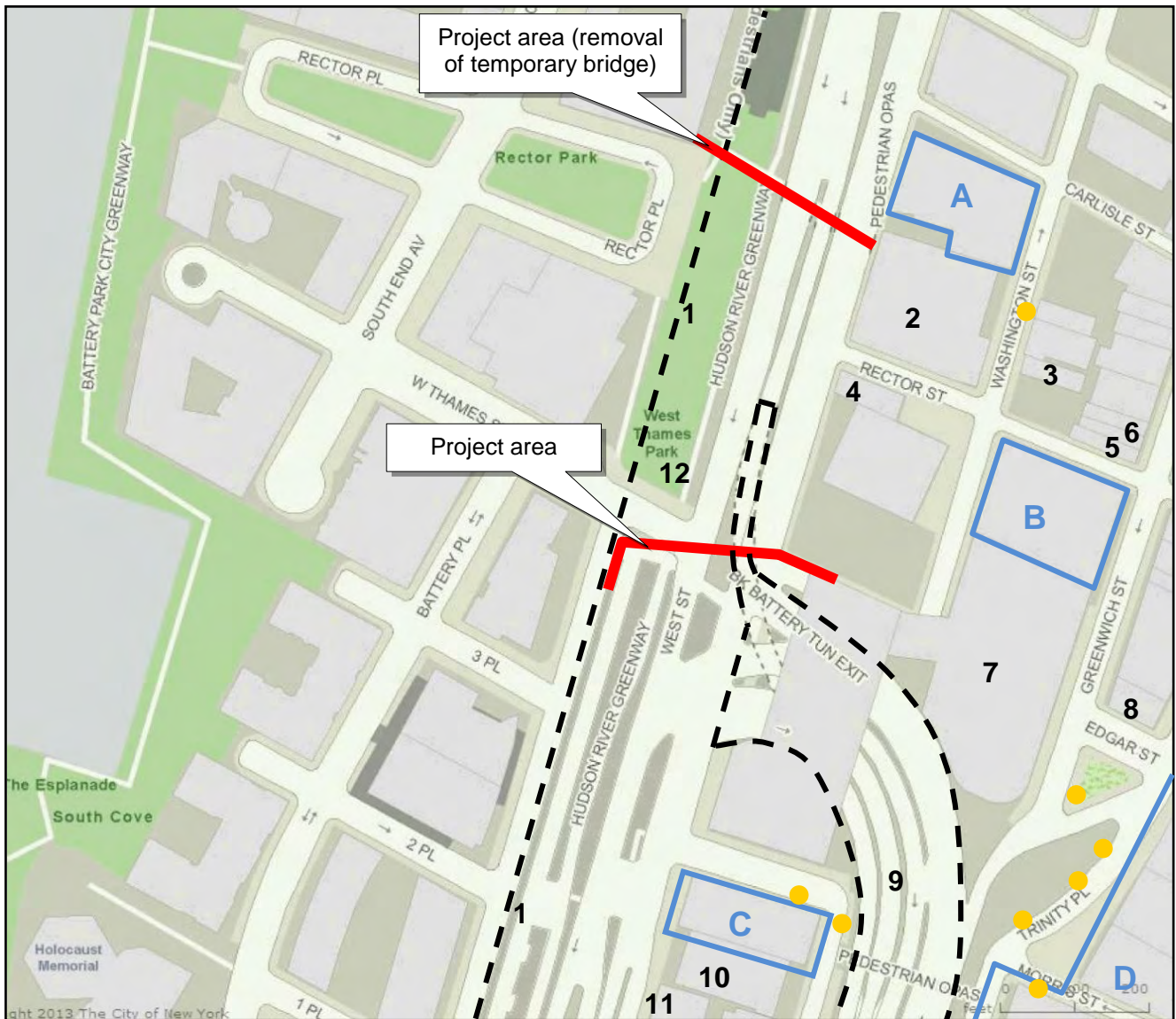


Figure 5. National Register Listed and Eligible Resources.



Figure 6. Detail from map of New York published by David Longworth in 1817 (Stout 1817). Project area circled.



Figure 7. Detail from map of New York in 1844 (Tanner 1844). Arrow points to project site.



Figure 8. Detail from map of New York in 1846 (Burr 1846). Arrow points to project site.

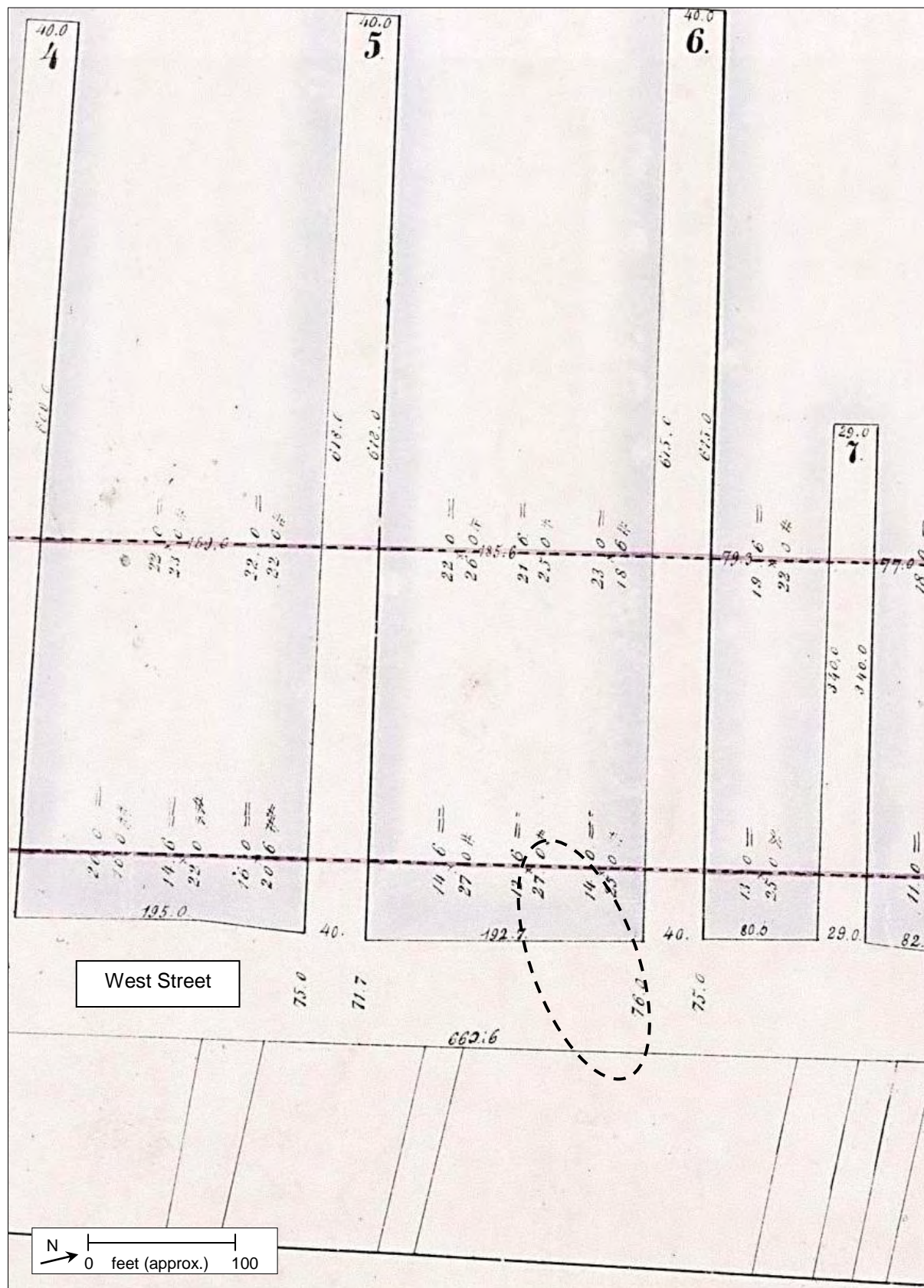


Figure 9. Detail from Map of Wharves and Piers on North River... (Smith 1850). Portion of survey showing Old Piers 4, 5, 6 and 7. Depths below the high water mark are shown for water (==) and mud (#). The project area (circled) is partially in the water, just south of Pier 6. The water here was 12-14 feet deep, and the mud extended to 25-27 feet.



Figure 10. Detail from Perris Map of 1857 showing Block 17 between West and Washington Streets (Perris 1857). The project alignment is shown with dashed white line.

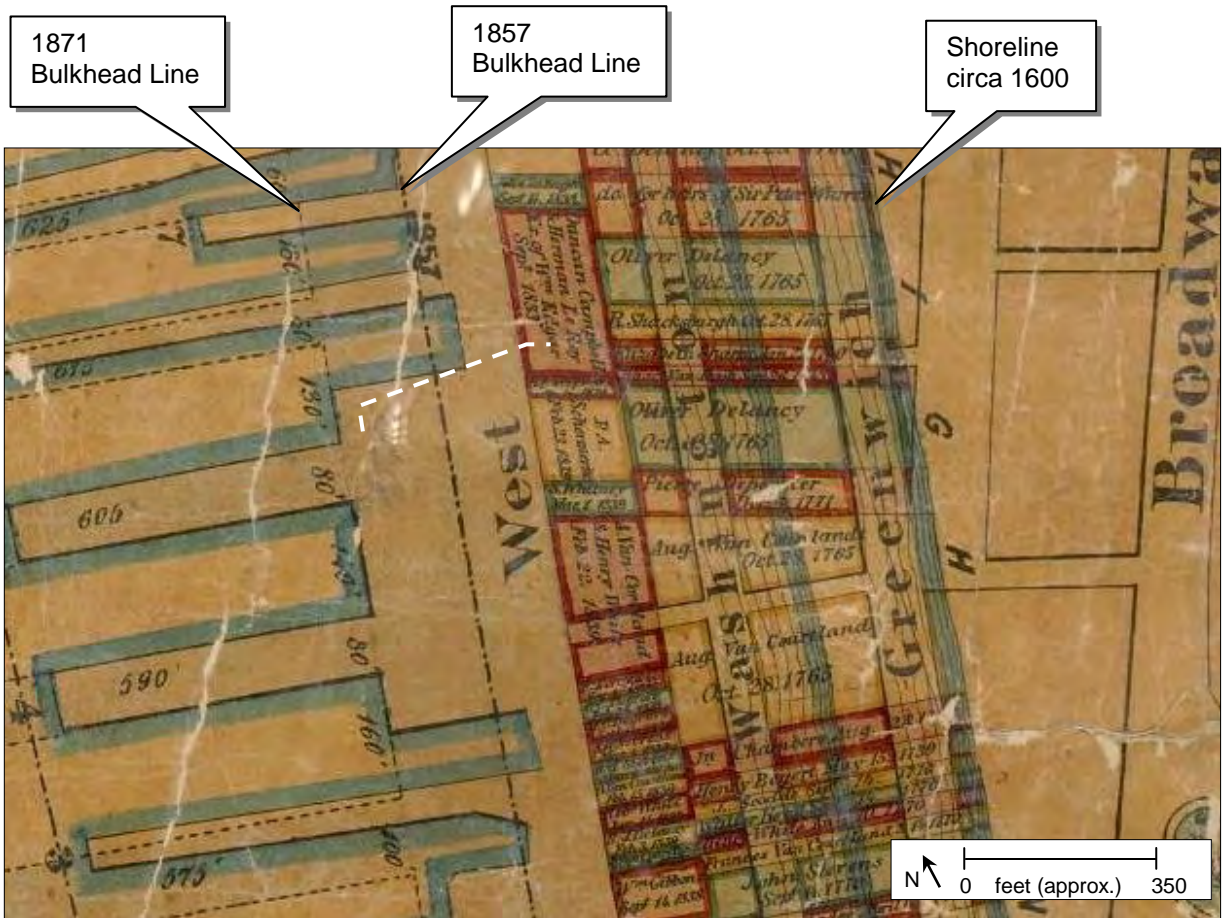


Figure 11. 1873 New York City Department of Docks Map Showing the High and Low Water Mark and the Original City Grants Under Water... (Keiller 1873). The Pennsylvania Railroad pier complex included Piers 4 and 5 and a large pier shed extending from West Street to the 1871 bulkhead line (just west of the word “West”). The property at the east end of the proposed bridge was granted to Duncan Campbell & Herman LeRoy, executors of William Edgar, in 1839.

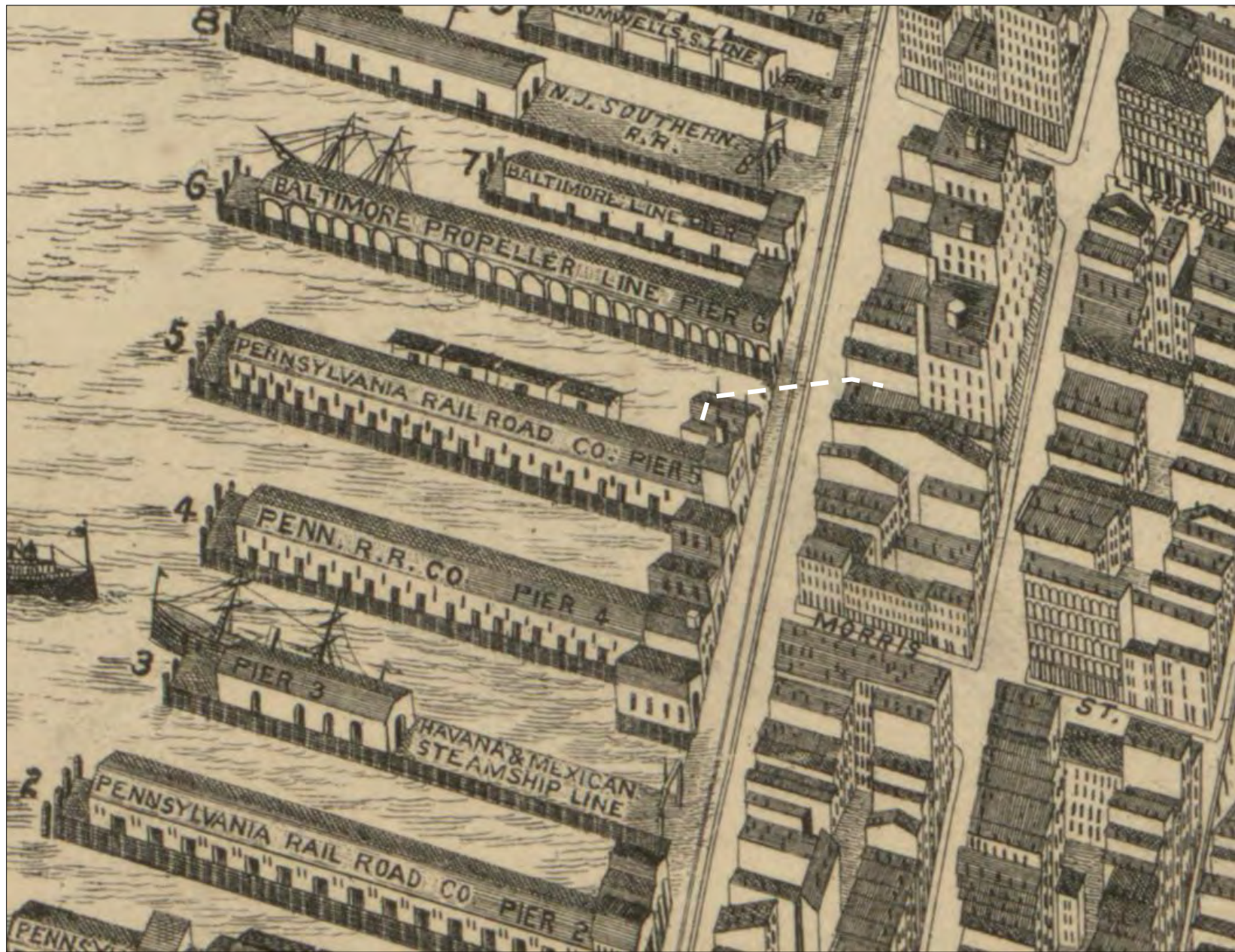


Figure 12. Detail from the Will L. Taylor bird's-eye view of New York in 1879. The six adjoining buildings at the head of the Pennsylvania Railroad piers (Piers 4 and 5) were on pilings, occupying space between West Street and the new (1871) bulkhead line. The project area is shown with dashed white line.



Figure 13. 1885 insurance map showing the east side of West Street (Robinson and Pidgeon 1885). Project alignment shown with dashed white line.

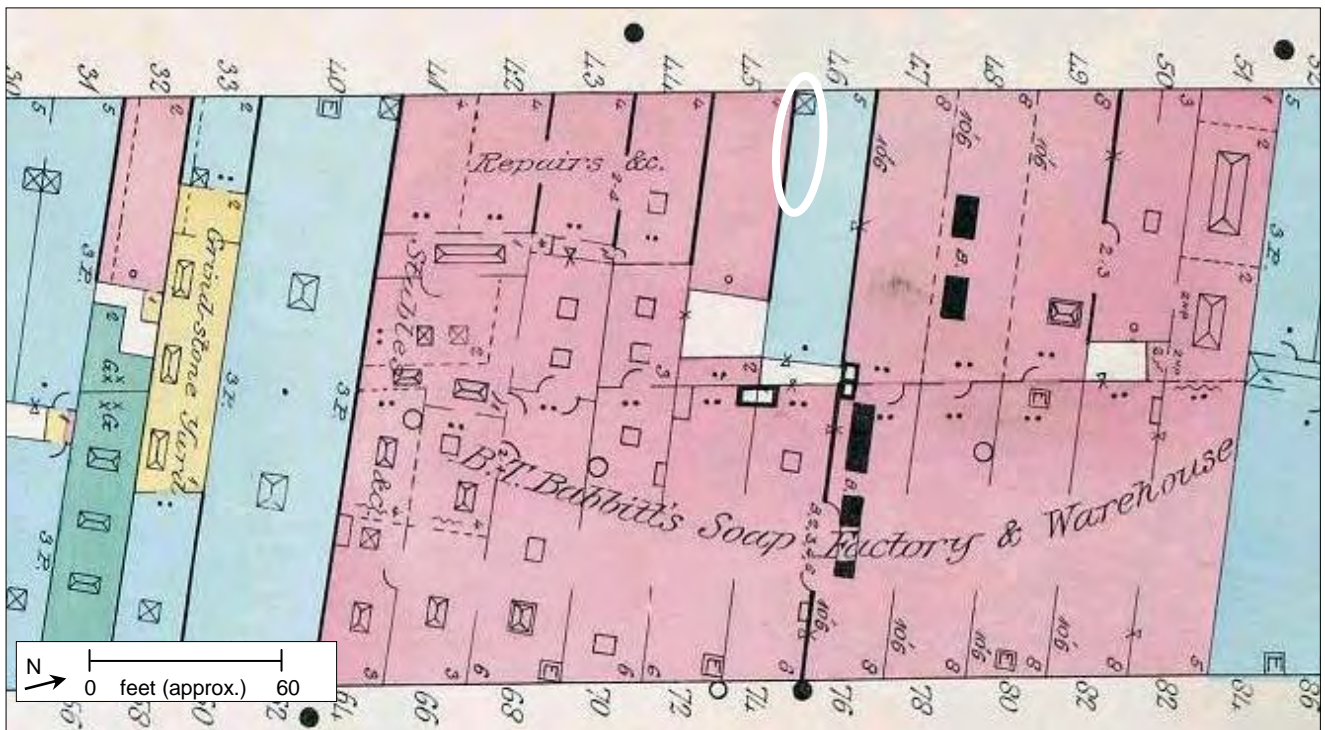


Figure 14. 1894 Sanborn Map showing the east side of West Street. The smaller buildings at numbers 45 and 46 were subsumed within the Babbitt Soap Factory & Warehouse. Immediately adjacent at 47-49 West Street was an 8-story structure that was built 1882-1885 and later would become known as the "Crystal Building," which remained standing until 2008. The east end of project area is circled.

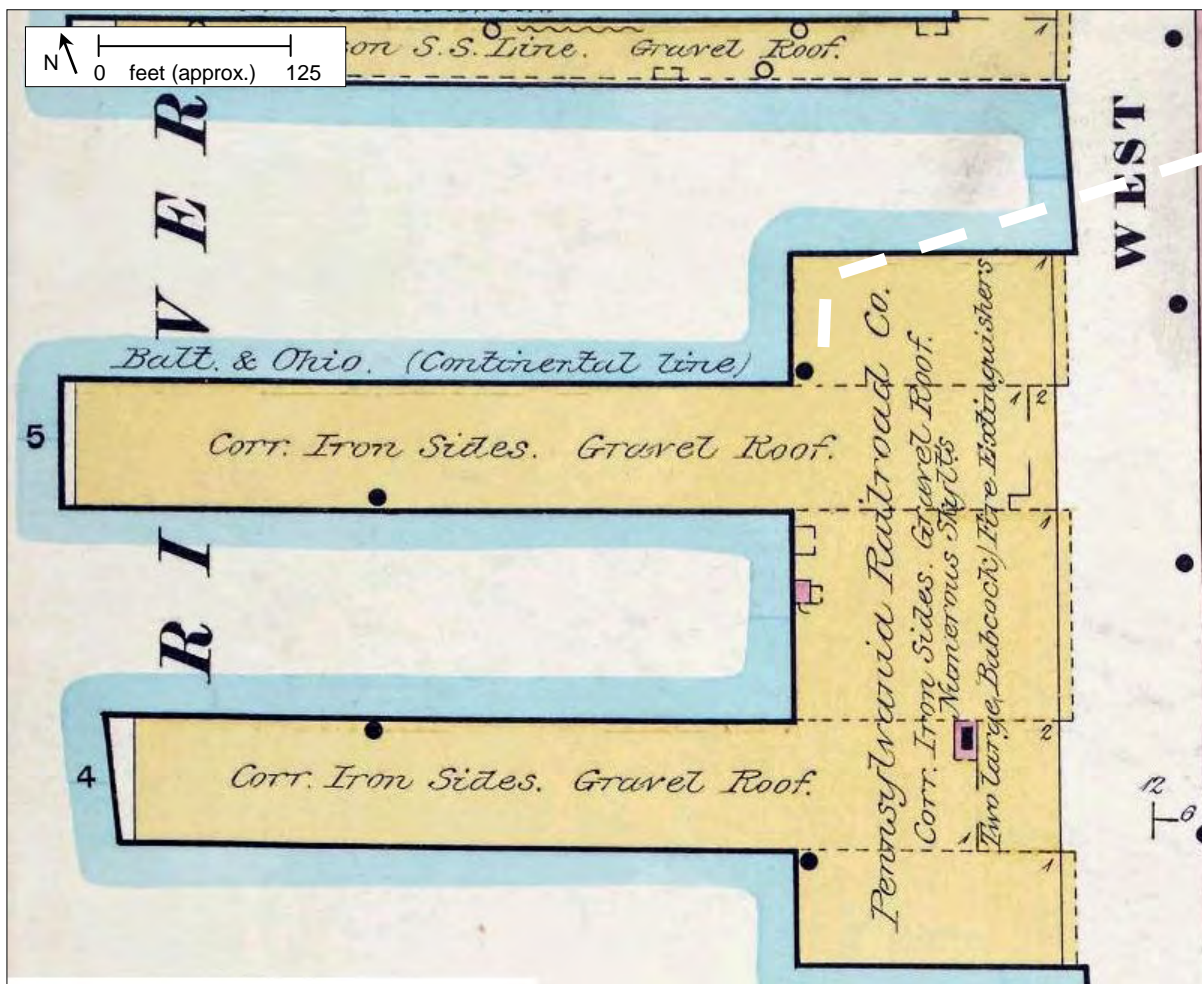


Figure 15. Sanborn Map Company map of piers in 1894. The large Pennsylvania Railroad Co. pier warehouse had corrugated iron sides, a gravel roof, and numerous skylights.

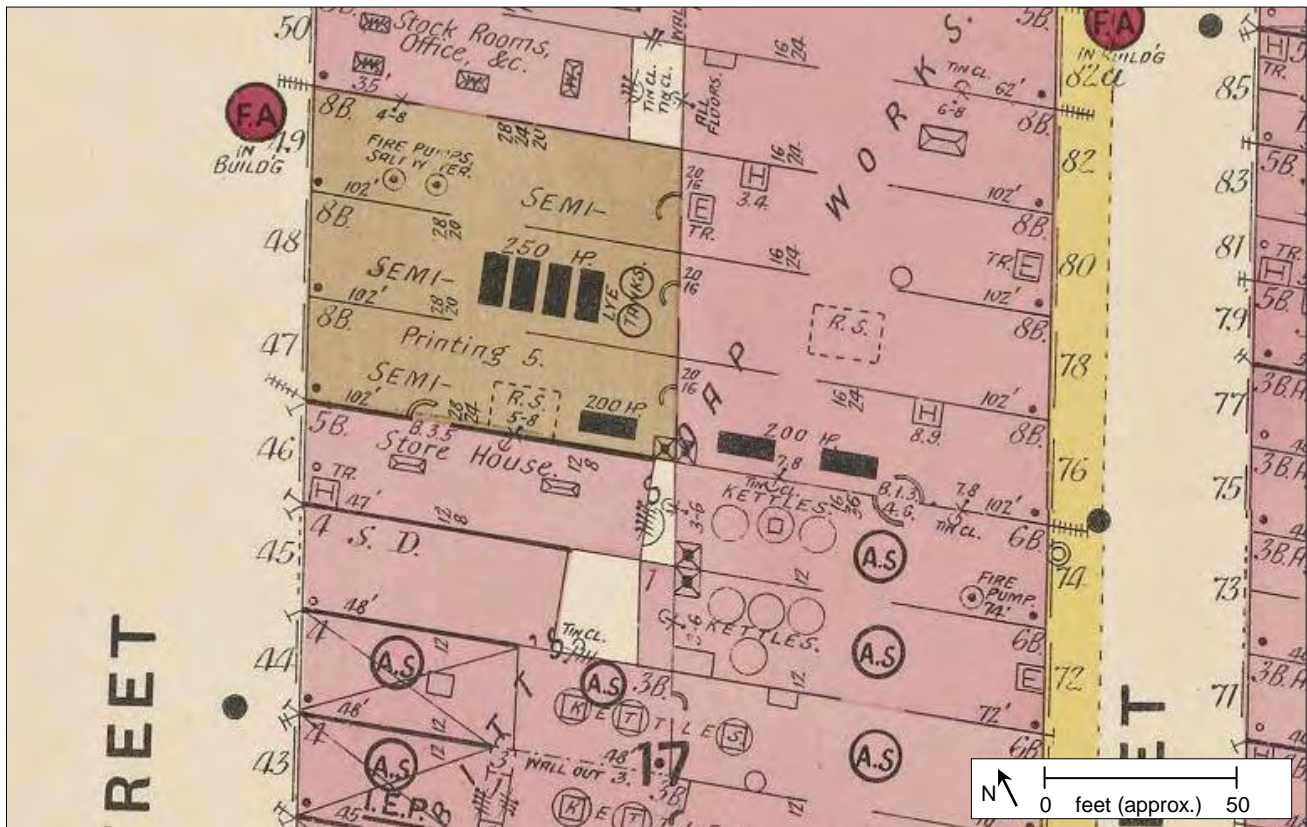


Figure 16. Sanborn Map of 1905 showing the central part of Block 17, between West Street (left) and Washington Street (right). Number 46 West Street was shown as a 5-story building with a basement.

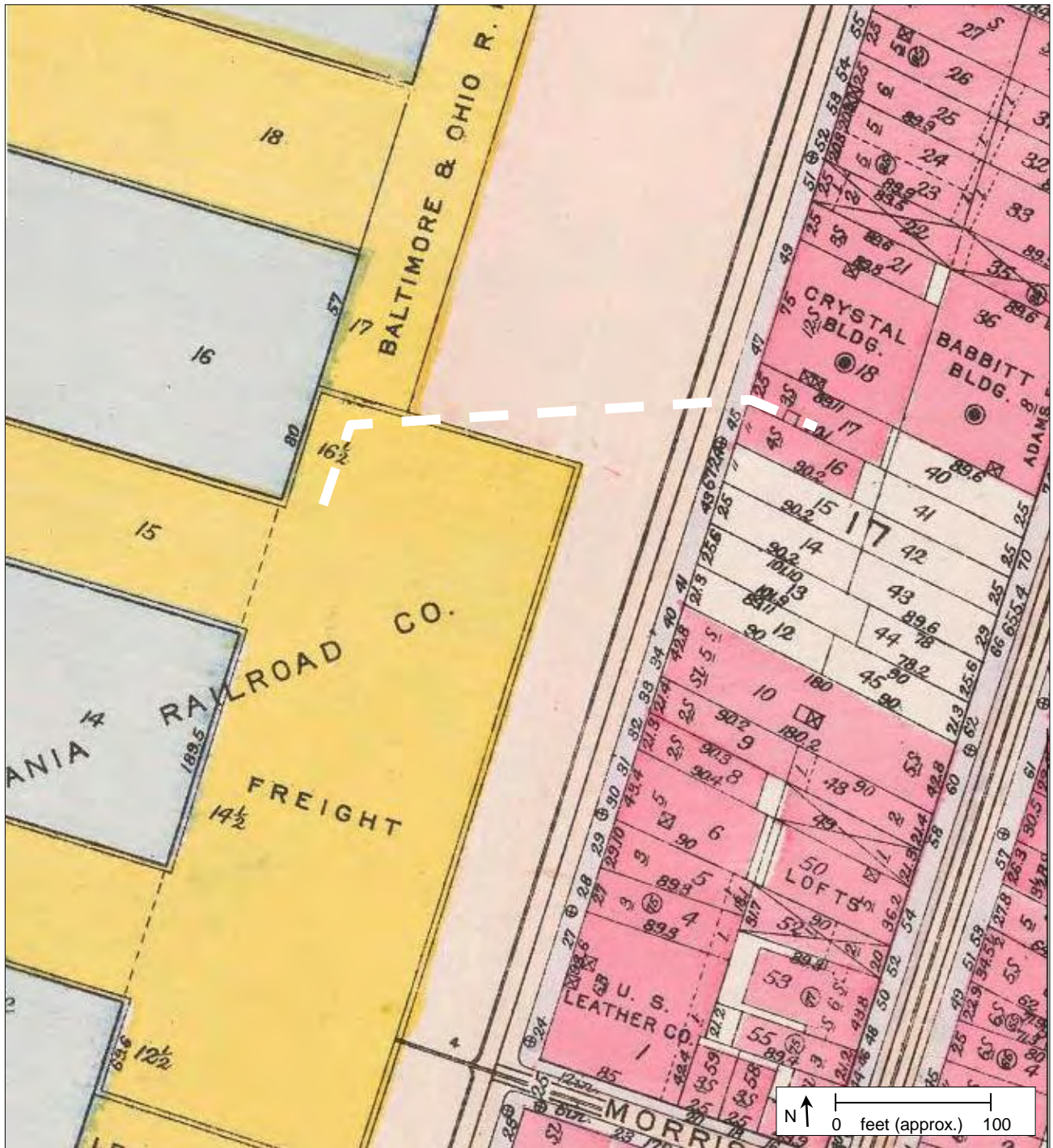


Figure 17. G.W. Bromley Atlas of 1916. The project alignment is shown with a dashed white line.



Figure 18. 1925 photograph of the rear of number 45 West Street. Source: New York Public Library, "45 West Street..."



Figure 19. 1924 view of project area. The 6-bay dark-roofed structure at center is the Pennsylvania Railroad pier shed. The arrow points to number 45 West Street. Note the empty lots. Source: Aerial Photography of New York City.



Figure 20. 1929 view of fill at Pennsylvania Railroad pier complex, demolished in 1928. For orientation, the arrow points to 46 West Street. Source: New York Public Library, "West Street, north across Morris Street."

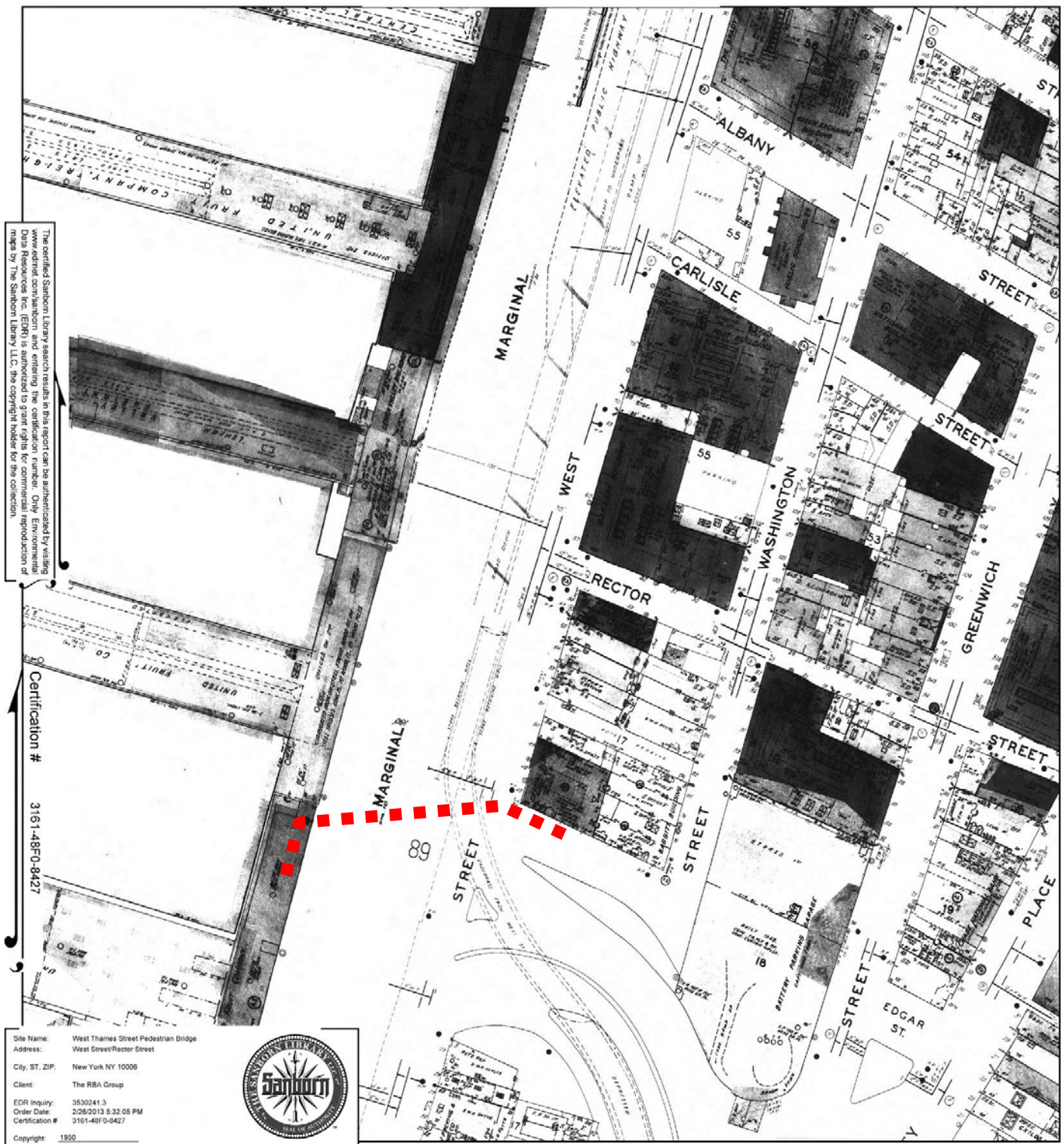


Figure 21. 1930 photograph showing the newly-completed Pier 3 and pier shed along Marginal Street (Fairchild Aerial Surveys 1930). Dashed white line shows project location.

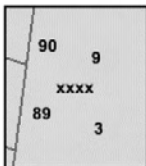


Figure 22. Two views of 45 and 46 West Street in 1927 (left) and 1937 (right). Note wide cobbled width of West Street in the photograph at right. The proposed pedestrian bridge will be mainly within the footprint of #46. The elevator will be within the former front west corner of #45. Source: New York Public Library, “45-46 West Street...” and “The Same at a later date.”

1950 Certified Sanborn Map



This Certified Sanborn Map combines the following sheets.
Outlined areas indicate map sheets within the collection.



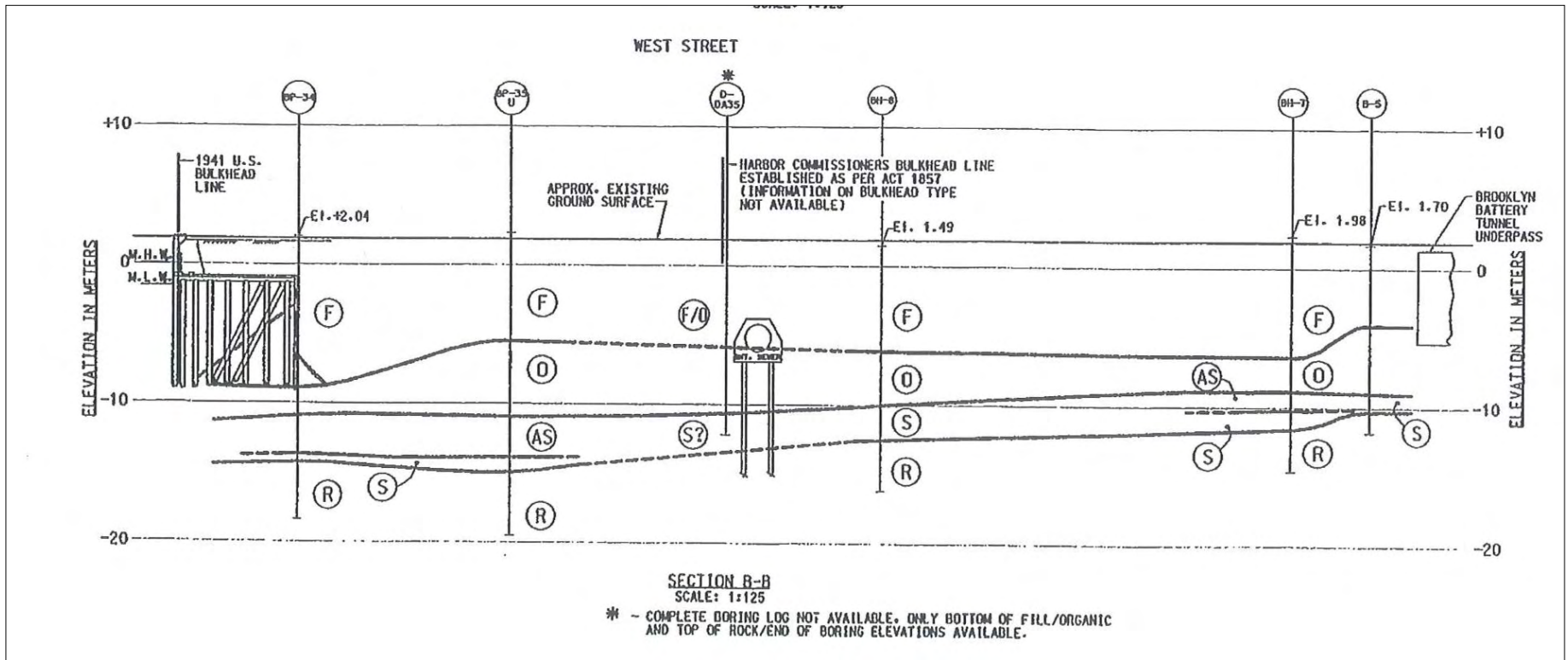
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Volume 1S, Sheet 9
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Volume 3, Sheet xxxx
Volume 1S, Sheet xxxx

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3530241 - 3 page 31

Figure 23. Sanborn Map of 1950. Project Location shown with dashed red line.



- (F) Miscellaneous fill
- (O) Organic silt and clay
- (AS) Alluvial sand
- (S) Glacial outwash sand and glacial till
- (DR) Decomposed rock
- (R) Bedrock

Figure 24. Soil boring and subsurface information, profile across the project area (west to east) (New York State Department of Transportation 2004). The rendering of the bulkhead is as depicted in Raber 1997.

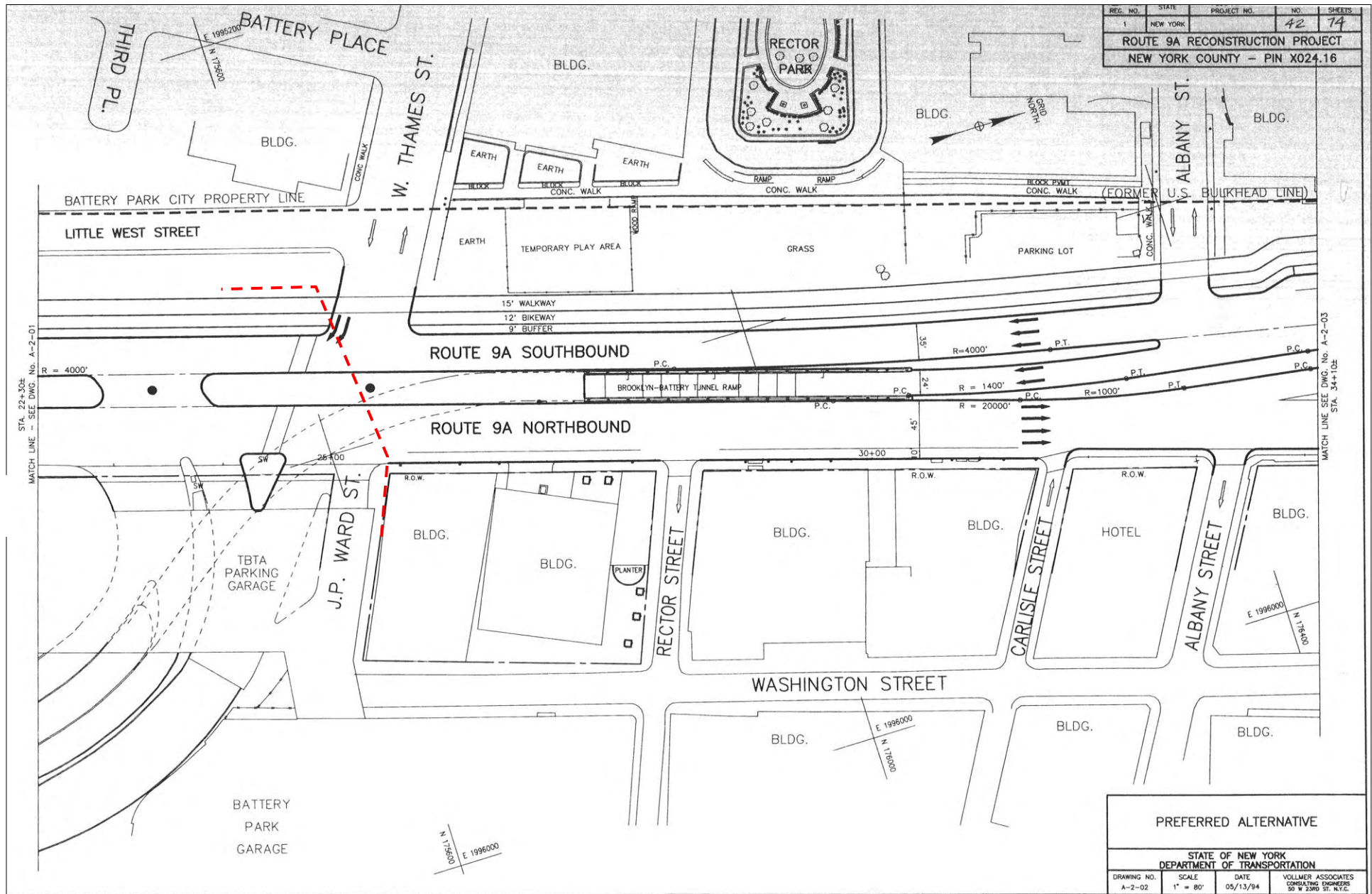


Figure 25. Plan for Reconstruction of Route 9A, 1994. Project alignment shown with dashed line. From the Route 9A Final Environmental Impact Statement, Appendix A, Technical Engineering Drawings (New York State Department of Transportation 1994).

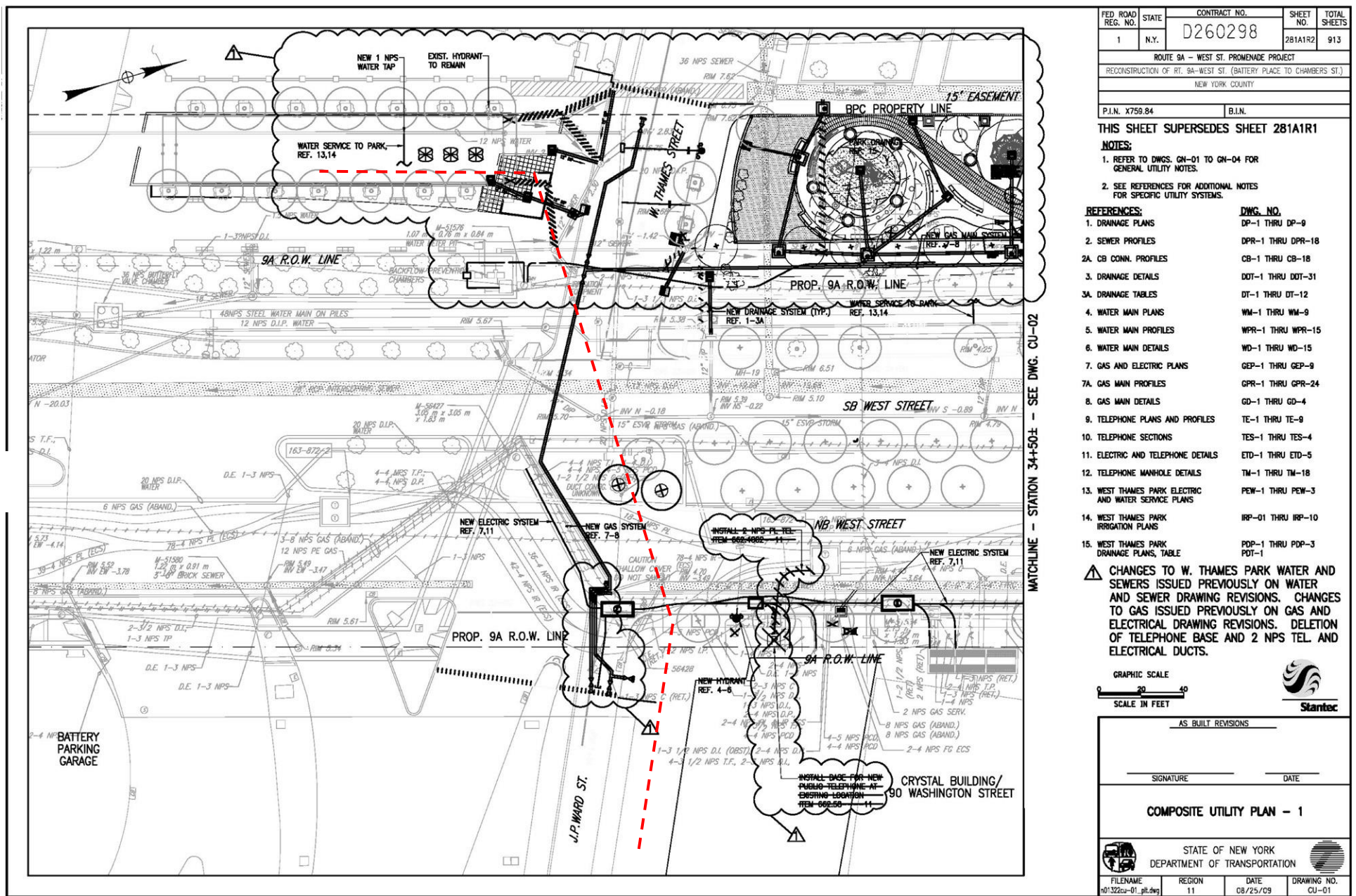


Figure 27. Composite Utility Plan. Project alignment shown with dashed line. Route 9A Reconstruction Project (New York State Department of Transportation 2009).

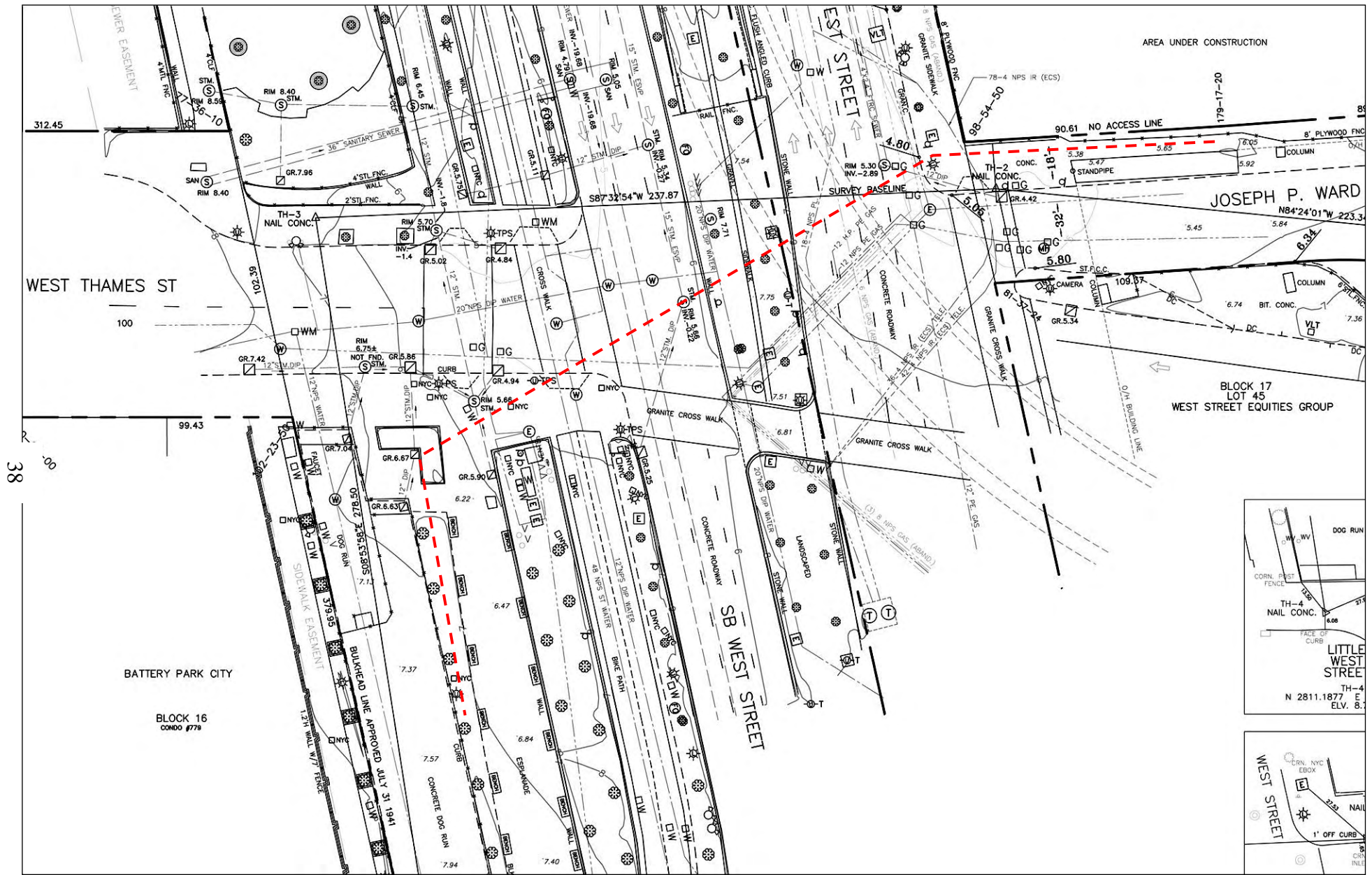


Figure 28. Existing topography and utilities in project area. Project alignment shown with dashed line (The RBA Group, 2013).

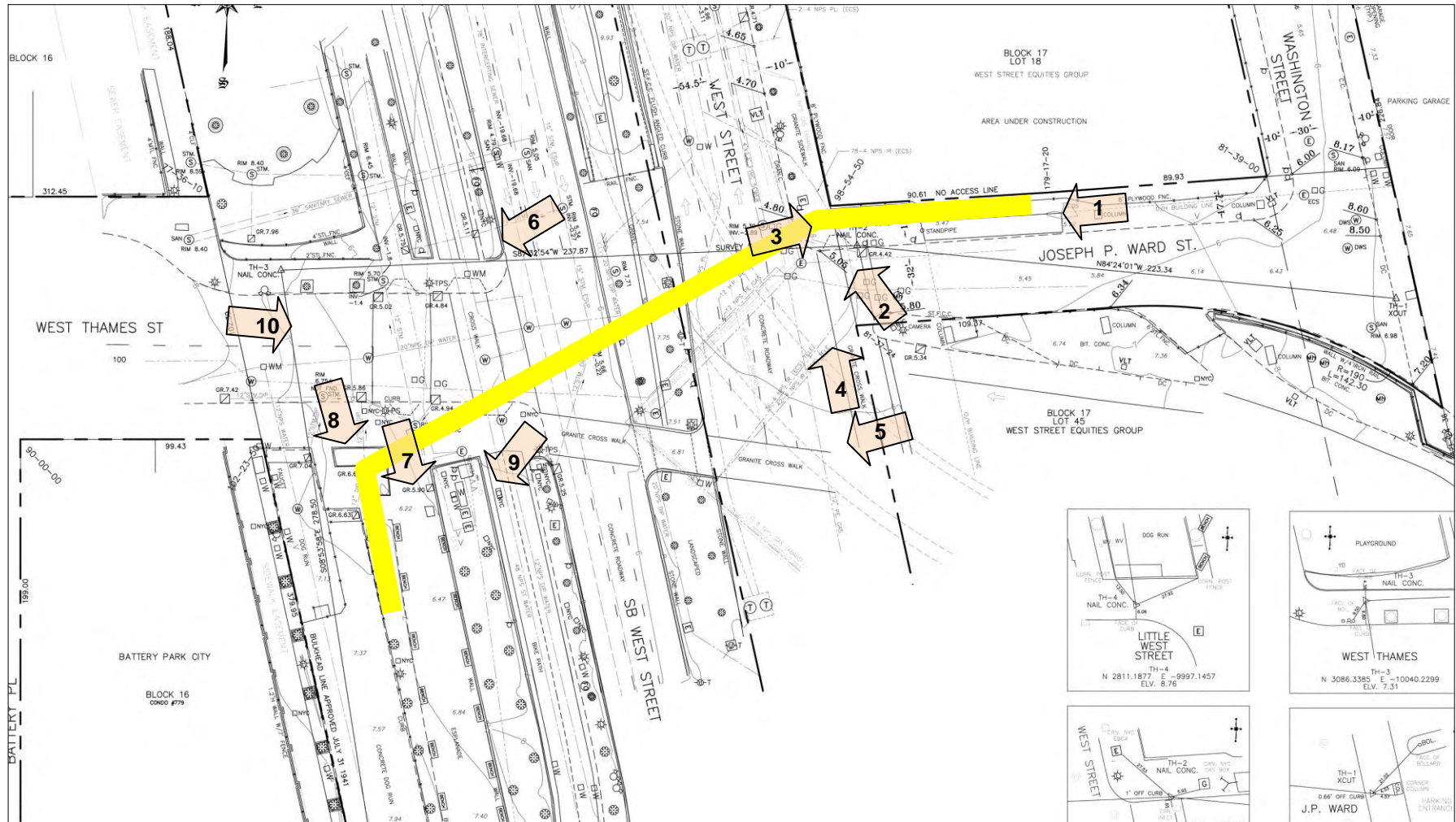


Figure 29. Key to photo locations.



Plate 1. View to west between garage wall and 50 West Street construction site.



Plate 2. View to northwest at corner of Joseph P. Ward St. and West St.



Plate 3. View to northeast at corner of Joseph P. Ward St. and West St. Fence is for construction site at 50 West Street.



Plate 4. View to north from southeast corner of Joseph P. Ward St. up West St.



Plate 5. View to west across West St.



Plate 6. View to southeast from West St. median.



Plate 7. View to south along esplanade on west side of West St.



Plate 8. View to south along esplanade on west side of West St. showing dog run.



Plate 9. View of landscaped island within esplanade with utilities.



Plate 10. View to east from center of West Thames St.

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APPENDIX A

Review Letter from New York State Office of Parks, Recreation and Historic Preservation



Andrew M. Cuomo
Governor

Rose Harvey
Commissioner

New York State Office of Parks, Recreation and Historic Preservation

Division for Historic Preservation
Peebles Island, PO Box 189, Waterford, New York 12188-0189
518-237-8643
www.nysparks.com

April 16, 2013

Jean Howson
Principal Archaeologist
The RBA Group
7 Campus Dr., Suite 300
Parsippany, New Jersey 07054
(via e-mail only)

Re: HUD
West Thames Street Pedestrian Bridge
Over West St.(Route 9A) (at Battery Tunnel Entrance),
Manhattan, New York County
13PR01251

Dear Ms. Howson:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic resources.

We have reviewed the submission and understand that the proposed project consists of two distinct project areas. The removal of the temporary pedestrian bridge at Rector Street is adjacent to National Register Listed New York Evening Post Building at 75 West Street and the National Register Eligible Barrett Building at 40 Rector Street/57-69 West Street. The bridge runs over the National Register Eligible Pier 7 Complex Site at West Thames Park. The proposed new pedestrian bridge is located adjacent to four historic resources including: National Register Eligible (NRE) Frasci Building at 56 West Street/33 Rector Street, the NRE Battery Garage at 56 Greenwich Street, the NRE Brooklyn Battery Tunnel, and the NRE Pier 7 Complex Site.

We note that that conceptual design of the proposed pedestrian bridge includes a stairway and elevator connection along Joseph P. Ward Street, a lenticular truss bridge with a single mid-span pier placed in the median of West Street, and an elevator and stairway or 200' long ramp and a stairway running south from the bridge between Little West Street and the adjacent dog run.

Vibration, removal, and new construction effects will need to be addressed at the two projects site locations. As noted in the submission, potential effects of the bridge removal to the New York Evening Post Building were previously addressed in Stipulation 6 of the Amended Programmatic Agreement for the Route 9A project.

Based upon this review, it is the SHPO's opinion that your project will have No Adverse Effect upon cultural resources in or eligible for inclusion in the National Registers of Historic Places provided that the following conditions are met:

1. Should Stipulation 6 of the Amended Programmatic Agreement for the Route 9A project not be utilized, a construction protection plan for all historic buildings within 90 feet of the proposed construction and removal activities is recommended. This plan should be created in accordance with the requirements stipulated in the New York City Department of Buildings, "Technical Policy Procedure Notice #10/88".
2. Archeological Resources: After reviewing the submitted information and considering experience gained from nearby projects, it does appear that the deeper pilings required by the proposed project may have the ability to affect deeply buried structural archaeological features related to the early landfilling and development of Manhattan. Recent work associated with the reconstruction of the World Trade Center and surrounding areas has sampled similar structures and is providing a better overall understanding of this process. Although it is possible that the current project will have an Adverse Effect on similar structures, the nature of the proposed work does not make it feasible to conduct proper archaeological examination of whatever resources may be within the APE. Therefore, we suggest that rather than attempting to identify if similar resources are present, it would be more feasible to consider developing and educational opportunity which would help explain this process to the public. A project such as compiling the information produced recently at adjacent projects, and using it to develop educational signage that could be displayed on the bridge would serve to mitigate any Adverse Effects that the piles may have on buried structures, as well as serving as a way to better educate the public about the historic processes which formed this area of Manhattan as it is known today. Please contact Douglas Mackey at (518) 237-8643 x 3291 should you have any questions.
3. Proposed bridge drawings shall be submitted to our office for review and comment at the pre-final stages of development. Drawings shall include the street elevation.
4. If there are substantive changes to the project or these conditions cannot be met, consultation with our office should resume.

If further correspondence is required regarding this project, I can be reached at (518) 237-8643, ext. 3260 or at eric.kuchar@parks.ny.gov. Please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric Kuchar", with a horizontal line extending to the right.

Eric N. Kuchar
Weatherization Specialist

APPENDIX B

Excerpts from Schematic Design Report



Schematic Design Report. Contract No. 53340001

WEST THAMES ST. PEDESTRIAN BRIDGE

April 29, 2013

PREPARED FOR:



PREPARED BY:





NYC EDC
WXY/WEIDLINGER

West Thames Street Pedestrian Bridge
4/23/2013

PROPOSED LAYOUT – Aerial View
NTS



WXY
architecture + urban design

RBA

WCA

vda

LIGHT
LENI SCHWILDLINGER

WEST THAMES PEDESTRIAN BRIDGE



New York City Economic Development Corp.



Wedinger Associates, Inc.
Civil Engineers
45 West Street, New York, NY 10012
Phone: 212-512-2222

WXY architecture + urban design

20 Canal Street
New York, NY 10013
Phone: 212-512-5453
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Design / Construction



The RBA Group - New York
111 West Street, New York, NY 10012
Phone: 212-512-5453



WCA
Shaw-Cohen Associates
Consulting Engineers, LLC
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Phone: 212-512-5453
Fax: 212-512-5453



LIGHT
111 West Street, New York, NY 10012
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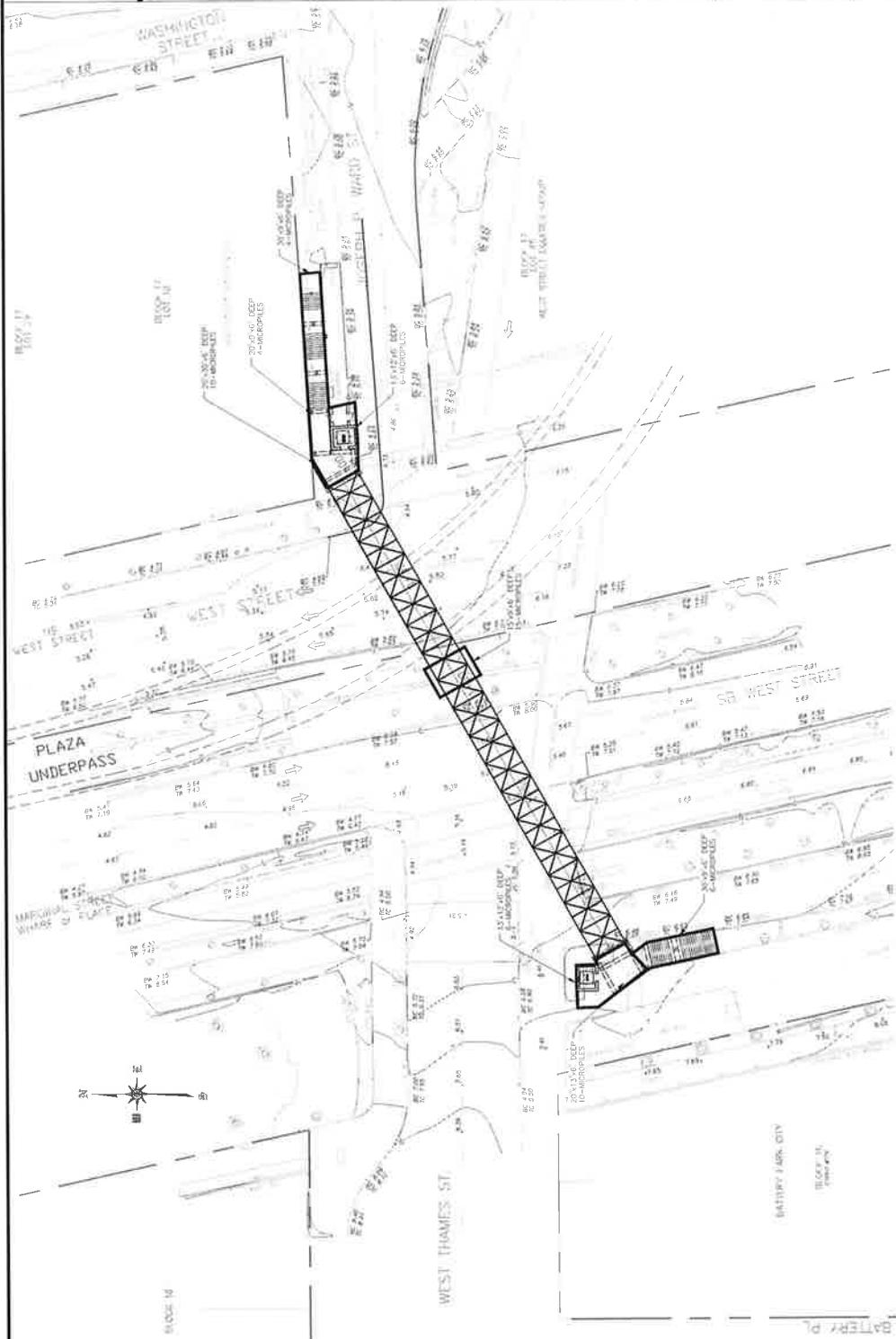
vda
VDA Associates, Inc.
111 West Street, New York, NY 10012
Phone: 212-512-5453
Fax: 212-512-5453

111 West Street



Scale: 1" = 100'

NOTE:
THE DISTURBANCE PLAN IS SUBMITTED AS
AN INDICATIVE TOOL TO PRELIMINARILY
ASSOCIATE THE AREA OF EXCAVATION AND
NUMBER OF PILES ARE UPPER-BOUND ESTIMATES



PRELIMINARY EXCAVATION LIMITS AND NUMBER OF MICROPILES
SCALE 1/16"=1'-0"

DISTURBANCE AREA PLAN

Sheet No.	111-111-111	Sheet No.	111-111-111
Date	11/11/11	Date	11/11/11
Scale	1" = 100'	Scale	1" = 100'

Sheet No. **D-01** of **004**

WEST THAMES PEDESTRIAN BRIDGE



New York City Department of Transportation

WYX Associates, Inc.
Civil Engineering
40 West Street, New York, NY 10003
Phone: 212-697-8000
WYX@NYCDOEDOT.GOV

W X Y architecture + urban design
34 Canal Street
New York, NY 10013
Phone: 212-512-3100
Fax: 212-512-4800

Engineer of Record: W X Y Associates

RBA The RBA Group - New York
770 Madison Avenue, New York, NY 10017-1001
Phone: 212-697-8000

WCA WCA Associates
Civil Engineering
40 West Street, New York, NY 10003
Phone: 212-697-8000
Fax: 212-697-8000

LIGHT LIGHT
110 West Street, New York, NY 10003
Phone: 212-697-8000
Fax: 212-697-8000

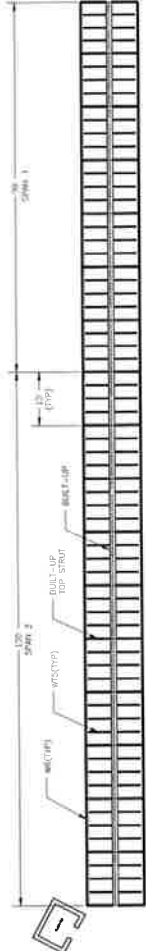
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110 West Street, New York, NY 10003
Phone: 212-697-8000
Fax: 212-697-8000



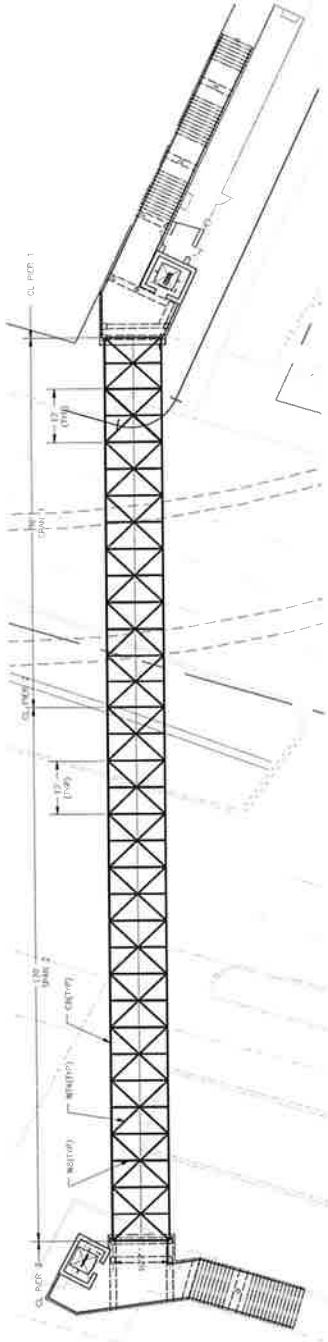
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**BRIDGE DECK AND ROOF
FRAMING PLAN AND ELEVATION**

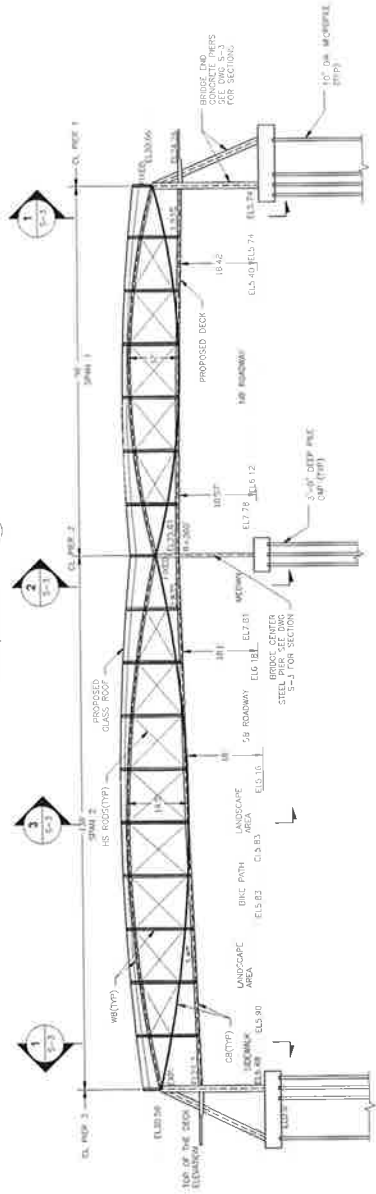
Sheet No. **S-02** of **011**



ROOF FRAMING PLAN
SCALE 3/32" = 1'-0"



DECK FRAMING PLAN
SCALE 3/32" = 1'-0"



GENERAL SOUTH ELEVATION
SCALE 3/32" = 1'-0"

NOTES:
1. ALL ELEVATIONS ARE IN FEET.