2003
5151M

HISTORICAL PERSPECTIVES INC.

5151M

ADDENDUM
PHASE 1A ARCHAEOLOGICAL ASSESSMENT
SECOND AVENUE SUBWAY

March 12, 2003

Re: New Project Elements

This addendum refers to Chapter 7, "New Project Elements" of the *Second Avenue Subway Phase 1A Archaeological Assessment*, March 12, 2003.

Since completion of the *Second Avenue Subway Phase 1A Archaeological Assessment*, five potential project elements, not previously assessed in the Phase 1A, have required archaeological evaluation. These project elements are as follows:

- A subterranean pedestrian passageway on East 53rd Street west of Second Avenue to connect to the E/V trains at Third Avenue and 53rd Street;
- A subterranean pedestrian passageway on East 42nd Street between Second and Third Avenues to connect to the No. 7 train;
- A subterranean pedestrian passageway on East 14th Street west of Second Avenue to connect to the Third Avenue L station;
- Ancillary station facilities on Broome Street between Chrystie Street and Bowery for the project's Deep Chrystie Option;
- Ancillary station facilities on Grand Street between Chrystie Street and Bowery for the project's Deep Chrystie Option.

The archaeological evaluations of these project elements are presented in this addendum as Sections 7.8-7.12, as follows:

Section 7.8	East 53rd Street: Pedestrian Connection
Section 7.9	East 42nd Street: Pedestrian Connection
Section 7.10	East 14th Street: Pedestrian Connection
Section 7.11	Broome Street: Deep Chrystie Option Ancillary Station Facilities
Section 7.12	Grand Street: Deep Chrystie Option Ancillary Station Facilities

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ADDENDUM
PHASE 1A ARCHAEOLOGICAL ASSESSMENT
SECOND AVENUE SUBWAY
MARCH 12, 2003

Summary Table
Chapter 7, Section 7.8 – Section 7.12

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Section 7.8: East 53rd Street Pedestrian Connection			
East 53rd Street west of Second Avenue	Precontact	7-12'	Potential Effect: 0' - unknown depth to build subterranean pedestrian passageway
Section 7.9: East 42nd Street Pedestrian Connection			
East 42nd Street between Second and Third Avenues, western half only	Precontact	5-7'	Potential Effect: 0' - unknown depth to build subterranean pedestrian passageway
Section 7.10: East 14th Street Pedestrian Connection			
East 14th Street west of Second Avenue, sidewalks only	Precontact	5-18'	Potential Effect: 0' - unknown depth to build subterranean pedestrian passageway
Section 7.11: Broome Street - Deep Chrystie Option Ancillary Station Facilities			
Broome Street west of Chrystie Street	Precontact	10-20'	Potential Effect: 0' - unknown depth to construct ancillary station facilities
Section 7.12: Grand Street - Deep Chrystie Option Ancillary Station Facilities			
Grand Street west of Chrystie Street	18th century Revolutionary War period fortifications	0-22'	Potential Effect: 0' – unknown depth to construct ancillary station facilities

[1] All depths below grade are considered approximate since they are based on a limited number of soil borings available for each APE. Furthermore, soil borings cannot substitute for field verification of potential sensitivity.

7.8 EAST 53RD STREET PEDESTRIAN CONNECTION

This Phase 1A Archaeological Assessment of the East 53rd Street pedestrian connection has been prepared by Historical Perspectives, Inc. as an addendum to *Second Avenue Subway Phase 1A Archaeological Assessment*, prepared by Historical Perspectives, Inc., March 2003.

7.8.1 Study Area Description

The East 53rd Street roadbed between Second and Third Avenues is being evaluated for its potential archaeological sensitivity, since it may be the location of possible excavation work to construct a pedestrian transfer between the proposed new Second Avenue Subway and the existing E/V trains (Figure 7.8-1, Photographs 7.8-1 through 7.8-2). The East 53rd Street Area of Potential Effect (APE) includes the East 53rd Street roadbed and abutting sidewalks from Second Avenue to a point about 550' to the west.

7.8.2 Existing Conditions

7.8.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

The Eastern Post Road, which followed the route of an old Native American trail, formerly passed through immediately east of the East 53rd Street APE (Grumet 1981:68). The road, identified by Grumet as Wickquasgek Road, once connected to the Old Albany Post Road (Broadway) and was used by Native Americans who were coming to trade at Fort Amsterdam (Ibid.:59). As the former road traversed the east side of Manhattan, its route was variable as it wound around the small hills on this side of the island.

Arthur C. Parker also reported a site in the area of East 53rd Street near First and Second Avenues where he noted "traces of occupation" were found (NYSM Site #4061). Although the nature and extent of the Native American presence at this site is unknown, it is possible that associated precontact resources once extended into the area of the East 53rd Street APE (Appendix 7.8.7.2). The locations of sites noted by Parker are not precise, but the proximity of a freshwater stream to the APE may have offered distinct advantages to the precontact peoples (Colton 1836; Viele 1865).

Archaeological Potential

The earliest depiction of the APE in 1782 (British Headquarters; Figure 7.8-2) shows the area as open land, with a stream running through the westernmost portion. A later map (Sackersdorf 1815; Figure 7.8-3) shows that the land north of the stream was swamp, but that within the APE it was not. The area is shown as meadowland in a shallow valley between two upslopes on the Commissioners' map (1811). Because documentary evidence shows the presence of a freshwater stream prior to development near the APE, there is the potential for precontact resources in the APE (Appendix 7.8.7.1). Soil

borings show varying amounts of fill below grade, from none in the easternmost and middle portions of the APE (Soil Borings WPA II:24:110, 118, 119, 1935; Appendix 7.8.7.3), to a pocket of seven feet of fill between those borings (Soil Borings WPA II:24:109, 1935), and 8-12' of fill in the western part of the APE (Soil Borings WPA II:24:107, 108, 1935). The later historic fill may have served to protect precontact resources from 19th and 20th century development. The fill overlies 12-38' of sand, clay, and gravel. Utilities may have caused some disturbance to potential precontact levels, particularly where the fill is shallower; however, detailed information on the depths of utilities within the roadbed was not available. The subsequent construction of the 20th century subway tunnel (the E and V lines, formerly the IND E and F lines; Figure 7.8-5) within East 53rd Street should not have disturbed any potential precontact resources, as the tunnel was rock mined and the base of the tunnel is 74' below grade, while the top of the bedrock varies from 12-41.6' below grade.

7.8.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

What is now East 53rd Street was once part of a large farm property, nearly 43 acres, that was known as the Brevoort and Odell Farm (Figure 7.8-3). Originally belonging to David Devore, it passed to his daughter Ann when he died in 1780 (Stokes 1928:81-82). She married Abraham Brevoort in 1788; he died in 1794 and she married Jacob Odell the following year (Ibid.).

According to Stokes (1918:977), the nearest landmarks to the APE included Cato's Tavern, which was located in the roadbed of East 54th Street, 200' east of Second Avenue. It was kept by David Devore prior to 1768, and became Cato Alexander's around 1805, and was demolished around 1853, although there is a label on an 1867 map (Dripps) indicating "Catos House." It was located at a juncture of the Old Post Road and a road leading west which is visible on a 1782 map (British Headquarters), and is identified on several maps (Colton 1836, Dripps 1851; Figure 7.8-4). Another identified by Stokes (1918:926) was the "Kissing Bridge," which was between East 51st and 52nd Streets west of Second Avenue, and was where the stream that flowed through the APE (known as "DeVoor's Mill Stream") crossed the Old Post Road. Neither structure stood within the APE.

The area immediately around the APE was otherwise undeveloped until intense construction began in the 1850's, as an 1851 map (Dripps) shows the blocks on either side of East 53rd Street completely undeveloped, and an 1862 map (Perris) shows them as nearly completely developed. The roadbed remained devoid of structures from this time on (Figure 7.8-5).

Archaeological Potential

Documentary research concluded that the East 53rd Street APE has no historic archaeological potential (Appendix 7.8.7.1; Figure 7.8-6). Cartographic evidence shows

that no structures existed in or very near the APE from 1782 until the area was developed along the modern street grid in the 1850's. Although there is a slight possibility that unmapped features associated with Cato's Tavern could have been present as far away as the APE, the distance and lack of fill in the soil borings closest to the tavern make it highly unlikely (Soil Borings WPA II:24:110, 119, 1935), although some pockets of fill farther west in the APE do survive (Soil Borings WPA II:24:109, 1935).

7.8.3 Summary of Archaeological Potential

The proposed creation of a pedestrian connection in East 53rd Street between Second and Third Avenues would have an effect on potential precontact resources in the APE (Figure 7.8-6). Precontact resources would be expected to lie between approximately seven and 12' below grade. There is no historic archaeological potential.

7.8.4 Proposed Project Effects

Proposed construction plans call for the creation of a pedestrian connection to allow access to the existing E/V subway lines. Subsurface effects may extend from the surface down to bedrock, and may disturb potential precontact levels which may lie between approximately seven and 12' below grade.

The potential effects to possible archaeological resources described in this report result from construction activities that have been identified at this stage in the project's engineering. In addition to these effects, it is possible that refinements to project designs as engineering work continues will result in other locations with the potential to have effects to archaeological resources. If those areas are in the APE already evaluated, the effects may be evaluated using the research done to date. If they are in new areas outside the project's APE, additional research may be required to identify whether any resources may be present. Potential effects would then be assessed in these areas as well.

7.8.5 Recommendations

There is a moderate expectation of encountering intact, significant precontact resources. Although the likelihood that resources would have survived the 19th and 20th development of this part of the APE is considered moderate to minimal, there is a possibility that undisturbed pockets of the precontact landscape may remain beneath fill that varies in depth throughout the APE. As fill level vary sharply in the middle of the APE, additional soil borings would be needed to determine which areas of the APE have not been disturbed by road regulating and opening, as well as utility installation. Therefore, prior to any field investigations, additional soil boring tests will be performed as part of the design effort of the project. These may provide additional subsurface information to further assist in the archaeological interpretation of the APE, but cannot always substitute for field verification.[1] Following the review of soil borings, some or all

[1] Soil borings to be undertaken for construction design purposes will be taken in coordination with an archaeologist. Preferably, continuous tube samples down to 15' below the bottom depth of fill would further assess subsurface conditions in potentially sensitive areas.

of the APE may be found to be too disturbed to possess research potential. For these sites, no further action will be recommended. However, for other sites, soil borings will either provide a clear indication of sensitivity or may be inconclusive. For these sites, an assessment of potential project effects will be made based on the most current engineering plans. Those sites that will not be affected will not be recommended for further study, unless design plans change in the future and effects will occur. For those sites that will be affected, the potential research value of each site will be evaluated and the sites prioritized for testing based on their potential to yield significant information and address meaningful research issues according to National Register criteria. A protocol for the prioritization of precontact resources will be prepared in consultation with SHPO.

Where subsurface testing is indicated, its goal would be to establish the presence or absence of cultural resources, the horizontal and vertical extent of these resources, site integrity, and, potential significance as defined by eligibility for inclusion on the National Register of Historic Places. Field analysis could also take the form of additional exploratory excavations or monitoring at the time of construction. The method of field analysis selected for each site would depend on site access and testing feasibility.

If avoidance of potential resources is possible, then that is considered a viable mitigation alternative. If the avoidance of adverse effects to potentially National Register eligible archaeological resources is not possible, then appropriate mitigation procedures would take the form of archaeological data recovery. It is possible, however, that given the wide range of areas identified in the Second Avenue Subway APEs as archaeologically sensitive, that some archaeological resources would not be excavated as part of the project's mitigation program, resulting in potentially adverse effects to archaeological resources. This could occur where archaeologically sensitive areas are not accessible as a result of their depth beneath deep fill and where construction would not entail any surface work that would allow access to such resources. Other sites may be inaccessible due to pedestrian, traffic, and safety constraints. In addition, some sites may not be selected for data recovery since they may hold a low potential to yield significant information and/or would provide a redundancy in information in contrast to other sites which may be sensitive for similar resources and would be mitigated.

7.8.6 Figures and Photographs

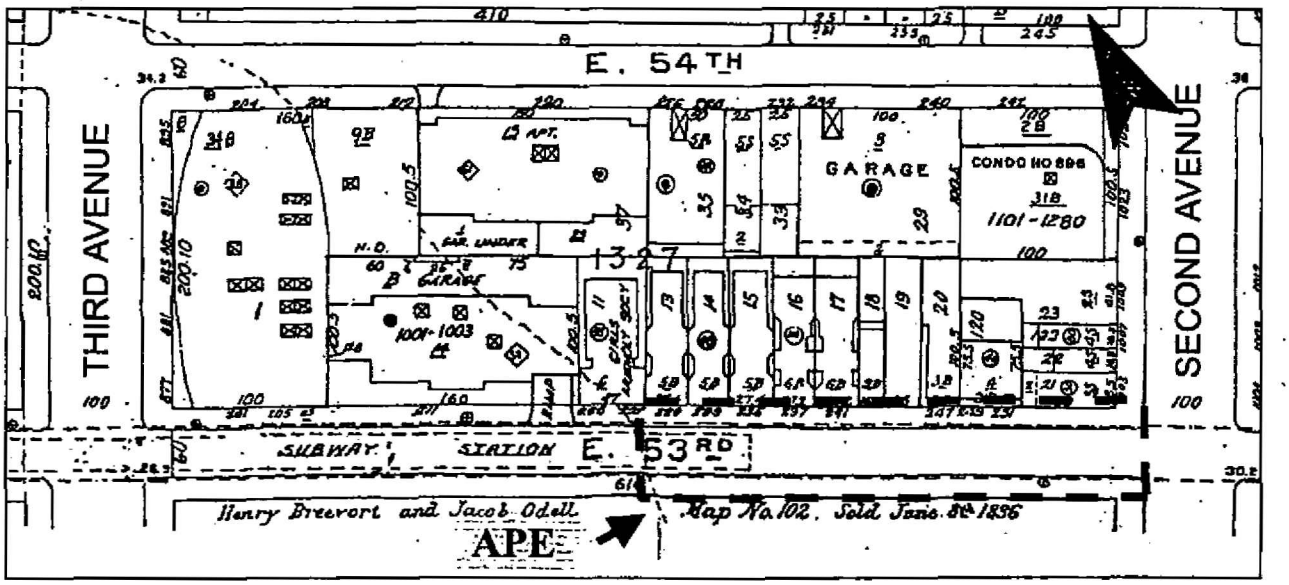


FIGURE 7.8-1

Insurance Maps. Sanborn 2001.
East 53rd Street, Second to Third Avenues.

Approximate Scale: ¾ inch = 100 feet

FIGURE 7.8-2

British Headquarters Map. 1782.
East 53rd Street, Second to Third Avenues.

Approximate Scale: ¼ inch = 150 feet

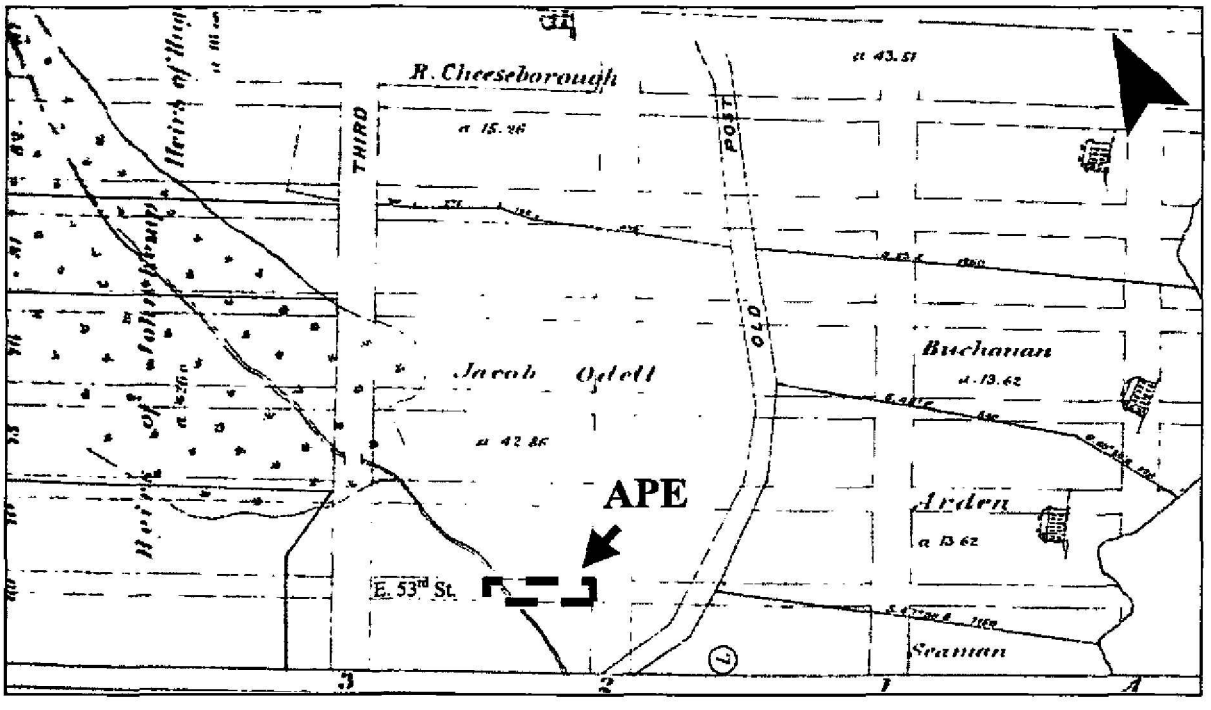


FIGURE 7.8-3

Maps of Farms Commonly Called the Blue Book. Sackersdorf 1815.
East 53rd Street, Second to Third Avenues.

Approximate Scale: ¼ inch = 100 feet

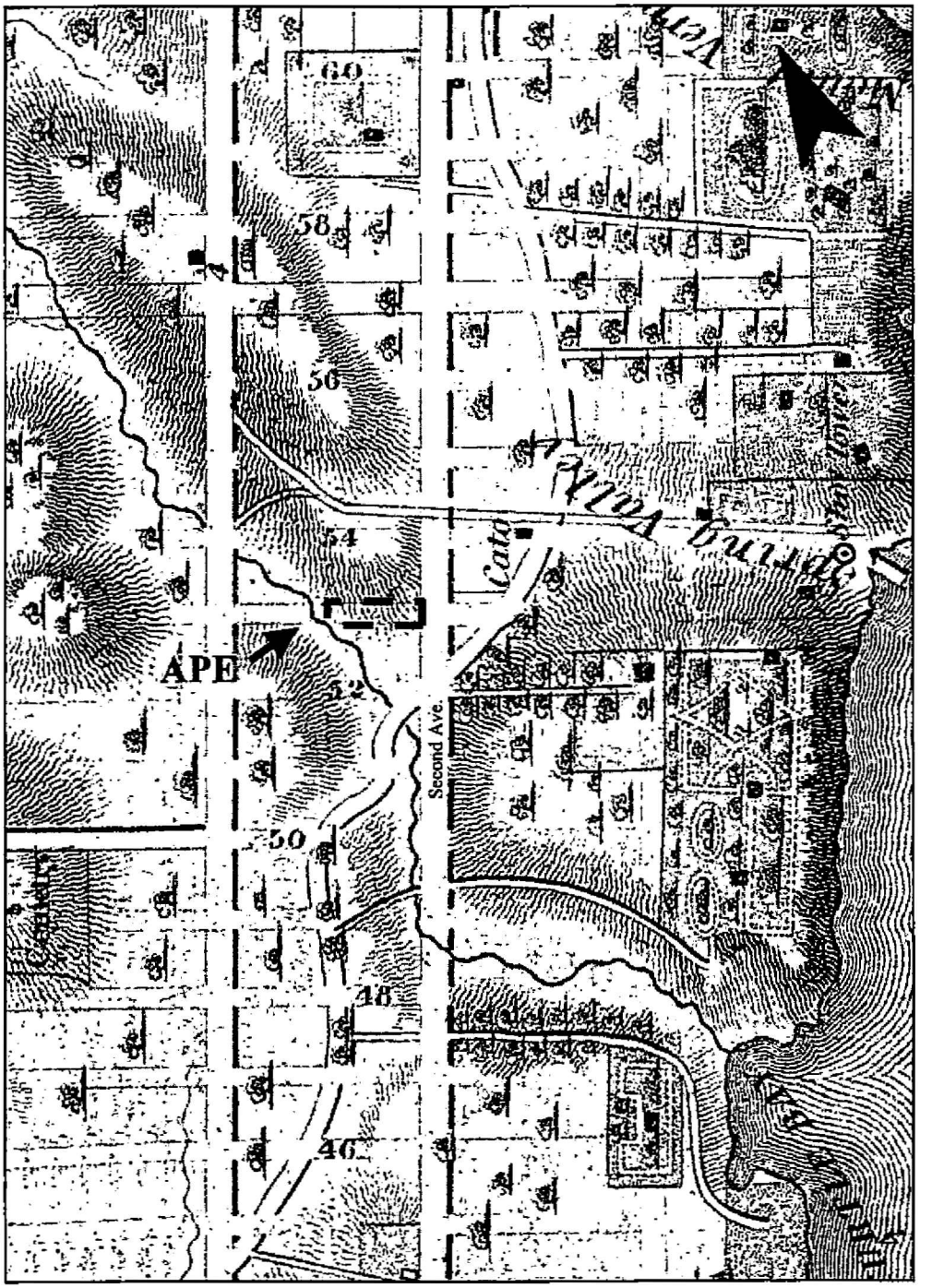


FIGURE 7.8-4

Topographical Map of the City and County of New York. Colton 1836.
East 53rd Street, Second to Third Avenues.

Approximate Scale: 3/16 inch = 100 feet

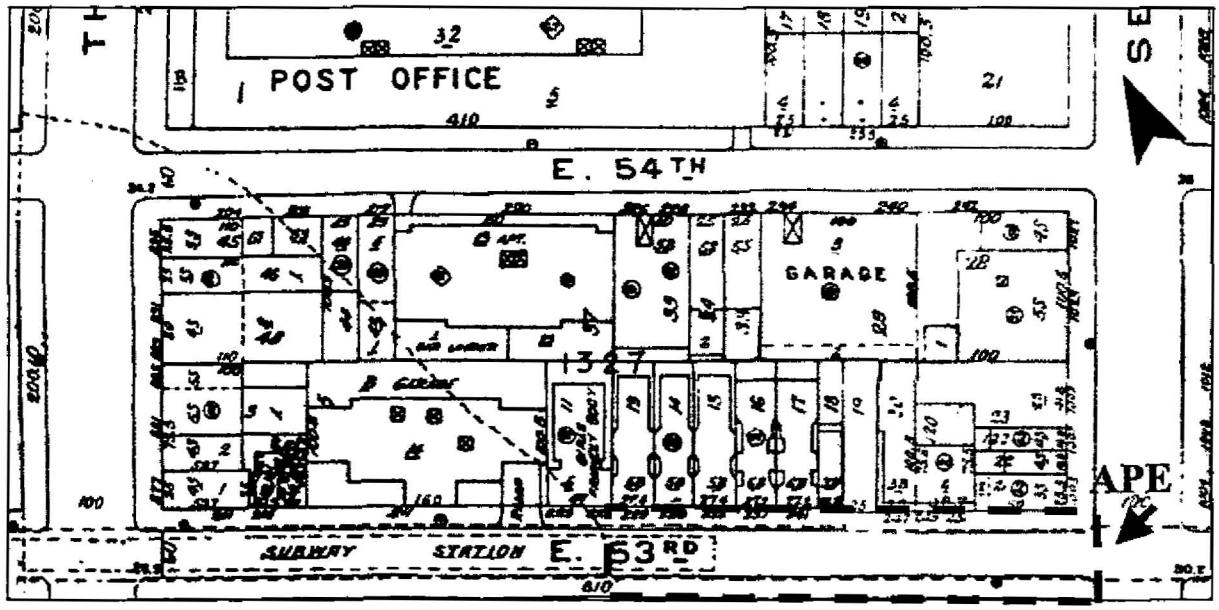


FIGURE 7.8-5

Atlas of the Entire City of New York. Bromley 1974.
East 53rd Street, Second to Third Avenues.

Approximate Scale: ¾ inch = 100 feet

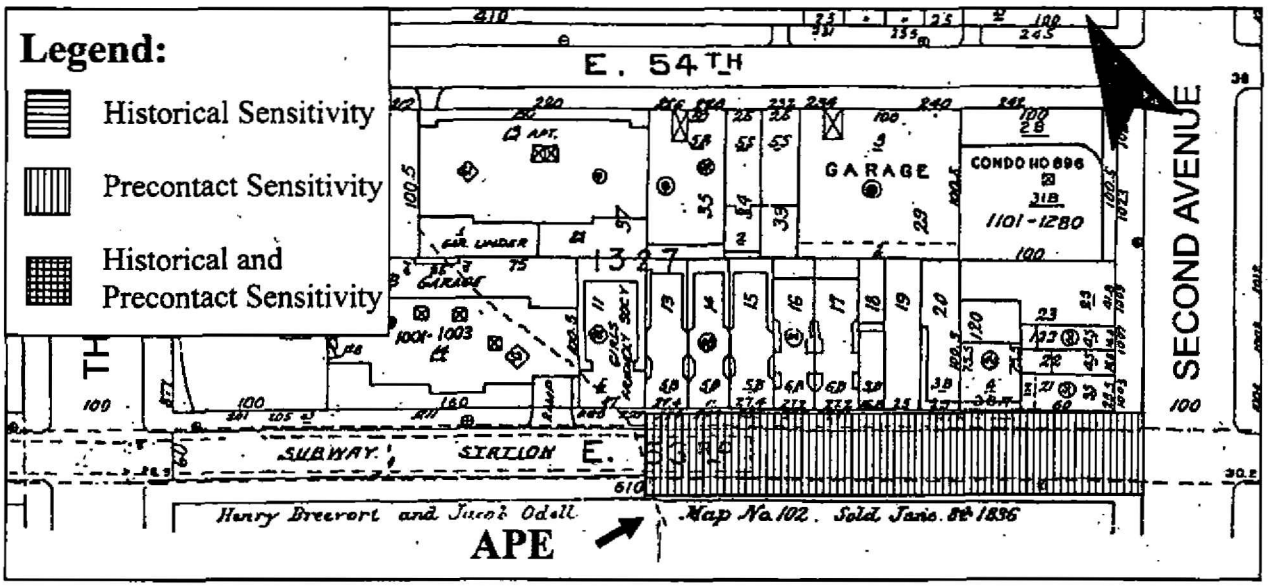
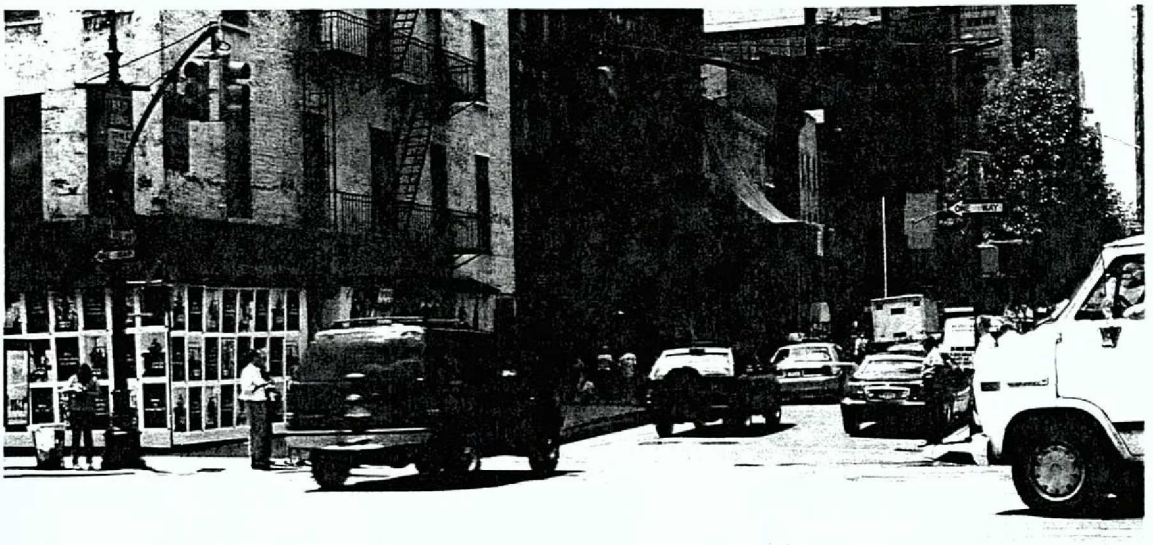


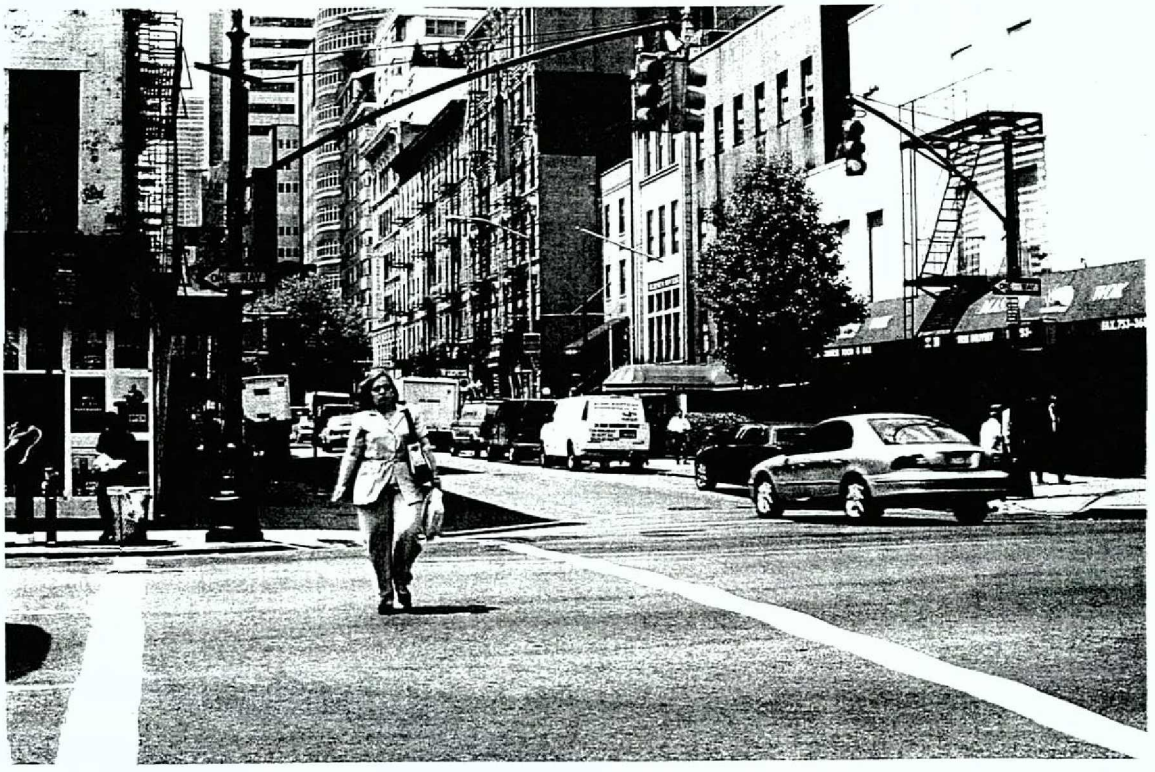
FIGURE 7.8-6

Area of Potential Archaeological Sensitivity. Sanborn 2001.
East 53rd Street, Second to Third Avenues.

Approximate Scale: ¾ inch = 100 feet



Photograph 7.8-1: Facing southwest toward East 53rd Street from the northeast corner of Second Avenue and East 53rd Street.



Photograph 7.8-2: Facing northwest toward East 53rd Street from the southeast corner of Second Avenue and East 53rd Street.

7.8.7 Appendices

7.8.7.1 Documentary Assessment of APE

Cartographic History

British Headquarters 1782 — The APE is open land, with a stream running in the westernmost end. The Boston Post Road runs to the east outside the APE, and there is a lane to the north with structures on the property north of this, but there are no structures within the APE itself (Figure 7.8-2).

Commissioner's 1811 — The APE is shown as open meadowland. There is a ridge running through the eastern end of the APE; it runs northwest to southeast with the downslope to the southwest. The APE is within a small valley with another ridge running outside the APE to the southwest. There is a knoll one block to the east and south. The Old Post Road is to the east of the APE. There are no structures shown in the vicinity of the APE.

Sackersdorf 1815 — The APE is open farmland belonging to Jacob Odell, part of a large estate of nearly 43 acres. A stream runs southeast into the East River (at Turtle Bay) through the western end of the APE at East 53rd Street, originating in a marshy area northwest of the APE. No structures are shown within several blocks of the APE (Figure 7.8-3).

Randel 1820 — The APE is vacant. There is a ridge running about mid-block that slopes downward to the east. A small stream appears to cut across the street. The property is owned by Odell.

Colton 1836: — The APE is shown within a valley between two ridges, the northernmost of which runs through the eastern end of the APE. There is a stream that runs through the middle of the APE southeast into the East River at Turtle Bay near East 47th Street. No structures are depicted within the APE. The closest structure outside the APE is one labeled "Cato" on East 54th Street and the Old Post Road, between First and Second Avenues (Figure 7.8-4).

Dripps 1851: — The APE has no development in it, nor are there any structures on either side of the roadbed. The closest landmarks are "Cato's House" on the Old Post Road, on East 54th Street between First and Second Avenues, and the "Print and Dying Works" on East 54th Street between Second and Third Avenues.

Perris 1857-62: — No roadbed information is shown. Both sides of the street on East 53rd Street are fully developed, outside of the APE.

Dripps 1863: — Trolley lines are shown on Second and Third Avenues.

Viele 1865 — Water pipes are shown on East 53rd Street between Second and Third Avenues, within the APE. A stream runs southeast through the western end of the APE at East 53rd Street to the East River (at

Turtle Bay). There is a large hill to the north, outside the APE, and a series of small hillocks to the west. Outside the streambed, the land is open meadow.

Dripps 1867 — Transportation lines are indicated on Second and Third Avenues, but these are outside the APE. Development on either side of East 53rd Street just outside the APE is similar to that indicated on Perris 1862. No sewer or water lines are indicated.

Viele 1874: — Similar to Viele 1865, although water pipes are not indicated.

Robinson 1885: — No development is seen within the APE. A hydrant is located on the north side of East 53rd Street just to the west of the APE. Elevated tracks and trolley tracks are indicated on both Second and Third Avenues, with a station on Third Avenue at East 53rd Street. Development on either side of East 53rd Street just outside the APE is similar to Dripps 1867.

Sanborn 1892: — The APE is similar to that of Robinson 1885 although there appears to be a protrusion from the rear of the building on Lot 21. Additionally there is the information that East 53rd Street is 60 feet wide, and there is a six-inch water pipe present.

Sanborn 1907: — The APE is unchanged from Sanborn 1892, except that a hydrant is now present within the eastern end of the APE on the southern side of East 53rd Street.

Hyde 1913 — The APE is unchanged from Sanborn 1907, with additional information that a 4' x 8' 6" brick pipe is present in East 53rd Street in addition to the six-inch pipe. Stairs are also present on nearly every structure fronting onto East 53rd Street, falling within the sidewalk portion of the APE.

Bromley 1934: — A subway line has been constructed on East 53rd Street (the modern E and V line). The elevated station is still present on Third Avenue at East 53rd Street, but in addition there is now a subway station on East 53rd Street extending from Third Avenue east into the APE.

Sanborn 1951: — This map was updated from the 1926 map and does not indicate the subway line on East 53rd Street, although the elevated station is still present on Third Avenue. Otherwise the APE is unchanged from Bromley 1934.

Bromley 1967: — The APE is unchanged from Sanborn 1951, although the Third Avenue elevated railroad is no longer present.

Bromley 1974: — The APE is unchanged from Bromley 1967 (Figure 7.8-5).

Sanborn 2001: — The APE is unchanged from Bromley 1967.

Street Elevations of the APE are as follows:

Data Source	53rd Street at Second Avenue	53rd Street at Third Avenue
1865 Viele	30'	24'
1885 Robinson	30.2'	26.9'
1913 Hyde	30.17'	33.17'*
1934 Bromley	30.2'	26.9'
1974 Bromley	30.2'	26.9'

* Although this elevation vastly differs from earlier and later elevations, it is probably accurate and dates from early construction along Third Avenue or East 53rd Street. The WPA rock topography map dating from 1937 shows an elevation of 33.2' at this intersection and is confirmed by surrounding soil borings. The subsequent Bromley figures, derived from Robinson 1885 which may have been in error, were probably never updated.

Precontact Sensitivity

The earliest depiction of the APE in 1782 (British Headquarters; Figure 7.8-2) shows the area as open land, with a stream running through the westernmost portion (approximately halfway between Second and Third Avenues). A later map (Sackersdorf 1815; Figure 7.8-3) shows that the area surrounding the stream to the northwest was swampy, but that within the APE it was not. The area is shown as meadowland in a shallow valley between two upslopes on the Commissioners' map (1811).

The Eastern Post Road, which followed the route of an old native trail, formerly passed through the project area immediately east of the East 53rd Street site (Grumet 1981:68). The road, identified by Grumet as Wickquasgek Road, once connected to the Old Albany Post Road (Broadway) and was used by Native Americans who were coming to trade at Fort Amsterdam (Ibid.:59). As the former road traversed the east side of Manhattan, its route was variable as it wound around the small hills on this side of the island.

Arthur C. Parker also reported a site in the area of East 53rd Street near First and Second Avenues where he noted "traces of occupation" were found (NYSM Site #4061). Although the nature and extent of the Native American presence at this site is unknown, it is possible that associated precontact resources once extended into the area of the East 53rd Street APE (Appendix 7.8.7.2). The locations of sites noted by Parker are not precise, but the proximity of a freshwater stream to the APE may have offered distinct advantages to the precontact peoples (Colton 1836; Viele 1865; Figure 7.8-4).

Because documentary evidence shows the presence of a freshwater stream prior to development within the APE, there is a potential for precontact resources in the APE. Typically, precontact sites are found on elevated land within fairly close proximity to a water course which would have provided an attractive location for wildlife and other food resources as well as a good vantage point. The small hill on the project site might have

provided this favorable setting in the past. Evidence of precontact activity is usually found near the surface, which leaves these resources at risk for destruction during the periods of intensive development that took place in the historical era when East 53rd Street was regulated and utilities were installed. Soil borings show varying amounts of fill, from none in the easternmost and middle portions of the APE (Soil Borings WPA II:24:110, 118, 119, 1935), to a pocket of 7' of fill between those borings (Soil Borings WPA II:24:109, 1935), and 8-12' of fill in the western part of the APE (Soil Borings WPA II:24:107, 108, 1935). The later historic fill may have served to protect precontact resources from 19th and 20th century disturbance. The fill overlies 12-38' of sand, clay, and gravel. Utilities may have caused some disturbances to precontact levels, particularly where the fill is more shallow; however, detailed information on the construction of utilities within the roadbed is not available, other than there is a 4' x 8' 6" brick pipe and a six-inch pipe present in the roadbed (Hyde 1913). The subsequent construction of the 20th century subway tunnel (the E and V lines, formerly the IND E and F lines, opened in 1933) within East 53rd Street should not have disturbed any potential precontact resources, as the tunnel was rock mined and the base of the tunnel is 74' below grade, while the top of the bedrock varies from 12-41.6' below grade, well below the depths of potential anticipated resources (SYSTRA November 12, 2001).

Historical Sensitivity

The earliest depiction of the APE in 1782 (British Headquarters; Figure 7.8-2) shows the area as open land, with a stream running through the westernmost portion (approximately halfway between Second and Third Avenues). North of the APE there is a lane veering west from the Old Post Road, and there is farm north of this lane. A later map (Sackersdorf 1815; Figure 7.8-3) shows that the area surrounding the stream to the northwest was swampy, but that within the APE it was not. The area is shown as meadowland in a shallow valley between two upslopes on the Commissioners' map (1811). The first major road in the area was the Eastern Post Road, a former Native American trail that meandered through the east side of Manhattan. Historic maps depict the route of this former road as just to the east of the APE. According to Grumet, the earliest mention of this road was by David de Vries, who called it Wickquasgek Road in 1642. In 1669 the formal Eastern Post Road was ordered made with instructions to be finished in 1672 (Stokes 1928:593). This road often formed the western boundary of the large estates on the east side of Manhattan. Much of the early development was clustered round the Eastern Post Road or on the East River shoreline. In the early 19th century, New York City established a system of blocks and lots throughout Manhattan rendering the Eastern Post Road, with its meandering route, obsolete. The Eastern Post Road was ordered officially closed from 52nd Street to 66th Street in 1852 (Ibid: 1839).

The APE was part of a large farm property, nearly 43 acres, that was known as the Brevoort and Odell Farm. Originally belonging to David Devore, it passed to his daughter Ann when he died in 1780 (Stokes 1928:81-82). She married Abraham Brevoort in 1788; he died in 1794 and she married Jacob Odell the following year (ibid.). Their house was later known as Cato's Tavern; Stokes mentions "the old mansion" but it

is not clear if it doubled as a tavern and a dwelling for the Brevoorts and Odells, or if they themselves managed it.

According to Stokes (1918:977) the nearest landmarks to the APE included Cato's Tavern, which was located in the roadbed of East 54th Street, 200' east of Second Avenue. It was kept by David Devore prior to 1768, and became Cato Alexander's around 1805, and was demolished around 1853, although there is a label on an 1867 map (Dripps) indicating "Catos House." It was located at a juncture of the Old Post Road and a road leading west which is visible on a 1782 map (British Headquarters), and the structure is identified on several maps in the 19th century (Colton 1836, Dripps 1851; Figure 7.8-4). Another landmark identified by Stokes (1918:926) was the "Kissing Bridge," which was between East 51st and 52nd Streets west of Second Avenue, and was where the stream that flowed through the APE (known as "DeVoor's Mill Stream") crossed the Old Post Road.

The area immediately around the APE was otherwise undeveloped until intense construction began in the 1850's, as an 1851 map (Dripps) shows the blocks on either side of East 53rd Street completely undeveloped, and an 1862 map (Perris) shows them as nearly completely developed. The roadbed contained no potential archaeological resources from this time on (Figure 7.8-5).

Documentary research concluded that the East 53rd Street Pedestrian Connection APE has no historic archaeological potential (Appendix 7.8.7.1; Figure 7.8-6). Cartographic evidence shows that no structures existed in the APE from 1782 onward, until the area was developed along the modern street grid in the 1850's, when buildings were constructed on either side of East 53rd Street. Although there is a slight possibility that subsurface structures associated with Cato's Tavern could have been present as far away as the APE (the nearest point of which is 400' away), the distance and lack of fill in the soil borings closest to the tavern make it highly unlikely (Soil Borings WPA II:24:110, 119, 1935), although pockets of fill do survive farther west in the APE (Soil Borings WPA II:24:109, 1935).

7.8.7.2 Site File Search Results, NYCLPC, NYSOPRHP and NYSM

SITE FILE SEARCH RESULTS

Project Name 2nd Ave. Subway IIAA Project Number 2362 Client Historical Perspectives

City/Village New York Town _____ County New York

Quadsheets Central Pk, Brooklyn, Jersey City

Conducted by: K.C. Date 10.1.01

NEW YORK STATE MUSEUM # Sites 7		SHPO # Sites 24 19	
4051X	*Missing	A061.01.0491 —	#30 = British Line
4060X		A061.01.01282 X	#31
4061X		A061.01.01272 X 1014	
4062X		A061.01.01284 X	(Note: #30 + #31 —
4063X		A061.01.01283X	the only info from SHPO
4064X		1- A061.01.1271X	was that NYAC did a
4078X		~~2- A061.01.0011~~ 003	survey in the 1970's
		3- A061.01.0623X 1023	and found historic Remains.
		4- A061.01.06763X	no other info was found.)
		~~5 - A061.01.0001~~	
	209 Water St. South Street Seaport HP NR	6- A061.01.00604X	NYAC = New York
		A061.01.01304X	Archeological Council.
		A061.01.01285X	
	*Missing * 576 Broom St. Historic Site ←	A061.01.07671 —	
		A061.01.09530X	
* According to Cynthia Blakemore @ SHPO		A061.01.01286X	
		A061.01.0541 X	
		A061.01.00542X	
		A061.01.09531X	

[redacted]

ilding Inventory #	NR Status	Form Copied	Property Description	Reads Checked
26101.000lo24	NRL	✓	South Street Seaport Historic District 209 Water Street	

<17 previous surveys w/in Radius>

EVIOUS SURVEYS

8 Westside Highway Program – 1983 [redacted] 209 Water St. – Schuyler – ? Date

[redacted] William D. Hersey – 1963 Castle Clinton At the Battery [redacted] East River Road... New York Harbor Collection Kardas & Larrabee October 1977

[redacted] Broad Street Financial Center Greenhouse January 1985 -10 Sheridan Square – 1983 – Rutgers University

X [redacted] Lower Eastside Service Center – Louis Berger Jan '98

[redacted] 60th Street ... Arnold Pickman & Nan Rothschild May 1981 [redacted] 750 Sixth Ave. HPI February 1998

[redacted] Stone Street Historic District 1987 NYC Landmarks Pres. Comm./Trinity [redacted] Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1981 / December 1989

9 Barclays Bank Site – 100 Water St. Berger – 1983 [redacted] East River Plaza HPI Sept. 1988

[redacted] 175 Water Street Block Geismar July 1983 [redacted] Stone Street Historic District NYC Landmark Pres. Commission February 1998

[redacted] Schermerhorn Row Block Kardas & Larrabee Aug. 1977

7 Telco Block – S. St. Seaport Historic District – 1983


SEE MAP C
Long Island City
1000 0
S#27
S#25

7.8.7.3 Soil Boring Logs

WPA Vol. 2, Sheet 24, No. 107
Board of Transportation, 1935
North side of East 53rd Street between Second and Third Avenues.

fill	+31.3' to +19.3'
sand and clay	+19.3' to +14.3'
gravel	+14.3' to +5.3'
coarse sand	+5.3' to –2.9'
rock	–2.9' to –10.9'

No water level recorded.

WPA Vol. 2, Sheet 24, No. 108
Board of Transportation, 1935
North side of East 53rd Street between Second and Third Avenues.

fill	+30.5' to +22.5'
sand	+22.5' to +1.9'
fine sand	+1.9' to –8.1'
hardpan	–8.1' to –11.1'
rock	–11.1' to –21.1'

No water level recorded.

WPA Vol. 2, Sheet 24, No. 109
Board of Transportation, 1935
South side of East 53rd Street between Second and Third Avenues.

fill	+31.0' to +24.0'
sand and gravel	+24.0' to +21.0'
sand and gravel	+21.0' to +16.0'
hardpan	+16.0' to +11.0'
rock	+11.0' to –2.0'

No water level recorded.

WPA Vol. 2, Sheet 24, No. 110
Board of Transportation, 1935
South side of East 53rd Street between Second and Third Avenues.

sand and gravel	+30.6' to +18.6'
rock	+18.6' to +4.6'

No water level recorded.

WPA Vol. 2, Sheet 24, No. 118
Board of Transportation, 1935
South side of East 53rd Street between Second and Third Avenues.

clay, sand, stones	+28.7' to +5.7'
fine gray sand, clay, and stones	+5.7' to –1.3'
fine sand	–1.3' to –5.3'

coarse sand, fine gravel	–5.3' to –9.3'
soft rock	–9.3' to –13.3'
Manhattan schist	–13.3'to –17.8'

No water level recorded.

WPA Vol. 2, Sheet 24, No. 119
Board of Transportation, 1935
North side of East 53rd Street between Second and Third Avenues.

brown sand and gravel	+29.0' to +19.0'
gravel and fine brown sand	+19.0' to +11.0'
fine brown sand	+11.0' to +4.0'
sand and gravel	+4.0' to –4.7'
disintegrated rock	–4.7' to –5.7'
Manhattan schist	–5.7'to –23.6'

No water level recorded.

7.9 EAST 42nd STREET PEDESTRIAN CONNECTION

This Phase 1A Archaeological Assessment of the East 42nd Street pedestrian connection has been prepared by Historical Perspectives, Inc. as an addendum to *Second Avenue Subway Phase 1A Archaeological Assessment*, prepared by Historical Perspectives, Inc., March 2003.

7.9.1 Study Area Description

The East 42nd Street roadbed between Second and Third Avenues is being evaluated for its potential archaeological sensitivity since it may be the location of possible mining work to construct a pedestrian transfer between the proposed new Second Avenue Subway and the No. 7 train (Figure 7.9-1, Photographs 7.9-1 and 7.9-2). The East 42nd Street Area of Potential Effect (APE) includes the East 42nd Street roadbed and abutting sidewalks from Second Avenue to the western boundary of Third Avenue.

7.9.2 Existing Conditions

7.9.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

The Eastern Post Road, which followed the route of an old Native American trail, formerly passed immediately west of the East 42nd Street APE (Grumet 1981:66). The road, identified by Grumet as Wickquasgek Road, once connected to the Old Albany Post Road (now Broadway) and was used by Native Americans who were traveling to trade at Fort Amsterdam (Ibid.:59). As the former road traversed the east side of Manhattan, its route was variable as it wound around the small hills on this side of the island. Arthur C. Parker also reported traces of occupation to the north, in the area of East 59th Street near First and Second Avenues (New York State Museum Site #4061). The locations of sites noted by Parker are not precise, but the proximity of a freshwater stream to the APE may have offered distinct advantages to precontact peoples in the area (Colton 1836; Viele 1865).

Archaeological Potential

Because of the presence of a freshwater stream 100' away from the APE, there is a potential for precontact resources within the APE (Appendix 7.9.7.1). Soil borings in the western half of the APE show seven feet of fill overlying 18-22.3' of clay, sand, and gravel (Soil Borings WPA II:14:76, 77, 1935; Appendix 7.9.7.3). The later historic fill may have served to protect any potential precontact resources from 19th and 20th century disturbance. In the eastern half of the APE, soil borings indicate that either there is no fill over the natural soils (Soil Borings WPA II:14:39-43, 1935), or that there is fill over no or little natural soils (Soil Borings WPA II:14:154, 155, 1936), suggesting that it is unlikely that potential precontact resources still exist. Effects from the construction of the No. 7 subway tunnel currently underneath the East 42nd Street roadbed to potential

precontact resources were probably minimal, at least in the western half of the APE. The extant IRT (No.) 7 line, constructed in 1904, was a rock mined tunnel, with its base at about 110' below grade (SYSTRA November 12, 2001), far below the depth of potential archaeological resources.

7.9.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

The East 42nd Street APE falls within what was once the Cornelius Vanderhoof farm, established in the second half of the 18th century and portrayed on a 1782 map (British Headquarters). His heirs sold the land to Martin Smith in 1796 (Stokes 1928:152), and according to cartographic evidence, it remained in the Smith family through the beginning of the 19th century (Sackersdorf 1815; Turtle Bay Farm Map 1820). A lane connecting to the Old Post Road ran along the southwestern border of the property and through the western end of the APE. The farm abutted the Old Post Road, and encompassed much of the APE. According to Stokes (1928:152: Landmark Map 1928:Plate 84B-C), the Ratzer map (1766) and Maerschalk's survey of the Turtle Bay farm in 1771 both place the farmhouse at the southeast corner of East 44th Street and Third Avenue, outside the APE. Furthermore, the Commissioners' Map (1811, Figure 7.9-3) shows three structures between East 44th and East 43rd Streets along the eastern side of Third Avenue. No houses are shown within the APE on the Sackersdorf (1815), Randel (1820), or the Turtle Bay Farm Map (1820). However, there is a possibility that the APE fell within the back of the farm property, although no structures were mapped within the APE either before or after East 42nd Street was laid out in the early 19th century.

An eighteenth century map (British Headquarters 1782; Figure 7.9-2) suggests that a cluster of buildings was once located near the APE. However, the scale of this map is such that it is difficult to determine structure location in relation to the APE with any degree of accuracy. Regardless, there is the possibility that unmapped associated farm structures and features, such as outbuildings, barns, wells, privies, and cisterns, may have once existed within or near the APE, but this is speculative. The farm itself was only 7.75 acres in size, according to Sackersdorf (1815), measuring approximately 500' by 700'. If the main structures of the farm always stood as portrayed on the more precise Commissioners' Map (1811; Figure 7.9-3), then the APE would have been located downhill and about 250' away from them, suggesting only a minimal probability that subsurface features associated with the farm might lie within the APE.

Archaeological Potential

Documentary research concluded that the East 42nd Street Shaft APE has virtually no potential for historic archaeological resources due to the lack of mapped structures in the APE, and the lack of natural soils in many of the soil borings. (Appendix 7.9.7.1; Figure 7.9-5).

7.9.3 Summary of Archaeological Potential

The proposed creation of a pedestrian connection in East 42nd Street between Second and Third Avenues would affect potential precontact resources in the western half of the APE (Figure 7.9-5). No precontact resources are anticipated in the eastern half of the APE due to the lack of natural soils reported below fill levels in boring logs. Precontact resources, if they exist in the western half of the APE, would be expected to lie between about five to seven feet below grade, based on the results of existing soil borings (Figure 7.9-5).

7.9.4 Proposed Project Effects

Proposed construction plans call for the creation of a pedestrian access to allow access to the existing No. 7 line. Subsurface effects may extend from the surface down to bedrock, and may disturb potential precontact levels in the western half of the APE which may lie between approximately five to seven feet below grade.

The potential effects to possible archaeological resources described in this report result from construction activities that have been identified at this stage in the project's engineering. In addition to these effects, it is possible that refinements to project designs as engineering work continues will result in other locations with the potential to have effects to archaeological resources. If those areas are in the APE already evaluated, the effects may be evaluated using the research done to date. If they are in new areas outside the project's APE, additional research may be required to identify whether any resources may be present. Potential effects would then be assessed in these areas as well.

7.9.5 Recommendations

There is a minimal to moderate expectation of encountering intact, significant precontact archaeological deposits within the western half of the APE. Although the likelihood that resources would have survived the 19th and 20th disturbances in this section of the APE is considered moderate to minimal, there is a possibility that undisturbed pockets of the precontact and contact landscape may remain beneath fill that varies in depth throughout the APE. As fill level varies sharply in the middle of the APE, additional soil borings would be needed to determine which areas of the APE have maintained their potential sensitivity. Therefore, prior to any field investigations, additional soil boring tests will be performed as part of the design effort of the project. These may provide additional subsurface information to further assist in the archaeological interpretation of the APE, but cannot always substitute for field verification.[1] Following the review of soil borings, some or all of the APE may be found to be too disturbed to possess research potential. For these sites, no further action will be recommended. However, for other sites, soil borings will either provide a clear indication of sensitivity or may be inconclusive. For these sites, an assessment of potential project effects will be made based on the most current engineering plans. Those sites that will not be affected will not be recommended

[1] Soil borings to be undertaken for construction design purposes will be taken in coordination with an archaeologist. Preferably, continuous tube samples down to 15' below the bottom depth of fill would further assess subsurface conditions in potentially sensitive areas.

for further study, unless design plans change in the future and effects will occur. For those sites that will be affected, the potential research value of each site will be evaluated and the sites prioritized for testing based on their potential to yield significant information and address meaningful research issues according to National Register criteria. A protocol for the prioritization of precontact resources will be prepared in consultation with SHPO.

Where subsurface testing is indicated, its goal would be to establish the presence or absence of cultural resources, the horizontal and vertical extent of these resources, site integrity, and, potential significance as defined by eligibility for inclusion on the National Register of Historic Places. Field analysis could also take the form of additional exploratory excavations or monitoring at the time of construction. The method of field analysis selected for each site would depend on site access and testing feasibility.

If avoidance of potential resources is possible, then that is considered a viable mitigation alternative. If the avoidance of adverse effects to potentially National Register eligible archaeological resources is not possible, then appropriate mitigation procedures would take the form of archaeological data recovery. It is possible, however, that given the wide range of areas identified in the Second Avenue Subway APEs as archaeologically sensitive, that some archaeological resources would not be excavated as part of the project's mitigation program, resulting in potentially adverse effects to archaeological resources. This could occur where archaeologically sensitive areas are not accessible as a result of their depth beneath deep fill and where construction would not entail any surface work that would allow access to such resources. Other sites may be inaccessible due to pedestrian, traffic, and safety constraints. In addition, some sites may not be selected for data recovery since they may hold a low potential to yield significant information and/or would provide a redundancy in information in contrast to other sites which may be sensitive for similar resources and would be mitigated.

7.9.6 Figures and Photographs

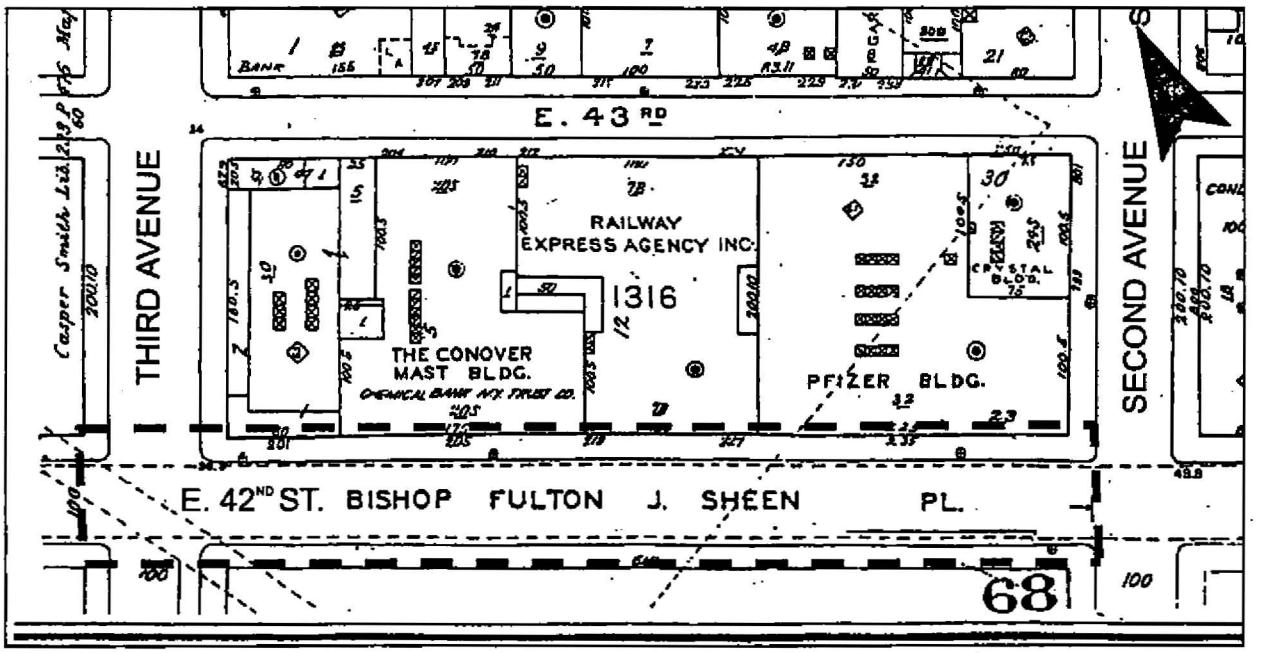


FIGURE 7.9-1

Insurance Maps. Sanborn 2001.
East 42nd Street, Second to Third Avenues.

Approximate Scale: ¾ inch = 100 feet

FIGURE 7.9-2

British Headquarters Map. 1782.
East 42nd Street, Second to Third Avenues.

Approximate Scale: ¼ inch = 100 feet

FIGURE 7.9-3

Map of the City of New York and Island of Manhattan as laid out by the Commissioners. Bridges 1807-1811.
East 42nd Street, Second to Third Avenues.

Approximate Scale: 1/8 inch = 100 feet

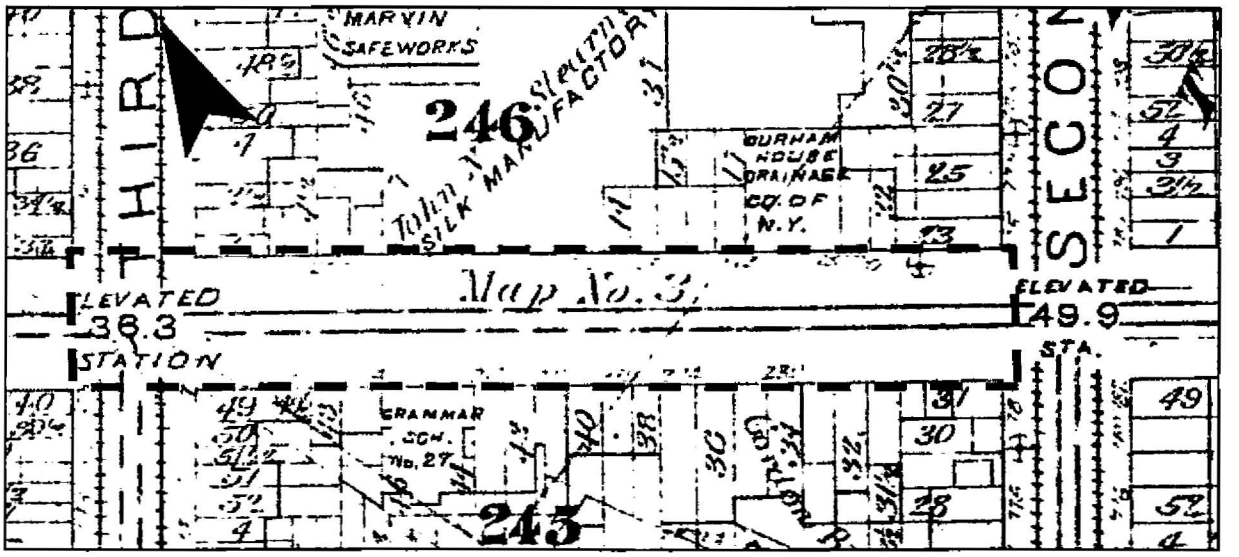


FIGURE 7.9-4

Atlas of the City of New York. Robinson 1885.
East 42nd Street, Second to Third Avenues.

Approximate Scale: ¾ inch = 100 feet

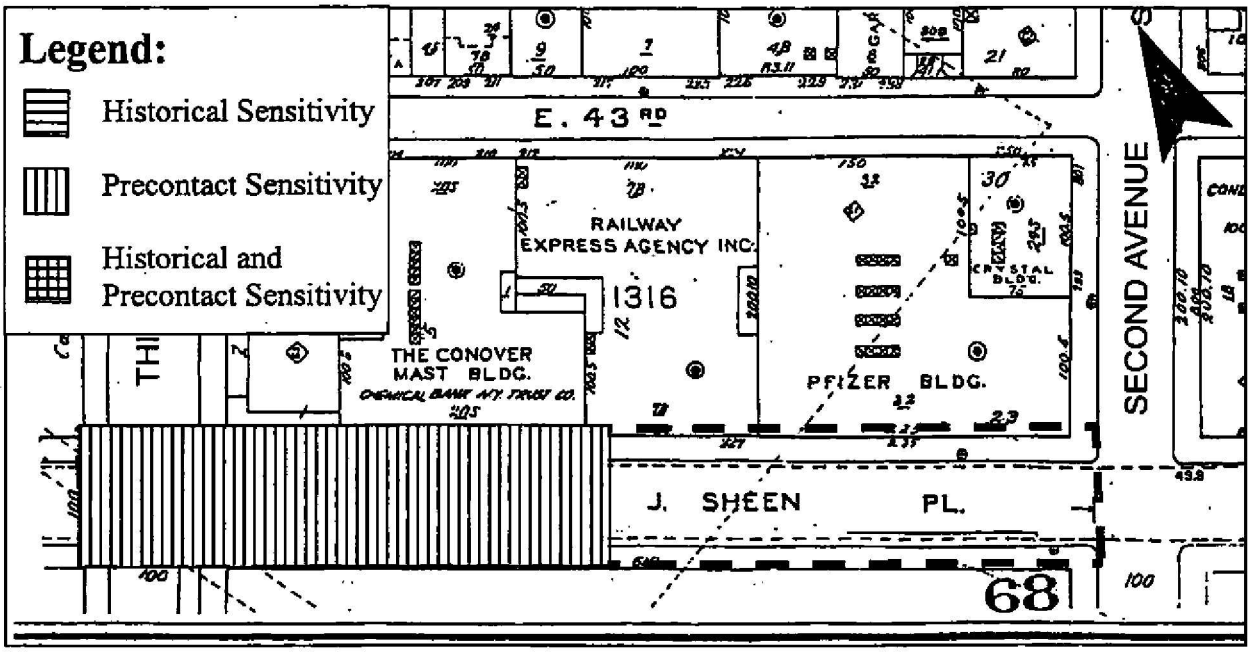
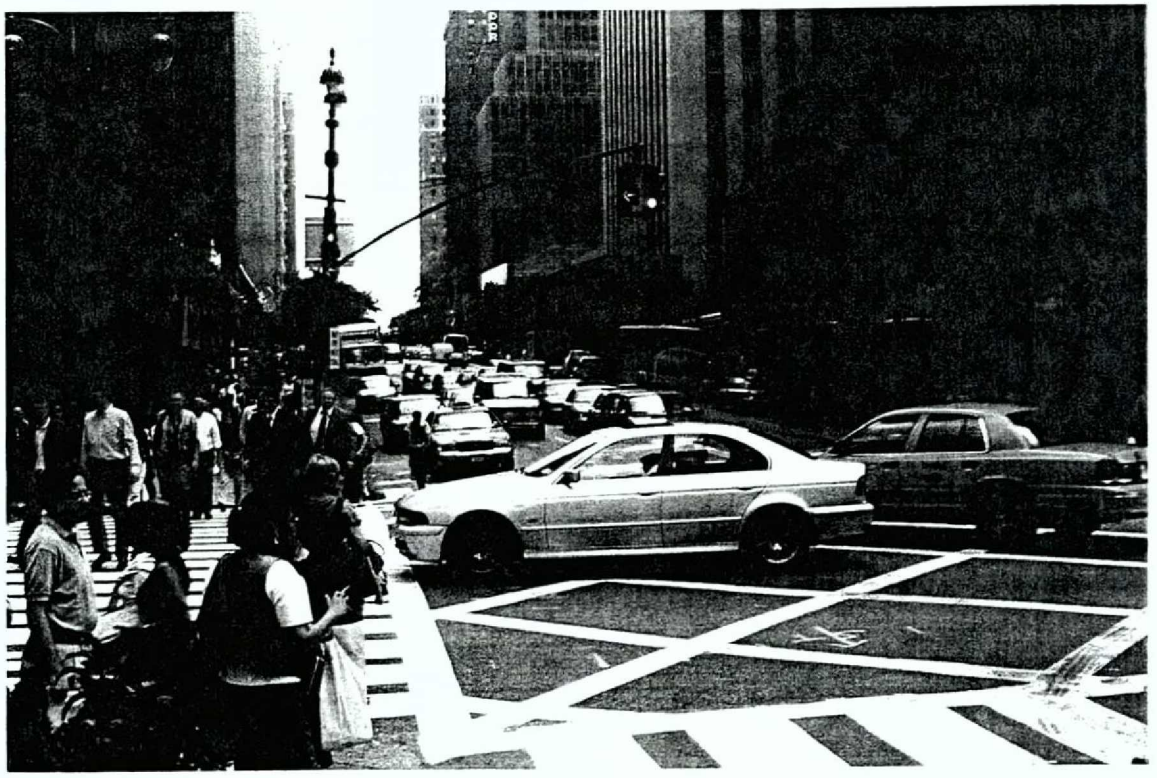


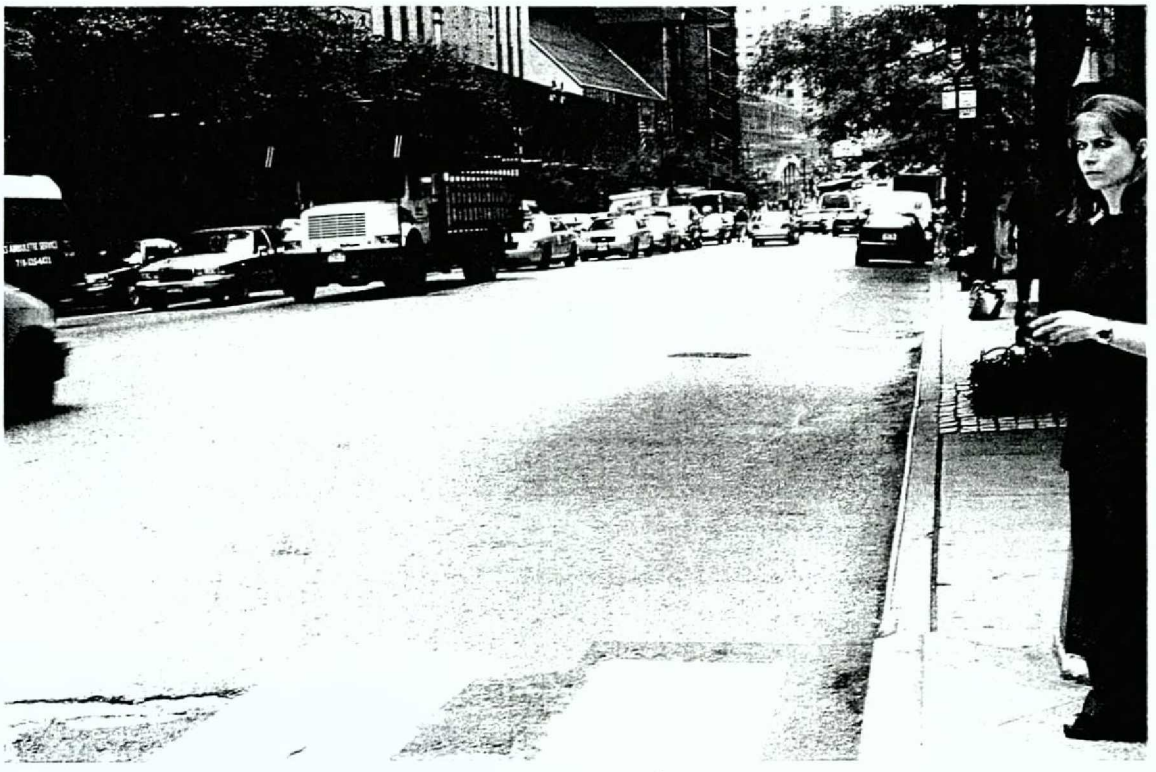
FIGURE 7.9-5

Area of Potential Archaeological Sensitivity. Sanborn 2001.
East 42nd Street, Second to Third Avenues.

Approximate Scale: ¾ inch = 100 feet



Photograph 7.9-1: Facing east toward East 42nd Street from the northwest corner of Third Avenue and East 42nd Street.



Photograph 7.9-2: Facing west toward East 42nd Street from the northwest corner of Second Avenue and East 42nd Street.

7.9.7 Appendices

7.9.7.1 Documentary Assessment of APE

Cartographic History

Ratzer 1766: East 42nd Street is portrayed as a vacant hill sloping downward toward the west. There appears to be a stream near where Third Avenue will eventually be laid out.

British Headquarters 1782: The APE contains a stream on the very western end, and a knoll in the middle. The area closest to the stream is swampy, and there is a farm on the knoll. The stream runs southeast to East River, emptying out at Kips Bay. The Boston Post Road runs to the west just outside the APE. A cluster of buildings, presumably part of a farm, is shown just outside the APE, but exact locations are difficult to determine on this map (Figure 7.9-2).

Commissioner's 1811: A promontory is shown in the center of the APE, and extending northwards for two blocks. The APE is just east of the Post Road and a stream that continues southeast to Kips Bay. The APE is part of the property of Smith. There are three structures associated with this property one block to the north of the APE near Third Avenue. Also outside the APE is a large house on East 42nd Street between First and Second Avenues, which is labeled as part of the Winthrop estate (Figure 7.9-3).

Sackersdorf 1815: The APE is east of the Old Stage Road, and the western portion is part of a 7.75 acre tract belonging to Margaret Smith, while the eastern portion is part of a very large estate of over 80 acres belong to Francis B. Winthrop. There do not appear to be any structures within the APE.

Randel 1820: The APE is vacant, and no distinguishing topographic features are shown.

Turtle Bay Farm Map 1820: The Smith property, which comprises the western two-thirds of the APE, is labeled as 'Farm belonging to the Casper Smith dec'd.' About 50' south of the APE, in Block 1315, is a symbol labeled 'Brown Monument marked 2.' A lane runs on the southwestern border of the Smith property, connecting to the Old Post Road and through the western end of the APE. It is not clear if this lane then continues along the southeastern border of the property, crossing through the APE. No structures are noted within the APE.

Colton 1836: A small high point in topography is present in the middle of the APE and extends northwards into the adjacent block. There is a ridge which passes through the western portion of the APE; it runs north-south, and the downslope, outside the APE, leads to a stream.

Dripps 1852: The APE is depicted as a vacant street. There is a small amount of development on each adjacent blocks (1315, 1316), but none is shown within the APE.

Perris 1859: No roadbed information is provided on this atlas. Each side of East 42nd Street between Second and Third Avenues has some development.

Dripps 1863: Trolley lines are shown on Second and Third Avenues. The Third Avenue lines are within the APE. Old property lines are noted as they are in Sackersdorf 1815, with the westernmost portion of the APE falling within the property of Smith, and the easternmost belonging to F.B. Winthrop. A small portion of the most southwestern area of the APE belongs to S. Kip.

Viele 1865 The majority of the APE is shown as open land, but there are ridges running along the western end of the APE, where the downslope leads away to a stream. There is another set of ridges running through the eastern end of the APE. Elevations are recorded as 23' at Third Avenue and East 42nd Street, and 43' at Second Avenue and East 42nd Street. Water pipes are shown on Third Avenue and intersect with a pipe on East 42nd Street west of the APE. The intersection falls within the APE. A stream runs northwest to southeast, about 200' away from the APE and empties into the East River (at Kips Bay). There is a series of small hillocks to the north and east, outside the APE.

Dripps 1867 Transportation lines are indicated on Second and Third Avenues, and the Third Avenue lines are within the APE. Development on either side of East 42nd Street just outside the APE is just slightly increased from that portrayed on Perris 1859. No sewer or water lines are indicated. The old farm property lines and the lane bordering the southwestern side of the old property are shown; the lane runs through the westernmost portion of the APE in the center of the Third Avenue and East 42nd Street intersection, and the southeastern property line runs through the middle of the eastern half of the APE, through the East 42nd Street roadbed.

Viele 1874: This map is similar to the Viele 1865, although water pipes are not indicated.

Robinson 1885: Trolley tracks are present on East 42nd Street, within the APE. There are also trolley and elevated railroad lines on both Second and Third Avenues. There are elevated stations at East 42nd Street and Second Avenue, and East 42nd Street and Third Avenue. The Third Avenue station definitely falls with the APE; it is not clear if the Second Avenue station does. A hydrant is located on the north side of East 42nd Street near Second Avenue, within the APE. Each side of East 42nd Street is fully developed (Figure 7.9-4).

Sanborn 1899: The outlines of the elevated stations are shown at the intersection of East 42nd Street and Second and Third Avenues. Much of the Third Avenue station is within the APE, while just the western part

of the Second Avenue station is within the APE. These stations are iron structures over the roadbed. In addition to the hydrant indicated on Robinson 1885, there are two other hydrants, also on the north side of East 42nd Street on the western end of the APE. There is also a fire alarm box on the southwest corner of East 42nd Street and Second Avenue. There are three boilers in front of 209/211 East 42nd Street. Additionally, East 42nd Street is 100' wide, and there are a number of water pipes present. On Third Avenue there are 30" and 12" pipes; on Second Avenue there are 48", 36", 12" and six-inch pipes; and on East 42nd Street there are 30" and six-inch pipes.

Sanborn 1910: The APE is similar to how it was portrayed on Sanborn 1899, except that there are two additional hydrants on the southern side of East 42nd Street within the APE, one on the western end, and the other on the eastern end. There is an additional boiler in front of 209 East 42nd Street.

Hyde 1913 There is now a subway running beneath East 42nd Street, within the APE (the modern 7 line), and the trolley lines are still present, as are the elevated stations. Stairs are also present on many of the structures fronting onto the north side of East 42nd Street, falling within the sidewalk portion of the APE. Stairs are also shown for the elevated stations, with stairs for the uptown platform of the Third Avenue station on the southern sidewalk of East 42nd Street, and stairs for the Second Avenue downtown station on the northwest sidewalk of the intersection of Second Avenue and East 42nd Street. Water and sewer pipe information is as follows: Third Avenue has 30", 12" and 5' x 4" brick pipes; Second Avenue has 48", 15", and 12" pipes; and East 42nd Street has a 36" pipe, two six-inch pipes, and a six foot circular brick pipe.

Sanborn 1929: The APE is similar to Hyde 1913, except that there are two additional hydrants on the southern side of East 42nd Street within the APE, one on the western end, and the other on the eastern end. There is an additional boiler in front of 209 East 42nd Street. On Second Avenue a rectangular structure is indicated overlying the elevated station, with the label 'Station Under Construction.' Presumably this is a new elevated station (see Bromley 1934).

Bromley 1934: The APE is similar to Sanborn 1929, although the elevated stations appear to be indicated differently, and may have been renovated or newly constructed since 1929. The Second Avenue station extends well into the APE, although the entire structure may be raised above ground, so therefore has little effect on it. The Third Avenue station is almost entirely within the APE.

Sanborn 1952: The elevated line and station on Second Avenue has been removed. The rest of the APE is unchanged from Bromley 1934.

Bromley 1967: The Third Avenue elevated railroad and station are no longer present. The rest of the APE is unchanged from Sanborn 1952.

Bromley 1974: The APE is unchanged from Bromley 1967.
Sanborn 2001: The APE is unchanged from Bromley 1967.

Street Elevations of the APE are as follows:

Data Source	42nd Street at Second Avenue	42nd Street at Third Avenue
1865 Viele	43'	23'
1885 Robinson	49.9'	36.3'
1913 Hyde	49.9'	30.6'
1934 Bromley	49.9'	36.3'
1935 WPA	50.6'	30.5'
1974 Bromley	49.9'	36.3'
2001 Bromley	49.9'	36.3'

Precontact Sensitivity

Maps of the APE prior to development show the western end in close proximity to a stream, and the land sloping upwards to the east where a knoll is located directly north of the APE (British Headquarters 1782; Commissioners' 1811). Viele (1865; 1874) does not depict the area as a discrete knoll, but rather as a section of a series of upslopes culminating in a knoll between East 42nd and East 41st Streets and First and Second Avenues. This more eastern knoll is also shown on the British Headquarters and Commissioners' maps. Colton (1836) depicts a knoll centered in the middle of the APE and continuing into the block just to the north. Stokes shows the area around the stream as swampy (Landmark Map 1928: Plate 84B-C), and also depicts a secondary stream that is to the east of the main stream depicted on the topographical maps. The British Headquarters map also depicts the area as marshy, but not to the extent of that of Stokes.

Because of the presence of a freshwater stream within 100' of the APE, there is a potential for precontact resources within the APE. Typically, precontact sites are found on elevated land within fairly close proximity to a water course which would have provided an attractive location for wildlife and other food resources as well as a good vantage point. The small hill on the project site might have provided this favorable setting in the past. Evidence of precontact activity is usually found near the surface, which leaves these resources at risk for destruction during the periods of intensive development that took place in the historical era. The Eastern Post Road, which followed the route of an old native trail, formerly passed immediately west of the East 42nd Street APE (Grumet 1981:66). The road, identified by Grumet as Wickquasgek Road, once connected to the Old Albany Post Road (Broadway) and was used by Native Americans who were coming to trade at Fort Amsterdam (Ibid.:59). As the former road traversed the east side of Manhattan, its route was variable as it wound around the small hills on this side of the island. Arthur C. Parker also reported traces of occupation to the north between First and Third Avenues (NYSM Site #4061). The locations of sites noted by Parker are not precise, but the proximity of a freshwater stream to the APE may have

offered distinct advantages to the precontact peoples in the area (Colton 1836; Viele 1865).

Soil borings in the western half of the APE show seven feet of fill overlying 18-22.3' of clay, sand, and gravel (Soil Borings WPA II:14:76, 77, 1935; Appendix 7.9.7.3). The later historic fill may have served to protect these precontact resources from 19th and 20th century disturbance. In the eastern half of the APE, soil borings indicate that either there was no fill over the natural soils (Soil Borings WPA II:14:39-43, 1935), or that there was fill over no or little natural soils (Soil Borings WPA II:14:154, 155, 1936), suggesting that it is unlikely that precontact resources would have been preserved. The effect of the construction of the subway tunnel currently beneath the East 42nd Street roadbed to precontact resources was probably minimal, at least in the western half of the APE. The IRT 7 line, constructed in 1904, was a rock mined tunnel, and the base of this tunnel is approximately 110' below grade (SYSTRA November 12, 2001), far below the depth of anticipated resources. Specific details about utilities are not available for the APE, other than cartographic evidence for water and sewer lines: Third Avenue has a 30", 12" and a 5' x 4" brick pipe; Second Avenue has a 48", 15", and a 12" pipe; and East 42nd Street has a 36" pipe, two six-inch pipes, and a six foot circular brick pipe. Construction of these may have caused some disturbances, as the deepest fill is only seven feet below grade. The western half of the APE should, therefore, be considered sensitive for precontact resources, while the eastern half is not (Figure 7.9-5).

Historical Sensitivity

Maps of the APE prior to development show the western end in close proximity to a stream, and the land sloping upwards to the east, where a knoll was located directly north of the APE (British Headquarters 1782; Commissioners' 1811). The APE falls into three historic properties, the Vanderhoof Farm (later belonging to Casper Smith and then Martin Smith), the Kipps property, and the Turtle Bay Farm, owned by Francis Winthrop and family. The majority of the APE falls into the Vanderhoof/Smith property, with the other two comprising the western and eastern ends respectively.

During the 17th century, the vast undeveloped lands of northern Manhattan were being divided into large farms or estates. Most of the estates on the eastern side of Manhattan were narrow tracts that had access to the East River, which provided the easiest transportation route to Lower Manhattan. The APE was part of the Common Lands of the City of New York, granted in 1686, but it is not known when Cornelius Van Derhoff actually took hold of the property. He is known to have been in New York in 1741 (Stokes 1928:152) and a farm in the appropriate location is visible on a 1782 map (British Headquarters). His heirs sold the land to Martin Smith in 1796 (Stokes 1928:152), and according to cartographic evidence, it remained in the Smith family through the beginning of the 19th century (Sackersdorf 1815; Turtle Bay Farm Map 1820). The Turtle Bay Farm property is unlikely to have resulted in historical resources, although a property was located in the vicinity of East 42nd Street and First Avenue (Commissioners' 1811; Sackersdorf 1815), because of the lack of historical fill as discussed below.

The property abutted the Old Post Road, and encompassed much of the APE. A lane connecting to the Old Post Road ran along the southwestern border of the property and through the western end of the APE. According to Stokes (1928:152: Landmark Map 1928:Plate 84B-C), the Ratzer map and Maerschalk's survey of the Turtle Bay farm in 1771 show the farmhouse was located at the southeast corner of East 44th Street and Third Avenue, outside the APE. The Commissioners' Map (1811) shows three structures between East 44th and East 43rd Streets along the eastern side of Third Avenue. No house is indicated on Sackersdorf (1815), Randel (1820), or the Turtle Bay Farm Map (1820). However, there is a possibility for the rear of the farm property to fall into the APE, as an earlier map (British Headquarters 1782; Figure 7.9-2) seems to indicate that a cluster of buildings is slightly more south, putting it in or very near the APE. Since it is difficult to ascertain precise locations on the 1782 British Headquarters map, the landmarks of a knoll and stream help to situate it. Associated unmapped structures and features such as farm outbuildings, barns, wells, privies, and cisterns may have the potential to fall within the APE, but this is purely speculative.

The farm directly to the north of the APE was mid-sized, encompassing only 7.75 acres according to Sackersdorf (1815), and measured approximately 500' by 700'. If the main structures of this property were always located as they are shown on the more precise Commissioners' Map (1811; Figure 7.9-3), then the APE was about 250' away from these structures, falling within the farm boundaries, but suggesting only a low possibility that subsurface features associated with the farm might lie within the APE. Therefore, the APE is considered not potentially sensitive for historic archaeological resources.

7.9.7.2 Site File Search Results, NYCLPC, NYSOPRHP and NYSM

SITE FILE SEARCH RESULTS

Project Name 2nd Ave. Subway HAA Project Number 2362 Client Historical Perspectives

City ~~Village~~ New York Town _____ County New York

Quadsheets Central Pk, Brooklyn, Jersey City.

Conducted by: K.C. Date 10.1.01

NEW YORK STATE MUSEUM # Sites 7

4051 X
4060 X
4061 X
4062 X
4063 X
4064 X
4078 X

*Missing

209 Water st. South Street Seaport HP

*Missing

*526 Broom st. Historic Site

*According to Cynthia Blakemore @ SHPO

SHPO # Sites ~~24~~ 19

A061.01.0491 —
A061.01.01282 X
A061.01.01272 X 2014
A061.01.01284 X
A061.01.01283 X
1 - A061.01.1271 X
~~2 - A061.01.0044 003~~
3 - A061.01.0623 X 2013
4 - A061.01.06763 X
~~5 - A061.01.0001~~
6 - A061.01.00604 X
A061.01.01304 X
A061.01.01285 X
A061.01.07671 —
A061.01.09530 X
A061.01.01286 X
A061.01.05411 X
A061.01.00542 X
A061.01.09531 X

#30 = British Line
#31
(note: #30 + #31 — the only info from SHPO was that NYAC did a survey in the 1970's 2nd found historic Remains. no other info was found.)

NYAC = New York Archeological Council.

[redacted]

Building Inventory #	NR Status	Form Copied	Property Description	Reads Checked
06101.000664	NRL	✓	South Street Seaport Historic District 209 Water Street	

<17 previous surveys w/in Radius>

PREVIOUS SURVEYS

8 Westside Highway Program - 1983

[redacted] 209 Water St. - Schuyler - ? Date

[redacted] William D. Hersey - 1963 Castle Clinton At the Battery

[redacted] East River Road - New York Harbor Collection Kardon & Larrabee October 1977

[redacted] Broad Street Financial Center Greenhouse January 1985

-10 Sheridan Square - 1983 - Rutgers University

X

[redacted] Lower Eastside Service Center - Louis Berger Jan '78

[redacted] 64th Park / Street Fifth Landfill Arnold Pickman & Nan Rothschild May 1981

[redacted] 750 Sixth Ave. HPI - February 1978

[redacted] Stone Street Historic District 1981 NYC Landmarks Pres. Comm. / Trader

[redacted] Baruch College Campus - Historic Conservation & Interpretation Inc. - Jan. 1981 / Reconnais. 1981

9 Barclays Bank Site - 100 Water St. Berger - 1983

[redacted] East River Plaza HPI Sept. 1978

[redacted] 175 Water Street Block Geismar July 1983

[redacted] Stone Street Historic District NYC Landmark Pres. Commission February 1978

[redacted] Schermerhorn Row Block. Kardon & Larrabee - Aug 1971

7 Telco Block - S. St. Seaport Historic District - 1983


SEE MAP C
S#27
S#25
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Long Island City
DEPTH CURVES
SHORELINE SHO
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7.9.7.3 Soil Boring Logs

WPA Vol. II, Sheet 14, No. 39
Board of Transportation, 1935
South side of East 42nd Street between Second and Third Avenues.

sand and clay	+36.4' to +31.0'
clay and sand	+31.0' to +28.0'
yellow clay	+28.0' to +25.0'
yellow clay and sand	+25.0' to +23.0'
very fine sand	+23.0' to +14.2'
top of rock	+14.2'

No water level recorded.

WPA Vol. II, Sheet 14, No. 40
Board of Transportation, 1935
North side of East 42nd Street between Second and Third Avenues.

sand and clay	+40.2' to +29.0'
top of rock	+29.0'

No water level recorded.

WPA Vol. II, Sheet 14, No. 41
Board of Transportation, 1935
North side of East 42nd Street between Second and Third Avenues.

sand and clay	+41.8' to +34.7'
top of rock	+34.7'

No water level recorded.

WPA Vol. II, Sheet 14, No. 43
Board of Transportation, 1935
North side of East 42nd Street between Second and Third Avenues.

sand and clay	+49.4' to +46.2'
yellow clay and sand	+46.2' to +43.2'
sand and gravel	+43.2' to +39.2'
soft rock	+39.2' to +36.0'
top of rock	+36.0'

No water level recorded.

WPA Vol. II, Sheet 14, No. 76
Public School No. 27, 1935
South side of East 42nd Street between Second and Third Avenues.

space (curb at top)	+37.6' to +28.8'
fill	+28.8' to +21.8'
clay and sand	+21.8' to +19.8'
find sand boggish	+19.8' to +13.8'
sand, gravel, mica	+13.8' to +3.8'
rock or boulder	+3.8'

No water level recorded.

WPA Vol. II, Sheet 14, No. 77
Public School No. 27, 1935
South side of East 42nd Street between Second and Third Avenues.

space (curb at top)	+37.6' to +28.8'
fill	+28.8' to +21.8'
not recorded	+21.8' to +17.8'
sand boggish	+17.8' to +12.8'
gravel	+12.8' to +7.8'
mica sand	+7.8'to –0.5'
rock or boulder	–0.5'

No water level recorded.

WPA Vol. II, Sheet 14, No. 154
Godwin Construction Co., 1936
South side of East 42nd Street between Second and Third Avenues.

fill (beg. 3.3' below curb)	+39.7' to +34.5'
med. soft rock	+34.5' to +32.5'
rock top	+32.5'

No water level recorded.

WPA Vol. II, Sheet 14, No. 155
Godwin Construction Co., 1936
South side of East 42nd Street between Second and Third Avenues.

fill (beg. 1.4' below curb)	+41.6' to +34.3'
misc. hard rock	+34.3' to +28.6'

No water level recorded.

7.10 EAST 14TH STREET: PEDESTRIAN CONNECTION

This Phase 1A Archaeological Assessment of the East 14th Street pedestrian connection has been prepared by Historical Perspectives, Inc. as an addendum to *Second Avenue Subway Phase 1A Archaeological Assessment*, prepared by Historical Perspectives, Inc., March 2003.

7.10.1 Study Area Description

The East 14th Street roadbed between Second and Third Avenues is being evaluated for its potential archaeological sensitivity since it may be the location of possible excavation work to construct a pedestrian transfer between the proposed new Second Avenue Subway and the Third Avenue L Station. The Area of Potential Effect (APE) includes the roadbed and sidewalks on East 14th Street west of Second Avenue for about 330 feet (Figure 7.10-1, Photographs 7.10-1, 7.10-2). The L subway line to Brooklyn runs beneath East 14th Street, with a subway station located within the APE.

7.10.2 Existing Conditions

7.10.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

The section of Fourth Avenue near 14th Street has been identified as part of the "Wickquasgeck Road," which led from the southern tip of Manhattan to Albany, with branches leading to settlements along the East and Hudson Rivers (Bolton 1920). Bowery Lane (of which the Bowery/Fourth Avenue is now a part), the main north/south route on Manhattan during the colonial period, followed the earlier Indian trail, and is located just two blocks west of the East 14th Street APE.

Bolton also reports a settlement called Schepmoes in "the area of Second Avenue in the vicinity of 14th Street. Here a pond of fresh water existed in the vicinity of a knoll, thus affording to some extent shelter and water supply" (Bolton 1972:133; 1922:57,64). Historic era maps confirm the presence of knolls and rises surrounding the area as well as a stream surrounded by wetlands that originates in the eastern area of the APE (Commissioner's Plan 1811; Randel 1820; Viele 1865, 1874). Schepmoes is referred to as a "plantation," a "group of lodges" and a "place of Indian occupation" (Ibid.). Grumet later identifies the toponym not as a native place name but as that of a Dutch settler, Jan Jansen Schepmoes, a seventeenth century Manhattan landowner, and places the settlement somewhat farther south closer to Second Avenue and East 10th Street (1981:51,68). Regardless, it may have fallen within the Second Avenue project corridor in the vicinity of East 14th Street.

Archaeological Potential

This section of the APE has been previously largely disturbed through cut-and-cover construction for the L subway tunnel and station located on East 14th Street between Second

and Third Avenues (Bromley 1934; Cudahy 1988: 62). Additionally, the very eastern end of the APE appears to have originally been wetlands (Viele 1865, 1874). While activities and settlements may have occurred on the margins of such resources, the wetlands themselves would not be an area likely to hold archaeological potential. Groundwater was encountered at nine to 11.5' below grade in soil borings taken along East 15th Street just north of the area of the APE (see Appendix 7.10.7.3, City of New York Borings 5, 6 and 7, 1975), suggesting the area indeed contained a marsh or slough.

Further, the surface area of the APE would have most likely been affected by early historic period farming, as the APE falls within Stuyvesant's 120 acre farm grant dating to 1651 (Stokes 1918, 1928). Surface remains are thus unlikely to have survived, and plowing may have disturbed up to one foot below historic-era grade.

WPA soil borings (1935) taken along East 14th Street do not conclusively identify fill layers (see Appendix 7.10.7.3, WPA Borings 7, 8, 17, 23 and 24). However, more recent soil borings from East 15th Street identify a definite fill layer of four to five feet, and possible fill reaching nine to 13 feet below grade (see Appendix 7.10.7.3, City of New York Borings 5, 6 and 7). The composition of the possible fill in the more recent East 15th Street borings matches layers in the older WPA borings that reach from 25 to 32 feet below grade--largely to bedrock. This would suggest that the former wetlands could have been dredged and filled.

If the fill reaches bedrock, there would be no sensitivity for precontact era resources within the APE. If fill levels reach only four to five feet, and possibly up to 13 below the surface, precontact sensitivity would be limited to depths of between five to 18 feet, with the precontact surface protected by the fill, in areas outside of the subway tunnels under the sidewalks that have not been otherwise previously affected by utilities or existing sidewalk vents.

7.10.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

While there are no known historical sites within the East 14th Street APE, the site falls within the historic era Stuyvesant farm which dates from the 17th century to the early 19th century (Cooke 1831; Sackersdorf 1815; Stokes 1918, 1928). Several streets had been established that were parallel and perpendicular to the old Bowery Road to Boston to the east in the vicinity of the APE. One larger street passed adjacent to the east end of the APE, which led to the residence of Peter Stuyvesant, one and a half blocks east of East 14th Street and Second Avenue (Commissioner's Plan 1811, Figure 7.10-2; Stokes 1918). Stokes also notes that "Stuyvesant's Pear Tree," planted by Petrus Stuyvesant and removed in 1867, was located near the corner of East 13th Street and Third Avenue (1918: 967).

Archaeological Potential

The archaeological potential for historical resources is minimal. The considerable disturbances caused by the construction of the L subway tunnel and station largely destroyed

the area, at least up to the sidewalk lines. It is likely that utilities and sidewalk vents have further disturbed the area. Evidence that the area held wetlands suggests the landscape was filled; soil borings show definite fill layers up to five feet in the vicinity and possibly down to bedrock within the APE (see Appendix 7.10.7.3). Further, the lack of documentary evidence for specific historical resources within the area of the APE makes it unlikely any would be encountered. Therefore, the APE is not considered sensitive for historic period resources.

7.10.3 Summary of Archaeological Potential

There is no potential to encounter historic resources within the APE, as the area was farmland before becoming East 14th Street. Research indicates that there is a high probability the area was inhabited by Native Americans. However, the present subway tunnel and station have already affected the majority of the APE under the streetbed. Sidewalks on either side of the street have the potential to hold precontact era archaeological resources only where there are no utilities, sidewalk vents associated with the subway tunnel, or other disturbances, probably leaving only very limited areas, if any. Additionally, the area has been covered by fill; however it is not clear how deep the fill levels reach in the area of the APE. Fill is not conclusively identified in soil borings within the APE, but to the north of the APE, borings identify with certainty four to five feet of fill, and possibly nine to 13 feet of fill. Archaeological potential for precontact resources is low due to probable disturbances, but contingent upon confirming the depth of fill in the area. Currently, the area of potential would be located from five to 18 feet below grade (Figure 7.10-4).

7.10.4 Proposed Project Effects

Proposed construction plans call for excavation work, likely using cut and cover construction, to create a pedestrian transfer from the proposed Second Avenue Subway to the existing Third Avenue L Subway Station. There is no sensitivity in the area for historic remains; however there is the possibility that some subsurface precontact era remains may exist undisturbed beneath historic period fill. The precise depths of that fill in the area of the APE need to be more accurately established, but with current information, the fill appears to be from five to 13 feet deep; thus, the area of potential effect would be from five to 18 feet below current grade.

The potential effects to possible archaeological resources described in this report result from construction activities that have been identified at this stage in the project's engineering. In addition to these effects, it is possible that refinements to project designs as engineering work continues will result in other locations with the potential to have effects to archaeological resources. If those areas are in the APE already evaluated, the effects may be evaluated using the research done to date. If they are in new areas outside the project's APE, additional research may be required to identify whether any resources may be present. Potential effects would then be assessed in these areas as well.

7.10.5 Recommendations

Due to extensive disturbances, there is a low expectation of encountering intact, precontact remains within the APE where precontact settlement was identified. However, subsurface conditions are incomplete for the precise location of the APE, and the precise depth of fill is currently unknown. Therefore, prior to any field investigations, additional soil boring tests will be performed as part of the design effort of the project. These may provide additional subsurface information to further assist in the archaeological interpretation of the APE, but cannot always substitute for field verification.[1] Following the review of soil borings, some or all of the APE may be found to be too disturbed to possess research potential. For these sites, no further action will be recommended. However, for other sites, soil borings will either provide a clear indication of sensitivity or may be inconclusive. For these sites, an assessment of potential project effects will be made based on the most current engineering plans. Those sites that will not be affected will not be recommended for further study, unless design plans change in the future and effects will occur. For those sites that will be affected, the potential research value of each site will be evaluated and the sites prioritized for testing based on their potential to yield significant information and address meaningful research issues according to National Register criteria. A protocol for the prioritization of precontact resources will be prepared in consultation with SHPO.

While the likelihood of encountering prehistoric remains is low, since Native American sites in Manhattan are so rarely encountered, it would be extremely significant if any were to be uncovered. Where subsurface testing is indicated via soil borings, its goal would be to establish the presence or absence of cultural resources, the horizontal and vertical extent of these resources, site integrity, and, potential significance as defined by eligibility for inclusion on the National Register of Historic Places. Field analysis could also take the form of additional exploratory excavations or monitoring at the time of construction. The method of field analysis selected for each site would depend on site access and testing feasibility.

If avoidance of potential resources is possible, then that is considered a viable mitigation alternative. If the avoidance of adverse effects to potentially National Register eligible archaeological resources is not possible, then appropriate mitigation procedures would take the form of archaeological data recovery. It is possible, however, that given the wide range of areas identified in the Second Avenue Subway APEs as archaeologically sensitive, that some archaeological resources would not be excavated as part of the project's mitigation program, resulting in potentially adverse effects to archaeological resources. This could occur where archaeologically sensitive areas are not accessible as a result of their depth beneath deep fill and where construction would not entail any surface work that would allow access to such resources. Other sites may be inaccessible due to pedestrian, traffic, and safety constraints. In addition, some sites may not be selected for data recovery since they may hold a low potential to yield significant information and/or would provide a redundancy in information in contrast to other sites which may be sensitive for similar resources and would be mitigated.

[1] Soil borings to be undertaken for construction design purposes will be taken in coordination with an archaeologist. Preferably, continuous tube samples down to 15' below the bottom depth of fill would further assess subsurface conditions in potentially sensitive areas.

7.10.6 Figures and Photographs

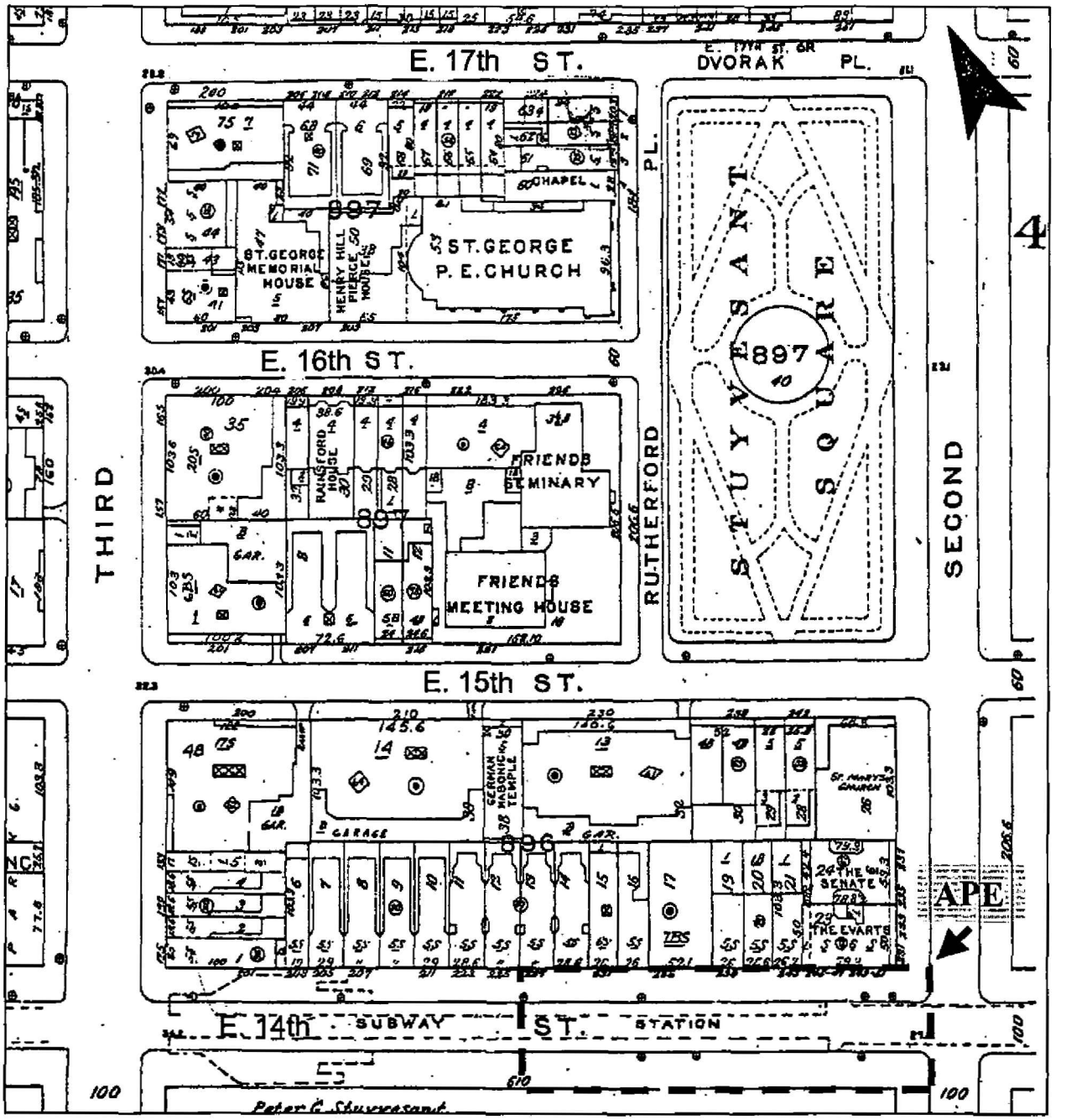


FIGURE 7.10-1

Insurance Maps. Sanborn 2001.
East 14th Street, Second Avenue to Third Avenue.

Approximate Scale: ½ inch = 50 feet

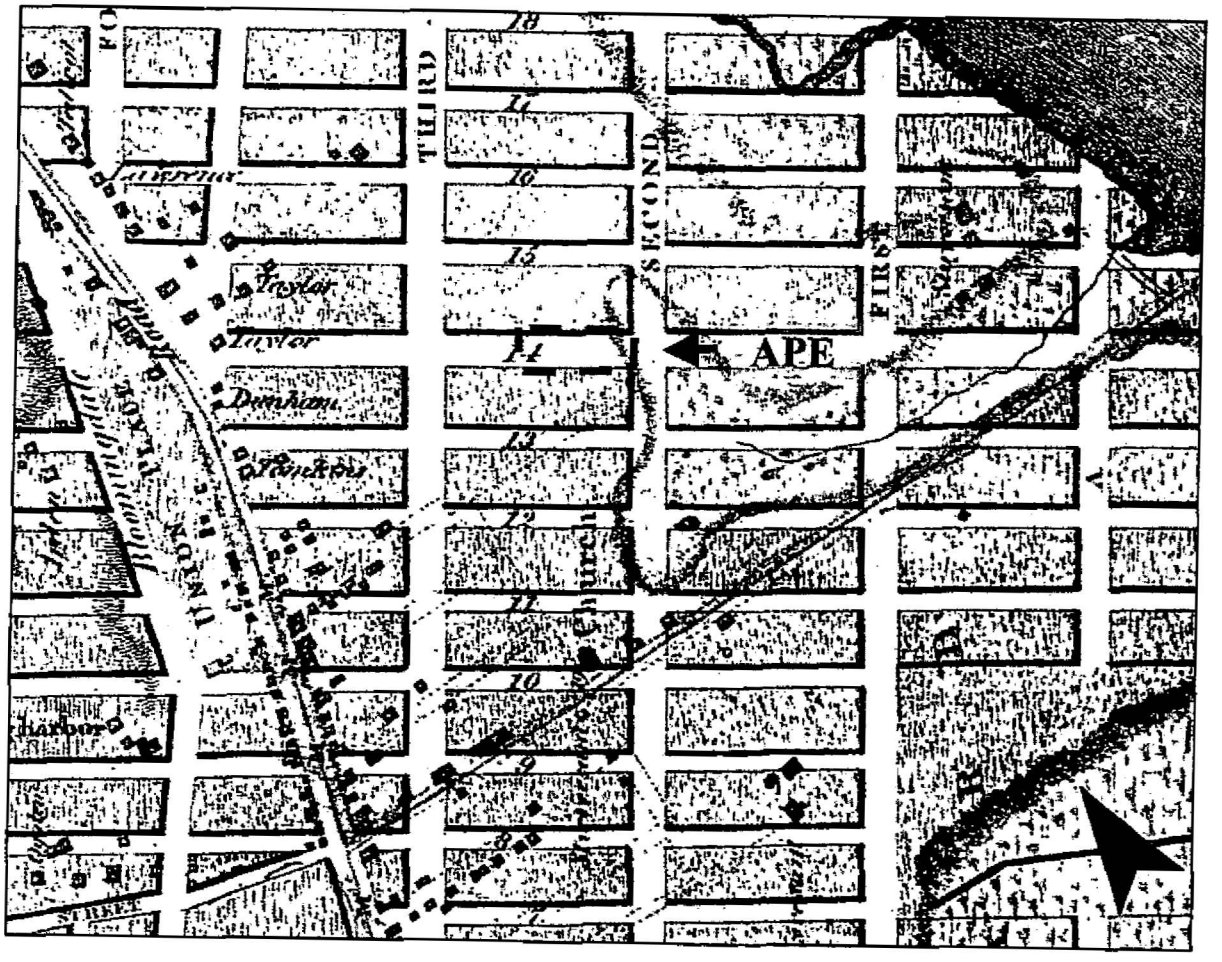


FIGURE 7.10-2

Map of the City of New York and Island of Manhattan as laid out by the Commissioners. Bridges 1807-1811.
East 14th Street, Second Avenue to Third Avenue.

Approximate Scale: ¼ inch = 100 feet

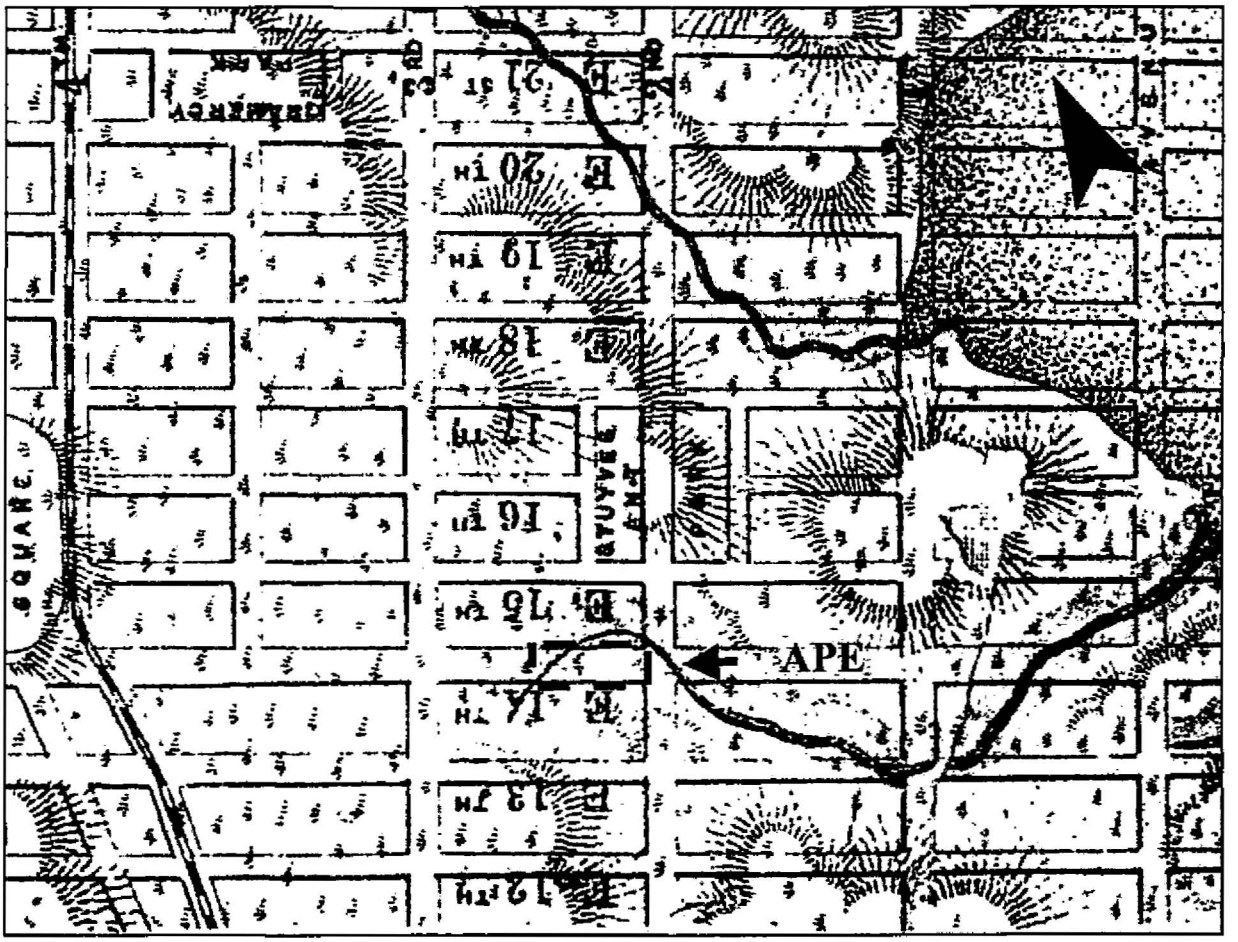


FIGURE 7.10-3

Topographical Atlas of the City of New York. Egbert Viele 1874.
East 14th Street, Second Avenue to Third Avenue.

Approximate Scale: ¼ inch = 100 feet

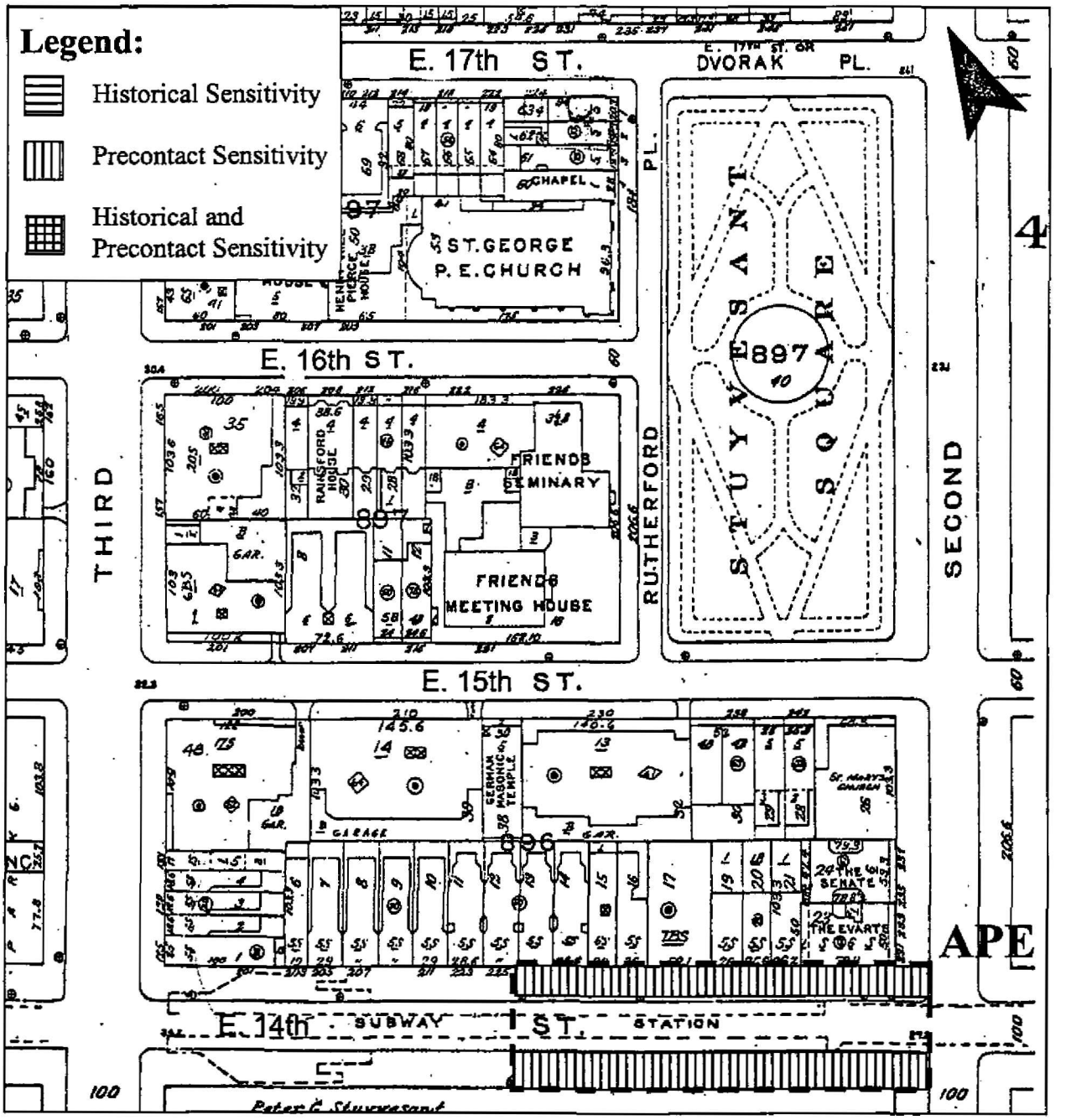
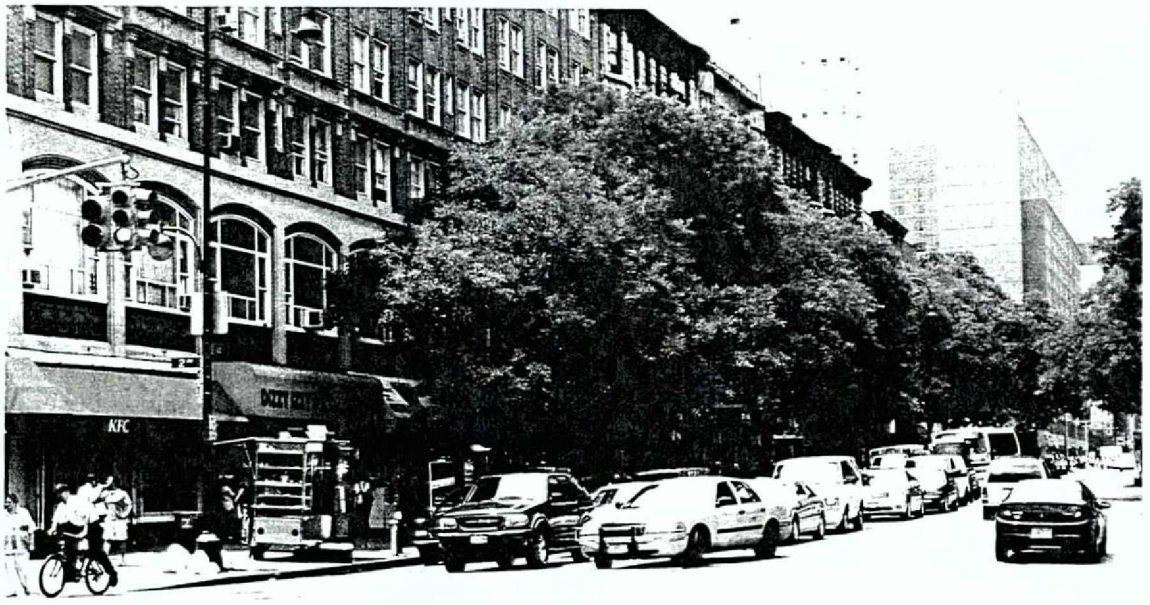


FIGURE 7.10-4

Area of Potential Archaeological Sensitivity. Sanborn 2001.
East 14th Street, Second Avenue to Third Avenue.

Approximate Scale: ½ inch = 50 feet



Photograph 7.10-1: Facing southwest toward East 14th Street from the northeast corner of Second Avenue and East 14th Street.

Photograph 7.10-2: Facing northwest toward East 14th Street from the southeast corner of Second Avenue and East 14th Street.

7.10.7 Appendices

7.10.7.1 Documentary Assessment of APE

Cartographic History

Montresor 1766: The APE is not shown on this early map of Manhattan. To the southwest of the APE, however, the landscape is divided into large farm lots. The "Road to Albany and Boston," later Bowery, which runs about a half a mile southwest of the APE, is present.

Ratzen 1767: The APE is located just north of the boundary of this map, and is not portrayed here. The area immediately south of is shown as vacant farmland. Again, the "Bowry Lane/"Road to Boston" is shown as the closest major thoroughfare, located west of the APE.

British Headquarters Map 1782: This particular map is not highly detailed, but the area of the APE is shown. It is located in an area where several streets are shown that run perpendicular to Bowery. Structures mainly cluster near Bowery, but also extend towards and possibly into the APE. However, given the small scale of the map, it is not possible to conclusively state the presence of structures in the APE.

British Headquarters Map 1797: This map is very like the earlier 1782 version, but slightly more detailed. Stuyvesant Square Park, which is located one block north of the APE, is shown. There are no structures shown in the area of the APE.

Bridges 1807: This Plan shows the area of the APE developed, or intended development. Stuyvesant Square, located one block north of the APE, is indicated on this map. No structures are shown. However, north-south streets are not in current configurations, but are shown parallel with Bowery. Four of these streets which fell within the APE include, from east to west, Orchard, Fourth, Third, and Second Street (not equivalent to current Avenues). The east-west streets at the time in the area were parallel with southern streets such as (current) East Houston Street. Morris Street would have crossed the APE at the time.

Commissioner's Plan 1811: Figure 7.10-2. This plan shows streets and avenues in their current alignments. Additionally, in the area of the APE, the layouts of previously existing streets are shown superimposed over the current layout. One older street that ran perpendicular to Bowery is shown nearly crossing the southeast corner of the APE at the intersection of Second Avenue and East 14th Street. This street is shown leading to a residence labeled "Stuyvesant," around two blocks east of the APE. There are no structures shown within the APE; however, outside of the APE, other structures are shown along these older streets. There is a

possibility that there were once structures within the APE, if they had been located on the north side of the street that passes by the corner of Second Avenue and East 14th Street. There is no direct record of such structures, however.
Additionally, this map shows the stream which begins near the vicinity of the east end of the APE and empties into the East River, which was then located less than three Avenue blocks east of the APE. The stream is surrounded by marshy lands that impact the east end of the APE.

Sackersdorf 1815: This map shows no details within the APE. However, the area in general is labeled "Peter G. Stuyvesant, 116 acres now in possession." A stream leading to the East River is shown just east of the APE, surrounded by a marshy area.

Randel 1820: The APE is shown vacant. A wetland crosses Second Avenue and extends to the east, terminating near the northwest intersection of East 14th Street and Second Avenue. Two structures are shown on the block bounded by East 13th and 14th Streets and Second and Third Avenues. The structures are located outside the APE, near the intersection of East 13th Street and Second Avenue.

Hooker 1829: East 14th Street is present, but no specific development is shown in the area of the APE. A house belonging to Stuyvesant is present approximately 1.5 blocks to the east, outside of the APE.

Cooke 1831: This map of old Manhattan farms indicates that the area of the APE was part of farmlands belonging to Peter G. Stuyvesant. A marshy area is shown just east of the APE, leading to the East River.

Colton 1836: This map is similar to Hooker 1829.

Tanner 1836: This map is similar to Colton 1836. General development is indicated on the blocks surrounding the APE.

Mitchell 1846: This map is the same as Tanner 1836.

Dripps 1852: This is the first map to show the block fully developed. There are few structures shown on the surrounding blocks, however the 14th Street Presbyterian Church is located at the southwest corner of Second Avenue and East 14th Street. While there is not scale, East 14th Street is shown considerably wider than surrounding streets (as it is in its current configuration), and is shown wider than the surrounding avenues as well.

Colton 1856: This generalized map shows transportation lines on both Second and Third Avenues, outside of the APE.

Perris 1857-62: East 14th Street is shown 80 feet wide. The surrounding blocks are shown almost fully developed. None of these fall within the APE.

Mitchell 1860: This map is the same as Colton 1856.

Vielé 1865: This topographic map shows the APE to lie within flat meadowlands, however there are knolls and rises to the north, east and south of the APE. Sewer pipes are shown on East 14th Street. A stream is shown that begins at the west side of the APE on East 14th Street about mid-way between Second and Third Avenues, winding north over the east

end of the APE, and ultimately leading to the East River. It is surrounded by a narrow marshy zone which covers the west end of the APE. See Figure 7.10-3.

Vielé 1874: Figure 7.10-3. This map is similar to Vielé 1865.

Robinson 1885: East 14th Street is shown approximately 85 to 90 feet wide, while Second Avenue is labeled 100 feet wide. Two elevated transportation lines are located on East 14th Street. One fire hydrant is located on the south side of East 14th Street, about 100 feet west of Second Avenue.

Sanborn 1903: East 14th Street and Second Avenue are both labeled as 100 feet wide. Three fire hydrants are shown within the APE: on the north side of East 14th Street, there is a hydrant at Second Avenue and another at the west side of the APE, on the south side of the street there is a hydrant in the middle of the APE. Two 12 inch water pipes and one 36 inch water pipe are shown running down East 14th Street.

Hyde 1913: This atlas shows sidewalks, which are approximately 25 feet wide along both sides of East 14th Street and Second Avenue. East 14th Street is shown 100 feet wide, including the sidewalks. Three water lines are indicated on the north side of East 14th Street, while a 10 inch by 12 inch private sewer line is located on the south side. Two transportation lines are still present on the surface. There are now a total of six fire hydrants within the APE; three are located on the north side of East 14th Street and three on the south side, approximately evenly spaced.

Sanborn 1920: This map is very similar to Sanborn 1903, except that a total of six fire hydrants are shown, as shown on the Hyde atlas of 1913.

Bromley 1934: On this map, the sidewalks on East 14th Street and Second Avenue are shown 15 feet wide. An additional fire hydrant is shown on the northwest corner of East 14th Street and Second Avenue, bringing the total to seven hydrants shown within the APE. Four water lines are shown on East 14th Street, from north to south, one six inch, two 12 inch, and one 36 inch. Additionally, a subway line, the L, runs down East 14th Street. A station is located along East 14th Street, extending to each of the sidewalk edges for a total width of 40 feet. The entrances to the station are located outside of the APE at the intersection of East 14th Street and Third Avenue, but the station extends towards Second Avenue, ending approximately 55 feet from the building line on the west side of Second Avenue. Just east of the station, the tunnel is shown 30 feet wide, nearly reaching the edge of the north sidewalk on East 14th Street and leaving around ten feet between the tunnel and the edge of the south sidewalk.

Sanborn 1944: The APE is depicted here the same as on Sanborn 1920. However, the B.M.T. subway stations, outside of the APE, are indicated.

Sanborn 1951: This map is the same as Sanborn 1944.

Bromley 1967: The APE is depicted here the same as on Bromley 1934.

Bromley 1974: The APE is the same as shown on Bromley 1934.

Sanborn 2001: Figure 7.10-1. The APE is the same as depicted on Bromley 1934.

Street Elevation Table:

Data Source	East 14th Street x Second Avenue	East 14th Street x Third Avenue
1865 Vielé	24'	30'
1885 Robinson	27.8'	34.2'
1934-1974 Bromley	27.8'	34.2'
2001 Sanborn	27.8'	34.2'

Precontact Sensitivity:

The precontact landscape in the area of the APE would have been an attractive habitation area. The site was historically depicted as meadowlands gently sloping to the east, where a stream surrounded by wetlands originating at the eastern end of the APE ultimately emptied into the East River (Commissioner's Plan 1811; Randel 1820). Additionally, knolls and rises were present to the north, east and south of the APE (Viele 1865, 1874). Access to water and shelter were paramount to native dwelling places, according to Bolton (1922).

Bowery Lane (Fourth Avenue), located just two blocks west of the East 14th Street APE, was established along the earlier Native American "Wickquasgeck Road," leading from the southern tip of Manhattan to Albany with branches leading to settlements along the East and Hudson Rivers (Ibid.). One such settlement was called Schepmoes, located in "the area of Second Avenue in the vicinity of 14th Street. Here a pond of fresh water existed in the vicinity of a knoll, thus affording to some extent shelter and water supply" (Bolton 1972:133; 1922:57,64). Schepmoes is referred to as a "plantation," a "group of lodges" and a "place of Indian occupation" (Ibid.). Grumet later identifies the toponym not as a native place name but as that of a Dutch settler, Jan Jansen Schepmoes, a seventeenth century Manhattan landowner, and places the settlement somewhat farther south closer to Second Avenue and East 10th Street (1981:51,68). Regardless, it may have fallen within the Second Avenue project corridor in the vicinity of East 14th Street. Given the scarcity of precontact era Native American sites uncovered in Manhattan, the discovery of any precontact remains would be archaeologically significant.

However, the precontact archaeological potential of the APE has been largely destroyed through the construction of the L subway tunnel and station located on East 14th Street between Second and Third Avenues (Bromley 1934). The tunnel and station, constructed by the cut and cover method, occupy the entire streetbed to the sidewalk edges (Bromley 1934; Cudahy 1988: 62). The station ends about eighty feet from the eastern edge of the APE at the sidewalk edge on Second Avenue. Here, the tunnel narrows approximately five feet from the sidewalk edge on the north side and ten feet from the sidewalk edge of the south side. However, the construction of the tunnel and station would have also affected several additional feet outside the current boundaries.

Additionally, as stated earlier, the very eastern end of the APE appears to have originally been wetlands (Viele 1865, 1874). While activities and settlements are likely to have occurred on the banks and margins of such resources, the wetlands themselves would not be an area likely to hold archaeological potential. Groundwater was encountered at nine to 11.5' below grade in soil borings taken along East 15th Street just north of the area of the APE (see Appendix 7.10.7.3, City of New York Borings 5, 6 and 7, 1975), suggesting the area indeed contained a marsh or slough.

WPA soil borings (1935) taken along East 14th Street do not conclusively identify fill layers (see Appendix 7.10.7.3, WPA Borings 7, 8, 17, 23 and 24). However, the more recent soil borings from East 15th Street identify a definite fill layer of four to five feet, and possible fill reaching nine to 13 feet below grade down to the level of groundwater (see Appendix 7.10.7.3, City of New York Borings 5, 6 and 7). The composition of the possible fill in the East 15th Street borings matches sandy layers in the WPA borings that reach from 25 to 32 feet below grade--largely to bedrock. This would suggest that the area of wetlands may have been dredged and/or filled in the historic era. It is possible that fill levels protect the earlier surface.

An additional, earlier source of historic era disturbance would have been farming, as the area of the APE was part of the Stuyvesant's landholdings, dating back to 1651 (Stokes 1918, 1928). Plowing would have disturbed approximately a foot of soil, destroying precontact era surface features, but leaving subsurface remains such as trash deposits (middens) or storage pits.

If the area of the APE has been completely filled, there would be no sensitivity for precontact era resources within the APE. If fill levels reach only four to five feet below the surface, precontact sensitivity would be limited to those areas outside of the subway tunnels under the sidewalks that are not otherwise affected by utilities or sidewalk vents. The sidewalks are approximately 30 feet wide on the north side and 35 feet wide on the south; areas of effect would be located approximately five to ten feet below grade beneath the undisturbed portions of the sidewalk, if any exist.

Historical Sensitivity:

This area falls within farmlands associated with the Bouwery parcels administered by the Dutch West India Company during the 17th century (Stokes 1918, 1928). In particular, the APE falls within the Great Bouwery assigned to Petrus Stuyvesant on March 12th, 1651 (Ibid.). The area comprised 120 acres located largely to the east of Fourth Avenue/Bowery to the East River and was still associated with the Stuyvesants into the early 19th century (Cooke 1831; Sackersdorf 1815; Stokes 1918, 1928). Several streets had been established that were parallel and perpendicular to the old Bowery Road to Boston in the vicinity of the APE. One larger street passed adjacent to the east end of the APE, which led to the residence of Peter Stuyvesant, one and a half blocks east of East 14th Street and Second Avenue (Figure 7.10-2, Commissioner's Plan 1811; Stokes 1918). Stokes also notes that "Stuyvesant's Pear Tree," planted by Petrus Stuyvesant and removed in 1867, was located near the corner of

East 13th Street and Third Avenue (1918: 967). Additionally, Stuyvesant Square Park appears to have been established before the 19th century (British Headquarters Map 1797; Bridges 1807).

East 14th Street itself was established in the early 19th century (see Figure 7.10-2, Commissioner's Plan 1811; Hooker 1829). General development is indicated by the 1830s (Tanner 1836), and by 1852 (Dripps) a large Presbyterian church is located at the corner of East 14th Street and Second Avenue. East 14th Street was always portrayed wider than surrounding streets on early maps and atlases, probably to accommodate transportation lines (Robinson 1885). East 14th Street is also shown with sewer pipes by 1865 (Viele) and utilities by the 20th century (Sanborn 1903). By the 1930s, at least four water lines are present in East 14th Street, as well as a large 10 by 12 inch sewer line (Bromley 1934; Hyde 1913).

The considerable disturbances caused by the construction of the L subway tunnel and station likely affected the entire roadbed, but appears to have left areas beneath existing sidewalks untouched (Bromley 1934). The sidewalks themselves are relatively wide, 30 feet on the north and 35 feet on the south. It is likely that shallow utility lines and subway vents have caused disturbance to discrete areas beneath the sidewalks.

Evidence that the area once held wetlands suggests the area was filled; soil borings show definite fill layers up to five feet below grade in the vicinity and possibly down to bedrock within the APE (see Appendix 7.10.7.3). Most importantly, it appears that the APE was largely farmland before becoming East 14th Street. The lack of documentary evidence of historical resources within the APE makes it unlikely any would be encountered. Therefore, the area is not considered sensitive for historic period resources.

7.10.7.2 Site File Search Results, NYCLPC, NYSOPRHP and NYSM

SITE FILE SEARCH RESULTS

Project Name 2nd Ave. Subway HAA Project Number 2362 Client Historical Perspectives

City/Village New York Town _____ County New York

Quadsheets Central Pk, Brooklyn, Jersey City

Conducted by: K-C Date 10.1.01

NEW YORK STATE MUSEUM # Sites 7

4051 X
4060 X
4061 X
4062 X
4063 X
4064 X
7478 X

*Missing

209 Water St. South Street Seaport HP

*Missing * 526 Broom St. Historic Site

*According to Cynthia Blakemore @ SHPO

SHPO # Sites 24 19

A061.01.0491 —
A061.01.01282 X
A061.01.01272 D14
A061.01.01284 X
A061.01.01283 X
1 - A061.01.1271 X
~~2 - A061.01.0044 D03~~
3 - A061.01.0623 X D23
4 - A061.01.06763 X
~~5 - A061.01.0001~~
6 - A061.01.00604 X
A061.01.01304 X
A061.01.01285 X
A061.01.07671 —
A061.01.09530 X
A061.01.01286 X
A061.01.01541 X
A061.01.00542 X
A061.01.09531 X

#30 = British Line
#31

(Note: #30 + #31 — the only info from SHPO was that NYAC did a survey in the 1970's
3 - 2nd found historic Remains.
No other info was found.)

NYAC = New York Archeological Council.

ATIONAL REG ER E..GIBLE and LISTED ✓ Eligible | Listed X Building Inve

Building Inventory #	NR Status	Form Copied	Property Description	Reads Checked
06101.000604	NRL	✓	South Street Seaport Historic District 209 Water Street	

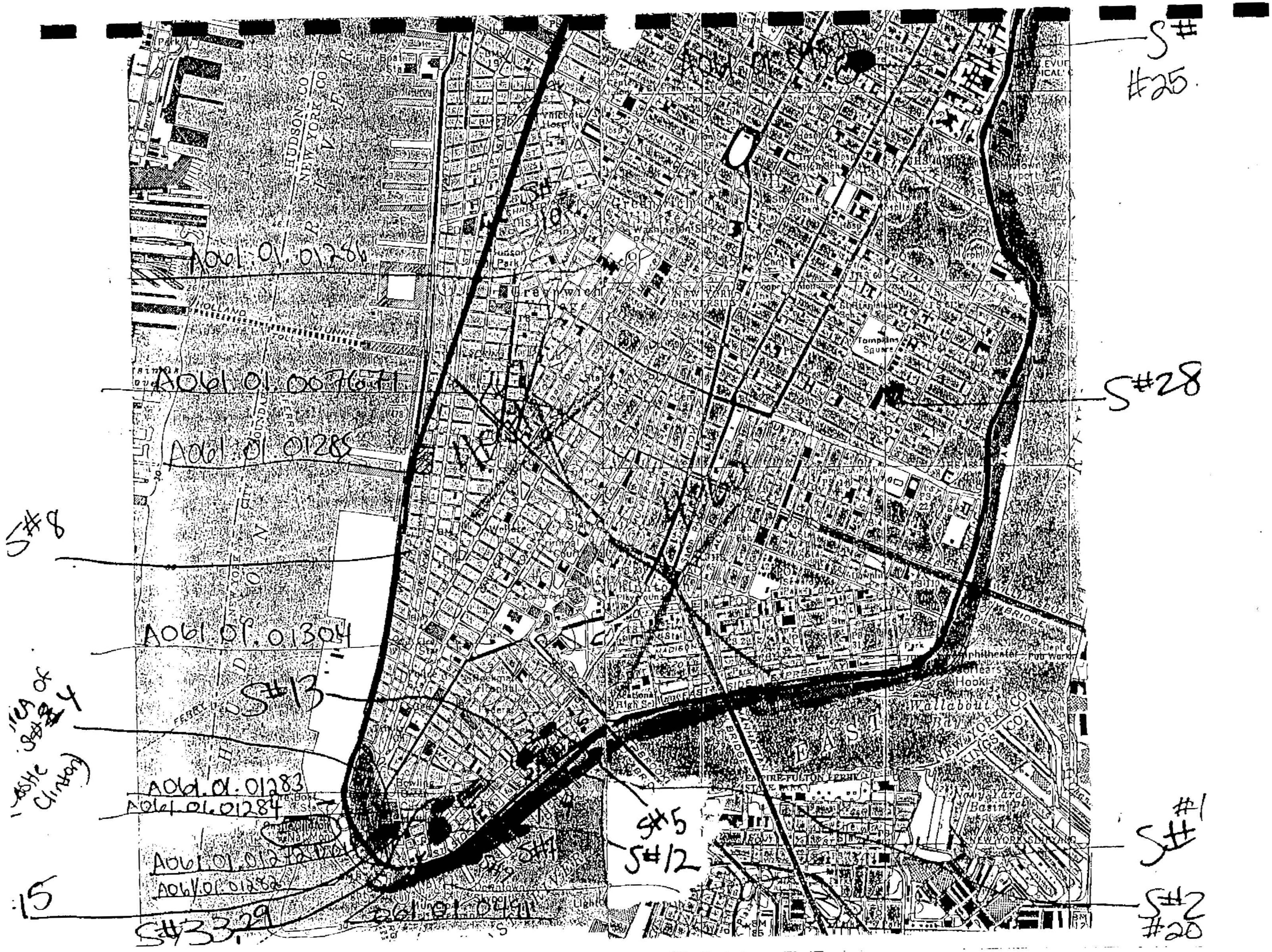
<17 previous surveys w/in Radius>

EVIOUS SURVEYS

8 Westside Highway Program - 1983
[illegible] William D. Hersey - 1963 Castle Clinton at the Battery
[illegible] Broad Street Financial Center Greenhouse January 1985
X
[illegible] 64th Pearl Street Fifth Landfill Arnold Pickman & Nan Rothschild May 1981
[illegible] Stone Street Historic District 1978 NYC Landmarks Pres. Comm. Fricker
9 Barclays Bank Site - 100 Water St. Berger - 1983
[illegible] 175 Water Street Block Geismar July 1983
[illegible] Schermerhorn Row Block. Kardas & Larrabee - Aug. 1971

[illegible] 209 Water St. - Schuyler - ? Date
[illegible] East River Road - New York Harbor Collection Kardas & Larrabee October 1977
- 10 Sheridan Square - 1983 - Rutgers University
[illegible] Lower Eastside Service Center - Louis Berger Jan '78
[illegible] 750 Sixth Ave. HPI - February 1998
[illegible] Baruch College Campus - Historic Conservation & Interpretation Inc. - Jan. 1981 / December 1987
[illegible] East River Plaza HPI Sept. 1998
[illegible] Stone Street Historic District NYC Landmarks Pres. Comm. February 1998

7 Telco Block - S.St. Seaport Historic District - 1983



S#
#25
S#28
S#8
A061.01.01286
A061.01.0076.71
A061.01.01285
A061.01.01304
S#13
A061.01.01283
A061.01.01284
S#5
S#12
S#1
S#2
#20
15
S#33,29
HUDSON CO
NEW YORK CO
HOLLAND
TUNNEL
Hudson Park
NEW YORK UNIVERSITY
Washington Sq
Tompkins Square
EXPRESSWAY
Wallabout
EAST
EMPIRE-FULTON FERRY STATE PARK
Navy Yard Basin

7.10.7.3 Soil Borings

Note: No reference to datum present on WPA borings.

Boring 7
WPA Rock Data, Vol. 1, Sheet 31, 1935
Location: Just east of the corner of East 14th Street and Third Avenue
Elevation at grade: 33.5'
0-5.0': Fine sand and clay
5.0-15.0': Sand and clay
15.0-25.0': Coarse and fine sand and clay
25.0-30.0': Sand, quicksand, and clay
30.0-35.0': Sand, clay, and mica
35.0-39.8': Sand, clay, quicksand, and mica
39.8-50.3': Mica schist
No groundwater recorded.

Boring 8
WPA Rock Data, Vol. 1, Sheet 31, 1935
Location: East 14th Street between Second and Third Avenue, towards Third Avenue
Elevation at grade: 32.5'
0-5.0': Fine sand
5.0-10.0': Sand
10.0-28.5': Coarse sand and gravel
28.5-37.7': Schist
No groundwater recorded.

Boring 17
WPA Rock Data, Vol. 1, Sheet 31, 1935
Location: East 14th Street at Third Avenue
Elevation at grade: 35'
0-32.0': Clay, sand and gravel
32.0': Rock or boulder
No groundwater recorded.

Boring 23
WPA Rock Data, Vol. 1, Sheet 31, 1935
Location: East 14th Street at Third Avenue
Elevation at grade: 31'
0-20.0': Coarse sand, gravel and clay
20.0-21.5': Sand and clay
21.5': Rock or boulder
No groundwater recorded.

Boring 24
WPA Rock Data, Vol. 1, Sheet 31, 1935
Location: East 14th Street at Second Avenue
Elevation at grade: 27'
0-15.0': Sand and gravel
15.0-20.0': Fine sand
20.0-25.0': Fine sand and clay
25.0-40.0': Fine sand
No groundwater recorded.

Note: The surface elevations for the following three City of New York borings refer to the Borough of Manhattan Highway Datum, which is 2.750 feet above mean sea level at Sandy Hook, as established by the U.S. Coast & Geodetic Survey.

Boring 5
City of New York, Department of Public Works, Bureau of Building Design, 1975
Location: East 15th Street between Rutherford Place and Third Avenue.
Elevation at grade: 29.7'
0-0.3': Concrete
0.3-4.0': Misc. fill
4.0-8.0': Brown silt and fine to medium sand, trace gravel, trace vegetation, "stratified"
8.0-11.0': Brown silt, some clay, trace very fine sand, "stratified"
11.0-12.0': Dark gray organic silt
12.0-18.0': Fine to medium gray/grown sand, some silt, trace to little gravel
18.0-23.3': Fine to medium to coarse brown sand, little silt, little gravel
Groundwater encountered at 9' below grade.

Boring 6
City of New York, Department of Public Works, Bureau of Building Design, 1975
Location: East 15th Street at Rutherford Place (between Second and Third Avenue).
Elevation at grade: 27.4'
0-0.3': Concrete
0.3-5.0': Misc. fill
5.0-9.0': Fine to medium brown sand, some silt, trace to little gravel, possible fill
9.0-15.0': Brown silt, some fine to medium sand, little gravel
15.0-19.0': Gray silt, clay, little very fine sand, trace vegetation
19.0-28.3': Fine to medium to coarse brown sand and gravel, some silt
Groundwater encountered at 11' below grade.

Boring 7
City of New York, Department of Public Works, Bureau of Building Design, 1975
Location: East 15th Street at Rutherford Place (between Second and Third Avenue).
Elevation at grade: 24.9'
0-0.3': Concrete
0.3-5.0': Misc. fill
5.0-9.0': Fine to medium brown sand, some silt, little gravel, possible fill

9.0-13.0': Fine to medium brown sand, little gravel, trace silt, possible fill
13.0-17.0': Brown silt, little very fine sand
17.0-20.5': Fine brown sand, some silt, "stratified"
20.5-23.0': Red/brown silt, little very fine sand, "stratified"
23.0-26.5': Fine to medium brown sand, trace silt
Groundwater encountered 11.5' below grade.

7.11 BROOME STREET: DEEP CHRYSTIE OPTION ANCILLARY STATION FACILITIES

This Phase 1A Archaeological Assessment of the Deep Chrystie Option ancillary station facilities proposed on Broome Street has been prepared by Historical Perspectives, Inc. as an addendum to *Second Avenue Subway Phase 1A Archaeological Assessment*, prepared by Historical Perspectives, Inc., March 2003.

7.11.1 Study Area Description

The Broome Street roadbed between Chrystie Street and the Bowery is being evaluated for its potential archaeological sensitivity, since it may be the location of possible excavation work to construct ancillary station facilities under the Deep Chrystie Option. The Area of Potential Effect (APE) includes the roadbed and sidewalks on Broome Street west of Chrystie Street for approximately 185 feet (Figure 7.11-1, Photograph 7.11-1).

7.11.2 Existing Conditions

7.11.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

No previously inventoried precontact sites have been identified in the immediate vicinity of the APE. However, NYCLPC sources indicate the area is close to areas of precontact sensitivity (see Appendix 7.11.7.2). Additionally, a habitation site called "Schepmoes" was recorded about 12 blocks north of the APE at approximately East 10th Street and Second Avenue in association with a Native American trail (Grumet 1981). The area is also in the immediate vicinity of a piece of land called "Werpoes" by Native Americans, as recorded in a land patent from 1651 (Stokes 1928: 72). It is likely that specific habitation sites or activity areas would have been located in the vicinity.

Archaeological Potential

The precontact surface was most likely disturbed by farming under the Dutch West India Company during the 17th century (Stokes 1918, 1928). Later, fortifications were constructed one block to the south of the APE during the Revolutionary War period, but probably did not affect the APE (Figure 7.11-2; British Headquarters Map 1782). Overall, the upper one foot or so of the precontact surface is less likely to hold any possible intact remains of surface scatter or features due to plowing.

Soil borings in the most immediate vicinity of the APE (Borings 47, 53 and 55; see Appendix 7.11.7.3) indicate that the precontact surface may be buried under nine to 15 feet of fill. Later subsurface disturbances such as sewer and utility lines are not likely to have affected the precontact layer, except for a single sewer line (WPA Subsurface Conditions Map 85, 1937). The area is considered moderately sensitive for precontact archaeological remains between 10 and 20 feet below grade.

7.11.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

There is no documentary evidence for historical sites within the Broome Street APE. During the 17th and 18th centuries, the area was farmed, first under the Dutch West India Company, then under the James De Lancey Farm, but there is no evidence for structures within the area of the APE during this time (Stokes 1918, 1928). In the immediate vicinity, fortifications were constructed to the south of the APE towards Grand Street, but do not appear to have been present the area of the APE (Figure 7.11-2; British Headquarters Map 1782; Stokes 1918, 1928).

Archaeological Potential

Documentary research concluded that the Broome Street APE has little to no historic archaeological potential. At the end of the 18th century, Broome Street was legally opened, and has been a street since that time (WPA Subsurface Conditions Map, 1935). No structures of note were ever documented within or in the immediate vicinity of the APE apart from British fortifications, located one block south.

7.11.3 Summary of Archaeological Potential

There is no direct evidence for historic resources within the APE, although early historic activities would have most likely disturbed at least the top foot of the precontact landscape. No precontact surface remains are likely to have survived, but subsurface precontact features may still be present. Given the layer of fill over the precontact surface, the area is moderately sensitive for precontact era remains between 10 and 20 feet below grade (Figure 7.11-4).

7.11.4 Proposed Project Effects

Proposed construction plans for the Deep Chrystie Option of the Second Avenue Subway call for excavation work, likely using cut and cover techniques, to create ancillary station facilities for the proposed Grand Street Station. There is no sensitivity in the APE for historic remains; however there is the possibility of subsurface precontact features. Precontact sensitivity is estimated at between 10 and 20 feet below the surface; thus, the area of potential effect would be between 10 and 20 feet below grade.

The potential effects to possible archaeological resources described in this report result from construction activities that have been identified at this stage in the project's engineering. In addition to these effects, it is possible that refinements to project designs as engineering work continues will result in other locations with the potential to have effects to archaeological resources. If those areas are in the APE already evaluated, the effects may be evaluated using the research done to date. If they are in new areas outside the project's APE, additional

research may be required to identify whether any resources may be present. Potential effects would then be assessed in these areas as well.

7.11.5 Recommendations

There is a moderate expectation of encountering precontact period remains within the APE. While several borings are recorded from the area of the APE itself, these are not up to date, largely WPA borings from the 1930s (see Appendix 7.11.7.3). Therefore, prior to any field investigations, additional soil boring tests will be performed as part of the design effort of the project. These may provide additional subsurface information to further assist in the archaeological interpretation of the APE, but cannot always substitute for field verification.[1] Following the review of soil borings, some or all of the APE may be found to be too disturbed to possess research potential. For these sites, no further action will be recommended. However, for other sites, soil borings will either provide a clear indication of sensitivity or may be inconclusive. For these sites, an assessment of potential project effects will be made based on the most current engineering plans. Those sites that will not be affected will not be recommended for further study, unless design plans change in the future and effects will occur. For those sites that will be affected, the potential research value of each site will be evaluated and the sites prioritized for testing based on their potential to yield significant information and address meaningful research issues according to National Register criteria. A protocol for the prioritization of precontact resources will be prepared in consultation with SHPO.

Where subsurface testing is indicated, its goal would be to establish the presence or absence of cultural resources, the horizontal and vertical extent of these resources, site integrity, and, potential significance as defined by eligibility for inclusion on the National Register of Historic Places. Field analysis could also take the form of additional exploratory excavations or monitoring at the time of construction. The method of field analysis selected for each site would depend on site access and testing feasibility.

If avoidance of potential resources is possible, then that is considered a viable mitigation alternative. If the avoidance of adverse effects to potentially National Register eligible archaeological resources is not possible, then appropriate mitigation procedures would take the form of archaeological data recovery. It is possible, however, that given the wide range of areas identified in the Second Avenue Subway APEs as archaeologically sensitive, that some archaeological resources would not be excavated as part of the project's mitigation program, resulting in potentially adverse effects to archaeological resources. This could occur where archaeologically sensitive areas are not accessible as a result of their depth beneath deep fill and where construction would not entail any surface work that would allow access to such resources. Other sites may be inaccessible due to pedestrian, traffic, and safety constraints. In addition, some sites may not be selected for data recovery since they may hold a low potential to yield significant information and/or would provide a redundancy in

[1] Soil borings to be undertaken for construction design purposes will be taken in coordination with an archaeologist. Preferably, continuous tube samples down to 15' below the bottom depth of fill would further assess subsurface conditions in potentially sensitive areas.

information in contrast to other sites which may be sensitive for similar resources and would be mitigated.

7.11.6 Figures and Photographs

7.11-1 Location of Broome Street APE, Sanborn 2001.

7.11-2 Location of APE on British Headquarters Map of 1782

7.11-3 Location of APE on Hyde 1913.

7.11-4 Area of Potential Archaeological Sensitivity, Broome Street APE. Sanborn 2001

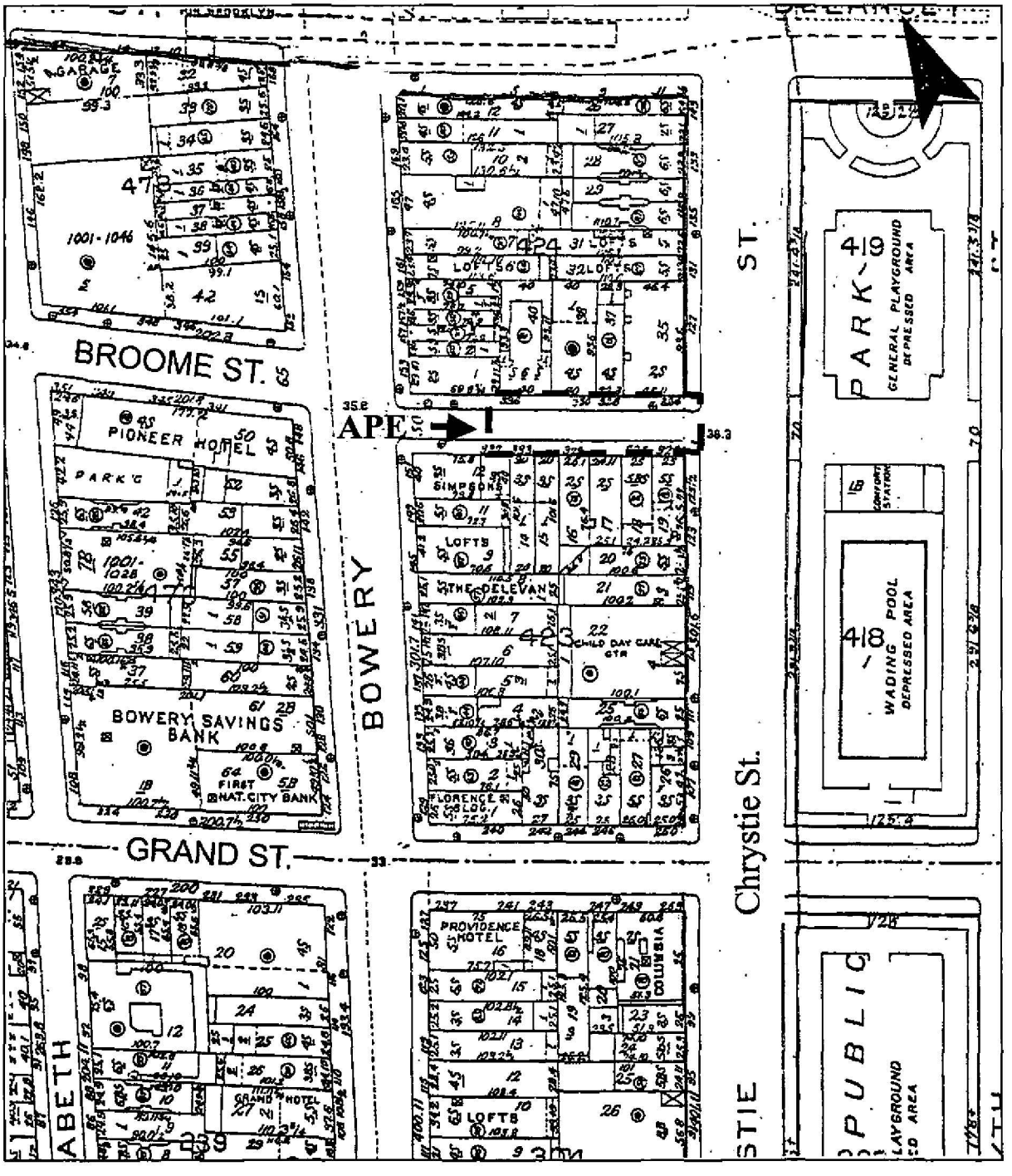


FIGURE 7.11-1

Insurance Maps. Sanborn 2001.
Broome Street, Chrystie Street to Bowery.

Approximate Scale: ½ inch = 50 feet

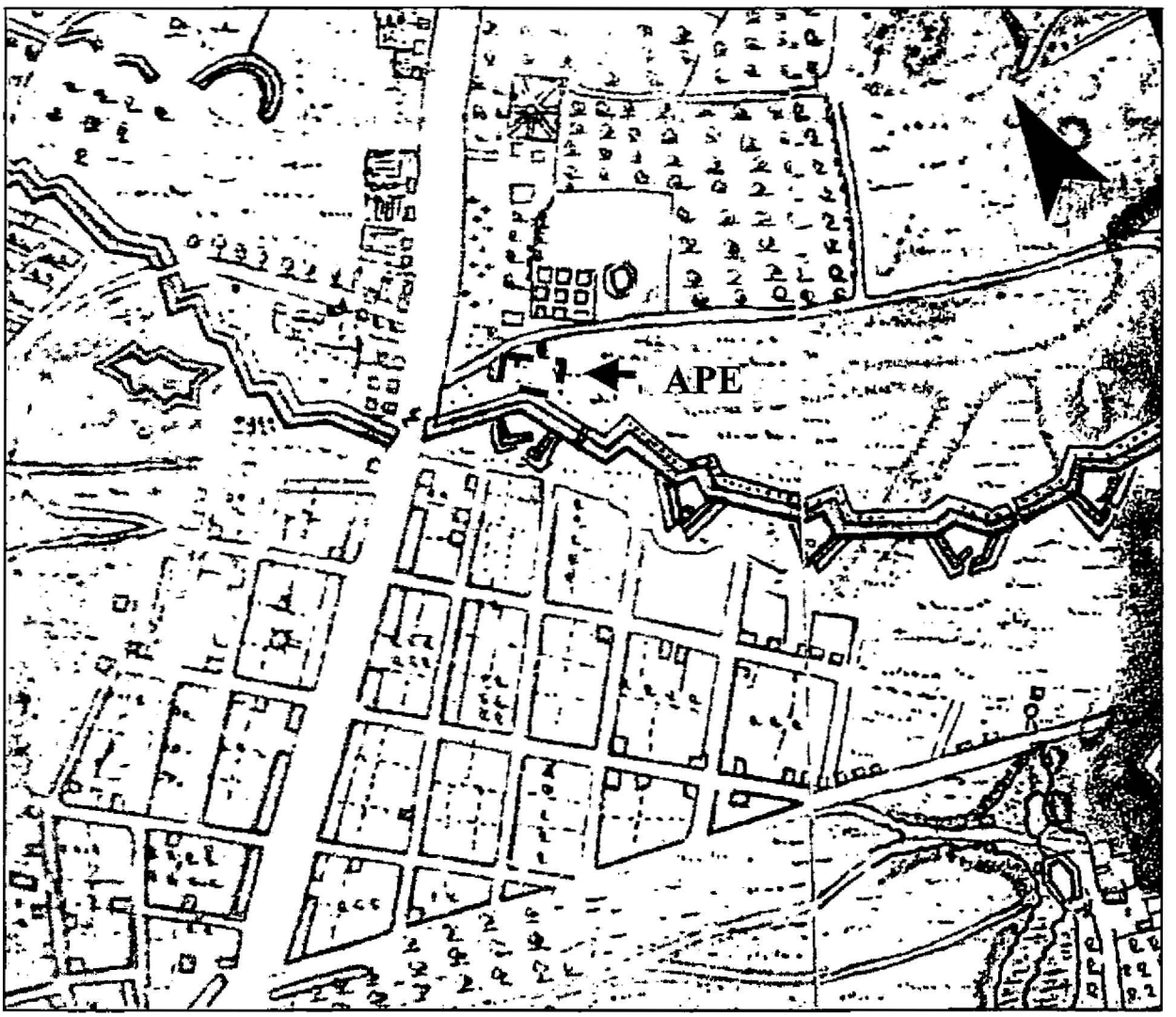


FIGURE 7.11-2

British Headquarters Map. 1782.
Broome Street, Chrystie Street to Bowery.

Approximate Scale: 1/8 inch = 100 feet

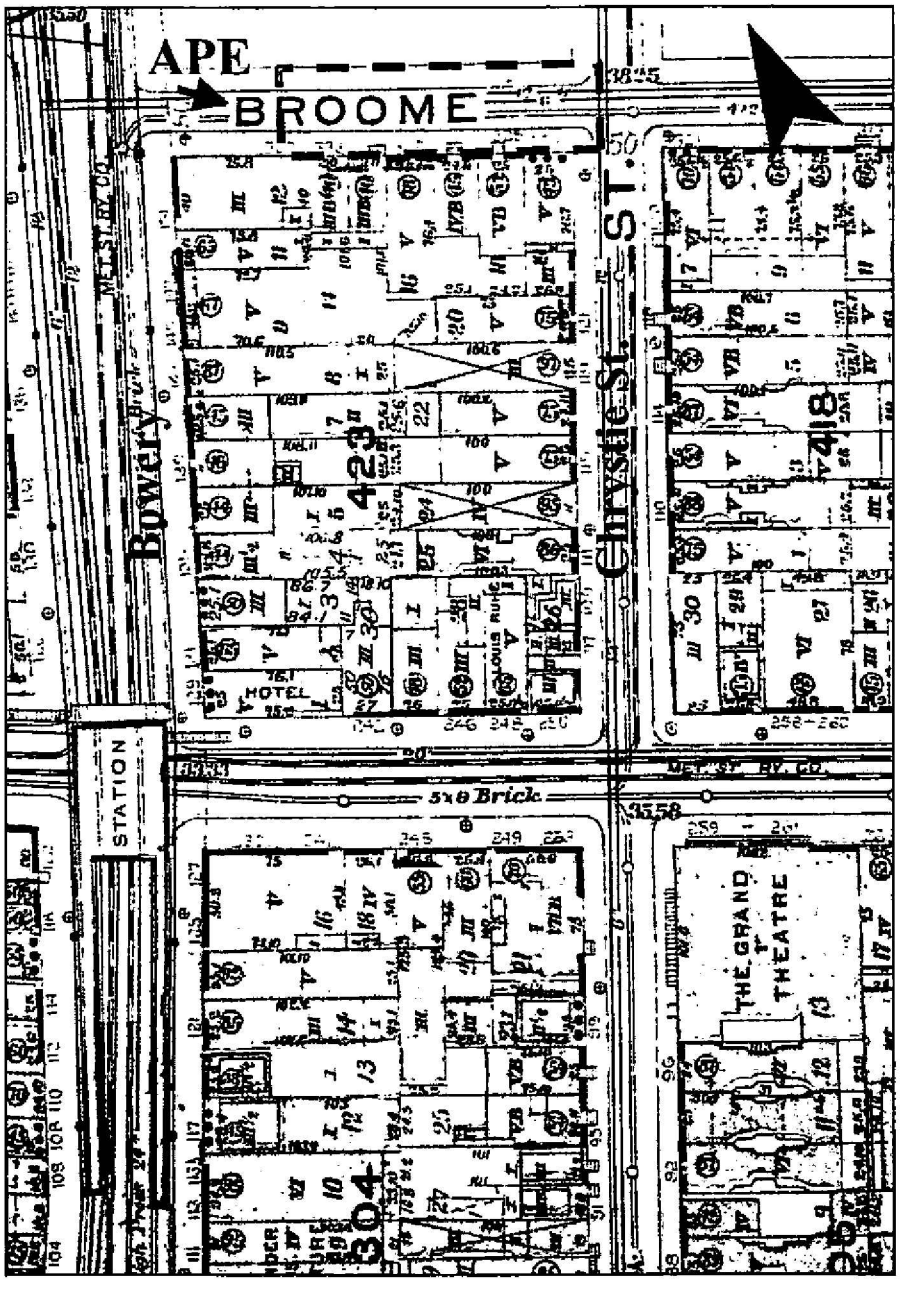


FIGURE 7.11-3

Atlas of the Borough of Manhattan. Hyde 1913.
Broome Street, Chrystie Street to Bowery.

Approximate Scale: ½ inch = 50 feet

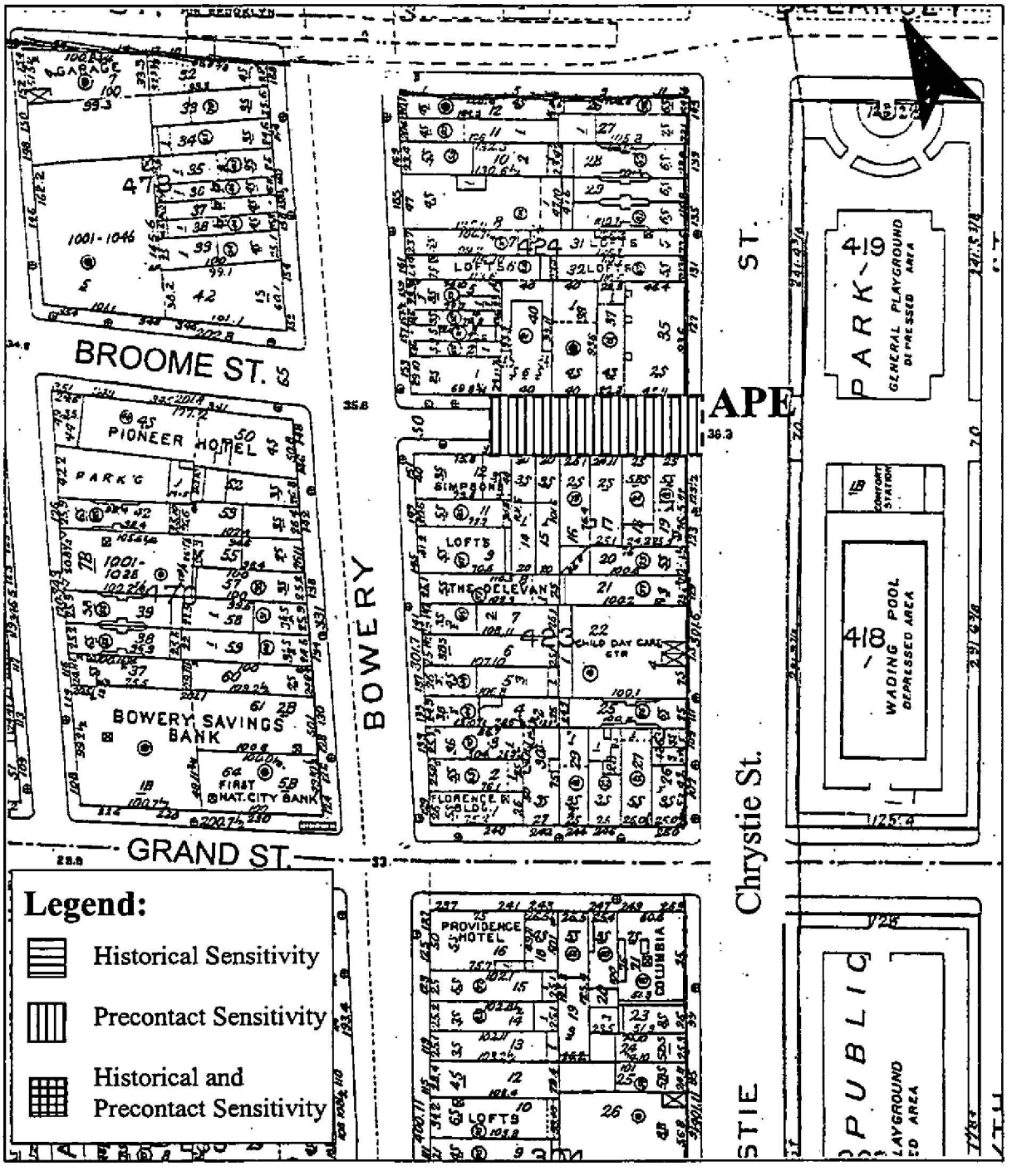
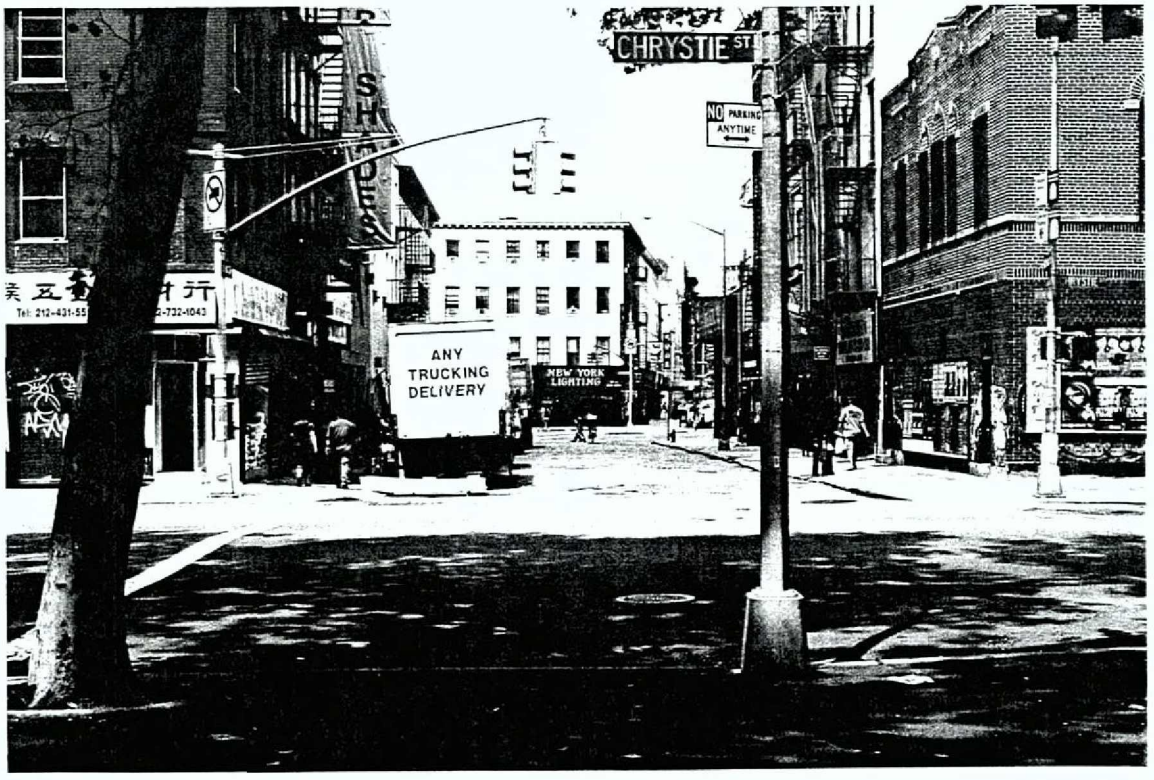


FIGURE 7.11-4

Area of Potential Archaeological Sensitivity. Sanborn 2001.
Broome Street, Chrystie Street to Bowery.

Approximate Scale: ½ inch = 50 feet



Photograph 7.11-1: Facing west toward Broome Street from the east side of Chrystie Street at Broome Street.

7.11.7 Appendices

7.11.7.1 Documentary Assessment of APE

Cartographic History

Grim Plan 1744: The APE appears to be in farmlands associated with the residence of "J. Delancy's Farm" located outside of the APE to the north. The old Bowery Road to Boston is shown, which is the current location of Bowery. An access road heading east off of Bowery is in the approximate location of Broome Street today. Other than fences shown along the roads, there are no structures shown within this section of the APE.
The APE here is located about 2,500' northeast of the Collect Pond, a source of fresh water. The APE is also around 2,800' outside of the walled section of Manhattan to the southwest.

Maerschalck 1755: The High Road to Boston (later Bowery) is present, and streets are laid out on the west side of Bowery including St. Stephen's Street (later Broome Street). However, these streets are not shown extending east past Bowery into the area of the APE. There are no structures shown within the APE.

Montresor 1766: Bowry Lane (sic) is present, as is Chrystie Street (unlabeled), but no road is shown in the location of Broome Street east of Bowery. A major road labeled "Road to Crown Point" heading toward the East River from Bowery is shown between the current locations of Broome Street and Grand Street to the south. There are no structures indicated within the APE.

Ratzer 1767: Bowry Lane (sic) is shown, as are Chrystie Street and Broome Street (the last two unlabeled as such). An additional street is shown heading northeast from Bowery at Broome Street. North of this angled street, the area is shown as fields and structures associated with the Delancey Farm. South of the angled street, a thin triangle of land on the north side of the APE is shown as developed. There is also a structure that appears to be located in the Chrystie Street roadbed, just north of Broome Street, which would be just outside of the APE to the north. No actual structures are shown within the APE.

British Headquarters Map 1782: Figure 7.11-2. This particular map is not highly detailed, but the area of the APE is shown. A fortification wall is indicated running east-west just south of Broome Street with an attached structure on its south side between Chrystie Street and Forsyth Street, below the APE. The street that angles off of Broome Street from Bowery is indicated (see Ratzer 1767). A small fortification on a knoll is located at approximately Delancey Street and Forsyth Street, also outside of the APE. The area north of the palisade in general is not shown with

much development and no structures are shown in this section of the APE.

Directory Plan 1789: Nearly all of the streets surrounding the APE are now labeled, including First Street (later Chrystie Street), Bowery Lane, and Byard's Lane (later Broome Street). The lane angling north from Broome Street and Bowery is still shown. A structure associated with the Delancey Farm is still shown at Chrystie Street and Broome Street, although, as also shown on Ratzer 1767, it appears to fall within the Chrystie Street roadbed, east of the APE. Overall, the area north of Broome Street is shown undeveloped, south of Broome Street the area is shown as generally developed.

British Headquarters Map 1797: This map is very like the earlier 1782 version. Fortifications are found just south of the APE between Broome Street and Grand Street. One structure is shown at the approximate location of Broome Street and Chrystie Street, on the north side of a road that flanks the south side of the Delancey farm. This structure appears to fall just east of the APE.

Taylor Roberts 1797: First Street (later Chrystie Street), Bowry Road (sic), and Bullock Street (later Broome Street) are shown. There are no structures indicated within this section of the APE. The freshwater pond is still present about ten blocks southwest of the APE.

Bridges 1807: First (Chrystie) Street, Bowery Road, and Broom (sic) Street are shown. The Collect Pond is not shown on this map.

Commissioner's Plan 1811: This plan is similar to Bridges 1807 except Broome Street is indicated with the current spelling.

Hooker 1829: All modern street spellings are used on this map: Chrystie Street, Bowery, and Broome Street. Both sides of Broome Street are shown developed.

Colton 1836: This map is similar to Hooker 1829.

Tanner 1836: This map is the same as Colton 1836.

Mitchell 1846: This map is the same as Colton 1836. A railroad is present on Bowery.

Dripps 1852: This is the first map to show the surrounding blocks on the north and south sides of Broome Street fully developed. Just outside of the APE, St. Stephen's Episcopalian church is located on the opposite (southeast) corner of Chrystie and Broome Streets.

Perris 1857-62: Broome Street is shown 45 feet wide. The street is portrayed as 50 feet wide today (Sanborn 2001), and it is most likely that the discrepancy is due to the accuracy of this 19th century depiction, and not a later widening of the street. The surrounding blocks are shown almost fully developed. None of these fall within the APE.

Mitchell 1860: Transportation lines are shown on Bowery and Chrystie Street, outside of the APE.

Vielé 1865: This topographic map shows the APE to lie within the lowest point of a gently sloped valley. Larger knolls are located several blocks

southwest of the APE. Sewer pipes are shown along Broome Street and Bowery but not Chrystie Street.

Vielé 1874: This map is similar to Vielé 1865.

Robinson 1885: Broome Street is shown approximately 45 feet wide. One fire hydrant is shown on the south side of Broome Street near Chrystie Street.

Sanborn 1894: Broome Street is shown approximately 50 feet wide. The same hydrant shown on Robinson 1885 is present here near the southwest corner of Broome and Chrystie Street. A six inch water pipe is shown on Broome Street.

Sanborn 1905: Broome Street is labeled 50 feet wide. Another hydrant is shown mid-block on the north side of Broome Street. The hydrant at the corner of Broome and Chrystie Street is shown further east.

Hyde 1913: Figure 7.11-3. This atlas shows sidewalks, which are approximately 12 feet wide along both sides of Broome Street and on Chrystie Street. Broome Street is labeled as 50 feet wide, including the sidewalks. There are several water pipes on Broome Street. The street is portrayed on two separate plates within the atlas (Plates 14 and 20), where each shows a slightly different arrangement: one shows two six inch and one 12 inch pipe, while the other shows only one six inch and one 12 inch pipe. A 4' x 2'8" brick sewer line is portrayed on both plates. There are no fire hydrants portrayed within the APE here.

Sanborn 1922: On this map, Broome Street is shown with one fire hydrant at the southwest corner of Broome and Chrystie Street and one near the northwest corner, slightly down Broome Street. Two water pipes are shown, one is 12 inches, another a 20 inch high pressure pipeline. The street is 50 feet wide.

Bromley 1934: On this map, the sidewalks on Broome and Chrystie Street are shown approximately 12 feet wide. The hydrant at the southwest corner of Chrystie and Broome Streets is no longer portrayed. Two water lines are shown on Broome Street.

Sanborn 1951: This map is similar to Sanborn 1922. An additional high pressure hydrant is shown near Bowery on the south side of Broome Street, at the western edge of the APE.

Bromley 1967: The APE is depicted here the same as on Bromley 1934.

Bromley 1974: The APE is the same as shown on Bromley 1934.

Sanborn 2001: Figure 7.11-1. The APE is the same as depicted on Bromley 1934.

Street Elevation Table:

Data Source	Broome Street x Chrystie Street	Broome Street x Bowery
1865 Vielé	38'	35'
1885 Robinson	38.2'	35.5'
1934-1974 Bromley	38.3'	35.8'
2001 Sanborn	38.3'	35.8'

Precontact Sensitivity

Before European Contact, the APE occupied the lowest point of a gently sloped meadow valley with large knolls present to the southwest (Viele 1865). A large source of fresh water, the Collect Pond, was located approximately 2,500 feet southwest of the APE. Additionally, another much smaller pond is indicated by Stokes (1928) just a block and a half to the south of the APE. Although no particular sites have been identified in the immediate vicinity of the APE, NYCLPC sources indicate the area is close to areas of precontact sensitivity (see Appendix 7.11.7.2). Additionally, a habitation site called "Schepmoes" was recorded about 12 blocks north of the APE at approximately East 10th Street and Second Avenue in association with a Native American trail (Grumet 1981). The area is also in the immediate vicinity of a section of land called "Werpoes" by Native Americans, as recorded in a land patent from 1651 (Stokes 1928: 72). It is likely that specific habitation sites or activity areas would have been located in the vicinity.

As Broome Street was not laid out during the initial phases of contact era occupation, it is likely that the precontact landscape was disturbed by farming under the Dutch West India Company during the 17th century (Stokes 1918, 1928). Later, fortifications were constructed to the south of the APE during the Revolutionary War period (Figure 7.11-2; British Headquarters Map 1797). The upper foot or so of the precontact surface is thus not likely to hold any possible intact remains of surface scatter or features due to plowing.

Soil borings in the most immediate vicinity of the APE (Borings 47, 53 and 55; see Appendix 7.11.7.3) indicate that the precontact surface may be buried under nine to 15 feet of fill. Later subsurface disturbances such as sewer and utility lines are not likely to have affected the precontact layer, except for a single sewer line, shown 15 feet below the surface in the middle of the roadbed. Overall, then, subsurface precontact features are more likely to have survived. The area is considered moderately sensitive for precontact archaeological remains between about ten and 20 feet below grade.

Historical Sensitivity

This area falls within farmlands associated with the Bouwery parcels administered by the Dutch West India Company during the 17th century (Stokes 1918, 1928). In particular, most of the APE falls within Bouwery No. 4, in a section assigned by Director Kieft to Bastiaen on March 26, 1647 (Ibid.). The southeast corner of the APE is located in a section assigned to Gerrit Jansen in 1646. Later, the parcel is shown bestowed entirely to Gerrit Jansen. Early

maps of Manhattan show that Broome Street was not established until the latter half of the 17th century, and thus it is likely that the area of the APE was farmed until then (Grim 1744; Maerschalk 1755). The major roads in the vicinity of the APE at this time are Bowery and the Road to Crown Point, running between the current locations of Grand and Broome Streets (Ibid.).

During the 18th century, the entire parcel became part of James De Lancey's Farm (Ratzer 1767; Grim 1744; Stokes 1918, 1928). An access road angles off of Bowery, then heads to the northeast of the current orientation of Broome Street toward a small unidentified structure south of the Delancey residence, east of the APE.

At the end of the 18th century, fortifications are shown on British Headquarters maps in the vicinity of the APE (Figure 7.11-2; 1782, 1797). The fortifications were also reported through site file searches (see Appendix 4.6.7.2 below). More specifically, the British Headquarters map show a fortification wall with an attached fort or garrison on the south side of the APE, on or just north of Grand Street between Chrystie and Forsyth Streets, southeast of the APE, by roughly 250 to 300 feet (British Headquarters Map 1782, 1797). The fortifications involved earthworks (Stokes 1918), and may have affected the surface in the vicinity, but it is doubtful their effect reached the APE, as the fortifications are consistently shown one block to the south.

By 1799, the residence of James Delancey (to the north of the APE) was demolished (Stokes 1918: 949), and Lower Manhattan up to and including the APE was fully gridded by 1797 (Taylor Roberts). Broome Street was established by this time; according to a WPA Subsurface Conditions Map (Map No. 85, 1937), it was legally opened in 1795. The same map shows the street was paved with granite blocks over six inches of cement in 1930, although what was labeled cement on the map was probably macadam.

The surrounding blocks were fully developed by the mid 19th century (Dripps 1852), and sewers were present in Broome Street also by the mid 19th century (Viele 1865). Soil borings in the most immediate vicinity of the APE (Borings 47, 53 and 55; see Appendix 7.11.7.3) indicate that the precontact surface is buried under nine to 15 feet of fill. Surrounding borings to the east indicate levels of fill up to 22 feet (Boring R; see Appendix 7.11.7.3).

The WPA Subsurface Conditions Map (Map No. 85, 1937) details clusters of utilities under Broome Street, including electricity ducts, gas and water pipes and postal cables, all of which are located five feet or less beneath the surface of the roadbed on the north and south sides, and were not located under the sidewalks. The sewer line is shown directly in the middle of the street and is considerably deeper, 15 feet below the surface. The majority of utilities appear to have not affected the pre-fill surface, although there is a possibility the sewer line did.

In sum, there is no documentary evidence for any historical remains within the Broome Street APE. While it is probable that the area was historically farmed prior to the establishment of the street, there is no evidence of any structures within the APE.

Documentary evidence places 18th century British fortifications near, but not within the APE. The area is not considered sensitive for historic period remains.

7.11.7.2 Site File Search Results, NYCLPC, NYSOPRHP and NYSM

SITE FILE SEARCH RESULTS

Project Name 2nd Ave. Subway HAA Project Number 2362 Client Historical Perspectives

City (Village) New York Town ________ County New York

Quadsheets Central Pk, Brooklyn, Jersey City

Conducted by: K.C. Date 10.1.01

NEW YORK STATE MUSEUM # Sites 7

SHPO # Sites ~~24~~ 19

NEW YORK STATE MUSEUM		SHPO	
4059 X	*Missing	A061.01.0491 —	#30 = British Line
4060 X		A061.01.01282 X	#31
4061 X		A061.01.01272 X D014	
4062 X		A061.01.01284 X	(note: #30 + #31 —
4063 X		A061.01.01283 X	the only info from SHPO
4064 X		1 - A061.01.1271 X	was that NYAC did A
7278 X		~~2 - A061.01.0014 - D03~~ -	Survey in the 1970's
		3 - A061.01.06233 X - D03	2nd found historic Remains.
		4 - A061.01.06763 X	no other info was found)
		~~5 - A061.01.0001~~ -	
	209 Water St. South Street Seaport HD ←	6 - A061.01.00604 X	NYAC = New York
		A061.01.01304 X	Archeological Council.
		A061.01.01285 X	
*Missing	* 576 Broom St. Historic Site ←	A061.01.07671 —	
		A061.01.09530 X	
*According to Cynthia Blakemore		A061.01.01286 X	
@ SHPO		A061.01.0541 X	
		A061.01.00542 X	
		A061.01.09531 X	

ATIONAL REC… ER E…GIBLE and LISTED ___✓___ Eligible ___|___ Listed … ___X___ Building Inve…

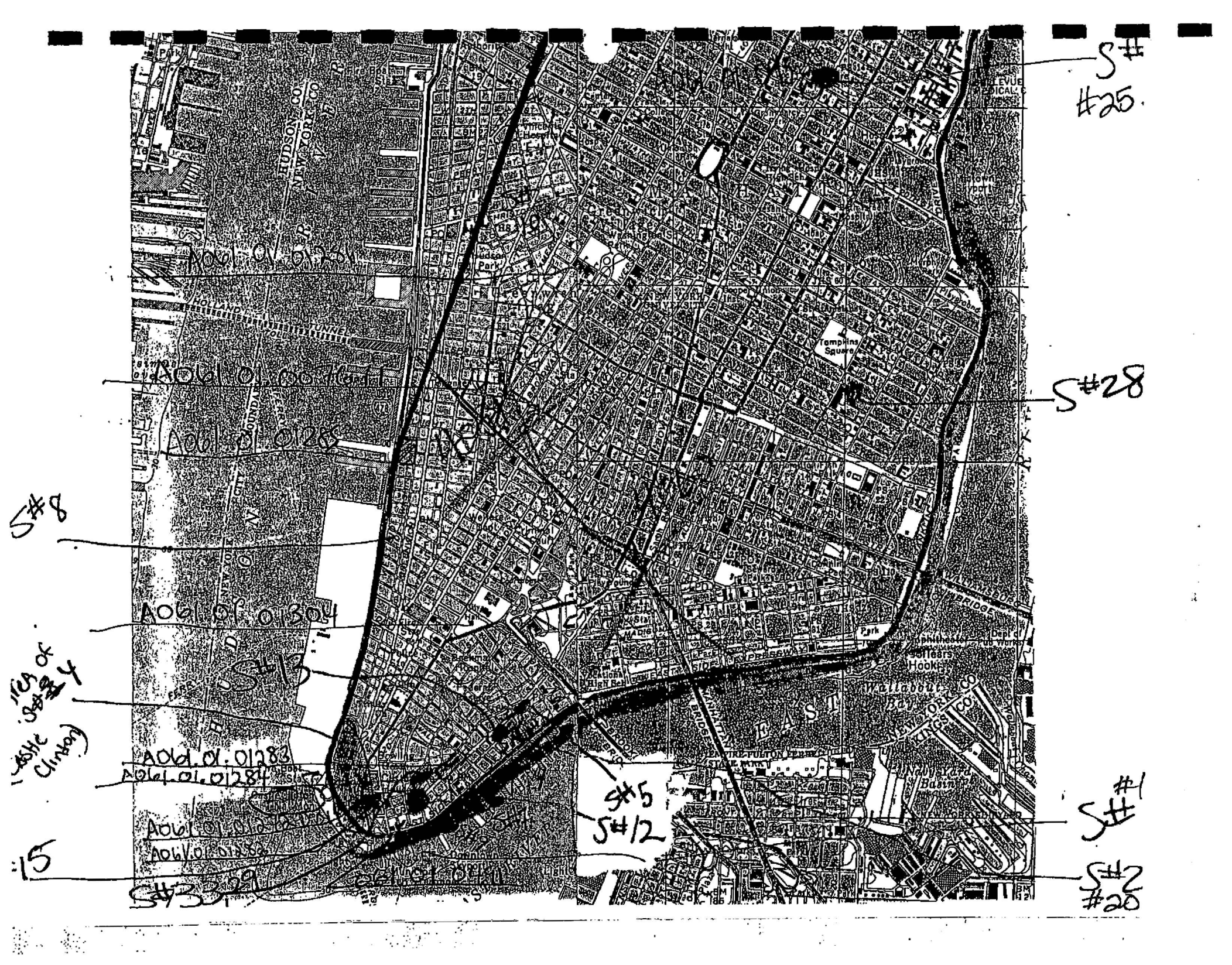
Building Inventory #	NR Status	Form Copied	Property Description	Roads Checked
06101.000604	NRL	✓	South Street Seaport Historic District 209 Water Street	

EVIOUS SURVEYS

<17 previous surveys w/in Radius>

8 Westside Highway Program – 1983	[redacted] 209 Water St. – Schuyler – ? Date
[redacted] William A. Hersey – 1963 Castle Clinton At the Battery	[redacted] East River Road, New York Tilton Collection Kardas & Larrabee October 1977
[redacted] Broad Street Financial Center Greenhouse January 1985	-10 Sheridan Square – 1983 – Rutgers University
X	[redacted] Lower East Side Service Center – Louis Berger Jan '98
[redacted] 6th Ave / Street Fifth Landfill Arnold Pickman & Nan Rothschild May 1981	[redacted] 750 Sixth Ave. HPI – February 1998
[redacted] Stone Street Historic District 1987/8/… NYC Landmarks Pres. Comm / Tracker	[redacted] Baruch College Campus – Historic Conservation &
9 Barclays Bank Site – 100 Water St. Berger – 1983	[redacted] East River Plaza HPI Sept. 1998 Interpretation Inc. – Jan. 1989 / Recompiled 1989
[redacted] 175 Water Street Block Geismar July 1983	[redacted] Stone Street Historic District NYC Landmarks Pres. Comm. February 1998
[redacted] Schermerhorn Row Block. Kardas & Larrabee – Aug 1971	

7 Telco Block – S. St. Seaport Historic District – 1983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7.11.7.3 Soil Borings

Boring 47
WPA Rock Data, Vol. 1, Sheet 14, 1933
Location: Bowery and Broome Street
Elevation at grade: 34.2'
0-2.0': Concrete sidewalk and slab
2.0-8.2': Void
8.2-11.4': Misc. fill, cinders, brick, fine and coarse sand
11.4-89.6': Fine to medium sand, some coarse sand, silt, trace gravel
89.6'-89.9': Varved silt and layers sand
89.9-90.7': Silt and fine sand.
No groundwater recorded.

Boring 53
WPA Rock Data, Vol 1., Sheet 20, 1973 (last date recorded on sheet, no other date present)
Location: Bowery and Broome Street
Elevation at grade: 33.9'
0-2.0': Concrete, misc. fill, cinders
2.0-12.0': Fill, fine to medium sand, some silt, trace gravel
12.0-15.0': Concrete footing
15.0-30.0': Fine to coarse sand, trace silt, trace gravel
30.0-90.0': Fine to medium sand, trace silt, small layers of silt
90.0-102.3': Silt and fine sand, trace varved silt (missing at 100'-102'6")
No groundwater recorded.

Boring 55
WPA Rock Data, Vol 1., Sheet 20, 1973 (last date recorded on sheet, no other date present)
Location: Broome and Chrystie Street
Elevation at grade: 37.6'
0-9.0': Misc. fill
9.0-68.0': Fine to medium sand, some silt
68.0-90.0': Sand and silt, some varved silt at intervals
90.0-131.5': Fine sand and silt except 2" layer of clay at 110' to 111'6"
No groundwater recorded.

Boring C6-14
Raymond International Inc., 1974
Location: South side of Delancey Street between Chrystie and Forsyth Streets
Elevation at grade: 139.93' (datum unknown)
0-2': [unreadable]
2-15': Sand, brick and concrete fill
15-25': Brown coarse to fine sand, little gravel
25-33': Light brown fine sand
33-37': Brown medium find sand
No groundwater observed.

Boring 8
Engineering Services, Subsurface Exploration Section 1981
Location: Between Grand, Forsyth, Chrystie and Hester Streets, within Sara D. Roosevelt Park (Block 305)
Elevation at grade: 35.2'
0-0.2': Blacktop
0.2-0.5': Concrete
0.5-6.0': Fill (brick, sand, cinders, etc.)
6.0-12.0': Possible fill (fine to medium brown sand, trace to little silt, trace to little gravel)
12.0-21.0': Fine to medium brown sand, trace silt
21.0-25.5': Fine red/brown sand, little silt, bulls liver
25.5-28.0': Fine to medium light brown sand, trace silt
28.0-31.5': Fine to medium dark brown sand, trace silt, trace gravel
Groundwater observed at 27'.

Boring R
Engineering Services, Subsurface Exploration Section 1984
Location: Towards the corner of Grand and Chrystie Streets within Sara D. Roosevelt Park (Block 305)
Elevation at grade: 38.8'
2" asphalt
0-9.0': Fill with boulders (brick, some fine to medium brown sand, trace silt, gravel, concrete, etc)
9.0-18.0': Fill with boulders (fine to medium to coarse brown sand, trace silt, gravel)
18.0-22.0': Fill with boulders (Fine to medium gray sand, little silt, trace gravel, brick, cinders, etc.)
22.0-36.5': Fine to medium brown sand, trace silt, trace gravel, with thin very fine silty sand layers from 29.0-33.0'
Groundwater encountered at 33.0'.

7.12 GRAND STREET: DEEP CHRYSTIE OPTION ANCILLARY STATION FACILITIES

This Phase 1A Archaeological Assessment of the Deep Chrystie ancillary station facilities proposed on Grand Street has been prepared by Historical Perspectives, Inc. as an addendum to *Second Avenue Subway Phase 1A Archaeological Assessment*, prepared by Historical Perspectives, Inc. March 2003.

7.12.1 Study Area Description

The Grand Street roadbed between Chrystie Street and the Bowery is being evaluated for its potential archaeological sensitivity, since it may be the location of possible excavation work to construct ancillary station facilities under the Deep Chrystie Option. The Area of Potential Effect (APE) includes the roadbed and sidewalks on Grand Street west of Chrystie Street for approximately 150 feet (Figure 7.12-1, Photograph 7.12-1, 7.12-2).

7.12.2 Existing Conditions

7.12.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

There are no known specific sites in the vicinity of the APE. However, NYCLPC sources indicate the APE is close to areas of previously reported precontact sensitivity (see Appendix 7.11.7.2). Additionally, a habitation site called "Schepmoes" was recorded about 13 blocks north of the APE at approximately East 10th Street and Second Avenue in association with a Native American trail (Grumet 1981). The area is also in the immediate vicinity of a piece of land called "Werpoes" by Native Americans, as recorded in a land patent from 1651 (Stokes 1928: 72). It is likely that specific habitation sites or activity areas would have been located in the vicinity.

Archaeological Potential

The area of the APE was farmed during the 17th century under the Dutch West India Company and then the James Delancey Farm in the 18th century (Ratzer 1767; Grim 1744; Stokes 1918, 1928). At the end of the 18th century, Revolutionary War period fortifications were constructed in or in the immediate vicinity of the APE (Figure 7.12-2; British Headquarters Map 1782, 1797; Stokes 1918, 1928). The fortifications are described as sod-banked earthworks, the construction of which would have affected the area significantly. If precontact resources were ever deposited within the APE, it is likely that they were extensively disturbed by the 18th century construction of the earthworks. Therefore, it is unlikely that any precontact resources remain undisturbed within the APE.

7.12.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

At the end of the 18th century, fortifications are shown on British Headquarters maps directly in or immediately north of the APE (Figure 7.12-2; 1782, 1797; Stokes 1918, 1928). The fortifications on and near Grand Street were also reported through a site file search (see Appendix 7.12.7.2). Stokes (1918, 1928) describes the fortifications as "redoubts and earthworks of the Revolutionary Periods, taken for the most part from the manuscript additions by Montresor on an engraved copy of the Ratzen Map in the N.Y. Public Library" (1918, Notation on Landmark Map, Plate 174). The Stokes map places the fortification wall directly within the APE, crossing it diagonally from the north side of Grand Street at the western edge of the APE to the southwest corner of Grand and Chrystie Streets.

Archaeological Potential

It is highly probable that remnants of the 18th century Revolutionary War period fortifications are present within the APE. However, the precise depth of these resources is difficult to assess, given the variation in subsurface conditions recorded on soil boring logs (see Appendix 7.12.7.3). Fill layers from the early 19th century may have served to protect the earlier surface, yet soil borings in the vicinity of the APE show extreme variation in fill levels, from zero to 22 feet. The more recent of these borings, just east of the APE, indicate fill levels of 12 to 22 feet below grade. It may be that the fill layer has served to protect potential deposits from the 18th century. A WPA Subsurface Conditions Map (Map No. 75, 1939) shows electricity ducts, gas and water pipes and telephone cables located approximately five feet beneath the surface of Grand Street, with a sewer line located 15 feet below the surface. It is very possible that the majority of the utilities would have not affected the pre-fill surface, except the sewer line.

In sum, the Grand Street APE is highly sensitive for late 18th century historic period remains, and the area of sensitivity is conservatively estimated to lie between zero and 22 feet below grade.

7.12.3 Summary of Archaeological Potential

The APE is not sensitive for precontact resources, since it is likely that any precontact resources, if ever deposited within the APE, were extensively disturbed by the construction of 18th century fortifications. However, there is a high probability of encountering late 18th century historic archaeological resources in the form of Revolutionary War period fortifications and earthworks. These fortifications may be located within or beneath the layer of fill that was likely laid down during the beginning of the 19th century when the area was developed more intensively. Based on the reported depth of fill to date, these fortifications could be present from the surface down to about 22 feet below grade.

7.12.4 Proposed Project Effects

Proposed construction plans for the Deep Chrystie Option of the Second Avenue Subway call for excavation work, likely using cut and cover techniques, to create ancillary station facilities for the proposed Grand Street Station. The proposed effects to Grand Street would not affect precontact resources, since none are anticipated. However, cut and cover construction would affect potential historic period resources in the form of Revolutionary War period fortifications and earthworks, since these features are anticipated from the surface down to approximately 22 feet below grade.

The potential effects to possible archaeological resources described in this report result from construction activities that have been identified at this stage in the project's engineering. In addition to these effects, it is possible that refinements to project designs as engineering work continues will result in other locations with the potential to have effects to archaeological resources. If those areas are in the APE already evaluated, the effects may be evaluated using the research done to date. If they are in new areas outside the project's APE, additional research may be required to identify whether any resources may be present. Potential effects would then be assessed in these areas as well.

7.12.5 Recommendations

There is a high likelihood that historic Revolutionary War period remains are present within the Grand Street APE. While several borings have been recorded from the area of the APE, these are not up to date. Therefore, prior to any field investigations, additional soil boring tests will be performed as part of the design effort of the project. As historic sensitivity is dependent on the depth of later fill levels, new soil borings may provide subsurface information to further assist in the archaeological interpretation of this APE, but cannot always substitute for field verification.[1]

Following the review of soil borings, some or all of the APE may be found to be too disturbed to possess research potential. For these sites, no further action will be recommended. However, for other sites, soil borings will either provide a clear indication of sensitivity or may be inconclusive. For these sites, an assessment of potential project effects will be made based on the most current engineering plans. Those sites that will not be affected will not be recommended for further study, unless design plans change in the future and effects will occur. For those sites that will be affected, additional documentary research is recommended in order to document prior disturbance in the sensitive areas, refine historic occupation and use, and thereby better delineate areas of potential archaeological sensitivity. This intensive level of study would provide contextual information in which to prioritize archaeologically sensitive areas for testing based on their potential to yield significant information and address meaningful research issues according to National Register criteria. A protocol for any additional research will be

[1]Soil borings to be undertaken for construction design purposes will be taken in coordination with an archaeologist. Preferably, continuous tube samples down to 15' below the bottom depth of fill would further assess subsurface conditions in potentially sensitive areas.

prepared in consultation with SHPO. It is expected that the additional documentary research will aid in the formulation of a specific subsurface testing plan.

A subsurface testing plan will be warranted to test potentially sensitive areas. Its goal would be to establish the presence or absence of cultural resources, the horizontal and vertical extent of these resources, site integrity, and, potential significance as defined by eligibility for inclusion on the National Register of Historic Places. Field analysis could also take the form of additional exploratory excavations or monitoring at the time of construction. The method of field analysis selected for each site would depend on site access and testing feasibility.

If avoidance of potential resources is possible, then that is considered a viable mitigation alternative. If the avoidance of adverse effects to potentially National Register eligible archaeological resources is not possible, then appropriate mitigation procedures would take the form of archaeological data recovery. It is possible, however, that given the wide range of areas in the Second Avenue Subway APEs identified as archaeologically sensitive, that some archaeological resources would not be excavated as part of the project's mitigation program, resulting in potentially adverse effects to archaeological resources. This could occur where archaeologically sensitive areas are not accessible as a result of their depth beneath deep fill and where construction would not entail any surface work that would allow access to such resources. Other sites may be inaccessible due to pedestrian, traffic, and safety constraints. In addition, some sites may not be selected for data recovery since they may hold a low potential to yield significant information and/or would provide a redundancy in information in contrast to other sites which may be sensitive for similar resources and would be mitigated.

7.12.6 Figures and Photographs

7.12-1 Location of Grand Street APE, Sanborn 2001.

7.12-2 Location of APE on British Headquarters Map of 1782.

7.12-3 Location of APE on Hyde 1913

7.12-4 Area of Potential Archaeological Sensitivity, Grand Street APE. Sanborn 2001

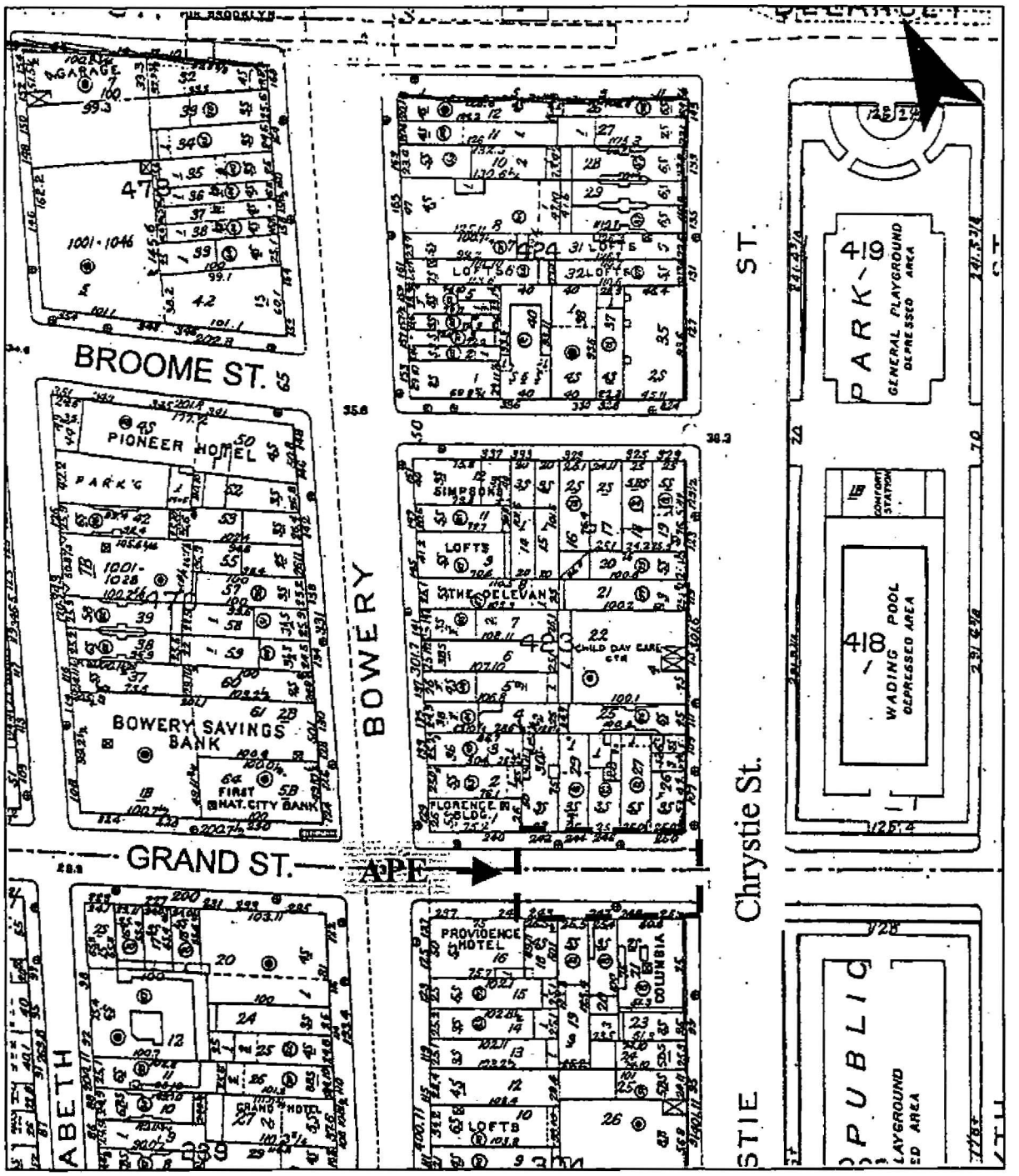


FIGURE 7.12-1

Insurance Maps. Sanborn 2001.
Grand Street, Chrystie Street to Bowery.

Approximate Scale: ½ inch = 50 feet

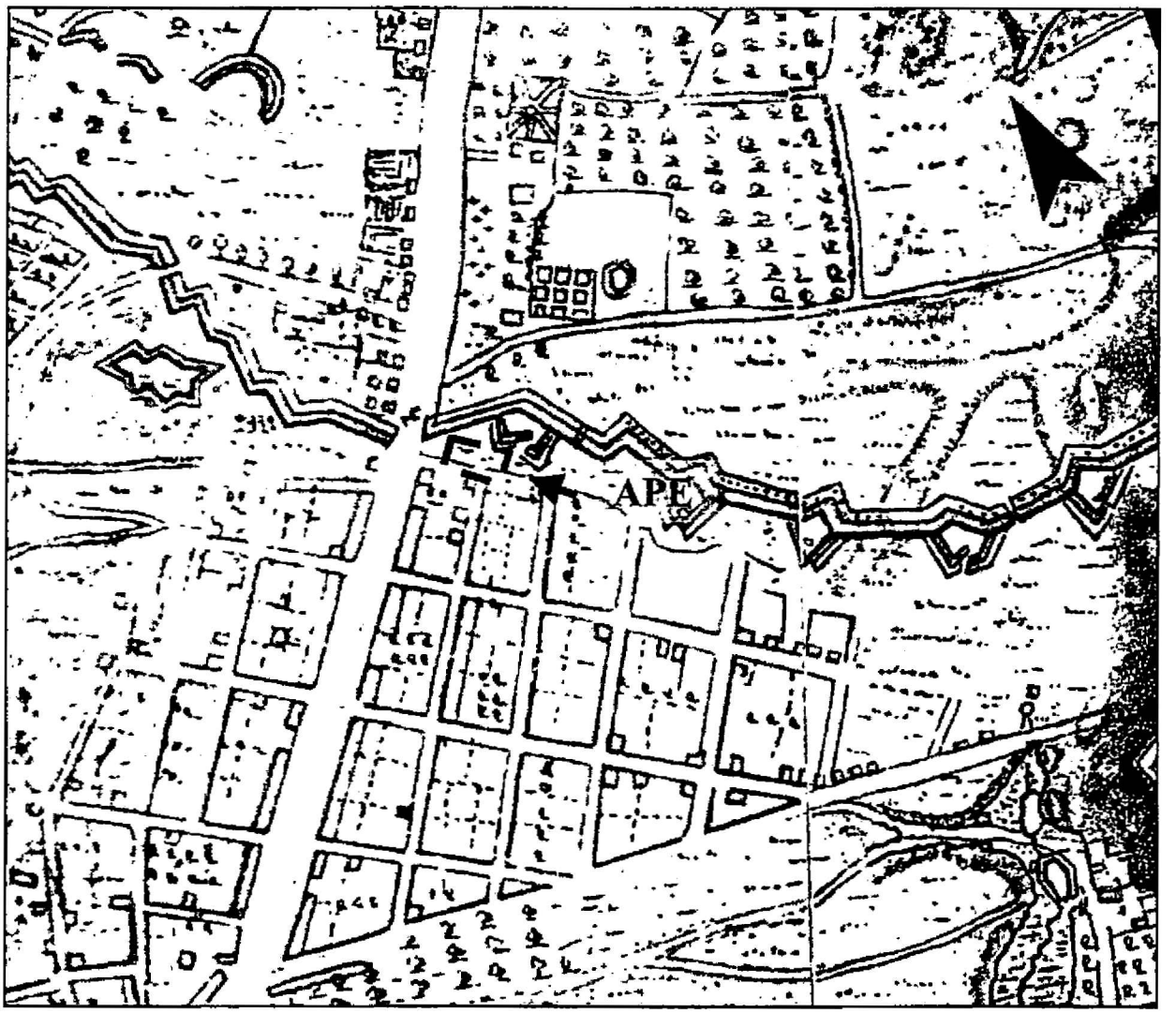


FIGURE 7.12-2

British Headquarters Map. 1782.
Grand Street, Chrystie Street to Bowery.

Approximate Scale: 1/8 inch = 100 feet

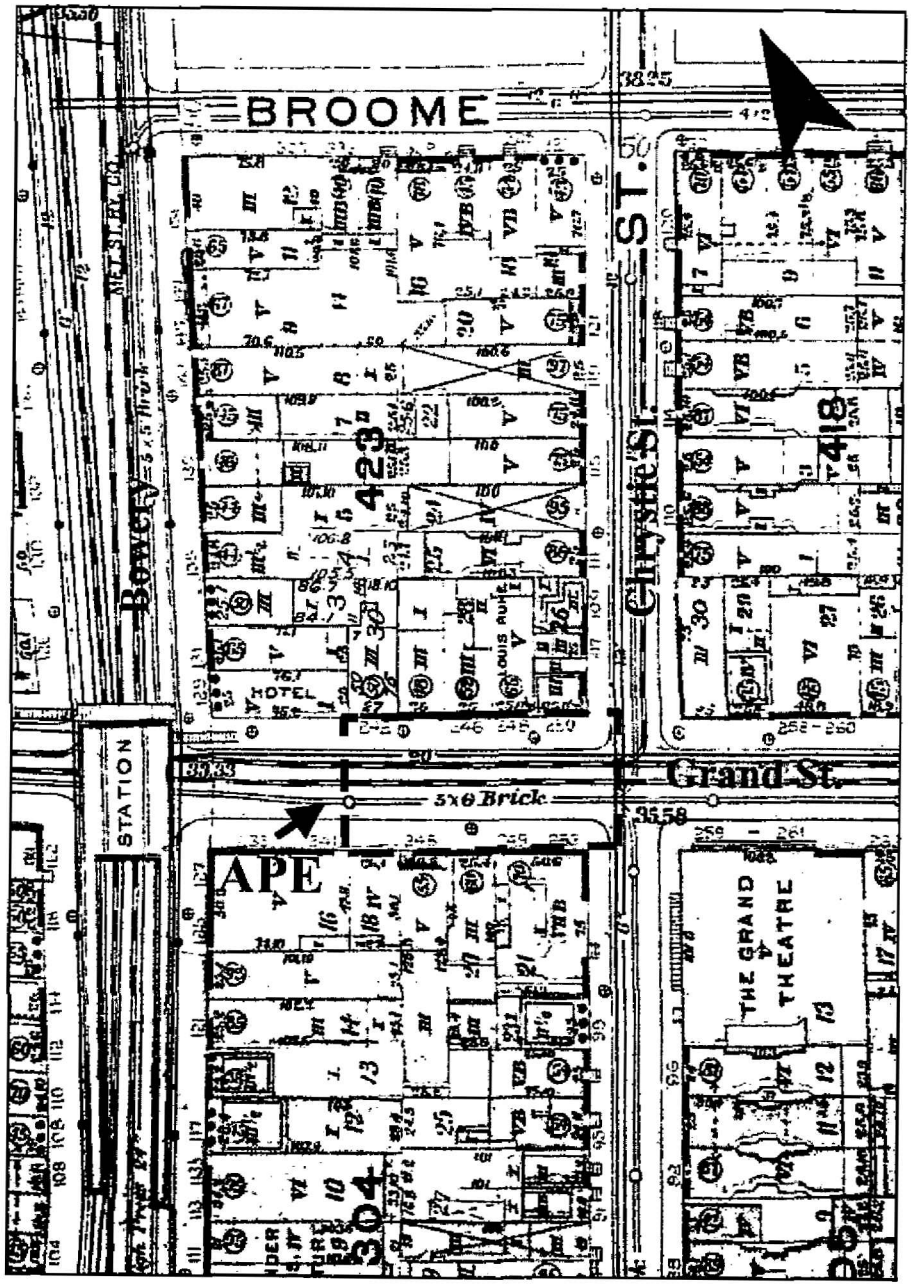


FIGURE 7.12-3

Atlas of the Borough of Manhattan. Hyde 1913.
Grand Street, Chrystie Street to Bowery.

Approximate Scale: ½ inch = 50 feet

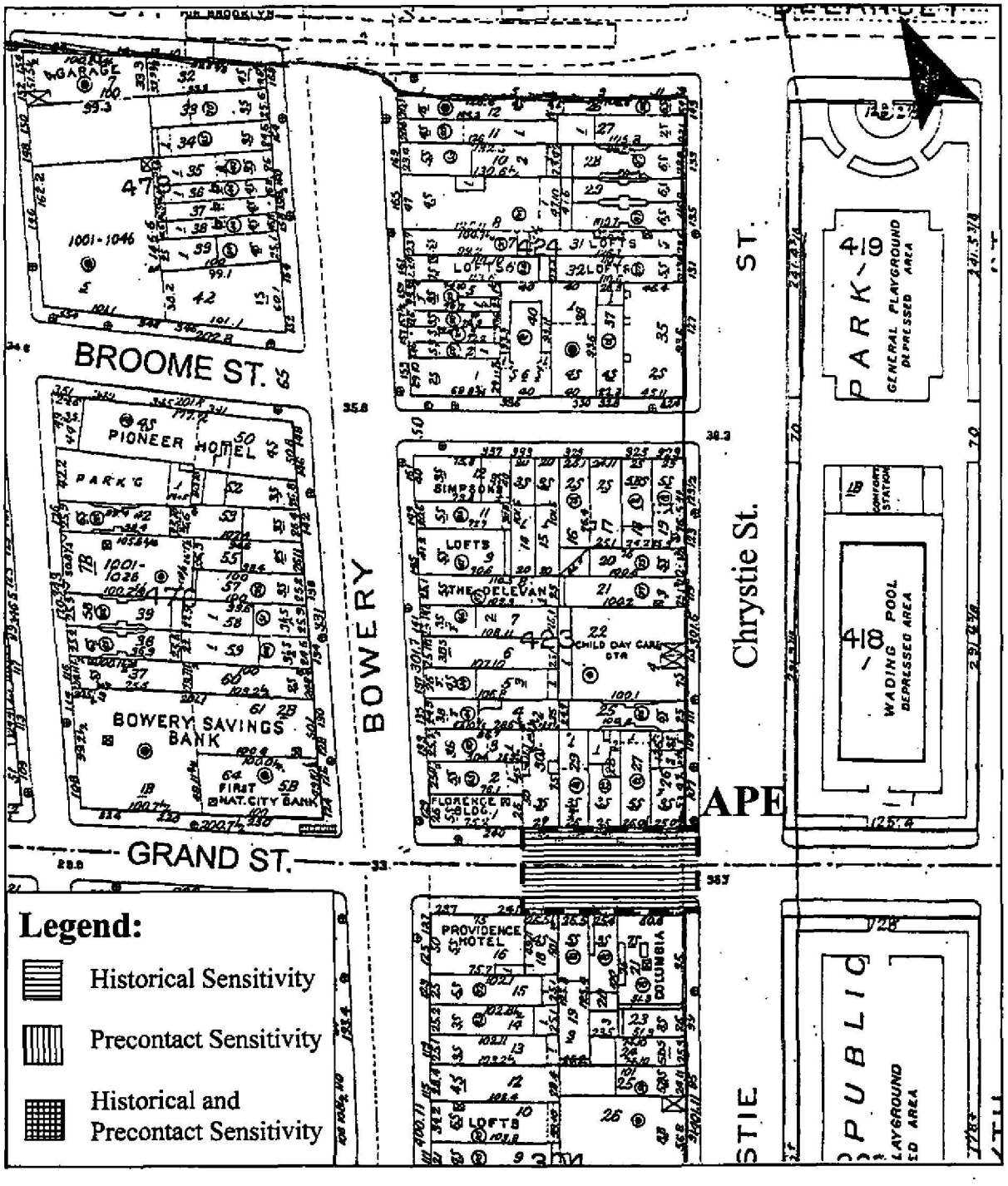
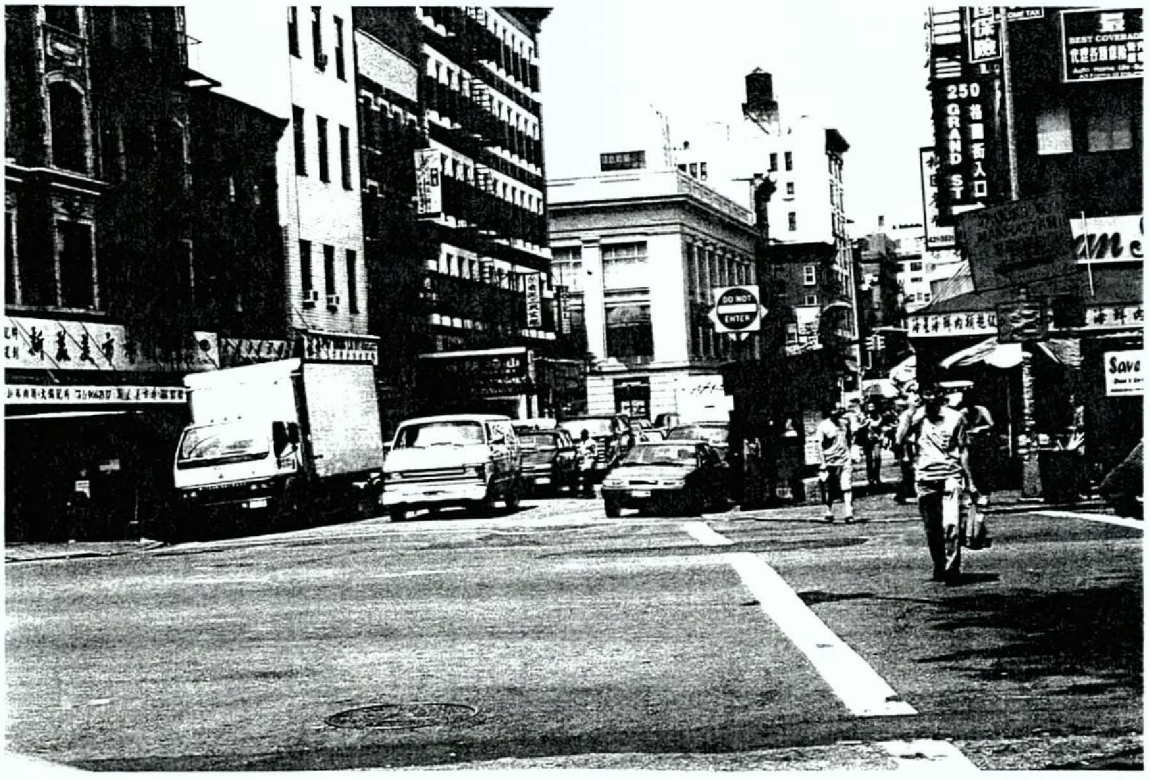


FIGURE 7.12-4

Area of Potential Archaeological Sensitivity. Sanborn 2001.
Grand Street, Chrystie Street to Bowery.

Approximate Scale: ½ inch = 50 feet



Photograph 7.12-1: Facing west toward Grand Street from the northeast corner of Chrystie and Grand Streets.

Photograph 7.12-2: Facing west toward Grand Street from the southeast corner of Chrystie and Grand Streets.

7.12.7 Appendices

7.12.7.1 Documentary Assessment of APE

Cartographic History

Grim Plan 1744: The APE appears to be in farmlands possibly associated with the residence of "J. Delancy's Farm" located outside of the APE to the northwest. The old Bowery Road to Boston is present, which is the current location of Bowery. There are no structures within this section of the APE.
The APE here is located about 2,200' northeast of the Collect Pond, a source of fresh water. The APE is also around 2,500' outside of the walled section of Manhattan to the south.

Maerschalck 1755: The High Road to Boston (later Bowery) is present, and streets are laid out on the west side of Bowery including Judith's Street (later Grand Street). However, these streets are not shown extending east past Bowery into the area of the APE. There are no structures shown within the APE.

Montresor 1766: Bowry Lane (sic) is present, as are Chrystie Street and Grand Street (unlabeled). A major road labeled "Road to Crown Point" heading toward the East River from Bowery is shown between the current locations of Broome Street and Grand Street, outside of the APE. There are no structures indicated within or immediately around the APE. Just west of Bowery, Grand Street ends at a large hill.

Ratzer 1767: Bowry Lane (sic) is shown, as are Chrystie Street (unlabeled) and Grand Street (labeled). The south side of Grand Street is shown as developed land, north of Grand Street is shown undeveloped. Two blocks east of Chrystie and Grand Street, outside of the APE, is a two-block by two-block area labeled "Great Square."

British Headquarters Map 1782: Figure 7.12-2. This particular map is not highly detailed, but the area of the APE is shown. A fortification wall is indicated running east-west just north of Grand Street with an attached structure on its south side between Chrystie and Forsyth Street just north of Grand Street, northeast of the APE. It cannot be precisely determined from this map if this structure or wall affected the APE.

Directory Plan 1789: Nearly all of the streets surrounding the APE are now labeled, including Bowery Lane, First Street (later Chrystie Street), and Eagle Street (later Grand Street). The blocks around the APE are not shown with any specific structures but are indicated as developed.

British Headquarters Map 1797: This map is very similar to the earlier 1782 British Headquarters Map. A fortification wall is located north of the APE between Broome Street and Grand Street, with a small garrison located on the south side of the

wall just north of Grand Street between Forsyth and Chrystie Streets. Compared with the earlier British Headquarters Map, the fortifications appear to be located outside of the APE by approximately 50 feet.

Taylor Roberts 1797: First Street (later Chrystie Street), Bowry Road (sic), and Grand Street are shown. The block on the south side of Grand Street is indicated as developed while the north side of Grand Street remains undeveloped. The freshwater pond is still present about ten blocks southwest of the APE.

Bridges 1807: First (Chrystie) Street, Bowery, and Grand Street are shown. The Collect Pond is not shown on this map.

Commissioner's Plan 1811: This plan is similar to Bridges 1807.

Hooker 1829: This plan is similar to Bridges 1807. Both the north and south sides of Grand Street surrounding the APE are shown developed.

Colton 1836: This map is similar to Hooker 1829.

Tanner 1836: This map is the same as Colton 1836.

Mitchell 1846: This map is the same as Colton 1836.

Dripps 1852: This is the first map to show the surrounding blocks on the north and south sides of Grand Street fully developed. While there is no scale for this map, Grand Street appears wider than surrounding east-west oriented streets.

Perris 1857-62: Grand Street is shown approximately 60-65 feet wide. The surrounding blocks are shown developed. None of these fall within the APE.

Mitchell 1860: Transportation lines are shown on Grand Street, within the APE, as well as Bowery and Chrystie Street, outside of the APE.

Vielé 1865: This topographic map shows the APE to lie within a low area of a gently sloped valley. Larger knolls are located a few blocks west and southwest of the APE. Sewer pipes are shown along Grand Street and Bowery but not Chrystie Street.

Vielé 1874: This map is similar to Vielé 1865.

Robinson 1885: Grand Street is shown approximately 60 feet wide. Two transportation lines are present on Grand Street within the APE. One fire hydrant is shown on the north side of Grand Street at Chrystie Street and another is located on the south side of Grand Street near Chrystie Street.

Sanborn 1894: Grand Street is labeled 70 feet wide. Given that the structures are shown the same as on Robinson 1885, it is unlikely that the street was actually widened; the discrepancy may be cartographic error, or this width includes the sidewalks as well as the streetbed. The same hydrant shown on Robinson 1885 on the south side of the street is present here but the hydrant on the north side of the street is not shown. A 12 inch water pipe is shown on Grand Street.

Sanborn 1905: Grand Street is labeled 69'6" wide. Otherwise the APE is portrayed unchanged from the Sanborn 1894 map.

Hyde 1913: Figure 7.12-3. This atlas shows sidewalks, which are approximately 15 feet wide along both sides of Grand Street and around 12 feet wide

on Chrystie Street. Grand Street is labeled as 70 feet wide, including the sidewalks. A 5' x 6' brick sewer line is portrayed on the south side of Grand Street, as well as a 20 inch water pipe on the north side. Two rail lines labeled "Met. St. Ry. Co." are shown on Grand Street as well. There are several fire hydrants portrayed within the APE on this atlas, two on the north side and one on the south side of Grand Street.

Sanborn 1922: This map portrays two out of the three hydrants shown on the Hyde atlas of 1913, lacking the hydrant on the north side of Grand and Chrystie Street. An additional high pressure hydrant is shown on the south side of Grand Street at the western edge of the APE. Two water pipes are shown, one is 12 inches, another a 20 inch high pressure pipeline. The street is labeled 70 feet wide.

Bromley 1934: On this map, the sidewalks on Grand Street are shown about 15 feet wide and on Chrystie Street they are shown approximately 12 feet wide. Within the APE, three hydrants on this map are present, as shown on Hyde 1913. A 20 inch water line is shown on Grand Street as well as a transportation line.

Sanborn 1951: This map is similar to Sanborn 1922. There are no hydrants shown on the north side of Grand Street within the APE, however.

Bromley 1967: The APE is depicted here the same as on Bromley 1934.

Bromley 1974: The APE is the same as shown on Bromley 1934.

Sanborn 2001: Figure 7.12-1. The APE is the same as depicted on Bromley 1934.

Street Elevation Table:

Data Source	Grand Street x Chrystie Street	Grand Street x Bowery
1865 Vielé	35.7'	35.9'
1885 Robinson	35.5'	33'
1934-1974 Bromley	35.7'	33'
2001 Sanborn	35.7'	33'

Precontact Sensitivity

Before European Contact, the APE occupied a low point within a gently sloped open meadow valley with large knolls present to the southwest (Viele 1865). A large source of fresh water, the Collect Pond, was located approximately 2,200 feet southwest of the APE. Additionally, another much smaller pond is indicated by Stokes (1928) a few hundred feet to the southwest of the APE. Although no particular precontact sites have been identified in the immediate vicinity of the APE, the NYCLPC sources indicate the area is close to areas of precontact sensitivity (see Appendix 7.11.7.2). Additionally, a habitation site called "Schepmoes" was recorded about 13 blocks north of the APE at approximately East 10th

Street and Second Avenue in association with a Native American trail (Grumet 1981). The area is also in the immediate vicinity of a piece of land called "Werpoes" by Native Americans, as recorded in a land patent from 1651 (Stokes 1928: 72). It is likely that specific habitation sites or activity areas would have been located in the vicinity.

As Grand Street was not laid out during the initial phases of contact era occupation, it is likely that the precontact landscape was disturbed by farming under the Dutch West India Company during the 17th century (Stokes 1918, 1928). The upper one foot or so of the precontact surface is thus not likely to hold any possible intact remains of surface scatter or features. Additionally, 18th century British fortifications would have further disturbed the precontact landscape in the area of the APE (Figure 7.12-2; British Headquarters Maps 1782, 1797; Stokes 1918, 1928). In Stokes (1918), the fortifications are described as "redoubts and earthworks." These were typically earthen embankments created through hand-digging and repositioning of large quantities of soil to create entrenchments and embankments. It is quite possible that the creation of these earthworks would have affected soils within the APE, even though the fortifications themselves were tangential to, and directly north of the APE.

Soil borings in the most immediate vicinity of the APE (see Appendix 7.12.7.3) indicate that the precontact surface, although disturbed, may be buried under three to 22 feet of fill. However, it is likely that this fill was not laid down until the beginning of the 19th century, as a WPA map indicates that Grand Street was not legally opened until 1803, after the Revolutionary period fortifications were installed (WPA Subsurface Conditions Map 75, 1939). Later subsurface disturbances such as sewer and utility lines largely rest within five feet of the surface, except for a single sewer line depicted 15 feet below the surface in the middle of the roadbed (Ibid.). But since remains from the precontact era would have been disturbed during the 17th and 18th centuries, the area is not considered sensitive for precontact archaeological remains.

Historical Sensitivity

This area falls within farmlands associated with the Bouwery parcels administered by the Dutch West India Company during the 17th century (Stokes 1918, 1928). In particular, the APE falls within Bouwery No. 4, in a section assigned by Director Kieft to Bastiaen on March 26, 1647 (Ibid.). Early maps of Manhattan show that Grand Street was not established until the latter half of the 17th century, and thus it is likely that the area of the APE was farmed until then (Grim 1744; Maerschalk 1755). The major roads in the vicinity of the APE at this time are Bowery and the Road to Crown Point, running between the current locations of Grand and Broome Streets (Ibid.).

During the 18th century, the entire parcel became part of James Delancey's Farm (Ratzer 1767; Grim 1744; Stokes 1918, 1928). At the end of the 18th century, fortifications are shown on British Headquarters maps directly in or in the immediate vicinity of the APE (Figure 7.12-2; 1782, 1797). The fortifications were also reported through site file searches (see Appendix 7.12.7.2). More specifically, the British Headquarters map show a fortification wall with an attached fort or garrison on the south side of the wall, the wall located on or just north of Grand Street with the fort between Chrystie and Forsyth Streets,

east of the APE. Stokes (1918, 1928) describes the fortifications as "Redoubts and earthworks of the Revolutionary Periods, taken for the most part from the manuscript additions by Montresor on an engraved copy of the Ratzen Map in the N.Y. Public Library" (1918, Notation on Landmark Map, Plate 174). The Stokes map places the fortification wall directly within the APE, crossing it diagonally from the north side of Grand Street at the western edge of the APE to the southwest corner of Grand and Chrystie Streets.

By 1799, the residence of James Delancey (to the north of the APE) was demolished (Stokes 1918: 949), and Lower Manhattan up to and including the APE was fully gridded by 1797 (Taylor Roberts). The street itself is reported as having legally opened in 1803, according to the WPA (Subsurface Conditions Map No. 75, 1939). The surrounding blocks were fully developed by the mid 19th century (Dripps 1852), and sewers were present in Grand Street also by the mid 19th century (Viele 1865). Additionally, transportation lines were established on Grand Street by 1860 (Mitchell) and were present up through the beginning of the 20th century (Figure 7.11-3; Hyde 1913). It is possible that support structures for the trolleys are still buried in the Grand Street roadbed. Documentation of these foundation elements, if encountered, should be considered. However, they are not mapped as potential resources since their research potential does not meet criteria for potential significance.

Soil borings in the vicinity of the APE show extreme variation in fill levels, from zero to 22 feet (see Appendix 7.12.7.3). The more recent of these borings, just east of the APE, indicate fill levels of 12 to 22 feet below grade. Further exploration may help to determine the exact nature of the fill covering the APE, as the fill layer may protect potential deposits dating to earlier historic periods.

A WPA Subsurface Conditions Map (Map No. 75, 1939) details clusters of utilities under Grand Street two blocks west of the APE, and thus may not be entirely representative of the utilities within the precise area of the APE. The map shows electricity ducts, gas and water pipes and telephone cables, all of which are located five feet or less beneath the surface of the roadbed on the north and south sides, and were not located under the sidewalks. The sewer line is shown directly in the middle of the street and is located 15 feet below the surface. It is very possible that the majority of the utilities would have not affected the pre-fill surface, except the deeply buried sewer lines.

In sum, the documentary evidence strongly suggests that historical remains within the Grand Street APE map include 18th century British fortifications. Regarding earlier historical occupation, while it is probable that the area was historically farmed prior to the establishment of the street, there is no evidence of any structures within the APE. The area is considered highly sensitive for historic period remains, conservatively estimated from the surface to 22 feet below grade, the lowest depth of reported fill.

7.12.7.2 Site File Search Results, NYCLPC, NYSOPRHP and NYSM

SITE FILE SEARCH RESULTS

Project Name 2nd Ave. Subway HAA Project Number 2362 Client Historical Perspectives

City/Village New York Town _____ County New York

Quadsheets Central Pk, Brooklyn, Jersey City.

Conducted by: K.C. Date 10.1.01

NEW YORK STATE MUSEUM # Sites 7		SHPO # Sites 24 19	
4051X	*Missing	A061.01.0491 —	#30 = British Line
4060X		A061.01.01282X	#31
4061X		A061.01.01272 X 0014	
4064X		A061.01.01284X	(Note: #30 + #31 —
4063X		A061.01.01283X	the only info from SHPO
4064X		1- A061.01.1271X	was that NYAC did a
7276X		~~2- A061.01.0014 003~~	survey in the 1970's
		3 - A061.01.0623X 0023	3rd found historic Remains.
		4 - A061.01.06763X	no other info was found.)
		~~5 - A061.01.0001~~	
	209 Water St. South Street Seaport HP	6 - A061.01.00604X	NYAC = New York
		A061.01.01304X	Archeological Council.
		A061.01.01285X	
	*Missing * 526 Broom St. Historic Site	A061.01.07671 —	
		A061.01.09530X	
		A061.01.01286X	
		A061.01.0541X	
		A061.01.00542X	
		A061.01.09531X	

*According to Cynthia Blakemore @ SHPO

ATIONAL RE... ER E..GIBLE and LISTED ✗ Eligible ... | Listed ... ✗ Building Inve...

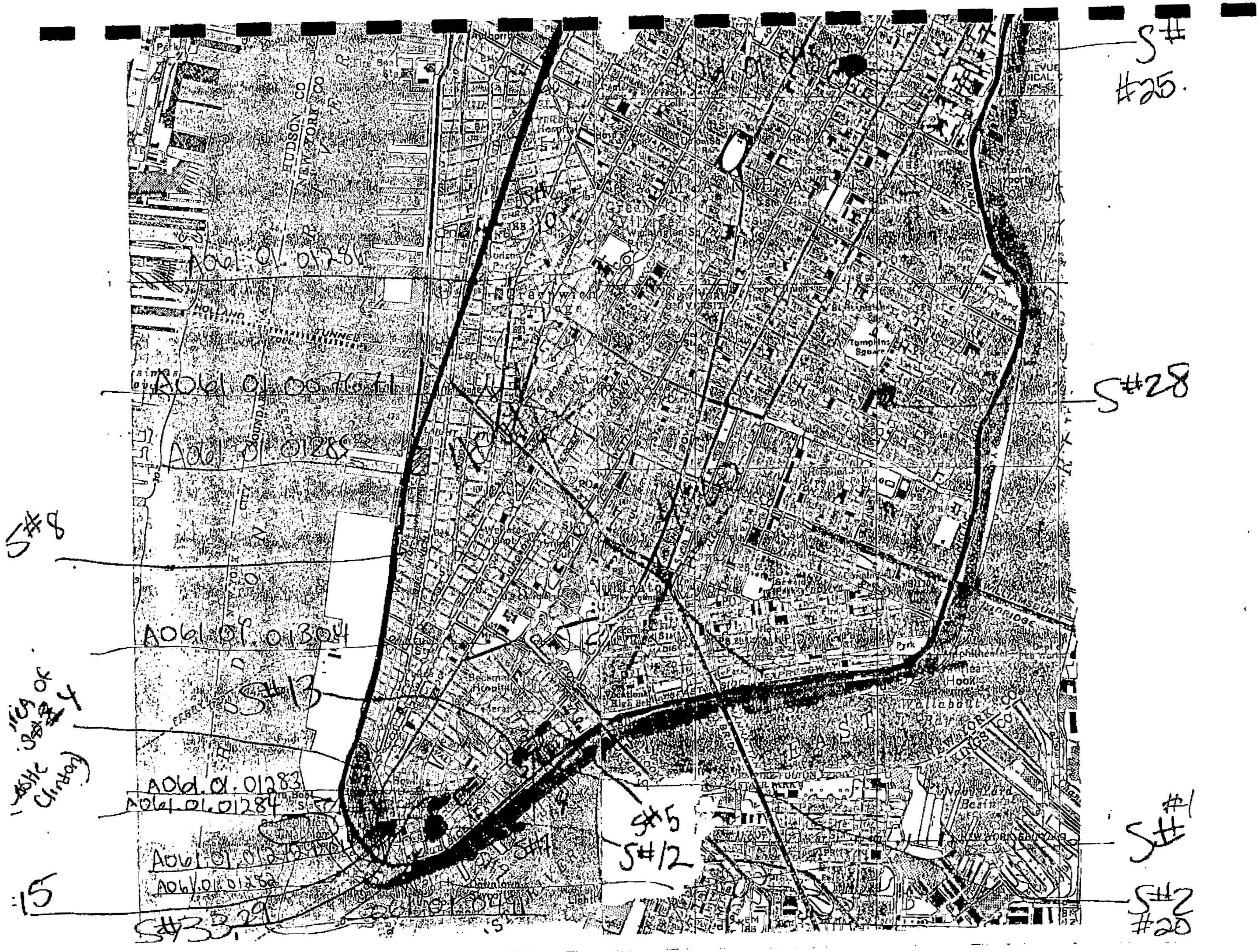
Building Inventory #	NR Status	Form Copied	Property Description	Reads Checked
06101.000604	NRL	✓	South Street Seaport Historic District 209 Water Street	

< 17 previous surveys w/in Radius >

EVIOUS SURVEYS

8 Westside Highway Program – 1983
[redacted] 209 Water St. – Schuyler – ? Date
[redacted] William D. Hersey – 1963 Castle Clinton at the Battery
[redacted] East River Road..., New York Harbor Collection Kardas & Larrabee October 1977
[redacted] Broad Street Financial Center Greenhouse January 1985
-10 Sheridan Square – 1983 – Rutgers University
X
[redacted] Lower Eastside Service Center · Louis Berger Jan '98
[redacted] 6th Ave / Street Fifth Ave Landfill Arnold Pickman & Nan Rothschild May 1991
[redacted] 750 Sixth Ave. HPI – February 1998
[redacted] Stone Street Historic District 1987/1988 NYC Landmarks Pres. Comm. / Tracker
[redacted] Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1989 / December 1991
9 Barclays Bank Site – 100 Water St. Berger – 1983
[redacted] East River Plaza HPI Sept. 1998
[redacted] 175 Water Street Block Geismar July 1983
[redacted] Stone Street Historic District NYC Landmark Pres. Comm. February 1998
[redacted] Schermerhorn Row Block. Kardas & Larrabee – Aug 1971

7 Telco Block – S. St. Seaport Historic District – 1983



S#
#25.
HUDSON CO
NEW YORK CO
HOLLAND
TUNNEL
Tompkins Square
S#28
A061.01.01288
S#8
A061.01.01304
S#13
WILLIAMSBURG
Wallabout
Bay
KINGS CO
A061.01.01283
A061.01.01284
S#5
S#12
S#1
15
S#2
#20

7.12.7.3 Soil Borings

Boring 13
WPA Rock Data, Vol. 1, Sheet 14, 1933
Location: Bowery and Grand Street
Elevation at grade: 34.7'
0-33.4': Coarse sand
No groundwater recorded.

Boring 48
WPA Rock Data, Vol. 1, Sheet 14, 1933
Location: Grand Street between Bowery and Chrystie Street
Elevation at grade: 33.6'
0-0.3': Concrete sidewalk
0.3-1.1': Cinder fill
1.1-3.1': Misc. fill
3.1-105.0': Fine to coarse sand, some silt, some gravel
105.0-118.0': Varved silt with layers of sand
118.0-126.5': Silt, some fine sand.
No groundwater recorded.

Boring 49
WPA Rock Data, Vol. 1, Sheet 14, 1933
Location: Grand and Chrystie Street
Elevation at grade: 33.9'
0-0.3': Concrete sidewalk
0.3-1.1': Cinder fill
1.1-3.1': Misc. fill
3.1-96.0': Fine to medium sand, some silt, trace gravel
96.0-125.0': Varved silt with layers of fine sand
125.0-201.5': Silt and fine sand, some clay
No groundwater recorded.

Boring 8
Engineering Services, Subsurface Exploration Section 1981
Location: Between Grand, Forsyth, Chrystie and Hester Streets, in Sara D. Roosevelt Park
Elevation at grade: 35.2'
0-0.2': Blacktop
0.2-0.5': Concrete
0.5-6.0': Fill (brick, sand, cinders, etc.)
6.0-12.0': Possible fill (fine to medium brown sand, trace to little silt, trace to little gravel)
12.0-21.0': Fine to medium brown sand, trace silt
21.0-25.5': Fine red/brown sand, little silt, bulls liver
25.5-28.0': Fine to medium light brown sand, trace silt
28.0-31.5': Fine to medium dark brown sand, trace silt, trace gravel
Groundwater observed at 27'.

Boring 9
Engineering Services, Subsurface Exploration Section 1981
Location: Just south of Grand Street between Chrystie and Forsyth Streets, within Sara D. Roosevelt Park (Block 305)
Elevation at grade: 34.6'
0-0.2': Blacktop
0.2-0.3': Concrete
0.3-9.0': Fill (fine to coarse gray/grown sand, some gravel, trace silt, little brick, etc)
9.0-14.0': Fill (fine to medium brown sand and gravel, little organic silt, trace concrete, etc.)
14.0-22.0': Fine to medium brown sand, some gravel
22.0-28.0': Fine to coarse brown sand, little gravel, trace silt
28.0-31.5': Brown silt, some very fine sand, trace mica, bulls liver
No groundwater encountered.

Boring 10
Engineering Services, Subsurface Exploration Section 1981
Location: Near the corner of Grand and Chrystie Streets, within Sara D. Roosevelt Park (Block 305)
Elevation at grade: 35.7'
0-0.2': Blacktop
0.2-0.3': Concrete
0.3-8.0': Fill with boulders (fine to medium brown sand, little gravel, trace silt, little brick, etc)
8.0-13.0': Fill with boulders (fine to medium to coarse gray/brown sand, some gravel, trace silt, trace brick, etc)
13.0'-18.0': Fine to medium brown sand, little gravel, trace silt
18.0-24.0': Fine to medium brown sand, trace to little gravel
24.0-29.0': Fine to medium brown sand, trace silt, trace gravel
29.0-31.5': Fine to medium brown sand, trace silt, trace gravel
No groundwater encountered.

Boring R
Engineering Services, Subsurface Exploration Section 1984
Location: Towards the corner of Grand and Chrystie Streets, at the edge of Sara D. Roosevelt Park (Block 305)
Elevation at grade: 38.8'
2" asphalt
0-9.0': Fill with boulders (brick, some fine to medium brown sand, trace silt, gravel, concrete, etc)
9.0-18.0': Fill with boulders (fine to medium to coarse brown sand, trace silt, gravel)
18.0-22.0': Fill with boulders (Fine to medium gray sand, little silt, trace gravel, brick, cinders, etc.)
22.0-36.5': Fine to medium brown sand, trace silt, trace gravel, with thin very fine silty sand layers from 29.0-33.0'
Groundwater encountered at 33.0'.