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SECOND AVENUE SUBWAY
PHASE 1A ARCHAEOLOGICAL ASSESSMENT

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4.5-3b *Map of the City of New York Extending Northward to 50th Street.* Chrystie Street, Stanton Street to Delancey Street. Dripps 1852.

4.5-4 *New York City, County, and Vicinity.* Chrystie Street, East Seventh Street to Delancey Street. Dripps 1867.

4.5-5a *Area of Potential Archaeological Sensitivity.* Second Avenue. East 6th Street to East Houston Street. Sanborn 2001.

4.5-5b *Area of Potential Archaeological Sensitivity.* Chrystie Street, Forsyth Street, and Sara Delano Roosevelt Park between East Houston Street and Delancey Street. Sanborn 2001.

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4.6-1 *Insurance Maps.* Sara Delano Roosevelt Park and Forsyth Street APE, including former Blocks 419, 418, 305 and 302. Sanborn 2001.

4.6-2 *Plan of the City of New York.* Sara Delano Roosevelt Park APE. Ratzer 1766/67.

4.6-3 *Maps of the City of New-York.* Block 419. Perris 1857-62.

4.6-4 *Maps of the City of New-York.* Block 418. Perris 1857-62.

4.6-5 *Maps of the City of New-York.* Block 305. Perris 1857-62.

4.6-6 *Maps of the City of New-York.* Block 302. Perris 1857-62.

4.6-7 *Atlas of the City of New York, Borough of Manhattan.* Blocks 419 and 418. Bromley 1925.

4.6-8 *Atlas of the City of New York, Borough of Manhattan.* Block 305. Bromley 1925.

4.6-9 *Atlas of the City of New York, Borough of Manhattan.* Block 302. Bromley 1925.

4.6-10 *Area of Potential Archaeological Sensitivity.* Forsyth Street and Sara Delano Roosevelt Park between Delancey and Canal Streets. Sanborn 2001.

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5.1-1 *Nassau Street Alignment from Block 425 to Centre Street at Grand Street.* Sanborn 2001.

5.1-2 *Plan of the City of New York* Nassau Street Alignment.. Ratzer 1766/67.

5.1-3 *Maps of the City of New-York.* Block 425. Perris 1857-62.

5.1-4 *Maps of the City of New-York.* Block 424. Perris 1857-62.

5.1-5 *Maps of the City of New-York.* Block 478, future location of Kenmare Street. Perris 1857-62.

5.1-6 *Maps of the City of New-York.* Block 479, future location of Kenmare Street.

Perris 1857-62.

5.1-7 *Maps of the City of New-York.* Block 480, future location of Kenmare Street. Perris 1857-62.

5.1-8 *Maps of the City of New-York.* Block 481, future location of Kenmare Street. Perris 1857-62.

5.1-9 *Maps of the City of New-York.* Centre Street from Broome Street to Grand Street. Perris 1857-62.

5.1-10 *Delancey Farm Map.* Block 425. 1865.

5.1-11 *Atlas of the City of New York, Borough of Manhattan.* Block 425. Bromley 1902.

5.1-12 *Atlas of the City of New York, Borough of Manhattan.* Blocks 424, 478 and 479 before the construction of Kenmare Street. Bromley 1902.

5.1-13 *Atlas of the City of New York, Borough of Manhattan.* Block 478 before the construction of Kenmare Street. Bromley 1902.

5.1-14 *Atlas of the City of New York, Borough of Manhattan.* Block 479 before the construction of Kenmare Street. Bromley 1902.

5.1-15 *Atlas of the City of New York, Borough of Manhattan.* Block 480 before the construction of Kenmare Street. Bromley 1902.

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5.1-17 *Atlas of the City of New York, Borough of Manhattan.* Centre Street from Broome Street to Grand Street, east side. Bromley 1902.

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5.1-19 *Atlas of the City of New York, Borough of Manhattan.* Centre Street south of Grand Street. Bromley 1902.

5.1-20 *Atlas of the City of New York, Borough of Manhattan.* Blocks 425, 424, 478, 479 and 480. Bromley 1911.

5.1-21 *Atlas of the City of New York, Borough of Manhattan.* Kenmare Street from Bowery to Mulberry Street. Bromley 1911.

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5.1-23 *Atlas of the City of New York, Borough of Manhattan.* Centre Street from Broome Street to Grand Street. Bromley 1911.

5.1-24a *Area of Potential Archaeological Sensitivity.* Block 424, Block 425 and Delancey Street between Chrystie and Bowery Streets, north and south sides. Sanborn 2001.

5.1-24b *Area of Potential Archaeological Sensitivity.* Kenmare,Centre, and Broome Streets, including Lots 12, 27, and 28 on Block 478, and Block 481. Sanborn 2001.

Chapter 6

6.1

6.1-1 *A Plan of the City of New York From an Actual Survey.* Lyne 1730.

6.1-2 *A Plan of the City of New York.* Carwitham 1740.

6.1-3 *Plan of the City of New York. Surveyed in 1767.* Ratzer 1766/67.

6.1-4a *Map of the City of New York Extending Northward to 50th Street.* Water Street Alignment, Delancey Street to Division Street. Dripps 1852.

6.1-4b *Map of the City of New York Extending Northward to 50th Street.* Water Street Alignment, Division Street to Dover Street. Dripps 1852.

6.1-4c *Map of the City of New York Extending Northward to 50th Street.* Water Street Alignment, Dover Street to Wall Street. Dripps 1852.

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6.1-5a *New York City, County, and Vicinity.* Water Street Alignment, Delancey Street to Canal Street. Dripps 1867.

6.1-5b *New York City, County, and Vicinity.* Water Street Alignment, Canal Street to Chatham Square. Dripps 1867.

6.1-5c *New York City, County, and Vicinity.* Water Street Alignment, Chatham Square to Fulton Street. Dripps 1867.

6.1-5d *New York City, County, and Vicinity.*
Water Street Alignment, Fulton Street to State Street. Dripps 1867.

6.1-6a *Area of Potential Archaeological Sensitivity.*
Chrystie Street, Delancey Street to Grand Street. Sanborn 2001.

6.1-6b *Area of Potential Archaeological Sensitivity.*
Chrystie Street, Hester to Canal Street, and Bowery, Bayard to Division Street. Sanborn 2001.

6.1-6c *Area of Potential Archaeological Sensitivity.*
Chatham Square. Sanborn 2001.

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St. James Place, Chatham Square to Madison Street. Sanborn 2001.

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Pearl Street, Madison Street to Peck Slip. Sanborn 2001.

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Pearl and Water Streets, Peck Slip to Pine Street. Sanborn 2001.

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Water Street, Pine Street to Coenties Slip. Sanborn 2001.

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6.2-1 *Topographical Atlas of the City of New York, Including the Annexed Territory.* Viele 1874.

6.2-2 *A Plan of the City of New York From an Actual Survey.* Lyne 1730.

6.2-3 *Plan of the City of New York. Surveyed in 1767.* Ratzer 1766/67.

6.2-4 *Map of the City of New York and Island of Manhattan as laid out by the Commissioners.* Bridges 1807-1811.

6.2-5a *Map of the City of New York Extending Northward to 50th Street.*
Detail of Block 98 and Peck Slip. Dripps 1852.

6.2-5b *Map of the City of New York Extending Northward to 50th Street.* Detail of Gouverneur Lane. Dripps 1852.

6.2-6 *Atlas of the City of New York.* Detail of Block 98 and Peck Slip. Robinson 1885.

6.2-7 *Atlas of the City of New York, Borough of Manhattan. From actual surveys and official plans.* Detail of Block 98 and Peck Slip. Bromley 1897.

6.2-8 *Land Book of the Borough of Manhattan, City of New York.* Detail of Block 98 and Peck Slip. Bromley 1926.

6.2-9 *Area of Potential Archaeological Sensitivity.* Block 98 and Peck Slip. Sanborn 2001.

6.2-10 Area *of Potential Archaeological Sensitivity.* Gouverneur Lane. Sanborn 2001.

6.3

6.3-1 *Afbeeldinge van de Stadt Amsterdam in Nieuw Neederlandt.* Castello 1660.

6.3-2 *A Plan of the City of New York From an Actual Survey.* Lyne 1730.

6.3-3 *Plan of the City of New York.* Peter Minuit Park. Ratzer 1766/67.

6.3-4 *Map of Battery Park.* Ewen 1827.

6.3-5 *Proposed Peter Minuit Park Site.* Kearns et al. 1992.

6.3-6 *Area of Potential Archaeological Sensitivity.* Peter Minuit Park. Based on Louis Berger & Associates 2000.

Chapter 7

7.1

7.1-1 *A Plan of the City of New York From an Actual Survey.* Lyne 1730.

7.1-2 *Plan of the City of New York.* Vietnam Veterans Plaza. Ratzer 1766/67.

7.1-3 *The New-York Directory and register for the Year 1789.* McComb 1789.

7.1-4 *A New and Accurate Plan of the City of New York in the State of New York in North America.* Vietnam Veterans Plaza. Taylor Roberts 1797.

7.1-5 *Topographical Map of the City and County of New York.* Vietnam Veterans Plaza. Colton 1836.

7.1-6 *Map of the City of New York Extending Northward to 50th Street.* Vietnam Veterans Plaza. Dripps 1852.

7.1-7 *Atlas of the City of New York.* Vietnam Veterans Plaza. Robinson 1885.

7.1-8 *Area of Potential Archaeological Sensitivity.* Vietnam Veterans Plaza. Sanborn 2001.

7.2

7.2-1 *Insurance Maps.* Kips Bay Shaft Site. Sanborn 2001.

7.2-2 *Farm Maps.* Note the Elbert Kip house, barn and dock, with Kips Bay and stream at upper right. Randel 1820.

7.2-3 *Maps of the City of New York.* Note Elbert Kip house in APE. Perris and Hutchinson 1850/51.

7.2-4 *Atlas of the City of New York, Borough of Manhattan.* Kips Bay Shaft Site. Bromley 1902.

7.2-5 *Insurance Maps.* Kips Bay Shaft Site. Sanborn 1929.

7.2-6 *Area of Potential Archaeological Sensitivity.* Kips Bay Shaft Site. Sanborn 2001.

7.3

7.3-1 *Insurance Maps.* St. Vartan Park Shaft Site. Sanborn 2001.

7.3-2 *Atlas of the City of New York, Borough of Manhattan.* St. Vartan Park Shaft Site. Lots 1-8, 56-63 and the west half of Lot 55 are in APE. Bromley 1902.

7.3-3 *Topographical Atlas of the City of New York, Including the Annexed Territory.* St. Vartan Park Shaft Site APE. Viele 1874.

7.3-4 *Farm Maps.* Note the Van Tuyl residence within the APE and old Kip residence just south of the APE. Randel 1820.

7.3-5 *Area of Potential Archaeological Sensitivity.* St. Vartan Park Shaft Site. Sanborn 2001.

7.4

7.4-1 *Farm Maps.* East 66th Street Shaft Site. Randel 1820.

7.4-2 *Map of the City of New York North of 50th Street.* East 66th Street Shaft Site. Dripps 1851.

7.4-3 *Maps of the City of New-York.* East 66th Street Shaft Site. Perris 1857-62.

7.4-4 *Insurance Maps of New York.* East 66th Street Shaft Site. Sanborn 1892.

7.4-5 *Atlas of the City of New York, Borough of Manhattan.* East 66th Street Shaft Site. Bromley 1955.

7.4-6 *Area of Potential Archaeological Sensitivity.* East 66th Street Shaft Site. Sanborn 2001.

7.5

7.5-1 *Insurance Maps.* Block 1792. Sanborn 2001.

7.5-2 *Map of the City of New York and Island of Manhattan as laid out by the Commissioners.* Block 1792. Bridges 1807-1811.

7.5-3 *Atlas of the Entire City of New York.* Block 1792. Bromley 1879.

7.5-4 *Topographical Map of the City and County of New York.* Block 1792. Colton 1836.

7.5-5 *New York City, County, and Vicinity.* Block 1792. Dripps 1867.

7.5-6 *Atlas of the Borough of Manhattan.* Block 1792. Hyde 1913.

7.5-7 *Insurance Maps.* Block 1792. Sanborn 1951.

7.5-8 *Area of Potential Archaeological Sensitivity.* Block 1792. Lots 22 through 25 lack historic archaeological sensitivity. Sanborn 2001.

7.6

7.6-1 *A Plan of the City of New York From an Actual Survey.* Lyne 1730.

7.6-2 *Plan of the City of New York.* Old Slip. Ratzer 1766/67.

7.6-3 *The New-York Directory and register for the Year 1789.* McComb 1789.

7.6-4 *A New and Accurate Plan of the City of New York in the State of New York in North America.* Old Slip. Taylor Roberts 1797.

7.6-5 *New York City, County, and Vicinity.* Old Slip. Dripps 1867.

7.6-6 *Atlas of the City of New York.* Old Slip. Robinson 1893.

7.6-7 *Atlas of the Borough of Manhattan.* Old Slip. Bromley 1916.

7.6-8 *Area of Potential Archaeological Sensitivity.* Old Slip. Sanborn 2001.

7.7

7.7-1 *Insurance Maps.* Second Avenue Train Yard. Sanborn 2001.

7.7-2 *Diagram of Historic Block Numbering.* Second Avenue from the Harlem River to East 127th Street. Sanborn 2001.

7.7-3 *Map of the City of New York and Island of Manhattan as laid out by the Commissioners.* Second Avenue from the Harlem River to East 125th Street. Bridges 1807-1811.

7.7-4 *New Harlem village Plot, 1670.* Second Avenue, East 127th to East 125th Streets. Romer and Hartman 1981.

7.7-5 *British Headquarters Map.* Second Avenue from the Harlem River to East 125th Street. 1782.

7.7-6 *Farm Maps.* Ingraham estate. Second Avenue between East 127th and East 126th Streets. Randel 1820.

7.7-7 *Map of the City of New York Extending Northward to 50th Street.* Second Avenue between East 128th and East 125th Streets. Dripps 1851.

7.7-8 *New York City, County, and Vicinity.* Second Avenue Train Yard APE. Dripps 1867.

7.7-9 *Atlas of the Entire City of New York.* Second Avenue Train Yard, East 129th Street to East 125th Street. Bromley 1879.

7.7-10 *Insurance Maps.* Block 1803. Sanborn 1896 (top), Sanborn 1911 (bottom).

7.7-11 *Area of Potential Archaeological Sensitivity.* Second Avenue, Harlem River Drive to East 125th Street. Sanborn 2001.

EXECUTIVE SUMMARY

Introduction:

MTA New York City Transit is preparing a Supplemental Draft Environmental Impact Statement (SDEIS) for a proposed full-length Second Avenue Subway extending from 125th Street to Lower Manhattan (Figure 1-1).

The SDEIS is being prepared for the Federal Transit Administration (FTA) as lead agency, in accordance with the National Environmental Policy Act (NEPA). As per Section 106 of the National Historic Preservation Act of 1966, an archaeological resource analysis identifying designated and potential archaeological resources that may be affected by a proposed federal agency's action, and an assessment of the action's effects on those resources, is required. As mandated by the regulations governing such work, the archaeological resource methodology and analysis was prepared in consultation with the New York State Historic Preservation Office (SHPO).

The proposed subway route runs directly beneath 125th Street at approximately Fifth Avenue to Second Avenue, and then beneath Second Avenue, from 125th Street to Houston Street. From Houston Street south, the Water Street alignment would continue construction of a new tunnel south of Houston Street down Forsyth or Chrystie Street to St. James Place, and continue on Water Street, terminating near Whitehall. Furthermore, along the route ventilation and access shafts are proposed for the insertion of boring machines and/or for spoils removal. Both the route of the proposed tunnel and these shaft sites were assessed for their precontact and historical archaeological potential.

An engineering option previously but no longer under consideration, the Nassau Street alignment, would have curved to the west south of Houston Street, connecting at approximately Grand Street and Centre Street to the existing tunnel running beneath Centre Street and carrying the J, M, and Z subway routes. The new service would then have continued along that line, continuing under Nassau Street to Lower Manhattan (Figure 1-2). The assessment of this alignment's archaeological sensitivity is provided in Chapter 5. However, due to the Nassau Street alignment's greater potential environmental effects and engineering difficulties, this alignment is no longer being evaluated as a project alternative and, therefore, potential project effects were not assessed.

The first task for the Phase 1A archaeological assessment was to define the Areas of Potential Effect (APEs) for each project element. Areas of Potential Effect are areas where the proposed project could disturb potential archaeological resources, if present (For a definition of the APEs, see Chapter 1, Section 1.4). Once the APEs were defined, for each APE the scope of work was designed to:

- Establish the original site topography and evaluate any subsequent alterations;
- Determine prior usage - specifically if prehistoric and/or historical resources and/or their associated features existed within the project area;

- Identify the extent of prior disturbances such as grading and construction, which would have caused subsurface effects to potential resources.
- Assess potential project effects.
- Recommend mitigation alternatives where necessary.

This study was designed to address two major questions. What is the likelihood that potential prehistoric and historic archaeological resources of significance exist within each APE; and, what is the likelihood that such resources have survived later disturbances? Sufficient information was gathered to compare, both horizontally and vertically, the prehistoric past, the historical past, and the subsurface disturbance record. Documentary research also focused on establishing the extent of effects from prior construction where existing subway or road tunnels exist along the alignment.

To accomplish these goals, Historical Perspectives, Inc., performed a documentary and cartographic review of each APE. Research was conducted at various institutions, such as the New York Public Library, the Municipal Archives, the Manhattan Borough President's Office, the Department of Design and Construction's Subsurface Bureau, and the New-York Historical Society. Site file searches were performed at the New York State Office of Parks, Recreation, and Historic Preservation - State Historic Preservation Office (SHPO), the New York State Museum in Albany (NYSM), and the New York City Landmarks Preservation Commission (NYCLPC). In addition to documentary research, field visits were undertaken as required. At this time, photographs were taken.

The documentary study concluded that the proposed Second Avenue Subway project may affect potential precontact and historical archaeological resources. The following table summarizes the areas of sensitivity, the potential resource types, the approximate depth of anticipated resources, and all the proposed actions for the locations of these resources. The depths of potential resources provided must be considered approximate since the actual location and depth of resources can only be confirmed through subsurface testing. Furthermore, while it is likely that precontact resources have not survived the process of urbanization throughout much of Manhattan, the APEs were considered to have potential precontact sensitivity in levels below fill where extensive subsurface disturbance to the precontact living surface could not be definitively established.

Resource Sensitivity and Proposed Effects:

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Chapter 4.1 Second Avenue, Harlem River to East 125th Street			
Second Avenue, Harlem River to East 125th Street	Precontact	20-25'	Cut and cover for underground train yard: 0-50' Effect ✓
Second Avenue, East 127th to 126th Streets	Mid 19th c., farm related features and outbuildings	0-15'	Cut and cover: 0-50' Effect ✓
Shaft Site A, former Blocks 1794 & 1805	Precontact	15-25'	30x50' shaft excavation: 0-30' Effect, ✓ 40,000-80,000' staging area on surface: No Effects
Shaft Site B, Block 1793	Mid 19th c., Residential Features	0-15'	30x50' shaft excavation: 0-50' Effect, ✓ 40,000-80,000' staging area on surface: depth of effects unknown ✓
Shaft Site B, Block 1793	Precontact	0-15'	30x50' shaft excavation: 0-50' Effect, ✓ 40,000-80,000' staging area on surface: depth of effects unknown ✓

[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.

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Shaft Sites C and E, Block 1791	Precontact	16-21'	30x50' shaft excavation: 0-30' Effect, ✓ 40,000-80,000' staging area on surface: No effects
Shaft Site E, Block 1791	Mid 19th c., Residential Features	0-16'	30x50' shaft excavation: 0-50' Effect, ✓ 40,000-80,000' staging area on surface: depth of effects unknown ✓
Chapter 4.2 East 125th Street, Second Avenue to Fifth Avenue			
East 125th Street, Second to Fifth Avenues	Precontact	3-15'	Cut and cover: 0-80' Effect ✓
Block 1788 and 1789	Precontact	5-15'	Mining at 65 to 70' below the surface: No Effect
Block 1788, Lot 28	Late 17th-Early 19th c., Residential Features	0-15'	Mining at 65 to 70' below the surface: No Effect
Block 1789, Lots 10-21.5, 23-27 odd, 28, 30-33, 35, 39, 41-45	Late 17th - Early 19th c., Residential Features	0-15'	Mining at 65 to 70' below the surface: No Effect
Chapter 4.3 Second Avenue, East 125th Street to East 63rd Street			
Second Avenue, East 124th - East 122nd Streets	Early to Mid 19th c., J. Chesterman Residential Features	0-12'	Cut and cover: 0 - 45'to 70' Effect ✓
Second Avenue, East 123rd - East 122nd Streets	Early to Mid 19th c., Waldron Residential Features	10-18'	Cut and cover: 0-45' to 70' Effect ✓
Second Avenue, 124th - 121st Streets	Precontact	12-17'	Cut and cover: 0-45' to 70' Effect ✓

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Second Avenue, 120th- 111th Streets (outside existing tunnels and shafts between East 120th and 110th Streets)	Precontact	13-18'	120th – 119th Streets, No New Excavation: No Effect, 116th and 118th Streets, excavation in sidewalk for station entrance: depths of effects unknown
Second Avenue, East 112th - 111th Streets (east side only)	Early 19th c., George Bradish Residential Features	0-12 or 30'	No New Excavation: No Effect
Second Avenue, East 110th - 109th Streets	Precontact	18-23'	No New Excavation: No Effect
Second Avenue, 106th - 95th Streets (outside of existing tunnels between East 105th and East 99th Streets)	Precontact	0-22'	106th and 105th Streets, cut and cover: 0-35' Effect, 99th – 95th Streets, cut and cover: 0-35' Effect
Second Avenue, East 79th - East 77th Streets	Precontact	14.5-20'	Tunnel Boring Machine (TBM): No Effect, Vent Shaft Unknown: Potential Effect
Second Avenue, East 65th - East 63rd Streets	Precontact	2.5-17'	TBM: No Effect, Vent Shaft Unknown: Potential Effect
Shaft Site C, Block 1646	Precontact	13-29'	No Action: No Effect
Shaft Site B, Block 1440 Lots 4½, 49¼, 49½, 50½, 51, 52, and Lots 1-4	Mid 19th c. Residential Features	0-20'	No Action: No Effect
Chapter 4.4 Second Avenue, East 63rd Street to East 6th Street			
Second Avenue, East 62nd - East 61st Streets	Precontact	14-19'	TBM: No Effect, Vent Shaft Unknown: Potential Effect
Second Avenue, East 61st - East 60th Streets	Precontact	5-10'	TBM: No Effect, Vent Shaft Unknown: Potential Effect

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Second Avenue, East 61st - East 59th Streets	Early 19th c., Thorne Property Residential Features	0-19'	TBM: No Effect, Vent Shaft Unknown: Potential Effect
Second Avenue, East 60th - East 59th Streets	Precontact	15-20'	TBM: No Effect, Vent Shaft Unknown: Potential Effect
Second Avenue, East 59th Street	Precontact	0-5'	TBM: No Effect, Vent Shaft Unknown: Potential Effect
Second Avenue, East 45th - 44th Streets	Early 19th c., Turtle Bay Farm Residential Features	0-16'	Cut and cover: 0-70' to 85' Effect
Second Avenue, East 42nd Street (west side)	Precontact	2-6'	Cut and cover: 0-70' to 85' Effect
Second Avenue, East 39th - East 38th Streets	Early 19th c., Kips Bay Farm Residential Features	0-12'	TBM: No Effect, Vent Shaft Unknown: Potential Effect
Second Avenue, East 36th - 35th Streets	Early 19th c., Kips Bay Farm Residential Features	0-18'	Cut and cover: 0-55' Effect
Second Avenue, East 31st- East 29th Streets	Early 19th c., Kips Bay Farm Residential Features	0-18'	TBM: No Effect, Vent Shaft Unknown: Potential Effect
Second Avenue, East 23rd - East 21st Streets	Precontact	4-10'	TBM: No Effect, Vent Shaft Unknown: Potential Effect
Second Avenue, East 21st - East 20th Streets	Precontact	19-25'	TBM: No Effect, Vent Shaft Unknown: Potential Effect
Second Avenue, East 19th Street	Precontact	9-14'	TBM: No Effect, Vent Shaft Unknown: Potential Effect
Second Avenue, East 16th - East 15th Streets	Precontact	9-14'	TBM: No Effect
Second Avenue, East 14th - East 13th Streets	Early 19th c., Petersfield Farm Residential Features	0-15'	Cut and cover: 0-75' Effect
Second Avenue, East 11th - East 10th Streets	Early 19th c., St. Marks Church Property	0-11'	TBM: No Effect, Vent Shaft Unknown: Potential Effect

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Second Avenue, East 9th - East 6th Streets	Precontact	7-15'	TBM: No Effect, Vent Shaft Unknown: Potential Effect
Chapter 4.5 East 6th Street to Delancey Street			
Second Avenue, East 6th - East Houston Streets (except west side of Second Avenue between East 2nd and East 1st Streets)	Precontact	2-23'	Cut and cover: 0-75' Effect
West side Second Avenue, Second Avenue and First Street	Historic Burials, Methodist Cemetery	0-13'	Cut and cover: 0-75' Effect
Shaft Sites B and D, Block 457	Historic Burials, Methodist Cemetery	0-13'	No Action: No Effect
Shaft Sites B and D, Block 457	Residential Features	0-52'	No Action: No Effect
Shaft Sites B and D, Block 457	Late 19th c., Iron Foundry	0-52'	No Action: No Effect
Shaft Site C, Block 443	Mid 19th c., Residential Features	0-71'	30x50' shaft excavation: 0-30' Effect, 40,000-80,000' staging area on surface: depth of effects unknown
Chrystie Street, Forsyth Street and Block 420 (excluding sidewalks adjacent to north half of Block 420, subways, west side of Chrystie Street between Stanton and Rivington Streets and east side of Forsyth Street between East Houston and Stanton Streets)	Precontact	2-23'	Shallow Chrystie Option: Cut and cover in Chrystie Street: 0-25' to 40' Effect. Forsyth Street Option: Mining through soil in Block 420 and Forsyth Street at 80' to 85' below the surface: No Effect

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Northern end, Block 420-Sara Delano Roosevelt Park and Adjacent Sidewalks	Historic Burials, Presbyterian Cemetery	0-12'	Shallow Chrystie Option: Cut and cover: 0-25' to 40' effect on west sidewalk of park. Forsyth Street Option: Mining through soil at 80' to 85' below the surface: No Effect
East side of Forsyth Street, East Houston to Stanton Streets	Historic Burials, German Mission Cemetery	0-12'	Shallow Chrystie Street: No Action: No Effect. Forsyth Street Option: mining through soil at 80' to 85' below the surface: No Effect
West side of Chrystie Street, Stanton to Rivington Streets	Historic Burials, African Protestant Episcopal Cemetery	0-14'	Shallow Chrystie Option: Cut and cover: 0-25' to 40' Effect. Forsyth Street Option: No Action: No Effect
Block 420, Sara Delano Roosevelt Park	19th Century Foundry and Tenements	0-34'	Shallow Chrystie Option: Cut and cover: 0-25' to 40': Effect on west sidewalk of park. Forsyth Street Option: Mining through soil on Block 420 and Forsyth Street at 80' to 85' below the surface: No Effect
Chapter 4.6 Forsyth Street Option, Delancey to Canal Streets, Including Sara Delano Roosevelt Park			

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Blocks 418, 419, 302 North (305), and 302 - Sara Delano Roosevelt Park, and Forsyth, Grand and Canal Streets	Precontact	15-24'	Shallow Chrystie Option: Cut and cover 0-25 to 40' Effect, SDR Park, Grand & Canal Streets. Forsyth Street Option: Cut and cover 0-80 to 85' Effect for Grand Street Station in Forsyth Street, Grand Street, and SDR Park, Delancey to Hester Street. Mining through soil in SDR Park and Forsyth Street between Hester and Canal Streets, and in Canal Street at 70' to 85' below the surface: No Effect. Effect from Vent Shaft Unknown: Potential Effect

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Blocks 418, 419, 302 North (305), and 302 - Sara Delano Roosevelt Park, and Forsyth Street, Delancey to Grand Street	17th – 18th c. Residential and Fortification Features	14-33'	Shallow Chrystie Option: Cut and cover 0-25 to 40' Effect, SDR Park, Grand & Canal Streets. Forsyth Street Option: Cut and cover 0-80 to 85' Effect for Grand Street Station in Forsyth Street, Grand Street, and SDR Park, Delancey to Hester Street. Mining through soil in SDR Park and Forsyth Street between Hester and Canal Streets, and in Canal Street at 70' to 85' below the surface: No Effect. Effect from Vent Shaft Unknown: Potential Effect

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Blocks 418, 419, 302 North (305), and 302 - Sara Delano Roosevelt Park, and the west side of Forsyth Street, Delancey to Canal Street	19th c. Residential Features	0-33'	Shallow Chrystie Option: Cut and cover 0-25 to 40' Effect, SDR Park, Grand & Canal Streets. ✓ Forsyth Street Option: Cut and cover 0-80 to 85' Effect for Grand Street Station in Forsyth Street and SDR Park, Delancey to Hester Street. Mining through soil in SDR Park and Forsyth Street between Hester and Canal Streets at 70' to 85' below the surface: No Effect. Effectfrom Vent Shaft Unknown: Potential Effect ✓

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Block 418 Lots 5-10	Unrecorded Historic Burials – St. Stephens Episcopal Church	0-20'	Shallow Chrystie Option: Cut and cover 0-25 to 40' Effect, SDR Park, Grand & Canal Streets. Forsyth Street Option: Cut and cover 0-80 to 85' for Grand Street Station in Forsyth Street and SDR Park (east side), Delancey to Hester Street: No Effect. Involves reconstruction of existing Chrystie Street Grand Street Station and connection in park between Forsyth and Chrystie Streets: Potential Effect. Mining through soil in SDR Park and Forsyth Street between Hester and Canal Streets at 70' to 85' below the surface: No Effect. Effect from Vent Shaft Unknown: Potential Effect
Chapter 5 Nassau Street Alignment			
Block 425	Precontact	1- 11'	No Action: No Effect
Block 425	17th-19th c., Residential Features	0-37'	No Action: No Effect

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Block 424, south side of Delancey Street	Precontact	1-11'	No Action: No Effect
Delancey/Kenmare Street, Chrystie to Bowery, north and south sides	Precontact	4-14'	No Action: No Effect
Delancey/Kenmare Street, Chrystie - Bowery, north and south sides	17th - 19th c., Residential Features	0-30'	No Action: No Effect
Kenmare Street, Bowery and Elizabeth Streets, Block 478, north side of Kenmare Street, Lots 12,27,28	Precontact	1-15'	No Action: No Effect
Kenmare Street, Bowery and Elizabeth Streets, north side of Kenmare Street, Block 478, Lots 12, 27, 28	17th - 19th c., Residential Features	0-30'	No Action: No Effect
Kenmare Street, Elizabeth and Mott Streets, north and south sides	Precontact	5-15'	No Action: No Effect
Kenmare Street, Elizabeth and Mott Streets, north side	17th - 19th c., Residential Features	0-30'	No Action: No Effect
Kenmare Street, Mott to Mulberry Streets, north and south sides	Precontact	5-11'	No Action: No Effect
Kenmare Street, Mott to Mulberry Streets, north and south sides	17th - 19th c., Residential Features	0-30'	No Action: No Effect
Kenmare Street, Mulberry Street - Cleveland Place, north side	Precontact	5-11'	No Action: No Effect
Kenmare Street, Mulberry Street- Cleveland Place, north side	17th - 19th c., Historic Features	0-30'	No Action: No Effect
Cleveland Place, Kenmare to Broome Streets	Precontact	5-11'	No Action: No Effect
Cleveland Place, Kenmare to Broome Streets	17th - 19th c., Residential Features and Rev. War Walls	0-35'	No Action: No Effect
Block 481, excluding tunnel	Precontact	4-11'	No Action: No Effect

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Block 481, excluding tunnel	17th - 19th c., Residential Features and Rev, War Walls	0-35'	No Action: No Effect
Broome Street, Mulberry and Centre Streets	Precontact	4-11'	No Action: No Effect
Broome Street, Mulberry and Centre Streets	17th - 19th c., Residential Features and Rev. War Walls	0-35'	No Action: No Effect
Centre Street, Broome and Grand Streets, east and west sides	Precontact	6-10'	No Action: No Effect
Centre Street, Broome and Grand Streets	17th - 19th c., Residential features and Rev. War Walls	0-35'	No Action: No Effect
Chapter 6.1 Water Street Alignment			
Chrystie Street, Delancey to Broome Streets, excluding existing subway tunnel	Precontact	6-21'	Shallow Chrystie Option: Cut and cover: 0-30' Effect ✓ in Chrystie Street. Forsyth Street Option: No Action: No Effect
Chrystie Street, Delancey to Broome Streets, east side outside of existing subway tunnel	18th - 19th c., Residential Features	0-34'	Shallow Chrystie Option: Cut and cover: 0-30' Effect ✓ in Chrystie Street. Forsyth Street Option: No Action: No Effect
Chrystie Street, Broome to Grand Streets, except existing subway tunnel	Precontact	4-18'	Shallow Chrystie Option: Cut and cover: 0-30' Effect ✓ in Chrystie Street. Forsyth Street Option: No Action: No Effect

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Chrystie Street, Broome to Grand Street, east side, except existing subway tunnel	18th - 19th c., Residential Features	0-30'	Shallow Chrystie Option: Cut and cover: 0-30' Effect in Chrystie Street. Forsyth Street Option: No Action: No Effect
Chrystie Street, Grand to Hester Streets, except existing subway tunnel	Precontact	3-24'	Shallow Chrystie Option: Cut and cover: 0-30' Effect in Chrystie Street. Forsyth Street Option: No Action: No Effect
Chrystie Street, Grand to Hester Streets, east side, except for existing subway tunnel	18th - 19th c., Residential Features	0-37'	Shallow Chrystie Option: Cut and cover: 0-30' Effect in Chrystie Street. Forsyth Street Option: No Action: No Effect
Chrystie Street, Hester to Canal Street, except for existing subway tunnel	Precontact	13-21'	Shallow Chrystie Option: Cut and cover: 0-25' to 40' Effect in Chrystie Street. Forsyth Street Option: No Action: No Effect
Chrystie Street, Hester to Canal Street, east side, except for existing subway tunnel	18th - 19th c., Residential Features	0-37'	Shallow Chrystie Option: Cut and cover: 0-25' to 40' Effect in Chrystie Street. Forsyth Street Option: No Action: No Effect

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Bowery, Bayard to Division Streets, except for existing subway tunnel	Precontact	10.6-16.6'	Shallow Chrystie Option: Cut and cover: 0-45' Effect between Pell and Division Streets. Forsyth Street Option: Cut and cover: 0 to 70' between Pell and Division Streets.
Chatham Square	Precontact	unknown depth (no soil borings)	Shallow Chrystie Option: Cut and cover: 0-45' Effect. Forsyth Street Option: Cut and cover: 0 to 70' Effect
Chatham Square, east side between Division Street and East Broadway	c. 1744 Rope walk, unlabelled building, c. 1796 watch house and c. 1789 New Presbyterian Church	unknown depths (no soil borings)	Shallow Chrystie Option: Cut and cover: 0 to 45' Effect. Forsyth Street Option: Cut and cover: 0 to 70' Effect
St. James Place, Oliver Street and James Street	c. 1656 - 1831 Shearith Israel Cemetery	0-8'	Shallow Chrystie Option: Cut and cover: 0 to 45' Effect. Forsyth Street Option: Cut and cover: 0 to 70' Effect
St. James Place, Oliver Street and James Street	19th c., Residential Features	0-26.5'	Shallow Chrystie Option: Cut and cover: 0 to 45' Effect. Forsyth Street Option: Cut and cover: 0 to 70' Effect
St. James Place, James and Madison Street	Precontact	12.5-17.5'	Shallow Chrystie Option: Cut and cover: 0 to 45' Effect. Forsyth Street Option: Cut and cover: 0 to 70' Effect

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
St James Place, James and Madison Streets	19th c., Residential Features	0-16.5'	Shallow Chrystie Option: Cut and cover: 0 to 45' Effect. Forsyth Street Option: Cut and cover: 0 to 70' Effect
St. James Place at Madison Street	Precontact	19-4'	Shallow Chrystie Option: Cut and cover: 0 to 45' Effect. Forsyth Street Option: Cut and cover: 0 to 70' Effect
St James Place at Madison Street	19th c.	0-19'	Shallow Chrystie Option: Cut and cover: 0 to 45' Effect. Forsyth Street Option: Cut and cover: 0 to 70' Effect
St. James Place, Roosevelt Street and Avenue of the Finest	Precontact	14.6-19.6'	Shallow Chrystie Option: Cut and cover: 0-70' Effect. Forsyth Street Option: Mining through soil at 50 to 85' below the surface: No Effect
St. James Place, Roosevelt Street and Avenue of the Finest	18th and 19th c., Residential Features	0-17.4'	Shallow Chrystie Option: Cut and cover: 0-70' Effect. Forsyth Street Option: Mining through soil at 50 to 85' below the surface: No Effect

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Pearl Street, St. James Place to Peck Slip	Precontact	9-26'	Shallow Chrystie Option: Cut and cover: 0-70' Effect from St. James Place to Dover Street. Cut and cover for Seaport Station: 0-70' Effect between Dover Street and Peck Slip
Pearl Street, St. James Place to Peck Slip	18th and 19th c., Residential and Commercial Features	0-21'	Shallow Chrystie Option: Cut and cover: 0-70' Effect from St. James Place to Dover Street. Cut and cover for Seaport Station: 0-70' Effect between Dover Street and Peck Slip
Pearl Street, Peck Slip to Beekman Street	Precontact	15-20'	Cut and cover: 0-70' to 80' Effect
Pearl Street, Peck Slip to Beekman Street	18th - 19th c., Residential and Commercial Features	0-18'	Cut and cover: 0-70' to 80' Effect
Pearl Street, Beekman and Fulton Streets	Precontact	18.5-23.5'	Cut and cover: 0-70' to 80' Effect
Pearl Street, Beekman and Fulton Streets	Rev. War Redoubt	0-18'	Cut and cover: 0-70' to 80' Effect
Pearl Street, Beekman and Fulton Streets	17th - 19th c., Residential and Commercial Features	0-18.5'	Cut and cover: 0-70' to 80' Effect
Fulton Street at Pearl Street	Precontact	depth unknown	Cut and cover: 0-70' to 80' Effect
Fulton Street, Pearl to Water Street	18th c. fill (Inc. Ships), cribbing, and fill retaining devices	0-19'	Cut and cover: 0-70' to 80' Effect
Water Street, Fulton Street to John Street (excluding John Street)	Precontact	16-21'	Cut and cover, 0-70' to 80' Effect

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Water Street, Fulton to John Street	Pre 130 wharf, Mid 18th - 19th c. Fill, Fill retaining devices, and 18th - 20th c. Residential	0-16'	Cut and cover: 0-70' to 80' Effect
Water Street, John Street to Maiden Lane (excluding Maiden Lane)	Precontact	17-22'	Shallow Chrystie Option: Cut and cover: 0-70' to 80' Effect. Forsyth Street Option: Mining through soil at 70' to-80' below the surface: No Effect
Water Street, John Street to Maiden Lane	fill, cribbing, fill retaining devices, Foundation of Fly Market, c. 1730's wharf and 18th - 20th c. Residential and Commercial Features	0-22'	Shallow Chrystie Option: Cut and cover: 0-70' to 80' Effect. Forsyth Street Option: Mining through soil at 70' to-80' below the surface: No Effect
Water Street, Maiden Lane to Wall Street (except Wall Street)	Precontact	23-28'	Shallow Chrystie Option: Cut and cover: 0-70' to 80' Effect. Forsyth Street Option: Mining through soil at 70' to-80' below the surface: No Effect
Water Street, Maiden Lane to Wall Street	Pre 1730's wharf, fill, fill retaining devices, residential and commercial features	0-23'	Shallow Chrystie Option: Cut and cover: 0-70' to 80' Effect. Forsyth Street Option: Mining through soil at 70' to-80' below the surface: No Effect

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Water Street, Wall Street to Old Slip	Pre 1730's wharf, fill, fill retaining devices, 18th - 20th c. residential and commercial features	0-32.2'	Cut and cover: 0-75' Effect
Water Street, Old Slip and Coenties Slip	Pre 1730's wharf, fill, fill retaining devices, Cruger's Warf, 18th- 20th c. residential and commercial features	0-40.8', except at Old Slip, 0-18' at Old Slip where tunnels lie	Cut and cover: 0-75' Effect
Water Street, Coenties Slip to Broad Street	17th - 18th c. fill, Great Dock and Basin, cribbing, Wharfs at Coenties Slip and 18th - 20th c. residential and commercial features	0-23.7'	No Action: No Effect
Water Street, Broad to Moore Street	17th c. fill, fill retaining devices, Great Dock and Basin, Long Bridge Warf, 18th - 20th c. residential and commercial features	0-23.7'	No Action: No Effect
Water Street, Moore and Whitehall Streets	Fill and fill retaining devices, 18th - 20th c. residential and commercial features	unknown depth	No Action: No Effect
State Street south of Whitehall	17th- 18th c. fill and fill retaining devices,	unknown depth	No Action: No Effect
Chapter 6.2 Block 98, Peck Slip, and Gouverneur Lane			
Block 98	Precontact	15-20'	No Action: No Effect
Block 98	17th - 19th c. residential and commercial features	0-15.5'	No Action: No Effect
Peck Slip	Precontact	15-20'	No Action: No Effect

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
Gouverneur Lane	17th - 18th c., docks, wharfs, land fill, drainage system	0-30'	Cut and cover for under or above ground conveyance system: depth of effects unknown
Chapter 6.3			
Peter Minuit Plaza	18th c. fill retaining structure	0-10'	No Action: No Effect
Chapter 7.1 Vietnam Veterans Plaza			
Vietnam Veterans Plaza	19th c. fill and fill retaining devices, c. 1796 Middle Pier, wharfs	0-24.4'	Cut and cover for under or above ground conveyance system: depths of effects unknown
Chapter 7.2 Kips Bay Shaft Site			
Kips Bay Site	Precontact	6-23'	30x50' shaft excavation: 0-30' Effect; 40,000-80,000' staging area on surface: No Effects
Kips Bay Site	Early 19th c. Kip features	6-40'	30x50' shaft excavation: 0-50' Effect, 40,000-80,000' staging area on surface: No Effects
Chapter 7.3 St. Vartan Park Shaft Site			
St. Vartan Park	Precontact	7-20'	30x50' shaft excavation: 0-55' Effect, 40,000-80,000' staging area on surface: No effects

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
St. Vartan Park	17th - Mid 19th c., Residential Features	0-20'	30x50' shaft excavation: 0-55' Effect; 40,000-80,000' staging area on surface: depth of effects unknown
Chapter 7.4 East 66th Street Shaft Site			
East 66th Street, south side	Mid 19th c. Residential Features and Blacksmith Shop associated with Railroad Depot	0-17'	30x50' shaft excavation: 0-85' Effect, 40,000-80,000' staging area on surface: depth of effects unknown
Chapter 7.5 Block 1792 Shaft Site			
Block 1792	Precontact	Unknown	No Action: No Effect
Block 1792, except Lots 22-25	Early to Mid 19th c. residential	0-Unknown	No Action: No Effect
Chapter 7.6 Old Slip Shaft Site			
Old Slip	Mid 17th - 18th c., wharfs, fill and fill retaining devices	0-32', except over tunnels 0-25'	Cut and cover for under or above ground conveyance system: depth of effects unknown
Chapter 7.7 Train storage site, Second Avenue and adjacent blocks, east 125th Street to Harlem River			Cut and cover: 0-50' Effect
Second Avenue, East 128th, 127th, 126th, and 125th Streets, and Blocks 1790, 1791, 1792, 1793, 1802, 1803, 1804, and 1805	Precontact	2.6-33'	Cut and cover, 0-50' Effect
Block 1790	Mid-19th c. Residential features	0-11'	Cut and cover, 0-50' Effect
Block 1792	Mid-19th c.	0-?	Cut and cover,

Area of Sensitivity	Potential Resource Type	Approximate Resource Depth Below Grade[1]	Proposed Actions and Effects
	Residential features		0-50' Effect
Block 1793	Mid-19th c. Residential features	0-?	Cut and cover, 0-50' Effect
Block 1802	Late 19th c. Residential Features	0-12.2'	Cut and cover, 0-50' Effect
Block 1803	Late 17th-19th c. Residential and Park Features	0-?	Cut and cover, 0-50' Effect
Block 1804	Mid-19th-20th c. Residential Features	0-?	Cut and cover, 0-50'

Recommendations:

Sections of the APE were probably utilized at some time during the precontact and contact periods. Although the likelihood that resources would have survived the process of urbanization is considered moderate to minimal in many places, there is a possibility that undisturbed pockets of the precontact and contact landscape may remain beneath deep levels of fill observed in soil borings reviewed for this project. While the probability of finding intact, significant precontact or contact period resources eligible for inclusion on the National Register of Historic Places is remote, the scant possibility should be corroborated, if possible, by evidence from additional soil borings and/or subsurface testing, since proposed construction would potentially affect potential precontact resources.

There is also a high potential for significant historical period archaeological resources to exist within the APE dating from the 17th through 20th centuries, with the potential for an extensive array of site types including, but not limited to, residential, industrial, commercial, transportation, waterfront features, fill and fill retaining devices, parks, and cemeteries. These would also be affected by the proposed project. Therefore, a subsurface testing plan will be warranted to test potentially sensitive areas identified in the above table.

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.[2] Following the review of soil borings, some sites 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

[2] 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 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 prepared in consultation with SHPO. It is expected that the additional documentary research will aid in the formulation of a specific subsurface testing plan. Where subsurface testing is indicated, its goal would be to establish the presence or absence of cultural resources, their horizontal and vertical extent, site integrity, and, their 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 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.

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.

1.0 INTRODUCTION

MTA New York City Transit is preparing a Supplemental Draft Environmental Impact Statement (SDEIS) for a proposed full-length Second Avenue Subway extending from 125th Street to Lower Manhattan (Figure 1-1).

The SDEIS is being prepared for the Federal Transit Administration (FTA) as lead agency, in accordance with the National Environmental Policy Act (NEPA). As per Section 106 of the National Historic Preservation Act of 1966, an archaeological resource analysis identifying designated and potential archaeological resources that may be affected by a proposed federal agency's action, and an assessment of the action's effects on those resources, is required. As mandated by the regulations governing such work, the archaeological resource methodology and analysis was prepared in consultation with the New York State Historic Preservation Office (SHPO).

This introductory chapter provides an overview of previous and current archaeological research efforts and goals relevant to the Second Avenue Subway project, as well as applicable regulatory guidelines.

BACKGROUND HISTORY OF THE PROJECT

In 1999, a Draft Environmental Impact Statement (DEIS) was prepared for the Manhattan East Side Transit Alternative (MESA) project which analyzed four potential project alternatives. Two of those were build alternatives that involved the construction of a new subway on Second Avenue from East 125th Street to East 63rd Street, and continuing west under 63rd Street and south under Broadway, in existing underutilized subway tunnels. In addition to that subway, one of the alternatives (Build Alternative 2) also proposed construction of a light rail line serving the Lower East Side (running on 14th Street, Avenue D, East Broadway, Canal Street, Frankfort Street, and Water Street).

The potential effects of the excavation for subway stations, shaft sites, and light rail tracks were assessed for archaeological resources for both alternatives in a preliminary archaeological assessment. The methodology for the study of archaeological resources for the preliminary archaeological assessment established an Area of Potential Effect (APE) for these resources, which was defined as the areas that would be affected by the project.

The SDEIS to be prepared for the Second Avenue Subway will build on the work previously completed for the 1999 DEIS, where appropriate. The alternatives analyzed in that document have been superseded by the full-length Second Avenue Subway alternative.

1.1 REGULATORY SETTING: APPLICABLE REGULATIONS, POLICIES AND GUIDELINES

Section106 of the National Historic Preservation Act of 1966 as amended, 23 CFR 771, the guidelines developed by the Advisory Council on Historic Preservation published November 25, 1980 and the "Procedures for the Protection of Historic and Cultural Properties" as set forth in 36 CFR Part 800, require the effects of federally-assisted projects on any district, site, or structure included in, or eligible for inclusion in, the National Register of Historic Places to be assessed. To comply with these statutes, a Phase 1A documentary study has been conducted to identify potentially significant archaeological resources within areas that may be affected by the project. The effect of the proposed action on archaeological resources is then analyzed, and general mitigation measures, if necessary, are recommended. The study of archaeological resources has been coordinated with the SHPO.

As per New York Archaeological Council (NYAC) guidelines, the primary goals of a Phase 1A literature search and sensitivity assessment,

> *are intended to gather information concerning the environmental/physical setting of a specific project area as well as its cultural setting...This research should include a consideration of relevant geomorphology and soils information, culture history, and previous archaeological research to provide for the development of explicit expectations or predictions regarding the nature and locations of sites...The information presented and analyses performed should assist reviewers in understanding and evaluating the importance of environmental and cultural/historical resources within and surrounding the project area. Finally it should also provide the rationale for developing the research design, the sensitivity assessment, and for selecting appropriate Phase 1B field methodology as well as for evaluating project effects.* (NYAC 1994:2)

Furthermore, Phase 1B field testing, the second step of the Phase 1 Investigation, is the only way to actually establish the presence or absence of resources. If fieldwork is undertaken and resources are found to exist, Phase 2 Documentary Research and Subsurface Testing, both more intensive than in the first phase, may be required (NYAC 1994:7-10). It is the goal of a Phase 2 study to determine if a site meets one or more of the eligibility criteria for the National Register of Historic Places (as set forth in 9 NYCRR 427 and 4278, or 36 CFR 800). Only after a site is determined to be potentially eligible for the State or National Register of Historic Places would a third phase of work be necessary. If potentially significant resources are to be affected, Phase 3 Data Recovery or Mitigation may be required to recover information before all or part of the site is destroyed. Data recovery/mitigation plans are developed on a case-by-case basis.

1.2 PROJECT DESCRIPTION

The proposed subway route runs directly beneath 125th Street at approximately Fifth Avenue to Second Avenue, and then beneath Second Avenue, from 125th Street to Houston Street. From Houston Street south, the Water Street alignment would continue construction of a new tunnel south of Houston Street down Forsyth or Chrystie Street to St. James Place, and continue on Water Street, terminating near Whitehall.

An engineering option previously but no longer under consideration, the Nassau Street alignment, would have curved to the west south of Houston Street, connecting at approximately Grand Street and Centre Street to the existing tunnel running beneath Centre Street and carrying the J, M, and Z subway routes. The new service would then have continued along that line, continuing under Nassau Street to Lower Manhattan (Figure 1-2). The assessment of this alignment's archaeological sensitivity is provided in Chapter 5. However, due to the Nassau Street alignment's greater potential environmental effects and engineering difficulties, this alignment is no longer being evaluated as a project alternative and, therefore, potential project effects were not assessed.

1.3 STUDY APPROACH

The methodology proposed for the analysis of archaeological resources for the Second Avenue Subway built on that done for the 1999 DEIS for MESA for areas that are common to the earlier alternatives and the full-length subway. For the SDEIS, this Phase 1A Archaeological Assessment utilizes available information from the preliminary assessment completed in 1999 for the MESA DEIS, supplemented by new information in areas where the alignment has changed.

The first task for the Phase 1A archaeological assessment was to define the Areas of Potential Effect (APEs) for each project element. Areas of Potential Effect are areas where the proposed project could disturb potential archaeological resources, if present. Once the APEs were defined, for each APE the scope of work was designed to:

- Establish the original site topography and evaluate any subsequent alterations;
- Determine prior usage - specifically if prehistoric and/or historical resources and/or their associated features existed within the project area;
- Identify the extent of prior disturbances such as grading and construction, which would have caused subsurface effects to potential resources.
- Assess potential project effects.
- Recommend mitigation alternatives where necessary.

This study was designed to address two major questions. What is the likelihood that potential prehistoric and historic archaeological resources of significance exist within each APE; and, what is the likelihood that such resources have survived later disturbances? Sufficient information was gathered to compare, both horizontally and vertically, the prehistoric past, the historical past, and the subsurface disturbance record. Documentary research also focused on establishing the extent of effects from prior construction where existing subway or road tunnels exist along the alignment.

To accomplish these goals, Historical Perspectives, Inc., performed a documentary and cartographic review of each APE. Research was conducted at various institutions, such as the New York Public Library, the Municipal Archives, the Manhattan Borough President's Office, the Department of Design and Construction's Subsurface Bureau, and the New-York Historical Society. Site file searches were performed at the New York State Office of Parks, Recreation, and Historic Preservation - State Historic Preservation Office (SHPO), the New York State Museum in Albany (NYSM), and the New York City Landmarks Preservation Commission (NYCLPC). In addition to documentary research, field visits were undertaken as required. At this time, photographs were taken.

Included in this assessment are two chapters designed to provide contextual overviews of both precontact and historic resources. Within the Precontact Context chapter (Chapter 2), a precontact background is provided, previously inventoried sites are discussed, and research issues pertinent to the precontact period are presented. Within the Historical Context chapter (Chapter 3), a historical background is provided, and potential categories of site types, as defined by the NYCLPC (1982) are discussed. Within each of these categories, comparative archaeological sites are presented, and research issues are discussed.

Following these two chapters, chapters four through seven provide archaeological resource evaluations for specific project elements, documenting the potential for precontact and historical resources as per resource categories defined by the NYCLPC in 1983 (see Chapter 3 for a discussion of the categories). The text is laid out as follows:

Chapter 1	Introduction (entire corridor)
Chapter 2	Precontact Context (entire corridor)
Chapter 3	Historical Context (entire corridor)
Chapter 4	Second Avenue Alignment: 125th Street to Delancey Street (and including the Forsyth Street Option from Delancey to Canal Streets)
Chapter 5	Nassau Street Alignment
Chapter 6	Water Street Alignment
Chapter 7	New Project Elements
Chapter 8	Bibliography (entire corridor)

Chapters four, six, and seven include the following subsections:

- *Study Area Description*, which defines the APE for that chapter;

- *Existing Conditions*, which details the precontact and historical archaeological potential based on supplementary data provided in the appendices for that chapter;
- *Summary of Archaeological Potential*, which summarizes the potentially sensitive sections of the APE;
- *Proposed Project Effects*, which assesses proposed project effects in relation to potential resources within the APE; and,
- *Recommendations*, which provide a general and preliminary discussion of the types of additional research recommended.

Chapter 5, "Nassau Street Alignment," includes only the first three subsections, since this alignment is no longer being evaluated as a project alternative and potential project effects were not assessed.

Each of these chapters also includes all figures, photographs and appendices pertinent to that chapter. A comprehensive bibliography including references from all chapters is presented in Chapter 8.

The potential effect areas for each of these project elements are discussed more extensively in the following section 1.4, AREAS OF POTENTIAL EFFECT.

1.4 AREAS OF POTENTIAL EFFECT

A memorandum outlining the Areas of Potential Effect (APEs), including a description of project components that would not cause enough subsurface disturbance to damage potential archaeological resources, was submitted to SHPO in November 2001. Specifically, no potential for effect exists where deep tunnel boring or mining will occur through bedrock far below the anticipated depths of archaeological resources, resulting in no effect on potential deposits. Also, where existing tunnels would be refurbished or modified internally, there is generally no archaeological concern due to lack of sensitivity resulting from prior disturbance. Nevertheless, areas adjacent to existing tunnels have not been eliminated from the APE, because there may be potential effects to resources outside of the narrow area of prior effect for their excavations. This is also the case with the portions of the project that would operate in existing utilized tunnels (either the J, M, and Z routes or the Broadway line). For example, it may be necessary to install additional ventilation shafts, pedestrian access ways, and/or stations near these existing tunnels. Where there are existing subway tunnels that will not be used, for example where new tunnels are constructed beneath existing tunnels, there may be new construction outside of the footprint of prior effects. Therefore, these locations were assessed for potential archaeological sensitivity.

APEs are defined as areas where project construction could disturb potential archaeological resources. Effects could result from either cut-and-cover construction, excavations through soil, mining through soil, or any other subsurface construction which would extend from the existing grade down into potentially sensitive strata. The following describes the APEs for the project site.

1.4.1 Second Avenue Alignment

The Second Avenue Alignment runs on Second Avenue from its northernmost point on East 125th Street south to East Houston Street, with one western spur extending on East 125th Street from Second Avenue to Fifth Avenue. North of East 125th Street, a tunnel could be constructed on Second Avenue to the Harlem River. Therefore, Second Avenue between East 125th Street and the Harlem River is included in the APE. As described above, south of East Houston Street, the alignment would continue in a new tunnel down Forsyth or Chrystie Street to St. James Place, and continue on Water Street, terminating near Whitehall (the Nassau Street Alignment, a previously considered alignment that would have curved west south of Houston Street and is described in Chapter 5, is no longer being evaluated as a project alternative). Within the APEs, there is the potential for either deep tunnel boring machine (TBM) excavations, earth pressure balance machine (EPBM) tunneling, mining through soil or hard rock, or cut-and-cover construction. The precise locations of possible subway stations, pedestrian access points, and ventilation shafts are currently unknown. Therefore, the APEs are conservatively defined to include the roadbeds and sidewalks of the affected streets, as well as portions of city blocks which may experience subsurface disturbance. The precise boundaries of each APE are defined below.

1.4.1.1 Harlem River to East 125th Street

The project may include a tunnel between the Harlem River and East 125th Street, as well as a shaft or staging site(s) nearby. Construction would involve cut and cover excavations. In addition, other possible shaft sites evaluated were west of the Second Avenue roadbed, on Blocks 1793 and 1791. In addition, a potential barging site between the Harlem River Drive and the East River (former Blocks 1794 and 1805) was evaluated. Therefore, the APE for this section is the Second Avenue roadbed from the Harlem River south to the northern-most boundary of East 125th Street, from building line to building line, and includes the locations of the potential shaft sites on Blocks 1793, 1791, and former Blocks 1794 and 1805.

1.4.1.2 East 125th Street, Second Avenue to Fifth Avenue

New tunneling efforts would be undertaken on East 125th Street from Second Avenue west to Fifth Avenue. This would allow connections to both the Lexington Avenue subway line and the 125th Street station of the MTA Metro-North Railroad. Construction here may either include mining through soil and rock, and/or cut-and-cover excavations. Therefore, the APE for this section includes the East 125th Street roadbed from the western boundary of Fifth Avenue, east to the eastern boundary of Second Avenue, from building line to building line. Also included in this APE is a section of city Block 1789, located at the southwest intersection of Second Avenue and East 125th Street, and the southwest corner of Second Avenue and East 124th Street (Block 1788), where the proposed tunnel would curve from Second Avenue to 125th Street. Current city Lots 10

through 45 on Block 1789 and Lots 28 and 29 on Block 1788 fall within the APE.

1.4.1.3 East 125th Street to East 63rd Street

The East 125th Street to East 63rd Street APE includes some sections of subway that were previously constructed in the 1970s. Existing tunnel sections are located between East 120th Street south to East 110th Street, and East 105th Street south to East 99th Street. These built areas are not considered potentially sensitive for archaeological resources since they have experienced substantial subsurface effects. Disturbances to these previously excavated areas are documented within the text.

Potential effects to this section could result from cut-and-cover construction, linking existing tunnel segments, and construction of proposed subway stations, pedestrian access ways, and ventilation shafts. Cut-and-cover construction would also be needed to insert the TBM near East 92nd to East 96th Streets and near East 66th Street. Shaft sites or staging areas evaluated were on Blocks 1668, 1648, and 1440. South of this TBM access shaft, construction is expected to occur in bedrock except at stations where cut-and-cover construction will be necessary. Since the precise locations of stations, pedestrian access ways, and ventilation shafts are unknown, they could conceivably cause effects to sections of the Second Avenue roadbed near existing tunnel sections, but outside of the area of prior effect. Therefore, the APE for this section includes the entire Second Avenue Roadbed, from building line to building line, from the south boundary of East 125th Street, to the south boundary of East 63rd Street, and the areas of the potential shaft sites.

1.4.1.4 East 63rd Street to East 6th Street

Potential effects to this section could result from potential cut-and-cover construction for proposed subway stations, pedestrian access ways, and ventilation shafts. Construction of most of the alignment in this section would be in bedrock with a TBM. Since the precise locations of stations, pedestrian access ways, and ventilation shafts are unknown, the APE for this section includes the Second Avenue roadbed, from building line to building line, from the south boundary of East 63rd Street to the south boundary of East 6th Street. A potential TBM shaft site was also evaluated on Block 1437 between East 62nd and East 63rd Streets.

1.4.1.5 East 6th Street to Delancey Street

The APE for this section includes the Second Avenue roadbed, from building line to building line, from the south boundary of East 6th Street to the south boundary of East Houston Street. Because two different engineering options are under consideration in the area south of Houston Street, the Shallow Chrystie Option and the Forsyth Street Option, the APE south of East Houston Street was conservatively defined to include the area between Chrystie and Forsyth Streets and from East Houston to Delancey Streets, from building line to building line, including Sara Delano Roosevelt Park.

Construction to build the subway tunnel in this area would be accomplished either with an EPBM.or using cut and cover methods. Cut and cover construction would also be used to build the stations, stairways, and vents. A shaft site could also be used in this area, potentially on either Block 457 or 443. Therefore, these potential shaft sites are also included in the APE.

1.4.1.6 Forsyth Street Option, Delancey to Canal Streets including Sara Delano Roosevelt Park

Under the proposed Forsyth Street Option, the subway tunnel may curve through Sara Delano Roosevelt Park between East Houston and Canal Streets (the APE between East Houston and Delancey Streets is discussed in the preceding section, 1.4.1.5). Since the precise route of the tunnel may change, the park and adjacent Forsyth Street, between Delancey and Canal Streets, were included in the APE and are discussed in this section.

1.4.2 Nassau Street Alignment

Because of several alignments under consideration in this area, the northern section of the APE was conservatively defined to include the area between Chrystie and Forsyth Streets, and from East Houston to Delancey Streets, from building line to building line. Although there is an existing subway tunnel beneath Chrystie Street between East Houston and Delancey Streets, there is the potential for effects to occur outside of the existing tunnel which may affect resources. Therefore, the entire Chrystie Street roadbed is included in this APE. The APE for this section includes city Lots 1 through 8 and 28 through 43 on Block 425, and the Kenmare Street (Delancey Street) roadbed from the west side of Chrystie Street west to the west side of Cleveland Place (Marion Street). The APE also includes all of Block 481 south of Kenmare Street, and the Broome Street roadbed from the west side of Mulberry Street to Centre Street. The APE then veers south to include the Cleveland and Center Street roadbeds, from building line to building line, south to Grand Street. The construction method would be a combination of cut-and-cover and mining.

Like the existing tunnel that lies beneath Chrystie Street between East Houston and Delancey Streets, although a subway tunnel exists beneath Kenmare Street, Block 481, and Centre Street, there is the potential for effects to occur outside of area of prior effects. Therefore, the APE encompasses all of the areas with existing subway tunnels. Prior effects from subway construction are documented in the text.

As described above, this alignment is no longer being evaluated as a project alternative, and, therefore, potential project effects resulting from this alignment were not assessed in this document.

1.4.3 Water Street Alignment

1.4.3.1 East Houston Street to State Street

Because of two different engineering options under consideration in this area, the Shallow Chrystie Option and the Forsyth Street Option, the northern section of the APE was conservatively defined to include the area between Chrystie and Forsyth Streets, and from East Houston to Delancey Streets, from building line to building line. It then runs on Chrystie Street from the south side of Delancey Street south to Canal Street, from building line to building line. At Canal Street the APE shifts slightly to the west to Bowery, crossing much of Block 289 in the process. The APE then runs south down Bowery, from building line to building line, to St. James Place. Included in the APE is all of Chatham Square, formerly Kimlau Square, which includes a section of the Park Row streetbed and sidewalks as far south as the southern boundary of Worth Street, and north to the start of East Broadway at Catherine Street. The APE continues south down St. James Place, from building line to building line, until it merges with Pearl Street, then continues south on Pearl Street until it reaches Fulton Street. At the Pearl Street and Fulton Street intersection, the APE is widened to encompass a large triangular vacant area of streetbed, which includes the Fulton Street roadbed between the west side of Pearl Street and the east side of Water Street. The APE then runs down Water Street south to State Street. The building line is consistently used as the outer boundaries on all roads.

Depending on the engineering option, construction of the subway tunnel could involve either cut and cover construction or mining (with an EPBM) through soil. Cut and cover methods would be used the build the subway stations and any vent shafts.

Although there is an existing subway tunnel beneath Chrystie Street between Delancey and Canal Streets, there is the potential for effects to occur outside of the existing tunnel which may affect potential resources. Therefore, the entire Chrystie Street roadbed, from building line to building line, is included in this APE.

1.4.3.2 Lower Manhattan Shaft Site and Spur Tunnel Options

Several shaft or staging sites were evaluated in Lower Manhattan. These included Block 98, also known as the Peck Slip Parking Lot, on the southeast side of Pearl Street between Beekman, Peck, Water, and Pearl Streets. This site may be used as a shaft site. Since the horizontal and vertical limit of effects is unknown, the APE includes the entire block. Peck Slip was also evaluated for a possible spur tunnel leading from Pearl Street to a spoils removal shaft at the South Street Right-of-Way. An alternative spur tunnel was evaluated on Gouverneur Lane, leading from Water Street to a spoils removal site at the South Street Right-of-Way. Construction of the shaft sites and spur tunnels would be by cut-and-cover methods.

1.4.3.3 Peter Minuit Plaza

Peter Minuit Plaza was analyzed as a possible location for the creation of an access shaft to allow for the entrance and egress of machines/excavators below grade. Since the exact

location and types of effects are still undetermined, the APE for this project element includes all of Peter Minuit Plaza, including the Whitehall Street roadbed.

1.4.4 New Project Elements

After the first draft of the Phase 1A report evaluating the previously listed project elements was completed, additional project elements were introduced. Included are seven new potential sites in proximity to Second Avenue and Water Street which could be utilized for muck removal tunnels, access shafts and/or staging areas, and a train storage tunnel. Regardless of their locations in relation to other project elements, these seven new elements are included in Chapter 7 together. In addition to these new project elements, there may be some minor changes at three existing rail yards in the Bronx and Brooklyn to accommodate additional cars. A preliminary evaluation of potential effects to the three rail yards has been prepared under separate cover.

1.4.4.1 Vietnam Veterans Plaza Shaft Site

In Lower Manhattan, Vietnam Veterans Plaza and a portion of the basement of the building at 55 Water Street was evaluated as a potential muck removal tunnel site. Since the 55 Water Street basement was excavated in the 1960s when the structure was built, it lacks archaeological potential. Therefore, the APE for this project element includes areas of potential effect within the plaza but outside of the basement's location.

1.4.4.2 Kips Bay Shaft Site

A potential shaft site or staging area may be located east of Second Avenue between East 32nd and 33rd Streets. The Kips Bay APE includes a portion of East 33rd Street from Second Avenue to a point about 535 feet east, adjacent sidewalks, and an access road between East 32nd and 33rd Streets which parallels Second Avenue but is separated from it by a divider.

1.4.4.3 St. Vartan Park Shaft Site

The western end of St. Vartan Park, located between East 35th and 36th Streets directly east of Second Avenue, is being evaluated as a potential shaft site or staging area. The APE for this project element is the section of the park and adjacent sidewalks east of Second Avenue bounded by East 35th and 36th Streets, Second Avenue, and the Queens-Midtown Tunnel approach.

1.4.4.4 East 66th Street Shaft Site

The East 66th Street roadbed west of Second Avenue, including a driveway for the Manhattan House, is being evaluated as a potential shaft site or staging area. The East 66th Street APE includes the East 66th Street roadbed, the driveway, and abutting sidewalks from Second Avenue to a point about 600' to the west.

1.4.4.5 Block 1792 Shaft Site

In northern Manhattan, a potential shaft site or staging area is being evaluated on the west side of Second Avenue between East 127th and 128th Streets. The APE for this project element includes approximately the eastern half of Block 1792 bounded by East 127th and 128th Streets and Second Avenue.

1.4.4.6 Old Slip Spur Tunnel

In Lower Manhattan, Old Slip between West Street and South Street was also evaluated for a possible shaft site or spur tunnel. The APE for this potential project element includes the Old Slip streetbed from West Street to the South Street Right-of-Way, including sidewalks but excluding the footprint of the existing Police Museum (former NYCLPC) building.

1.4.4.7 Train Storage Site, Second Avenue and Adjacent Blocks, East 125th Street to the Harlem River Drive

In northern Manhattan there is the potential for a subsurface train storage yard to be constructed under Second Avenue which may extend outward beneath adjacent city blocks. The APE for this project element is Second Avenue, including sidewalks, from Harlem River Drive south to the southern boundary of East 125th Street. Within this span, the APE continues outward 80 feet from Second Avenue to include portions of Blocks 1790, 1791, and 1792 on the west side of Second Avenue, and Blocks 1802 and 1803 on the east side of Second Avenue.

1.5 PROJECT EFFECTS AND MITIGATION MEASURES

Project effects and mitigation measures were determined based on the project's potential to disturb areas with potential archaeological sensitivity. As described above in the discussion of the APEs, because engineering design work for the project is still underway, APEs for the project were conservatively defined as larger than the areas of specific project elements. However, some elements of the proposed construction have been finalized. Consequently, the assessment's conclusions about proposed project effects are based on known construction plans (April 1, 2002), but these conclusions may be refined as the engineering design work proceeds.

The NYAC recommendations for Phase 3 Mitigation requires that procedures be developed if an archaeological resource listed on/or eligible for the State or National Register of Historic Places is identified and effects to the proposed resource are anticipated. When a data recovery plan is developed,

> *it should be based on a balanced combination of resource-preservation, engineering, environmental, and economic concerns. Mitigation may take*

> *the form of avoidance through project redesign, reduction of the direct effect on the resource with data recovery on the portion to be destroyed, data recovery prior to construction, recordation of structural remains, and/or a combination of the above.* (NYAC 1994:14)

Mitigation measures for resources are based on the nature of the effect as well as the significant attributes of the resource at risk. Data recovery and outreach steps must first be outlined in a Data Recovery Plan which is reviewed and authorized by the lead agency and the state reviewers before the plan is executed in the field (NYAC 1994:14). Therefore, since determining potential significance is not part of the Stage 1A process, generalized mitigation measures are presented at the end of each chapter (Chapters 4, 6, and 7). Further phases of assessment (Phase 1B, Phase 2), and specific mitigation measures (Phase 3) would be developed under separate cover when construction plans have been refined. These would be outlined in a future Programmatic Agreement.

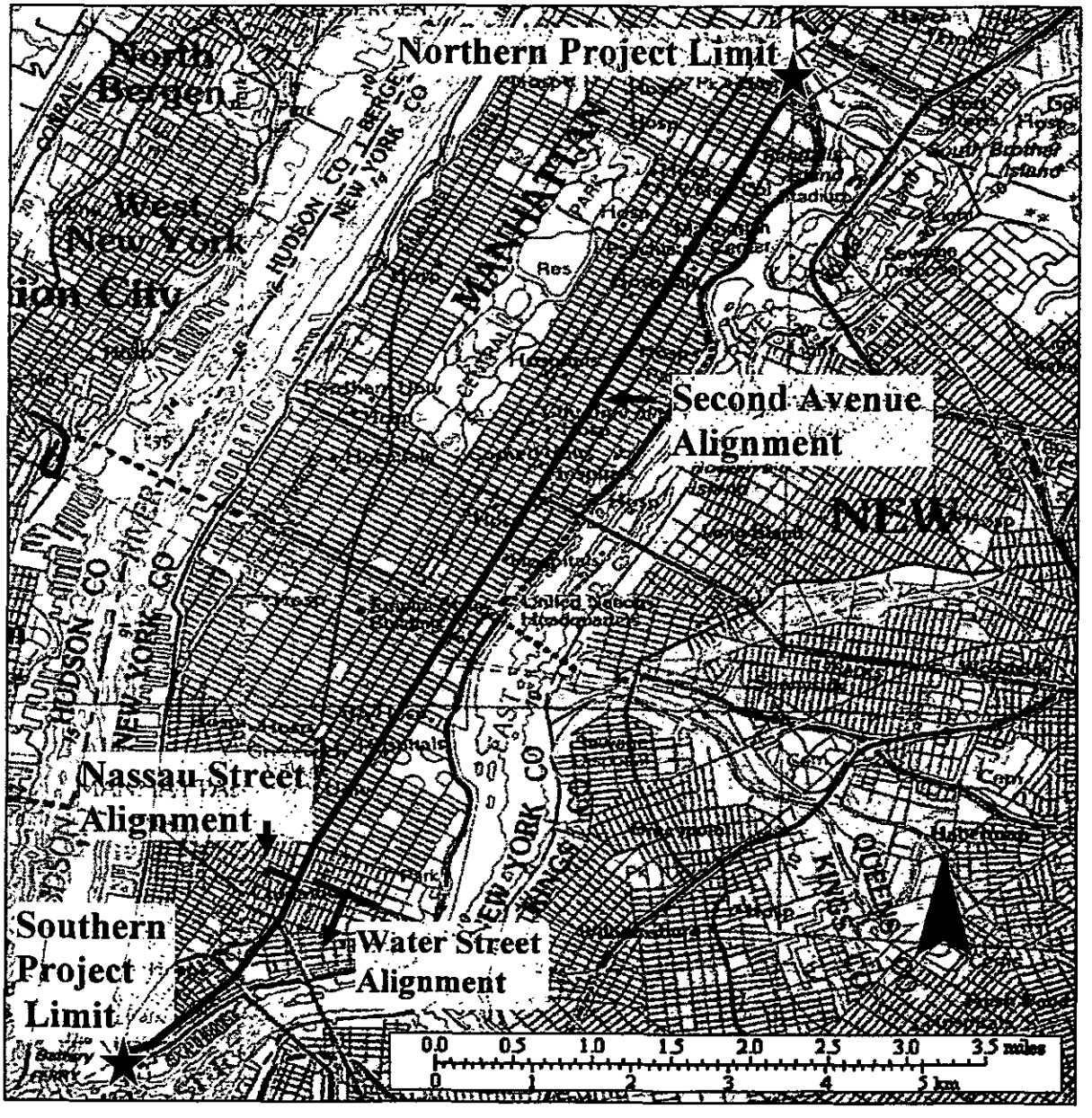


FIGURE 1-1

Second Avenue Subway Phase 1A Archaeological Study Area.
Brooklyn, Central Park, Jersey City and Weehawken Quads. U.S.G.S. 1981.

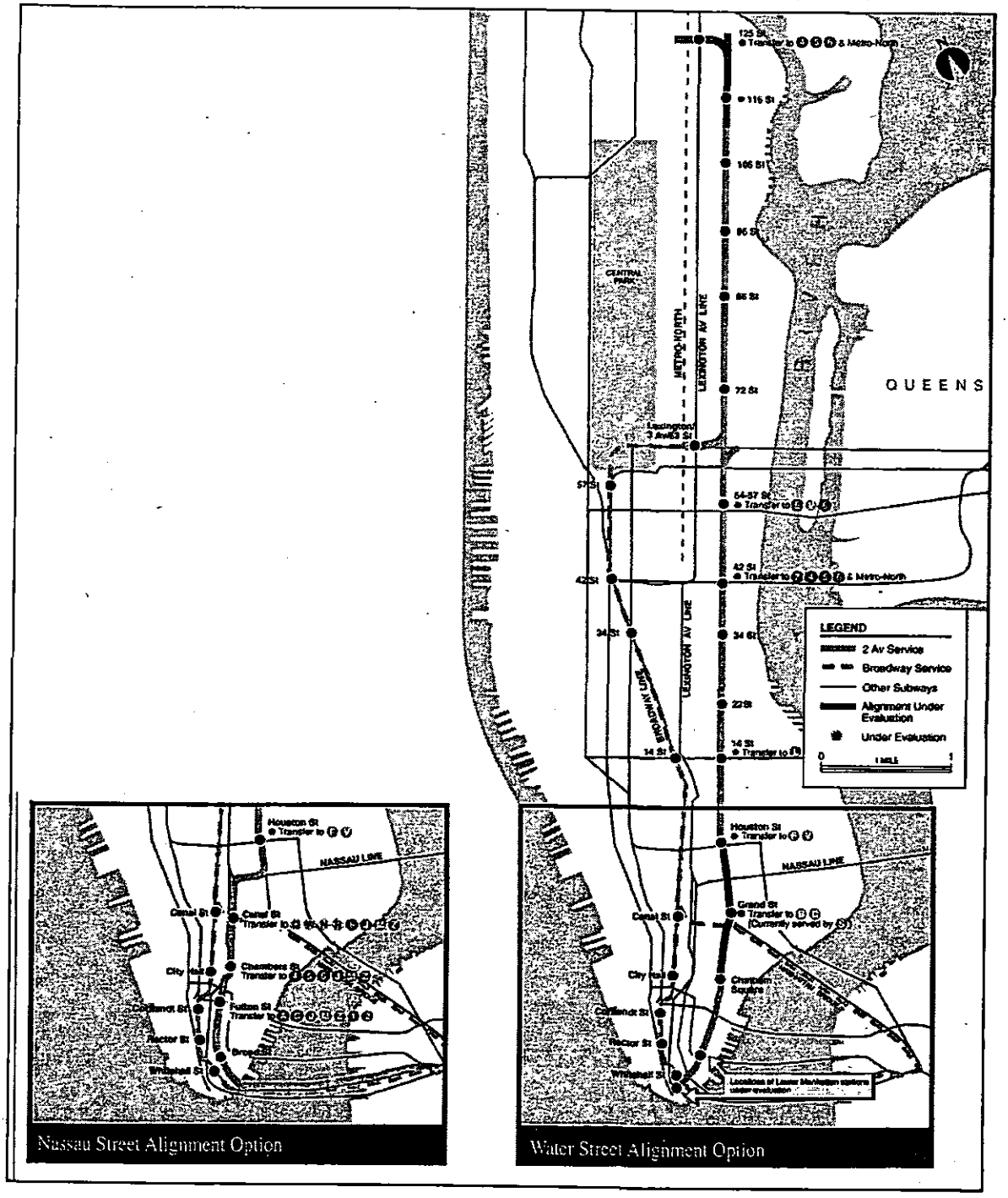


FIGURE 1-2

Second Avenue Subway Project Location

2.0 PRECONTACT OVERVIEW

In order to provide a contextual framework from which to understand the importance of precontact cultural resources which may have once existed in the vicinity of the project corridor, and as a standard part of any Stage 1A investigation, a review of the archaeological literature of the prehistory of the region, and of potentially comparable sites, is required. Drawing from the available archaeological literature, a prehistoric overview of the region is presented herein. It should be noted that as research in the area continues, our understanding of the prehistoric chronology is amended as new data is obtained.

PRECONTACT OVERVIEW

Changes in the precontact environment, the characteristics of precontact peoples, and the cultural artifacts that were left behind enable archaeologists to present a chronological framework for the prehistory of North America. Archaeologists have divided the North American precontact period into three stages, the Paleo-Indian, Archaic, and Woodland, followed by the historical, or Contact period. Both the Archaic and Woodland periods are generally divided into subperiods using the appellations Early, Middle, and Late. What follows is a brief overview of these periods with emphasis on the characteristics of, and archaeological evidence for, each period in the New York City area.

Paleo-Indian Period (ca. 11,000 - 7,000 B.C.)

Prior to the arrival of Native Americans, and subsequently Europeans, the Northeast experienced heavy glacial activity. After this period, glaciers slowly began to retreat north, with glacial gravel being deposited along the melting margin. By about 13,000 years ago, ice had retreated north far enough so that the metropolitan New York region was ripe for the reestablishment of flora and fauna. As ice melted, glacial lakes formed, eventually filling with sediments and forming swamps. Current studies suggest that shortly after deglaciation, Native American populations arrived in the Northeast; however, the exact date of first occupation remains uncertain, as does their method of arrival.

Some archaeologists argue that there was a pre-Paleo people who arrived in North America by water craft, rather than on foot, supported by an ecologically rich coastal environment (Engelbrecht and Seyfert 1994:228). Alternatively, others believe that near the end of the Wisconsin glacial age the first humans crossed into the New World via a narrow land bridge in the vicinity of the Bering Strait (Fagan 2001:30). Regardless of their method and time of arrival, by about 13,000 years ago, nomadic hunters known as the Paleo-Indians, were occupying the Northeast landscape. Identified by their utilization of a distinctive artifact, the fluted point, evidence suggests that although Paleo-Indians were limited in number and traveled in small groups, they soon spread across the pristine environment of North America. Although numerous Paleo-Indian "kill sites" have been discovered in the western and southwestern United States, new evidence indicates that small animals were hunted or trapped, and vegetation was harvested (e.g., the Gault Site in central Texas. Poole 2001:22). Camp sites that have been excavated in the Northeast

lead scholars to postulate that seasonal patterning or perhaps territorialism commenced during the latter part of this period (Ritchie 1965:3,9).

The environment during the Paleo-Indian period was dominated by the retreating glaciers and the transformation of the landscape to a deciduous woodland, prominent in the subsequent Archaic Period. The warmer climate and the newly exposed river valleys provided ample hunting and foraging grounds. In addition, the megafauna on which Paleo-Indian diet was based, in part, were rapidly becoming extinct, and were being replaced by the temperate-climate fauna that are indigenous today. As a result, Paleo-Indian sites, and later precontact sites, have typically been found on well-elevated terraces and hills near a fresh water source. However, as research continues on the issue of drowned shorelines and inundated precontact sites, it is becoming more evident that the number of Paleo-Indian sites previously encountered "represent only a very small portion of the settlement networks which extended across surfaces within the Harbor Region [of New York] that have since been inundated by rising sea levels" (Thieme 2000:3).

Along with the fluted point, scrapers and borers were part of the Paleo-Indian's "tool kit." These tools were used to hunt and butcher mastodon, elk, caribou, bison, and other smaller mammals. A variety of these animals, dated to this time period, have been excavated in New York State, particularly in the vicinity of former glacial lakes and moraines (Ritchie 1965: 9-16).

Although Paleo-Indians were dispersed across the North American continent no human skeletal material, or artifacts such as animal hides or wood objects have been recovered in the Northeast. Perhaps due to the transitory nature of these people little remains of their culture but lithic material. In New York State a few camp sites have been examined (For a detailed discussion on Paleo-Indian, Archaic, and Woodland sites in New York see Ritchie 1980). The closest recorded Paleo-Indian site to the project area is Port Mobil, a small camp site, recovered in Staten Island (Ritchie 1980:1,3,7).

Archaic Period (7,000 - 1,000 B.C.)

The transition from the Paleo-Indian period to the Archaic was marked by the availability of a larger variety of plants and small-game as the post-glacial Archaic peoples exploited the now dominant deciduous woodland environment. The decreased population of big-game animals led to the hunting of smaller game including the white-tailed deer, moose, wild turkey, and rabbit. In addition, Archaic peoples began to exploit the marine environment. Although not as mobile as the Paleo-Indians, archaeological evidence indicates that early Archaic peoples continued to travel seasonally. Their group movements, however, were within well-defined territorial boundaries and the camp sites that have been recovered indicate that they were repeatedly occupied over time.

Data regarding the Archaic period indicates that the quantity of recorded archaeological sites is much larger then those dating to the Paleo-Indian Period, thus suggesting a significant increase in the population of native peoples. The Archaic period is also characterized by an overall shift in the environment, an expansion of the lithic tool kit, and the exploitation of defined territorial boundaries.

By the Early Archaic the environment in the Northeast had developed into a deciduous woodland forest. A gradual warming trend allowed new resources to establish themselves in the river valley. The Archaic peoples subsistence was "based on hunting, fishing and gathering of wild vegetables" (Ritchie 1994:31). They hunted smaller game animals (deer, rabbit, beaver, and wild turkey) and gathered a variety of wild plants, as well as exploited the marine environment (fish and shellfish gathering). Artifacts attesting to the expanded subsistence economy include fishing implements and the mortar and pestle.

During this period, the expanding exploitable resource base may have initiated the significant increase in population. The Archaic hunters also began exploiting a well-defined territory, often reoccupying favored sites. Because of the repeated occupation of these Archaic sites as well as the seasonal rounds made within specific territories, archaeologists have been able to recognize several identifiable cultural traditions in New York State (Ritchie 1994). The change in the number of sites recovered also indicates that Archaic peoples had a greater impact upon the landscape. Typical with all prehistoric sites, river valleys and coastal areas were the preferred locale for primary camp sites. This environment supported the game, plants, and marine resources desired by Archaic peoples.

Additions to the tool kit of the Archaic hunter include the narrow bladed projectile point, grooved axe, and beveled adz. Archaeologist Robert Funk has suggested that the Laurentian, Susquehanna, and small stemmed cultural traditions persisted in the Hudson River Valley during the Archaic period (Funk 1976: 250). In his reassessment of the distribution of Late Archaic (or Transitional Archaic 4,000-3,000 years B.P.) projectile points, Snow alternatively suggests that the Susquehanna tradition, represented by the Snook Hill, Perkiomen and Susquehanna Broad points, was dominant in the first half of the period and the Orient Complex in the latter (Snow 1980: 237). In the Hudson River Valley, where a number of Archaic sites have been investigated, Orient Points have been radiocarbon-dated to approximately 4,000 to 2,800 years B. P. Artifacts dating to the Snook Kill or Orient traditions, commonly intrude much older archaeological sites in tidal marsh settings (Ritchie 1980:165-167). To date, the exact sequence of cultural traditions and representative complexes for the Archaic period is still undefined and a constant source of debate.

The Native American population had increased significantly in the region by the Late Archaic period. The variety of recovered sites from this period include rockshelters, open woodland camps, and secondary processing locations overlooking the various water sources. In a section of the Bronx's Riverdale Park, excavations were conducted on a series of prehistoric sites (DeCarlo 1990: 5). Archaeologists recovered a Late Archaic assemblage of oyster shells, fire cracked rocks, scrapers, bifaces, lithic debitage and diagnostic projectile points suggesting that this location may have been used for hunting and shellfish procurement from the nearby river (Lenik 1992: 24).

Woodland Period (1,000 B.C. - ca.1600 A.D.)

The Woodland Period is characterized by the introduction of pottery and horticulture, the appearance of large semi- permanent or permanent villages, and the establishment of clearly defined trade networks which marked the transition to a more settled culture. As with the earlier prehistoric periods, archaeological evidence suggests a marked preference for large-scale primary habitation sites within the vicinity of a fresh water source (e.g., rivers, lakes, streams, and ponds). In the majority of cases, secondary sites, where specific activities occurred (e.g., shellfish collecting and/or processing, butchering, and stone tool-making), were situated near the location of the exploited resource.

The first significant and identifiable use of pottery in New York State can be traced to the Early Woodland Period, around 1,000 B.C. By the Middle Woodland Period a wide variety of stamped, impressed and cord-decorated pottery types were developed. Smoking pipes, another Woodland innovation, reflected different cultural styles which archaeologists have been able to link to specific groups. The tool kit of the Woodland peoples expanded to include a larger variety of knives, drills, hammerstones, etc. Although some Archaic human burials have been recovered, those discovered dating from the Woodland Period suggest that more complex ceremonial burials commenced during the later period. Furthermore, this widespread mortuary ceremonialism (mound building) peaked during the beginning of the Middle Woodland and was essentially nonexistent by the close of the Period.

While the use of cultigens was evident in many areas of North America during the Early Woodland, it was not until near the end of the Middle Woodland stage (c.800-1000 A.D.) that agriculture may have played a part in the economy of New York State culture groups. By the Late Woodland, cultigens had become an essential element in daily life. The introduction of agriculture brought about a major change in settlement patterns as larger villages, some fortified or palisaded, were established. One such site was noted by the early Dutch explorer Adriaen Block, who described seeing "large wigwams of the tribe on Castle Hill" in the Bronx (Skinner 1919: 76). With the creation of more permanent sites came the development of extensive trade networks for the exchange of goods between the coastal and inland areas.

Late Woodland Stage sites of the East River Tradition in Manhattan and other parts of southern New York have been noted on the "second rise of ground above high water level on tidal inlets," and situated on "tidal streams or coves" and "well-drained sites" (Ritchie 1980:269). Carlyle S. Smith, who studied and analyzed the distribution of precontact ceramics in coastal New York, stated that "village sites" are found on the margins of bays and tidal streams" (Smith 1950:130). Early twentieth century archaeologist Reginald P. Bolton writes that "the indispensable elements in the selection of native dwelling places," were an accessible spring, and shelter from prevailing winter winds, which on Manhattan Island was found on "the eastern side of hills, or a southern exposure" (Bolton 1922:46,62,64).

Contact Period (A.D. 1600-A.D. 1800)

Much of what is known about the Contact Period has been acquired from the documentary record. Using legal documents and early ethnohistorical accounts, archaeologists have been able to learn much about the Native groups that were present upon contact with Europeans. One example is the journal of Robert Juet who traveled with Henry Hudson on his 1609 voyage. Juet provided a description of the native population encountered and the exchange of "Indian Wheate" (maize) and tobacco for beads and knives (Van Zandt 1981: 10-11).

In *Native American Place Names in New York City* (1981), Robert Steven Grumet categorized data from historical documents and the work of previous scholars in an attempt to synthesize and verify known information on Native American sites, pathways and culture groups. Grumet notes that the 1610 Velasco map used the name *Manahata* as the designation for the native inhabitants of both banks of the lower Hudson River (1981: 24). The Manhattan Indians were identified on Dutch seventeenth-century maps but not on many other documents. In addition, no individual Manhattan Indian was referred to by name in the documentary record.

Isaak de Rasieres reported ca.1628, that the island was "inhabited by the old Manhatesen; they are about 200 to 300 strong, women and men, under different chiefs." The Wiechquaesgeck have been identified as the denizens of northern Manhattan, as well as parts of the Bronx and Westchester County. However, there is little data available to identify the "Manhatesen" who dwelt to the south, in Lower Manhattan. Tradition, rather than firm evidence, has identified them as Canarsee Indians, while another, also discredited line of reasoning, suggested that they were Rechgawawancks. However, there is no seventeenth century documentary evidence to support this, nor even the idea that Manhattan was divided north/south between different maximal groups. It is likely that the Manhattan Indians were a sub-group of the Wiechquaesgeck, with whom they eventually combined (Grumet 1981:24-26; Bolton 1972:127).

The Manhattan and their Wiechquaesgeck relatives had few furs to trade with the Dutch. As a result, there was little motivation on either side for good relations, and New Amsterdammers probably considered the local Indians an annoyance. In addition, the sometimes cruel and often dishonest practices of European traders led to Wiechquaesgeck retaliation, which took the form of several murders between 1640 and 1642, leading to various raids and counter raids between Dutch and Indians (Grumet 1981:60-61; Kammen 1975:45-46).

The Dutch practice of trading firearms to the upriver Mahican and Mohawk, while denying guns to the Indians of the lower Hudson, left the Native community vulnerable to attack. When a large force of Mahican or Mohawk attacked the Wiechquaesgeck and Tappan in 1643, the surviving Indians fled to the Dutch in New Jersey and Corlaer's Hook on Manhattan for protection. Governor Kieft and his advisors seized this chance to revenge themselves, and sent a force to attack the refugee camp at Pavonia (now Jersey City), massacring 80 Tappan, while another force killed another 40 Wiechquaesgeck on Manhattan. Eventually every lower Hudson native group joined in war against the Dutch, with disastrous results for European settlers. "Governor Kieft's War" ended when

the Manhattan and Wiechquaesgeck sued for peace in 1644, after a series of surprise attacks on Indian villages ended in brutal massacres. Nevertheless, friction with the Dutch continued, as the Wiechquaesgeck participated in the "Peach War" (1655-1657) and the "Esopus War" (1659-1664) (Grumet 1981:60-62; Brodhead 1853:349-353; Bolton 1975:79).

These hostilities, coupled with the introduction of European diseases against which Native American populations had no natural protection, decimated Indian populations in the New York City area, and forced many groups to merge in order to maintain viable communities. The last of the Manhattans apparently left the island sometime after 1628, joining the mainland Wiechquaesgeck, where they were noted in 1680 as the *former* inhabitants of Manhattan Island (Grumet 1981:24,25).

It is generally accepted that precontact cultural groups that populated the area practiced a settlement and subsistence pattern of seasonal rounds exploiting a diverse array of resources. The types of sites found in the surrounding area, as reported by archaeologists, ethnographers, and amateur collectors, reflect this pattern and include villages, burials, and small campsites. These sites are often situated on well-drained upland soils in proximity to fresh water, and on tidal inlets. However, shell heaps, or middens, were frequently deposited along rivers where prehistoric peoples discarded their "garbage," away from their living areas (Ritchie and Funk 1973).

PREVIOUSLY IDENTIFIED PRECONTACT SITES IN THE PROJECT AREA

A site file search at the NYSOPRHP and the NYSM was undertaken in October, 2001. From north to south, the following precontact sites and habitation areas were reported either near or possibly within the Second Avenue project corridor.

East Harlem

The project corridor in this area was formerly flatlands called Muscoota by Native Americans. This region, which lies between the Harlem River and Morningside Heights northwest of what was once Harlem Creek, was surrounded by swamps (Rubinson 1989:3). "Rechgawanes" is reported by Grumet as the name of a point of land along the western shore near the confluence of the East and Harlem Rivers, and along an obliterated stream that roughly corresponded to the route of East 125th Street (1981:46). This tract could have extended into the current project corridor.

In this section of the project area, the Wickquasgeck trail ran several blocks to the west through what is now Central Park. An Indian Path veered off this trail at East 110th Street near Fifth Avenue, and headed northeast towards a habitation site on the Harlem River near East 124th Street. This Amerindian Trail was incorporated into the first road system of the village of Harlem. Passing through the meadows of Muscoota to the area called Conykeekst, it crossed First Avenue at East 124th Street and Second Avenue at East 121st Street within the project corridor (Bolton 1922:72,74-76). Arrowheads and flakes were found in East Harlem in 1855 during the excavation of a cellar on Avenue A between East 120th and 121st Streets (Riker 1904:123). Bolton concluded that this was

either a fishing place or an intermittently used place of landing or trading (Bolton 1922:72).

NYSM Site #4063 was reported near this northern section of the project site. Identified by Arthur C. Parker, this village/camp site was described as "...one of larger camps or fishing places of the Reckgawawancks...." (Parker 1920:26). He further characterized it as a "...camp or fishing place ....at Montagne's Point... on shore at Hellgate, just off 110th Street" (Ibid.). The site's boundaries and location are unknown, but it may have extended west into the vicinity of Second Avenue near East 110th Street.

Planting areas and old fields are shown on maps along much of this area, especially in the vicinity of First and Second Avenues (Figure 2-1). In addition, in the vicinity of East 97th to East 101st Streets was "Konaande Kongh," defined by Grumet as a major Indian settlement (1981:20). Bolton reported that this was a village located approximately between Lexington Avenue and Madison Avenue and East 98th to East 100th Streets, west of Second Avenue (Ibid.).

Mid Manhattan

The only Native American feature reported by Grumet in the vicinity of Second Avenue is the Wickquasgeck Road - a Native trail which ran from the southern tip of Manhattan to the northern tip of Manhattan (Figure 2-1). The road ran west of the project site through the Upper East Side and then turned into Central Park to head northeast. The road was well traveled, and reportedly linked settlements at the southern part of the island with those to the north.

In addition, Arthur C. Parker reported traces of occupation in the area of East 59th Street near First and Second Avenues (NYSM Site #4061). The nature and extent of the Native American presence is unknown, but it is possible that this site extended into the current project corridor.

Lower Manhattan

In the vicinity of East 14th Street, few Native American sites have been either reported or uncovered, in large part due to the intensive development witnessed during the nineteenth and twentieth centuries. Bolton identified the section of Fourth Avenue near 14th Street 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. 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 (Figure 2-1).

The settlement identified closest to this section of the project corridor is Schepmoes, which Bolton reports as 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). Bolton refers to Schepmoes as a "plantation," a "group of lodges" and a "place of Indian occupation," and suggests that Schepmoes means "little brook" (Ibid.). Robert Grumet's later research indicates that this toponym was not a Native word, but the name of a Dutch settler, Jan Jansen Schepmoes,

who was a prominent seventeenth century Manhattan landowner. Grumet places the settlement somewhat farther south closer to Second Avenue and East 10th Street (Grumet 1981:51, 68). Regardless, it may have fallen within the Second Avenue project corridor in the vicinity of 14th Street.

A map of Native place names and trails that have been identified for Manhattan Island shows a large path leading to the area called "Nechtanc," translated as "sandy point," near the East River at Houston Street (1981: 39; Figure 2-1). Grumet's research indicates that this place was also known as "Corlaers Hook" (Ibid.). A site file search reported one precontact site in this area. Site NYSM #4060 is identified by Parker as a village site (Parker 1920:627), while Grumet places it more precisely near the East River on the line of Canal Street. Parker reported "traces of occupation" there (Parker 1920:582). This "village" may be the site of Nechtanc which has yet to be verified archaeologically. Grumet identifies the area called Nechtanc as being "contiguous to Jacob van Curler's plantation." It is somewhere in the vicinity of Corlaer's Hook, probably east of the Second Avenue Project corridor (Grumet 1981:68).

According to Grumet the very southern tip of Manhattan was called Kapsee (Grumet 1981:68; Figure 2-1). This was described as a ledge of rocks at the southernmost point of Manhattan Island, probably in the vicinity of what is now Battery Park (Grumet 1981:17). To the north, Ashibic was probably a narrow ridge or ancient cliff north of Beekman Street in Lower Manhattan, which was bounded by marsh to the south (Ibid.:3).

PRECONTACT ARCHAEOLOGY IN MANHATTAN

Due to differences in land use and lifeways, archaeological resources from the prehistoric and historical periods generally vary in depth of burial relative to the ground surface at the time of deposition. As a result, subsequent activities such as construction or grading result in different degrees of effect on buried cultural remains. Under normal circumstances, precontact archaeological resources are shallowly-buried, usually within three or four feet of the pre-development surface. As a result, they are extremely vulnerable to post-depositional disturbances, such as farming or construction. However, in areas prone to flooding, precontact sites can be deeply buried beneath many feet of alluvial deposits. Furthermore, early precontact period sites may be in locations that have since been inundated. Therefore, precontact environmental and topographical reconstruction is a crucial component of establishing potential sensitivity.

Some of the environmental factors which contribute to potential precontact sensitivity include, but are not limited to, the predevelopment topography, distance to water, drainage conditions, soils, and resource availability. Early historic topographic maps and verbal descriptions of the early historic landscape serve to establish the likelihood that any particular area would have been well suited for precontact habitation or use. Later maps and atlases document subsequent changes in topographic elevation and potentially destructive development episodes.

The analysis of soil boring logs to help determine subsurface conditions can also aid in approximating precontact archaeological potential. However, the difficulty in interpreting subsurface conditions and archaeological potential arises because borings can not reveal

1) if upper sensitive levels were removed; and/or, 2) if the content of "fill" levels represent the addition of new strata or the disturbance of natural strata. To complicate the issue, the topography of Manhattan prior to historic development is vaguely understood, at best. The unique contours that once characterized the island (e.g., Viele 1864; Figures 2-2a, 2-2b), have long since been obliterated, so it is difficult to determine how the historic versus modern surface and subsurface conditions differ. Few early topographic maps record actual elevations tied to a vertical datum point.

One of the ways that soil borings can aid in the reconstruction of the precontact environment, is through the recordation of certain indicators, or markers, suggesting precontact sensitivity. The presence of peat, indicative of a tidal marsh, may suggest precontact potential in the vicinity as was found at the Old Place site on northwestern Staten Island (Ritchie 1980:140). Archaic period artifacts at the site coincide with radiocarbon dates taken from a layer of sand lying between adjacent tidal marsh peat (Thieme 2000:5). Other indicators for potential precontact habitation include the presence of buried soil, which is one of the most sensitive elements of landform stability (Ibid.:23).

Despite the shortcomings, a review of available borings logs was undertaken in conjunction with the analysis of historic and modern topographic maps in order to approximate potential precontact sensitivity for the Second Avenue Subway project corridor.

The results of these analyses, the environmental reconstruction, documentation of disturbance, and analysis of available soil borings, are presented in the assessment of precontact sensitivity completed for each project section (See Chapters 4 through 6 below).

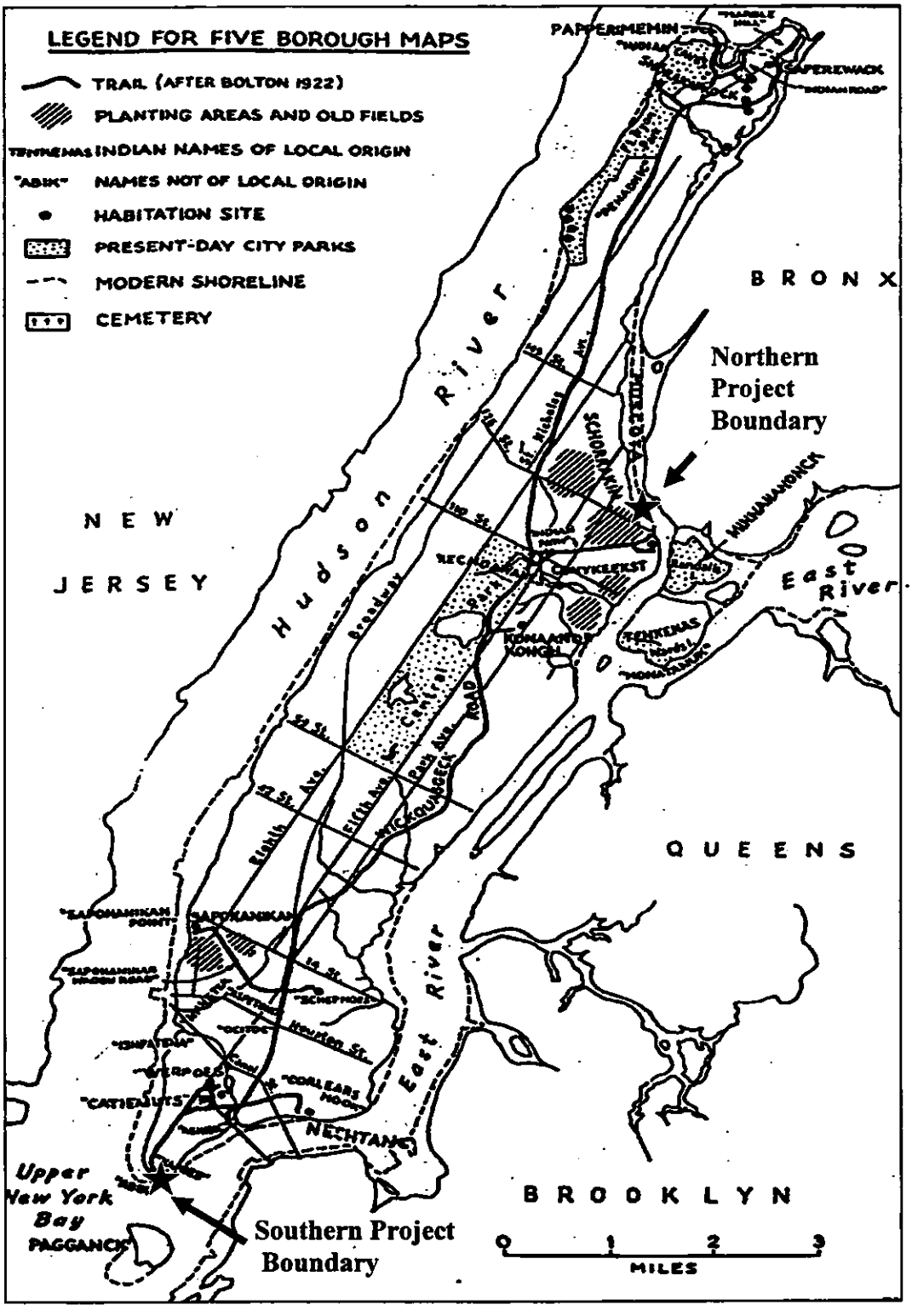


FIGURE 2-1

Native American Place Names in New York City. Grumet 1981.

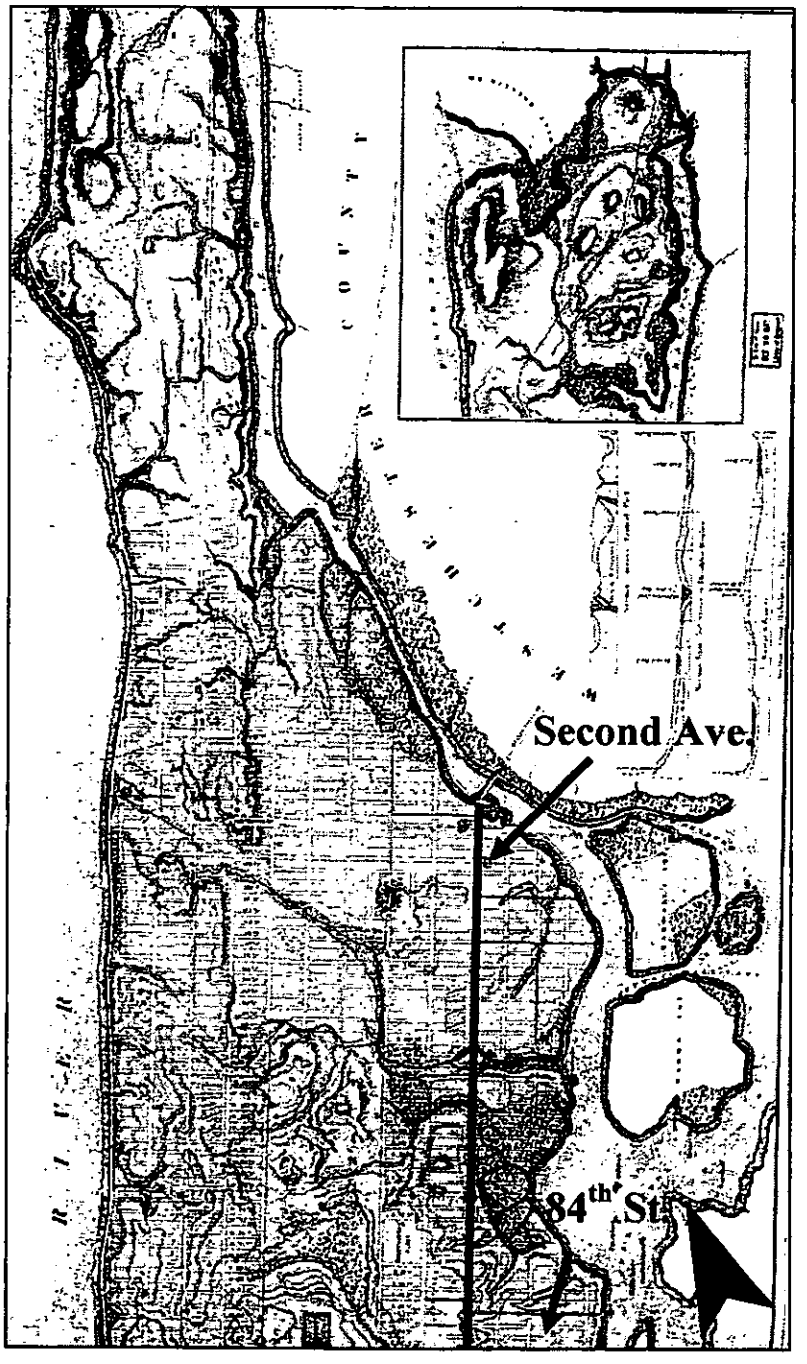


FIGURE 2-2a

Sanitary and Topographical Map of the City and Island of New York.
Viele 1865.
Detail of APE, East River to East 84th Street.

No Scale

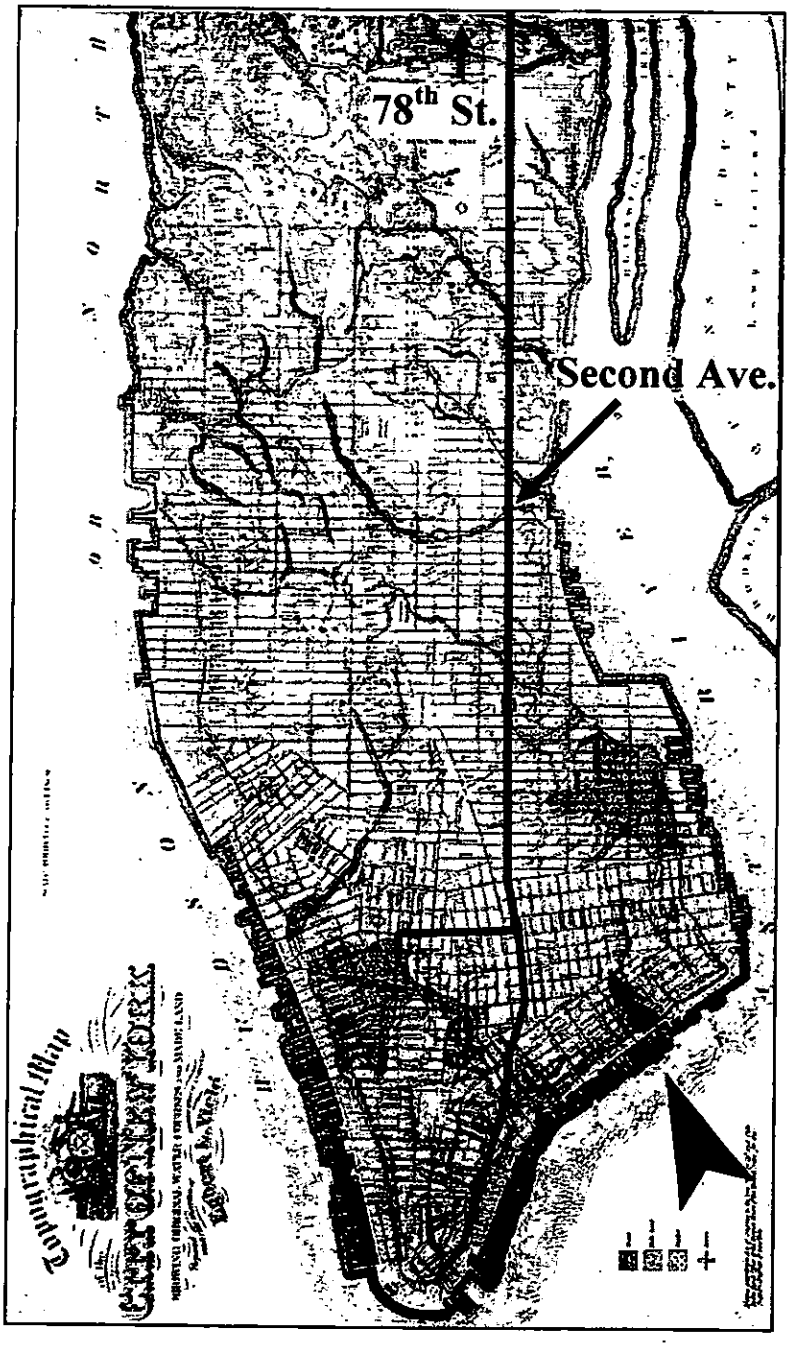


FIGURE 2-2b

Sanitary and Topographical Map of the City and Island of New York.
Viele 1865.
Detail of APE, East 78th Street to Peter Minuit Park.

No Scale

3.0 HISTORICAL OVERVIEW

The Historical Background of the project corridor, from Second Avenue at the Harlem River south to Peter Minuit Park, is presented to provide a historical framework in which to assess potential resources (Figure 3-1). In addition to the general project area background, a brief overview of land-based transportation systems in Manhattan is provided since there are so many systems which either fell, or currently fall, within the project corridor. Finally, the Previously Identified Historical Research Categories which the NYCLPC has listed as potentially important within the context of New York's history, are discussed.

The following historical overview is derived, in part, from the previously prepared *Manhattan East Side Transit Alternatives Archaeological Assessment* (Kearns et al 1998). Additional research was completed for new project elements, and an updated survey of cultural resource reports was undertaken at the NYCLPC, and the New York State Office of Parks, Recreation and Historic Preservation.

HISTORICAL BACKGROUND

The following historical background includes the entire project corridor and all proposed elements starting at the northern most section and proceeding south.

East Harlem

New Amsterdam had been settled for 13 years before the first attempt was made to settle at Harlem in 1637. Early settlements were not successful because of small population and poor health, as well as political conflicts and Indian attacks. Isaac De Forest was the first documented landowner in what eventually became the village of Harlem. In the 1630s he was granted a tract of about 100 acres which formed a narrow strip from the Harlem Creek to the Harlem River. After De Forest's ownership, the tract went through the hands of William Beeckman and Claesen Swits. Swits' farm was destroyed in an Indian attack and abandoned. Subsequently, Swits' former farm land became the first documented settlement of the village of New Harlem which extended from approximately East 118th to East 125th Streets, from Third Avenue east to the Harlem River and encompassed the project site (Rubinson 1989:11).

By 1658 a village was established in New Harlem, created by an order of the Director-General and Council of New Netherland. House lots and garden lots were laid out, together with larger farm tracts. The original village boundaries encompassed a portion of the project area, and were designated as follows: starting at a point on the East River at 125th Street the village boundary headed southwest to the intersection of Second Avenue and East 122nd Street. It then turned south on Second Avenue to East 118th Street. Heading west on East 118th Street it then veered north on Park Avenue to East 122nd Street. At East 122nd Street the boundary veered to the east one block to Lexington Avenue, then headed north to East 125th Street where it veered east again for one block. The line then turned north up Third Avenue, east at East 128th Street, then roughly followed the shoreline back down to East 125th Street. This tract is now commonly known as Spanish Harlem (Rubinson 1989:10).

Harlem's autonomous existence did not last long because in 1665 Governor Nicolls declared that the city of New York should encompass the entire island of Manhattan, including New Harlem. Land in some sections of New Harlem was rugged and rocky, while other sections had gently undulating meadowland. When early settlers found rich soils covered with timber, they soon realized the resource potential (Romer and Hartman 1981:5). Shortly thereafter, the community began to grow.

After New Haarlem was established, Danes, Swedes, Hollanders, French Huguenots, and Germans developed rich farms there. It was originally connected with the little town of New Amsterdam by the widening of the previously-discussed Indian trail "by the Dutch West India Company's negroes" (WPA 1939:254). Interestingly, the British permitted it to retain the name of New Harlem after their capture of the city in 1664 (Ibid.:256).

New Harlem's first church, which also served as the meetinghouse, was built in 1667 and a second was built in 1685 (Romer and Hartman 1981:5). During the Revolutionary War, the Morris mansion, far north of the project site, served as temporary headquarters for General Washington's army. During a series of raids that occurred in the immediate region, the Harlem Dutch Church, which once stood east of the project site near First Avenue, was burned. The Dutch Reformed Church was also built east of the project site and south of the previous church as a replacement.

It wasn't until the early 19th century that this area truly began to grow. East of Fifth Avenue, between East 110th and East 125th Streets, a tract was purchased by James Roosevelt, great-grandfather of Franklin Delano Roosevelt. He cultivated this land and eventually sold the property in the 1820s. The 1832 construction of a railroad to Harlem from the southern tip of Manhattan forged the way for this region to change from a charming rural area to a "suburb" of the growing city. In 1826 Second Avenue was opened from East 28th Street to East 86th Street, and from East 109th Street to East 123rd Street (Stokes 1928:602). Although East 125th Street was assessed for opening in 1815, it was not until 1836 that it was opened from Third Avenue to the Harlem River (Ibid.:63).

Because of the growth and overcrowding in Lower Manhattan, there was an increased need for low-cost housing as wage-earners desired to separate their homes from their work place and other industrial centers. The city had changed again, both internally and organizationally. At its edges were still factories and shipyards, while other sections had small shops, factories, and residences. Residential patterns changed, and residential streets of varying wealth and character were both clustered and scattered throughout the city proper (NYCLPC 1983:25). Factories and warehouses often moved to more remote areas. When the railroad was built from Chambers Street to Harlem in the 1830s, it enabled large numbers of people to move to the northern part of the island, and Harlem's population grew.

In the early 19th century, the majority of Manhattan north of East 125th Street was listed as a mix of residential, agricultural, and industrial use, while in the late 19th century it was shown as residential, commercial, and unimproved land. Presumably agriculture had largely been abandoned in this area by that time (NYCLPC Neighborhood Maps 1815-1829, 1855-1879). After East 125th Street was opened and regulated, it became an import

cross-island thoroughfare with a cable-car established on it in 1885 (Stokes 1928:603). During the late 19th century, dredging for the Harlem River Canal generated tons of fill material when much of the river bottom was removed to create a deep channel for shipping (Murphy 1860). Along with improvements in water transport, the 19th century also marked the introduction of the elevated railroad up Second and Third Avenues in the 1870s. The flatlands of the upper East 90th Streets served the transportation industry with the Manhattan Railway Company's yard at East 99th Street, and a trolley barn at East 100th Street and Lexington Avenue.

The Polo-Grounds in northern Manhattan were visited by New York's society, and the acclaimed Harlem Opera House was opened on West 125th Street in 1889. Following this period an influx of immigrants, largely Jews and Italians, changed the community character again. By the early 20th century, African Americans, Puerto Ricans, and other Latin-American groups moved to the area. Subsequently, housing developments which once were stretched along the Lower East Side, took hold in this section of the city. Harlem has a wealth of rich cultural resources chronicling the community's various transformations.

Mid and Upper Manhattan

This region of Manhattan has historically maintained a diversity of neighborhoods, industries and institutions. During the 17th and early 18th centuries, this region was only wooded land with sparsely situated farms. The first significant development within this area was the establishment of the Boston Post Road which ran through the Upper East Side of Manhattan Island near the present route of Third Avenue, one block west of the project corridor (Church and Rutsch 1984:13). This section of the route was known as the Eastern Post Road, built between 1669 and 1671. This important road was the vital link to the colonial village on the island's southern tip. Early settlements in this area tended to cluster along this road, and the East River shorefront. As a result of this thoroughfare, the last decades of the 17th century witnessed a growth of farmsteads.

In two transactions dated to 1677, the colonial Governor, Sir Edmund Andros, deeded 60 acres north of East 70th Street to John Bassett and an adjoining 60 acres to the southeast to Cornelius Mattysen (Stokes 1928 VI:108). By 1742 David Provoost had taken ownership of the Basset land and the northern 30 acres of the Mattysen tract (Church and Rutsch 1984:10). This Provoost tract, otherwise known as Jones' Wood, became the Louvre Farm and was more intensively settled than the surrounding properties. An important facility in the area was the Dove Tavern, an early 18th century tavern formerly located at the intersection of East 67th Street and Third Avenue about one block west of the project corridor.

A Quaker by the name of Robert Murray owned almost all of what became Murray Hill prior to the American Revolution. In 1776 the fleeing Continentals charged north through this area after the British invaded Manhattan. British frigates were stationed near Kips Bay to the south (East 23rd to East 34th Streets between Second Avenue and the East River) for the duration of the war. The British occupation of Manhattan wrought havoc on much of this area. Woodlands were decimated and orchards pillaged and raided for wood.

After the Revolutionary War, the Common Council voted to have the Murray Hill region surveyed and divided into lots for sale. In 1811 the Common Council authorized the construction of Second Avenue, but it was not opened until 1814. Sections of it north of East 28th Street were not opened until 1826 (Stokes 1928:602). As a result, by the first half of the 19th century this area grew into a domesticated landscape containing some estates bordering the East River shore, some mixed but scattered development along or near the Post Road, and the single hamlet of Yorkville. As early as the 1820s, sections of the Upper East Side were home to many small houses and shanties, particularly in the area south of East 104th Street (Hunter 1990:5-12).

By 1834 a number of well-to-do families established the village of Yorkville between East 83rd and East 89th Streets from Third Avenue to the East River. Here, elaborate summer houses and estates were constructed. This settlement enjoyed good access to Newtown in Queens via the Horn's Hook - or Hell Gate - ferry across the East River, which ran from the foot of what is now East 86th Street. As population increased, Yorkville eventually became crowded with tenements and brownstones populated by immigrants from Middle Europe (WPA 1982:184).

The construction of the New York and Harlem Railroad, which was operating by 1832, further opened up the area to settlement and vastly affected this area as smoky trains cut through the community of Yorkville (Church and Rutsch 1984:14). Nineteenth century maps show the transformation of the district from rural to suburban and then urban. The fast paced growth resulted in an oddly mixed land use - for example in some places small run-down shanties stood next to large opulent estates.

The mid-19th century also marked the true appearance of class segregated neighborhoods. The industrial working class was just beginning to emerge in the 1820s-1830s. There was an influx of European immigrants at that time, and in downtown the poor inherited the abandoned homes of the uptown-moving rich, who ended up in the Midtown and Upper East Side areas. There was increasing differentiation between neighborhoods and the steady move uptown spread. The city proper tapered off about 14th Street in 1825 - but by 1853 it extended much further north (NYCLPC 1983:25).

In the 1850s and 60s, "Manhattan north of Forty-second Street was not pleasant countryside; it was garbage dumps, shanty towns, and decrepit taverns, all punctuated by outcroppings of rock" (Lockwood 1976:236). One census counted over 10,000 squatters in this area (ibid.), while the New York Times conservatively estimated the Manhattan squatters' population at 20,000 in 1864 (Plunz 1990:53-54). Although squatting in the area slated for Central Park became more widespread after 1853, when the City began acquiring private land for the Park, one of Frederick Law Olmsted's first acts as Park Commissioner in 1857 was to remove 300 shacks from the area. The construction of Central Park had a significant effect on the East Side of Manhattan, elevating the area's social status in general. Construction of the Park caused Fifth Avenue, which formed its eastern border, to become New York's most fashionable neighborhood. As a result, real estate prices and development increased there and on adjacent streets.

Following the Civil War, prosperity brought growth to this area. Of major consequence to this section of Manhattan was the construction of the Grand Central Depot at East 42nd Street in 1871, essentially moving the City's main transportation hub "uptown" and away from the more populated areas of Lower Manhattan. Further effects to the east side of Manhattan occurred with the construction of the Third Avenue Elevated (El) train in 1878-1881 which brought additional people and businesses to the region. Squatters, who may have paid "rent" to land speculators, were evicted from properties as the residential building boom moved north, and one- and two-family houses and tenements were erected (Plunz 1990:54).

The densely settled areas of Lower Manhattan (below 30th Street) were ringed with factories, shipyards, and wharves, while the central business district remained below Chambers Street. Working class housing tended to be located on the city's East Side while the elite lived in the city's northern sections (Ibid.). The Upper East Side region was never entirely residential, but continuously had a mix of small industries and services as well. Some of the examples of the types of non-residential uses in this region include Mt. Sinai Hospital, which was built between 1872 and 904, the Normal College for Girls (now Hunter College) built in 1873, and the Seventh Regiment Armory erected in 1880.

Between 1867 and 1880 four elevated train lines were built in Manhattan, one on Second Avenue (Parsons Brinckerhoff Quade & Douglas, Inc., et al 1991:II-3). Steam powered trains chugged up through Manhattan leaving soot and smoke in their trails. While the els were relatively inexpensive and quick to build, they were noisy, interfered with street traffic, and blocked light and air from abutting properties (Ibid.). Many of the residents adjacent to these lines considered them a nuisance. But the el mobilized the city population and forever changed the city's character. The introduction of the subway in 1904 and the subsequent dismantling of the el tracks did much to improve this area.

In 1910 the Long Island Railroad cross-town tunnel to Penn Station was completed. Although the tunnel passes under the project area from East 32nd to East 33rd Streets, it is sixty feet below grade (WPA 1982:165). Connections to the other boroughs were also realized with the completion of the Queensboro Bridge in 1909. The entrance for the two-level steel cantilever bridge at 59th Street extends to Second Avenue. (In 1976 the Roosevelt Island Tramway was built adjacent to the north side of the bridge.) Construction for the Queens Midtown Tunnel, 1936, required the demolition of all or part of 12 blocks in the project area. Part of the below grade, Second Avenue entrance to the tunnel's twin tube is in the East 37th Street area (WPA 1982: 209-210; ASCE 1997:5). The construction of the East River Drive in the 1940s further changed the nature of the Lower East Side by aspiring to beautify the previously unsightly waterfront.

Lower East Side and Lower Manhattan

New York City, with Manhattan Island as its commercial and residential center, has developed at a rapid pace over the past three centuries. An important factor has been the flourishing commercial waterfront and the surrounding mercantile and later industrial ventures. The expansion and development of the waterfront along the East River began in the early 17th century. Although parts of the current project area along Water Street were submerged at that time, landfilling along the East River began before the end of the

17th century and continues today. Early historical maps indicate that the waterfront near Water Street hosted small piers. These areas were eventually filled in and the newly created blocks were commercially developed.

Although early Dutch trading expeditions had already been visiting the Hudson River for many years, the first settlement in New Netherland was not undertaken until 1624, under the authority of the Dutch West India Company, a private trading company founded in 1621. The purpose of this expedition was to strengthen Dutch ownership claims by occupying strategic points in the territory. Surprisingly, Manhattan was ignored in favor of Governors Island, where eight men were left to build a fort to protect the mouth of the Hudson. The main group of colonists traveled north and established Fort Orange, now part of Albany, in an area advantageously situated for participation in the lucrative fur trade (Brodhead 1853:150-151).

Eventually, the Dutch traders recognized Manhattan as the strategic heart of the region. Colonization began in earnest in 1625, when an expedition of Company farmers with livestock, tools and provisions arrived on the Hudson River, establishing itself at the southern tip of Manhattan Island, with the purpose of building a fort and laying out nine Company farms, or bouwerijen (bow-wer-RAY-en). These bouwerijen were intended to supply Company personnel with agricultural provisions, so that the Manhattan post would be self-sufficient (Bachman 1969:82-87). In addition, farm land, including a small tract north of what became Prince Street, was also designated for the "Company's Negroes" (Stokes 1926 VI: 70-72).

- Colonial History of Lower East Side and Lower Manhattan

The West India Company was generally scrupulous about acquiring title to the lands it occupied, and upon his arrival on Manhattan Island in 1626, Governor General Peter Minuit opened negotiations with the local Indians, and purchased the approximately 22,000 acres of the island for about 60 guilders worth of goods. The erection of Fort Amsterdam was begun near the foot of present Broadway, commanding the upper bay and the entrances to the Hudson and East Rivers (Brodhead 1853:164). The settlement around the fort, eventually called New Amsterdam, grew slowly, and at the time of the English conquest in 1664, extended only as far north as the palisades built along present Wall Street. Many of these settlers were merchants and fur traders who needed access to the shipping routes. As a result, much of the land granted was located along the rivers surrounding the island.

Although sections of Manhattan were considered unsuitable for agriculture, as early as ca.1628 at least six Company bouwerijen, four of which were near the East River shore, had been laid out and leased to tenants. These four farms embraced a total area of 120 acres. In addition to the Company farms, by 1635 about 150 colonists inhabited a number of private farms north of the town (Rink 1986:128). Unfortunately, Manhattan was not terribly fertile, and only two of the original farms were considered to have good land, the others better-suited for growing rye or buckwheat (Brodhead 1853:167; Bachman 1969:91; Jenkins 1913:69-70).

Most of Manhattan's farmsteads suffered greatly during the Indian troubles of 1642-43, and by the end of hostilities, the bouwerijen needed so many improvements that the West India Company decided to sell them rather than invest the money. The bounds of Bouwery No. 1 began on the east side of present Fourth Avenue/Bowery, between Houston and 18th Streets. It is described on the 1639 "Manatus" Map as "Company Farm with an excellent house." Bowery No. 1 was purchased by Director-General Peter Stuyvesant and became known as "Stuyvesant's Great Bouwery." The Bowery Road, the only road from New Amsterdam (now The Bowery and Fourth Avenue) was improved as far as his property [about present Stuyvesant Street] (Jenkins 1913:70,73,94).

In 1660, when farmers were ordered to gather into settlements for common defense, those directly north of the city asked to be allowed to remain in their homes, but requested that others be permitted to establish a village in the vicinity. The site selected was on Stuyvesant's Bouwery, and became known as the Bowery Village, an area generally between Bleecker and 10th Streets, Broadway and Second Avenue. In support of the new community, the Director-General had a chapel erected on his property, at the northwest corner of present Second Avenue and East 10th Street. Residents of the city attended Sunday evening services there, as did Stuyvesant's household and about 40 free Africans who lived in the neighborhood (Jenkins 1913:73; Brodhead 1853:681). Only two miles from the city, the "three or four houses" and a tavern, early became a popular recreational spot, a "stopping place, and the pleasure-ground of the Manhattans" (Brodhead 1853:681; Valentine 1853:69).

Following the 1664 conquest of New Netherland by the English, most private property was confirmed in its pre-conquest ownership. Stuyvesant chose to remain in New York, and retired to his Great Bouwery, where he remained influential until his death in 1678. In 1671, when Governor Lovelace set out to improve the road to Harlem, of which the Bowery Road was a part, the widening of the section between present Chatham Square and the Bowery Village was carried out under Stuyvesant's direction. This roadwork was part of Lovelace's projected New York to Boston postal service, the first rider of which galloped past the project site in January of 1673 (Jenkins 1913:1-2,73).

Officially, New York City was the entire island of Manhattan, with the "Out Ward" created by Governor Dongan in 1683. The Out Ward extended from approximately present Canal Street to the Spuyten Duyvil (Valentine 1853:182,184). The line of city fortifications which protected "the compact part of the city" had begun its slow march northward, as a palisade on Wall Street was demolished in 1699, and a new line erected in 1745 slightly north of present Chambers Street.

The inland area of Lower Manhattan, including a section of land just north of what is now City Hall Park, was originally set off by the Dutch colonial government as the Commons. Through time the watercourses and swamps in the Commons were filled in and the area eventually became the hub of communal, public, and civic endeavors. In the mid 1660s the area was used as a communal pasture, but by 1720 it had become the site of governmental activities such as executions (Harris et al 1993:3). This area was considered remote enough from the city proper to allow more "marginal" uses. For example, an almshouse was built in the Commons in 1735, and a burial ground for Negroes (now the African Burial Ground) was established here by at least 1712, and

remained in use until about 1795. The African population also used this area to celebrate holidays, and in the 1740s it was the site of a palisade with blockhouses across what is now the northern end of City Hall Park (Ibid.).

During the pre-revolutionary period, the Commons was the site of mass meetings and demonstrations, but by the end of the century, it was altered drastically. Chambers Street was laid out (1796), city blocks were devised and lotted, and City Hall construction began in 1803 (Ibid.). Elevated terrain was leveled and the low lying ground around the Collect Pond was filled. The area gradually acquired a more landscaped, park-like character, and former features were buried beneath new structures and roadbeds[1].

Other improvements to Lower Manhattan include the laying out of Bowling Green in 1733 (Latimer 1995: 132), and the establishment of a series of slips and wharves in the 1740s (see below).

- Waterfront Growth of the Lower East Side and Lower Manhattan

Since the Dutch first established the settlement of New Amsterdam, the growth of the waterfront has played a vital role in the history of Manhattan Island. The first public dock on the East River was constructed in 1647 near the area of Pearl and Broad Streets which were then at the shoreline (Buttenwieser 1987: 26). Ships would anchor in the river and passengers and cargo would be transported via tender to the narrow wooden dock. Less than twenty years later, the British, now ruling the colony renamed New York, transferred ownership of vacant (unpatented) and public (wharves, streets, and highways) land to the City of New York. In an effort to bolster trade, City leaders concentrated on developing the waterfront (e.g., the construction of the Great Dock in 1675).

The Dongan Charter of 1686 "granted all unencumbered lands to the City of New York" (Buttenwieser 1987:26). This allowed the growing city to expand eastward 200 feet, to the low water mark in the East River. While the population of Manhattan was increasing, soil removed from sections where new structures were built was deposited along the lower East River bank, horizontally extending the shoreline one block to the east (from Water to Front Street) by 1700. Despite this eastward expansion, numerous slips continued to extend inboard, or westward, from the shoreline at Water Street to Pearl Street (e.g., Peck's Slip, Coenties, Slip, and Old Slip). Many of these were not filled until decades later.

It was during the 18th century that the urbanization of Manhattan Island began in earnest. For the first two decades of the 18th century houses and stores sat on the banks of the East River in Lower Manhattan adjacent to the stone bulkheads, and in some cases extended out over the water supported by wooden stilts (Buttenwieser 1987:32). Most of the landfilling that took place from 1700-1776 was conducted by private citizens (Ibid.:13.). Within the Lower East Side waterfront area, however, landfilling activity did not extend the shoreline significantly until the end of the 18th century (Buttenwieser 1987: 26, 27, 28, 31).

[1]For a more detailed discussion of this archaeologically sensitive area, see Harris et al, 1993, Howson and Harris, 1991, and Ingle et al 1990.

Wharves were built along the East River throughout the colonial period. The most common type, being made of timber, were either "crib" or "cobb" wharves. Crib wharves were built out of rough timbers that were placed in alternating rows of "headers" (running lengthwise) and "stretchers" (spanning the width). In most cases a floor was built at the base to support the fill placed within. The cobb wharf was an openwork variant of the crib wharf. Its name was derived from the cobblestones used to fill and sink the wharf. The least common wharf was that made out of wrecked or burned ships. After securing a ship in the desired place, the framework of the hull was filled in much the same manner as the cobb wharf. While the primary function of these wharves was to provide docking space, in some cases they were later used as bulkheads for the continuing landfill along the East River. Most of the bulkheads constructed were of stone, although in some cases timber bulkheads were driven into the river bottom.

A push for more development along the waterfront promoted the Montgomerie Charter of 1730, which extended the boundary for improvement around the island to 400 feet out from the shoreline, 200 feet beyond the line established by the 1686 Dongon Charter (Ibid.:28). Waterfront construction escalated and numerous shipyards were created along the shores of the East River. As a result, the number of ships owned in Manhattan increased dramatically from approximately 60 at the turn of the 17th century to 447 by 1760, and nearly doubled to 709 by 1770 (Ibid.:35-36). The shortage of waterfront dock space was critical. Along with the lack of dock space, Manhattan merchants had the additional problem of having their shipping curtailed by British taxation. In the few years before the Revolutionary War, waterfront expansion was reduced by the lack of freedom in colonial trading.

- Revolutionary War Period of Lower East Side and Lower Manhattan

The Revolutionary War saw a seven-year period of British occupation of New York City, which followed Washington's evacuation of Manhattan Island in 1776. During the war the occupation of the harbor by the British further prevented waterfront construction and, in most cases, even the maintenance of the existing facilities. However, earthworks and redoubts dotted the landscape. New military works, such as "The Barrier" which crossed Bowery Lane near present Grand Street, were begun by the Americans in 1776, but completed by the British occupation forces (Jenkins 1913:59,84; Frances 1848:18).

Many of the residences in the city's outskirts suffered greatly during the occupation. Due to the British force's enormous demand for firewood for heating and cooking, large sections of Manhattan and its environs were completely denuded of trees. Soldiers also cut down long-established orchards and either razed or stripped buildings. Livestock was officially confiscated or simply stolen. Within the city proper, disastrous fires in 1776 and 1778 left Broadway from Trinity Church (Wall Street) to the Battery in ruins. Trinity and the nearby Lutheran Church on Rector Street had been consumed in the conflagration, and not rebuilt. The British used the buildings of the Dutch, Presbyterian and other "dissenting" denominations as a riding school, stables, prison and hospital (Smith 1972:5,50; Marks 1827:108,110).

When the war was over and American troops reentered the city, they marched from Harlem to Bowery Lane on November 25, 1783, "Evacuation Day." A group of citizens on horseback then rode up the Bowery Lane and met General Washington at the site of present Union Square, immediately west of the project area. From there, Washington led assorted officers, dignitaries and their "suites," as well as citizens on foot and horseback in a triumphal parade into the city, which concluded with a banquet at Fraunces Tavern, and fireworks on Bowling Green (Marks 1827:106).

- Late 18th and 19th Centuries of the Lower East Side and Lower Manhattan

Following the war the recovery of the city was swift, and the need to improve waterfront conditions was apparent. Central to this revitalization was the establishment of new trade routes to China which gave "fresh impulse and energy to American industry" (McKay 1969:5). The China trade and open markets encouraged buying, filling, repairing, and building along the banks of the East River. The accumulation of refuse and natural sedimentation between wharves contributed to the problems plaguing the shipping lanes on the East River. In addition, the build-up of sewage and garbage adjacent to the shoreline was also a major problem for both sanitary and economic reasons. The piers and jetties that lined the crowded waterfront were preventing the removal of debris by the River's natural tidal fluctuations. Although dredging was conducted along the East River beginning in 1785, most of the activity took place in the vicinity of slips and wharves, leaving the channel to fill with debris (Historical Perspectives 1987:23-24). By the end of the 18th century, dredging alone could not keep up with the accumulation of refuse.

In order to address the problem of the lack of dock space, the East River waterfront was filled, expanding the boundaries of Lower Manhattan to South Street. The newly created land along the waterfront in the Lower East Side became the center of the economic life of the city, while the streets further inland were lined with overcrowded tenements. The majority of the commercial activity in Lower Manhattan was directly tied to the fluctuating shipping industry. Along with the many boat builders and lumber yards, iron foundries dotted the many blocks along the shore of the East River. These industrial enterprises were needed for constant ship repairs, as well as boiler and engine work.

During the early 19th century the continued growth of maritime trade made New York the most important port in the United States. Historical documents are full of requests for more docking space including an 1803 letter from Comptroller Strong to the Common Council where he states there is:

> *a great want of accommodations for market boats and coasting vessels . . . there being no public slips between Catherine & Rutgers slips the distance of near half a mile* (Stokes 1918 III: 1403).

The Randel Plan, or Commissioner's Map of 1811, established new roads for Manhattan's unoccupied and newly filled areas along the waterfront. The creation of these roads required extensive filling and grading of the natural topography. The natural topographic barriers around the Collect Pond (e.g., Bayard's Hill and Smith's Hill) were leveled by the end of the 18th century as city expansion pushed north. These hills were cut down

and the material deposited along the shoreline and in low lying areas (e.g., Lispenard's Meadow). In addition, the construction of streets and new buildings, especially those with cellars, provided soil, sand, rocks, and other debris for fill along the shoreline. Another source of fill was the immense amount of garbage generated by the inhabitants of the island.

Many waterfront landowners built narrow private piers at the ends of the newly laid out streets. The area directly adjacent to the waterfront became the location for supplementary shipping activities (e.g., machine works, sail makers, ship's carpenter- tool makers, iron and brass foundries and lumber yards). Between 1800 and 1820 a shipbuilding community was located along the East River from Catherine Street to Corlears Hook (McKay 1969:69). By the mid-19th century most of eastern Manhattan had been filled to South Street, including most of the project area which was previously land under water (Kardas & Larrabee 1977:62).

The War of 1812 brought to a halt the rapid expansion of Manhattan, but did give rise to the New York Stock and Exchange Board which was organized to aid in financing the war (WPA 1982:85). While Wall Street was growing into the financial center that it is today, the waterfront was declining as the boycotts of European trade goods hurt the shipping industry. By 1815 the city limits had reached 14th Street on the West side and 6th Street on the East side, and Greenwich and Bowery Villages were incorporated into the city proper. By 1820 the city in its urban form was established.

The 19th century also marked the start of the decline of the Lower East Side of New York into what was often described as a community of immigrants, tenement slums, and sweatshops. Neighborhoods became characterized by specific ethnic groups and classes, with residences and shops sprinkled on every street, in backyards, and alleys (NYCLPC 1983:27).

Several events occurred toward the middle of the century that had further effect upon the character of the Lower East Side and Lower Manhattan, the first being the influx of new immigrants from European countries. The second was the change in the types of ships that came to New York Harbor. The shift from sail to steam power changed the construction of the large cargo ships. Longer, faster boats were now being used to ship goods in and out of New York. The immense investment in the new shipping was noted by diarist Philip Hone who, in 1850, wrote:

> *I witnessed this morning, at nine o'clock, a novel, exciting, and glorious exhibition. Three steam vessels, of the aggregate cost of more than $1,000,000 were launched in succession from the shipyard of William H. Brown, at the foot of Twelfth Street, East River* (1927: 882).

However, these new ships could not move easily on the East River and many of the narrow piers became obsolete. Increased shipping traffic also amplified the difficulty of docking along the East River. The new longer, and, in many cases broader, ships began to use berth space on the deeper and wider Hudson River on the western side of Manhattan.

By 1870, New York, with over ten thousand vessels moored in the harbor, had been established as one of the world's preeminent seaports (Buttenwieser 1987:56). Shipwrights, riggers, sail makers, merchants, and blacksmiths, as well as lumber yards, and iron foundries were among the many commercial establishments crowding the riverfront. Many of the piers on the East River were once again in terrible condition and insufficient for most ships. City officials grew increasingly concerned with the over-crowding along the East River waterfront. "Made land" was used for new waterfront construction and landowners built long thin piers to allow deep water wharfage to ships. In many areas land was generated at the expense of harbor space.

The growth of the waterfront directly affected development inland. During the 19th century, elegant townhouses were built around Bowling Green. Residents considered the park to be their own private space until it was designated for public use in the 1850s (Latimer 1995:132). Eventually, the residences were replaced by nonresidential structures such as the Produce Exchange and the U.S. Customs House (Ibid.).

While the Lower East Side was growing overpopulated and Lower Manhattan was getting increasingly more crowded, the establishment of streetcars and trolleys, which were eventually replaced by Elevated Trains (els), provided some relief through the disbursement of people to outer suburbs. The 1883 construction of the Brooklyn Bridge, an unprecedented steel suspension bridge, further opened Lower Manhattan to travel to and from Brooklyn. Construction of the bridge resulted in the demolition of dozens of buildings in Lower Manhattan and the rerouting of several city streets. The result was a change in traffic flow in Lower Manhattan, and the creation of a landmark which showcases the East River's waterfront.

- Twentieth Century of the Lower East Side and Lower Manhattan

Both the Lower East Side and Lower Manhattan were directly affected by the wave of foreign arrivals which continued until the 1920s when new federal immigration quotas were put into effect. The early 20th century creation of a subway system in Manhattan, which slowly replaced established els, made it even easier for people to live in less expensive and crowded areas and continue to work in Manhattan, easing some of the overcrowding. These factors caused the number of residents in the Lower East Side to drop from over 500,000 to under 250,000 in less than twenty years. In addition, increased vehicular traffic after the turn of the century prompted the removal of many of the decaying tenements in order to widen roads and create access ramps to the Williamsburg (1901) and Manhattan (1909) Bridges over the East River.

In Lower Manhattan, the Staten Island Ferry, which was in service in one form or another since 1713, was vastly expanded after being taken over by the City of New York in 1905. As the number of passengers increased and ships were enlarged to accommodate vehicles, earlier terminals were expanded. The number of people with relatively easy access to Lower Manhattan allowed for it's transformation from mixed commercial and residential to predominantly commercial. Reflecting this growth, by 1954 a new Staten Island Ferry Terminal was built at the foot of South Street near Whitehall Street (Willensky and White 1988:24).

In contrast, the character and view of the Lower East Side did not change much during the first quarter of the 20th century. However, by the late 1920s many New Yorkers focused on the renewal of this once active waterfront. In January 1929, while the construction of the West Side highway was proceeding, a plan was presented to the Board of Estimate for the construction of a similar road along the East River (Buttenwieser 1987:165). The road was to be built to ease traffic and to create a more aesthetic appearance for the riverfront. Many of the proponents of the new road believed that an attractively landscaped East River Drive would encourage slum removal and rebuilding in the adjacent neighborhoods.

The Lower East Side, however, was still in a state of physical deterioration. During the 1930s the neighborhood around Corlears Hook was the location of some of the most depressed real estate in New York City. The area was replete with disintegrating commercial buildings, boarded-up warehouses, and out-of-date tenements. The East River was bordered with dumps, lumber and coal yards, eroding piers, and the remains of a once prosperous shipbuilding industry (Buttenwieser 1987:165).

Toward the middle of the 20th century a new phase of rebuilding commenced that continues today. The first public housing in the country was built in this area in the 1930s, as the community sought quality of life improvements and affordable residences. The Lower East Side waterfront, once the most flourishing in the world, has only a few docks still in place.

Despite the difficulties experienced on the Lower East Side, throughout this period Lower Manhattan continued to grow as a social, economic, and financial center. City Hall Park and Foley Square became home to municipal State and Federal buildings, while Wall Street became the heart of the New York Stock Exchange. Industries that once characterized this area, were relocated and replaced by larger office developments. Even in the face of the tremendous growth of Lower Manhattan, small sections of it, such as the South Street Seaport neighborhood, have retained their historic character.

OVERVIEW OF LAND-BASED TRANSPORTATION SYSTEMS IN MANHATTAN

The following discussion provides a brief history of land-based transportation systems that were once present throughout the project corridor. Rather than repeat this historical overview in each of the above segregated sections above (e.g., East Harlem, Mid and Upper Manhattan, Lower East Side and Lower Manhattan), this topic has been presented in its entirety below. The potential archaeological visibility of each of these transportation systems will be discussed in the next section, *Previously Identified Historical Resource Types.*

Trolley Lines

Following the creation of a formal street system within the city in the early 19th century, public transportation efforts were initiated. The great network of mass-transit that exists in Manhattan today got its small beginning in 1832 when the first streetcar, drawn by a

team of horses, passed along the streets of New York City. While surface railways were operating in Manhattan in the 1840s and 1850s, these were typically at-grade steam engines which proved hazardous to pedestrian and vehicular traffic, and volatile to human health in general. Horse-drawn streetcars were slow to take hold, but by the 1860s were networked throughout the city. Their popularity was due, in part, to their less officious and more accessible nature. The earliest horse-drawn lines were no more than tracks in the streetbeds which guided horse-drawn cars, and were slowly replaced by a series of other streetcars; first cable-run cars, and later electrically powered cars. However, some horse-drawn lines remained in use in Manhattan through the 1920's - particularly those that served the city's ferries.

In 1868 the first ploughed cable-cars were introduced, powered by long cables of iron and hemp that rested on pulleys which pulled them through the streets at about nine-miles per hour. A plough protruded below the car, passing through a slot between the rails which gripped the continuously-moving cable. These were expensive to operate and only lasted for a very brief period (Jackson 1995:174).

Early electric railway experiments failed because they depended on wet-cell batteries, but by the 1870s efficient direct-current generators were available, and engineers quickly adopted them for streetcar systems. In 1874 Stephen Dudley Field successfully ran an electric streetcar in New York City with power from a stationary generator. At first, power was transferred to the cars by an overhead trolley wire. These types of electrified trolleys were instituted in the 1880s, but following the blizzard of 1888 were abandoned and replaced by electrified tracks (personal communication, Tom Harrington, Curator, New York City Transit Museum, December 15, 1997). The new cars connected to an electrified track laid directly in the street bed in a slot between the two main trolley tracks (Cudahy 1982:11). Only New York City and Washington, D.C. required that trolleys be powered this way.

The earliest horse-drawn cars ran along tracks laid directly in the city streets, the rails of which were capable of holding 35 pounds per yard - a relatively low weight. These tracks were commonly ripped out and replaced since they were not capable of supporting the weight of later cable and electrified cars. The ploughed cable-cars required rails capable of supporting 65 pounds per yard, and the subsequent electrified cars were even heavier which forced earlier tracks to be ripped up and replaced with even heavier weight tracks (personal communication, William Wood, Connecticut Trolley Museum, December 4, 1997). Huge cast iron saddles, typically three to four feet high and yoke shaped, were installed in the streetbeds to support both the trackage of the cable cars and later the electrified cars. Many of these were later modified or modernized; cast-cement models sometimes replaced them.

This popular form of electric street railways spread rapidly until the early 20th century. With the advent of buses, the costs of street-railway maintenance seemed prohibitively high, and hundreds of railway systems in New York City were abandoned during the period from 1920 to 1960 as the age of the automobile took off. As the trolley system was abandoned, saddles within the street beds of Manhattan were either ripped up and replaced, or abandoned in situ and paved over.

Elevated Trains

Other efforts to improve transportation in Manhattan sought to avoid the already congested streets which were crowded with pedestrian, wagon, coach, and rail traffic. Elevated trains were proposed to remove speeding trains from the dangerous street level, and provide "rapid transit" between the northern and southern sections of the city. The first elevated train in Manhattan, the Ninth Avenue El, was actually an overhead cable-powered railway. These elevated cable-cars were replaced by elevated steam locomotives in 1871 (Jackson 1995:174).

The Third Avenue El was opened in the 1870s, and in 1879 the Second Avenue El was opened as far north as East Harlem, connecting this neighborhood with Lower Manhattan and the outer boroughs. These two lines were built by the Metropolitan Elevated Company and the New York Elevated Railroad respectively, which merged in 1879 to form the Manhattan Railway (Stelter 1995:9). With the exception of "ladies mile" which took advantage of advertising in store windows visible to el riders, real estate directly along their smoke-filled and noisy routes was typically reserved for the impoverished. However, surrounding neighborhoods became more fashionable (WPA 1939:256).

In 1902 the Manhattan Railway company electrified their lines, improving air quality along el routes. By 1920 the ridership on the el systems reached its peak, subsequently declining with competition brought on by the newly burgeoning subway system. The late 1920s saw closure to some of the el lines. In 1940 the Second Avenue line north of 59th Street was officially closed, and was demolished the following year. The remainder of the Second Avenue line was razed in 1942 as riding subways and public buses became customary (Stelter 1995:9).

Subway Lines

Following the passage of the state Rapid Transit Act of 1894, New York's first subway line opened in 1904. When subways were introduced, they eventually replaced existing elevated train lines and the even more outmoded street trolleys which serviced the city. Traveling around the city was greatly enhanced. And while the ensuing years of development and refinement of this transportation system opened the doors to what is now New York's rapid transit system, it was not without a bumpy ride.

The opening of the subway in 1904 had profound influence on the sparsely populated areas in northern Manhattan. Plans to relieve urban slums in Lower Manhattan relied heavily on the ease of movement provided by the new subways. With the opening of the IRT, New York's demographics changed, and populations were dispersed and shifted. In fact, the subway system is said to have been one of the greatest impacts on the City's 20th century settlement patterns (Ibid.:IV-1).[2] According to one report,

> *The Progressives, social reformers very public and vocal at the time, wanted single family houses to be erected in these new areas, but the actions of land and building speculators*

[2] For a more complete discussion of New York's subway system see Parsons Brinckerhoff Quade & Douglas, Inc., et al 1991, and Cudahy 1979.

> *brought about the construction of tenement type buildings* (Parsons Brinckerhoff Quade & Douglas, Inc., et al 1991:III-5).

In 1940 the City of New York purchased the IRT and the Second Avenue El was abandoned and dismantled with the promise of a new Second Avenue Subway (Cudahy 1988:118; Stelter 1995:9). Only the Third Avenue El remained in operation on the East Side. The intent was for the Third Avenue El to stay in operation until the planned Second Avenue subway was completed (Cudahy 1988:119). In 1955 all of the Third Avenue El in Manhattan was abandoned - a six mile stretch in the Bronx remained active until 1973 (Ibid.:126). Demolition included yanking the pillars from their foundations (Stelter 1995:109).

In October of 1972 ground was broken at East 102nd Street for the newly approved Second Avenue Subway (Cudahy 1988:150). However, New York City's financial troubles in the 1970s brought a quick halt to construction and excavated tunnels were sealed up and left for future use.

PREVIOUSLY IDENTIFIED HISTORICAL RESOURCE TYPES AND ARCHAEOLOGICAL RESEARCH ISSUES

The NYCLPC has worked towards developing an outline for studying Manhattan's historical archaeological resources. As part of their efforts, potential resources within Manhattan were divided into distinct time periods by resource types. These efforts resulted in the delineation of six different time periods and 16 different categories of potential resources (NYCLPC 1983). The NYCLPC's Draft Predictive Model for Manhattan's archaeological resources examined changing land use patterns, focusing on specific industrial, commercial, and public areas that may be archaeologically visible, and provided recommendations for future research (NYCLPC 1982:4).

The categories developed by the NYCLPC were adopted for this study and are presented below. Resource types are discussed in terms of their potential visibility on the landscape, that is the likelihood that they would have left a footprint discernible to archaeologists, and their research potential. Pertinent archaeological studies illustrating these potential resource types are also discussed for contextual purposes.

Agricultural Land

Much of Manhattan was once used as agricultural land which once stretched from Lower Manhattan north to Harlem in the vicinity of the project corridor. It is highly doubtful that this type of resource would have a high degree of archaeological visibility given the extent of historical development. While there have been cases where buried prehistoric agricultural fields, historical plow scars, and agricultural features did indeed survive beneath later fill, these instances are infrequent, especially in an urban environment.

Commercial

While commercial activity was historically spread throughout Manhattan, earlier ventures were concentrated in Lower Manhattan. The East River waterfront was the hub of a wide

variety of early commercial activities, as evidenced by cartographic and archaeological research in these areas. Archaeological remains at commercial sites vary in type, and potential depth depending on the business engaged in. Resources could include broader features directly associated with the commercial venture, as well as more discrete shaft features, such as wells, privies, and cisterns, necessary for the inhabitants and workers at the site. While the depths of potential resources would have varied with the original deposition, the potential depths of shaft features, such as wells, privies, and cisterns, is discussed below under the *Residential* category.

Archaeological research at Block 31, bounded by Pearl, Wall, and Water Streets north of Hanover Square, recovered landfill associated with a series of water lot grants dating to 1694-95, and some of the earliest commercial activities associated with the waterfront in that area. By the middle of the 18th and the early 19th century, the block was mixed residential with a cluster of chemist/druggists, artists and small scale merchants (Louis Berger & Associates 1987:11). The block was eventually used as brokerages and for warehousing; by the 1820s it was all commercial.

Stage IB subsurface testing performed at the Block 31 site exposed extensive yard deposits, middens, privies, wells, cisterns, and house and outbuilding foundations (Ibid.). The back yard areas, where most of these resources were found, were concentrated within the center of the block. Home lot and commercial activities were reflected in the archaeological deposits, which dated mostly between 1780 and 1820 (Ibid.:4). However, investigations found that archaeological resources along the street fronts were destroyed by late 19th and 20th century construction.

In another study of a parcel directly west of Water Street, field investigations at Block 71 between John, Front, Fletcher, and Water Streets verified the block's commercial history, tying it to the mid-to-late 18th century development of New York City (Soil Systems 1982:2). In 1736 water lots were granted to merchants, and they were filled by 1773. This block was found to be created land located on the fringe of the South Street Seaport Historic District, which is currently on the National Register of Historical Places. Background research chronicled the backyard sections of the lots and determined that this was a predominantly mercantile area with china and glass shops as well as warehouses (Ibid.:5).

Markets are one of the resource types of particular interest in this category. According to some studies of market placement in Manhattan, the location of markets is determined by expected consumer rational and competition between sellers. Most of the markets were located along the edges of Manhattan (Rothschild 1990:56). By 1728 there were five markets in Manhattan, all located along the East River at the ends of major streets, but most of these fell one block west of the APE. It was probably the farmers' need for easy transport of goods into the city that was responsible for the waterside location of markets. In the project area there were markets near Water Street at Old Slip and Coenties Slip, and several other locations (Ibid.:57). By the 1830s the Centre Market had been established near the project site near Centre and Broome Streets, directly adjacent to the Nassau Street Alignment section of the project.

Much of the project corridor traverses areas of early commercial use, especially in Lower Manhattan. Specifically, where the APE crosses former city blocks which were razed

and paved, there is a high sensitivity for this type of resource. Furthermore, discarded material from commercial ventures, including markets, may be found in the nearby landfill, especially in Lower Manhattan (Social Systems Inc. 1982:78).

Residential

Early residences were scattered throughout the island in a number of communities, and frontages were not oriented toward the current street grid. Therefore, remnants of these structures and associated features may be present within the road beds in a number of areas throughout the APE. In addition, after the grid plan was implemented (1811), and city blocks were created, some blocks were developed and then razed for the creation of new streets (e.g., St. James Place) and for street widening or rerouting. These areas are also sensitive for dwellings and associated features, potentially dating from the 17th through 20th centuries.

Archaeological research in Manhattan has shown that residential neighborhoods have the potential to yield important information on former occupants. Although several 18th and 19th century sites have been archaeologically studied in Lower Manhattan (e.g., 64 Pearl Street, 175 Water Street, 209 Water Street, 7 Hanover Square - see discussions under landfill), these do not address the entire borough's general settlement patterns or land use (NYCLPC 1983:14). The expansion of city services to developing areas and the differences in availability to rich and poor or commercial and residential neighborhoods is not well understood. Therefore, residential yards and features throughout Manhattan are considered a potentially important historical resource with regard to understanding the issue of community development and expansion.

Historical archaeological resources relating to dwellings are often preserved in privies, cisterns, wells and cesspools, which in the days before the construction of municipal services - namely sewers and a public water supply - were an inevitable part of daily life. Prior to the availability of potable water, hand excavated wells were dug to serve individual or multiple lots, and sometimes even neighborhoods. Another measure undertaken to provide water for household use was through the collection of run-off from house roofs during rainstorms. Water was collected in cisterns or barrels, and used for purposes not requiring potable water, such as washing (Kieran 1982:31). Also, without piped water to accommodate flush toilets, privies were necessary and these were commonly situated in back yards, and sometimes these were drained into a communal cesspool.

Noxious conditions in the 19th century inspired ordinances regulating the depth and cleaning of privies. A city ordinance passed in 1823 required that privy vaults be constructed of stone or brick, although earlier ones were occasionally constructed of wood. They were also required to extend at least five feet below ground surface (Goldman 1988:45). Lime was placed in vaults to counteract some of the noxious gases, and contents were required to be emptied periodically. After sewer pipes were installed in the street beds, water closets connected to the sewer system were utilized (Ibid.:64). In some cases, earlier privies were retrofitted with sewer pipes to allow for the new system of flush toilets. In 1856 an ordinance was passed requiring that new construction be limited to lots served by sewers "unless a sink or privy was erected" (Ibid.:72). Buildings

constructed on lots without sewers were required to connect their sinks, privies, cesspools or water closets to a sewer so that they could be flushed clean (Ibid.).

Sewer and water pipes were installed throughout the streets of Manhattan at different times, with more affluent areas serviced first (Goldman 1988:36). Between 1846 and 1855, sewers extended uptown to 60th Street on Broadway, and downtown to Battery, from the East River to the Hudson (Ibid.). The poorer sections of the city remained unsewered until the mid-1850s when "the Common Council first ruled that residents must be connected to sewer lines" (Ibid.:39).

Archaeological and documentary research has shown that at numerous sites in Manhattan, these wells, privies, cisterns, and cesspools were continuously used even long after municipal utilities were available. For example, on Block 378 on the Lower East Side in Manhattan, a mid-19th century cistern and drain complex was found buried beneath a two to three foot deep layer of modern demolition debris, and it appears that it was in use for at least a decade after municipal water was accessible (Grossman1995:29). Documentary research for the Block 378 site found conflicting records as to when municipal water was available and connected to structures on the site. Records of the City Council cited the installation of sewer lines in adjacent streets in 1844, while records of the Bureau of Sewers reported them installed in 1891 - 47 years later (Grossman 1994:9).

Reportedly, the Block 378 site was connected to the Croton Reservoir System in 1852 through in-street water pipes, although the system was established in 1842 (Grossman 1994:9; Galusha 1999:30). However, archaeological evidence of the date of abandonment of the cistern post-dates 1864, suggesting that "the actual hookups of potable piped water appears to have not taken place for some twelve years after the water lines were installed in local streets in this areas of the city"(Grossman 1994:9). Excavations on the same block found the privy vault of a post-1901 community water closet (Ibid.:10). Datable artifacts indicated that the water closet was abandoned in the first quarter of the 20th century. Another mid-19th century pit feature was found beneath a later privy feature. This later privy was apparently retrofitted with a drain pipe after its construction, probably connecting it to the sewer (Ibid.).

Further evidence of the use of privies after municipal sewer and water were available is provided on an 1864 map showing the sanitary conditions in the City of New York (Pulling 1864). Pulling's map of the Fourth Ward shows the location of dozens of functioning privies, as well as "privies in an extremely offensive condition, "on individual residential lots, despite the fact that the 1842 Endicott *Map of the Croton Water Pipes...* shows municipal water in the streetbeds of almost every street in this ward (Pulling 1864; Endicott 1842). Of course, it should be noted that the Pulling map covers the area directly south of Five Points, which has been described as the "city's most depraved neighborhood, and in fact, one of the world's worst slums"[3] (Yamin 2001:2). Extensive archaeological research undertaken on Block 160 at Foley Square within this

[3] The Five Points neighborhood was centered at the five way intersection of what are now Park, Baxter, and Worth Streets.

neighborhood encountered many shaft features (e.g., cisterns, privies, cesspools) from the backyards of residential lots.[4]

Neighborhoods to the north, where more residential structures were owner occupied and residents were in a higher economic bracket, may have abandoned their privies as soon as in-street water pipes were available. However, the Pulling map suggests that where tenements and rentals were prevalent (such as the Fourth Ward), lot owners were not necessarily compelled to connect their properties to municipal water and sewer with any expediency.

As indicated by the above discussion, shaft features became convenient receptacles for all sorts of trash, providing a valuable time capsule of stratified deposits for the modern archaeologist. They frequently provide the best domestic remains recovered on urban sites. Truncated portions of these shaft features are often encountered on homelots (as well as commercial and industrial lots) because the shafts' deeper and therefore earlier layers remain undisturbed by subsequent construction. In fact, construction often preserves the lower sections of these features by sealing them beneath structures and fill layers.

The potential depth of shaft features throughout Manhattan is varied, and depends, in part, on the subsurface conditions at the time they were excavated. Wells would have been excavated at least as deep as the water table, and possibly deeper to access potable water. For example, once the water from the Collect Pond in Lower Manhattan was no longer potable, having been declared "stagnant and mephitic" in 1796, deeper wells were dug throughout the city to access clean water (Kieran 1982:31). At Bleecker Street near Broadway, in 1832 a well was bored to a depth of 448', of which 400' was through solid rock (Ibid.). However, this was not the typical depth for wells hand excavated in backyards throughout the city prior to the availability of high pressure steam engines (ca.1815) which allowed for deep drilling. These would typically have extended through soil to the water table, at whatever depth that was encountered, and possibly deeper to access better water.

The anticipated depth of privies is also difficult to estimate, given that subsurface conditions such as soil permeability and the number of households served would have affected the size and depth of vaults. Geismar notes that a possible privy identified at 17 State Street extended 13' below the grade that existed at the time it was constructed, and that this depth coincided with the depth of a privy excavated at the Augustine Heerman warehouse site on the block bounded by Whitehall, Broad, Bridge, and Pearl Streets, also in Lower Manhattan (Geismar 1986:44). As noted above, by 1823 they were required to be at least five feet deep (Goldman 1988:45).

Other commonly occurring, but much more shallowly-buried historical remains include foundations and builder's trenches, which, if a structure did not include a basement, would extend only a few feet below the pre-development land surface. Even more fragile backyard remains such as fence lines, paths, traces of landscaping and sheet midden

[4] *Historical Archaeology*, the Journal for the Society of Historical Archaeology, has devoted an entire edition to the archaeology of Five Points (Volume 35, No. 3, 2001).

scatter can provide valuable data to the archaeologist. However, these fragile resources are easily disturbed by subsequent development episodes.

Governmental (including town halls, court houses, civic centers)

Historically, a number of civic institutions were present throughout Manhattan, but none were immediately identifiable within any APEs. With the exception of the original *Stadt Huys*, or city hall, which once stood near the intersection of Coenties Slip and Pearl Street, Manhattan's municipal center has historically been, and continues to be, situated west of the project corridor and centered around City Hall Park. While archaeological excavations of the Stadt Huys Block provided extensive information on 17th through 19th century Manhattan (Rothschild et al 1987), resources related to Governmental Institutions are not anticipated within the APE.

Military

The military related structures and features identified on the east side of Manhattan largely date to the Revolutionary War period. Public parks and squares were used as parade grounds during this and subsequent periods of military upheaval. Garrisons and forts were scattered throughout the southern section of the project area and were extensive in nature. The wall that once ran along what is now Wall Street, was itself a military feature - designed to keep intruders out of the city proper. Fortifications were reported in the following places near the project area (NYCLPC 1982:94-95):

- Wall Street near Pearl Street (Fly Block House 1689)
- Pearl and Wall Street (Guard house near the Water Gate 1653)
- Pearl Street west of Old Slip (Half-Moon at Burger's Path 1679-1695)
- South side of Pearl Street east of Coenties Alley (Half Moon before the Stadt Huys 1661)
- North and south of the line of Chambers Street across the length of the island (Palisades of 1746)
- Across the island along the north line of Wall Street (The Wall 1653-1699)
- Whitehall Street (Whitehall Battery 1694).

A magazine or powder house stood in what is now City Hall Park between 1747 and 1789, and upper barracks were sited there from 1757 through 1790 (NYCLPC 1982:88). Between 1811 and 1812 additional fortifications, mostly earth and timber works, were quickly mounted. While many of the above military-related features may have not survived the process of urbanization, there is the possibility that associated shaft features may still be present. In contrast, battlefields and sites of skirmishes, (e.g. McGown's Pass north of 99th Street), probably have a low degree of archaeological visibility since they typically did not leave a more substantial footprint on the landscape.

Industrial

Numerous industrial complexes and structures were present in Lower Manhattan in the 17th through 19th centuries. For example, a number of potters were established in Lower Manhattan in the 18th century in proximity to the Collect Pond. While the locations of some of these potters are fairly well established, the exact whereabouts of others are

unknown. It is estimated that these were probably situated west of the project site since the Collect was at least seven blocks away from the project corridor. Other potters were not identified within the project corridor.

Other industries which may have left a visible footprint on the landscape include, but are not limited to, shipbuilders, brewers, tanners, and brick makers, to name a few. Brewers needed deep wells for water, tanners required large storage vats for soaking and processing hides, and brick makers dug out clay beds and constructed large drying racks. These are but a few of the examples of the resource types that may have been located throughout the project corridor, but were more likely located in the Lower East Side and Lower Manhattan sections. Like the category of *Commercial* resources, the anticipated depth and breadth of potential resources associated with *Industrial* sites vary considerably, and must be assessed on a site by site basis. These complexes also have the potential to contain deep shaft features with archaeologically important deposits (see discussion under *Residential*). Nearby in-filled sites may also bare evidence of their discard (Soil Systems Inc. 1982:78).

Institutional Complexes (e.g., colleges, hospitals, mental institutions)

A number of areas with large institutional complexes, or where a number of smaller institutions were clustered over a few city blocks were observed on historical maps and atlases near, but not within, the project corridor. In the northeast corner of City Hall Park, New York's first dispensary stood between 1811 and 1828 (NYCLPC 1990:Appendix L). The city's first alms house (1736-1797), which also stood in City Hall Park, was professionally excavated in the late 1980s (NYCLPC 1990:1). A number of institutions were also located on the Upper East Side between First and Second Avenues at East 64th Street. While these resource types would presumably have a high degree of archaeological visibility, their locations would have to be assessed for potential depth and breadth of resources.

Parks and Recreation

The establishment of parks and recreation sites has been integral to the history of Manhattan. As part of the 1811 Commissioners Plan, the entire island of Manhattan was gridded, and designated park land was established. However, not all designated parks were actually built. Established parks, such as Frederick Law Olmsted's Central Park, provided residents with much needed breaks in the urban landscape, and allowed city dwellers the opportunity to seek tranquility amidst the clutter.

What are currently, or were formerly, city parks are located either within, or adjacent to, the project corridor. These include:

- Sara D. Roosevelt Park between East Houston, Canal, Chrystie, and Forsyth Streets
- Chatham Square (Kimlau Square)
- Peter Minuit Park

While each of these Parks may be considered a valuable resource from other perspectives, archaeologically these parks are not considered to have research potential

either due to their relatively modern dates of establishment (e.g., Sara Roosevelt Park which dates to 1924), or they have been extensively modified throughout their existence. None of these represent and *in situ* undisturbed historic park.

Cemeteries

An ordinance passed in Manhattan in 1830 banned burials south of Canal Street. However, prior to that time, burials were permitted throughout Manhattan. Although there is a low probability that the landmarked African Burial Ground extends into one of the project APEs, there is the possibility that other early grave yards, established prior to the implementation of the 1811 grid plan fall within sections of the project APEs. There is also the possibility that cemeteries established on city blocks post-dating the 1811 grid plan were eventually, in part, incorporated into the streetbeds as roads were widened.

The issue of potentially encountering burials within the APE associated with historic cemeteries is an extremely important one. Therefore, each cemetery identified in the documentary research as either within or directly adjacent to the APE is discussed in detail within the pertinent chapter. Both the potential horizontal and vertical extent of these are discussed.

Docks and Wharves

There is the potential for docks, wharves, and other waterfront features including bulkheads, and cribbing, to exist where the project site traverses formerly inundated areas that have been in filled. Sections of the Water Street alignment cross over land which was once either submerged or shown as wetland/marsh on the 1874 Viele Topographic map, and confirmed on the 1873 Department of Docks map. Historical filling created the roadbeds for thoroughfares which were once actually located along the shorefront, but are now several blocks inland due to subsequent filling. It is possible that historical waterfront features such as docks and wharves are buried in this landfill.

Previous archaeological studies on the wharves and piers of Manhattan have focused primarily on resources dating to the 18th and very early 19th centuries. The mid-19th century transition to the pile driven wharves has not been documented up to this point, leaving a real gap in our knowledge of the history of wharf construction. Piers and wharves which may be located in the project site should be assessed for significance with regards to the type of joinery techniques employed and whether they bear evidence of the effects of utilizing steam driven piles. A more extensive discussion of potential landfill-retaining devices is provided below under the category of *Landfill.*

Fishing

No specific fishing related features are expected in the project area.

Transportation

This category contains three specific types of historical structures which may have archaeological components, and may fall within the Second Avenue study corridor. These include trolley lines, subway lines, and elevated trains (a.k.a. els).

- Trolley Lines

Trolley lines may be present in the street beds throughout Manhattan. The earliest horse-drawn lines were no more than tracks in the streetbeds. Many of these early lines were removed and replaced with electrified tracks in the 1890s. Trolleys powered by overhead wires were instituted in the 1880s, but following the blizzard of 1888 were abandoned and replaced by electrified tracks. By 1899 Second Avenue had an electrified line, while most of Lower Manhattan was still serviced by horse-drawn lines (Landers 1997:map #4).

Although many of the earlier horse-drawn tracks were removed, in some places, such as Fifth Avenue, they remained in operation until buses replaced them. The remains of the later electrified tracks - which consisted of two outside tracks and a third central electrified track - are commonly found throughout Manhattan. Other associated features, such as saddles (yokes), switching boxes, or electrical duct feeder vaults, may also be found beneath the existing pavement. Since many of these lines operated through the 1940s, the earliest systems were often modified and updated with more modern equipment. Subsurface remains of these late-running systems bear evidence of these later modernizations, and little - if no - evidence of their original components.

The archaeological research potential of trolley features has recently come under consideration. Some trolley features are considered more likely to address meaningful research issues than others. According to Tom Harrington, curator at the New York City Transit Museum (NYCTM), the presence of former trolley lines alone is not reason to designate their former routes as archaeologically sensitive (personal communication December 15, 1997). Extensive documentation already exists regarding the routes, technology, and construction of Manhattan's trolleys. Therefore, while later (post circa mid 19th century) tracks found in the streetbeds are not typically considered potentially significant, encountering a feature such as a cast-iron saddle - a support structure for the earliest electrified trolleys, original power conduits, or early (circa mid 19th century) tracks, may be considered important, and a sampling of any such features encountered during the course of any subsequent archaeological testing - may warrant some degree of documentation. Any such documentation would be reposited at the NYCTM (as requested by Charlie Sachs, Senior Curator, May 20, 2002). In addition, the NYCTM has expressed an interest in acquiring a sample (less than 20 feet) of power conduits or early rails, as well as any unique saddles. Therefore, this institution would be contacted for their input regarding curation should any such features be encountered during subsequent subsurface testing for the project.

- Elevated Trains

Els which once ran above some of the APEs date to the late 1870s. When the els were dismantled, all of their above-ground structural supports were removed and recycled. The brick and/or cement footings for structural framework were most likely removed entirely, but at the least were removed above street level. Footings from these piers, which may exist within the APEs were common throughout Manhattan given that these lines covered miles of terrain. Furthermore, as a potential resource, footings can provide

only limited information about the structures they supported. Thus, their research potential is considered minimal, and their locations are discussed in terms of effects to other potential resources.

- Subways

Subways were constructed in one of two ways: by deep-bore tunnels or by shallow excavation more commonly known as the "cut and cover" method (Cudahy 1988:23). Subsurface conditions had a direct bearing on the method employed. In some cases one method was used on one side of a street, and another method was used on the other because of the underlying geology. While the cut and cover method proved unsafe in several instances - more than one accident occurred when temporary covers over open tunnels collapsed allowing pedestrian and vehicular traffic to fall in - it also destroyed any pre-existing archaeological deposits in its path. Because deep boring tunnels usually ran far below the surface and often through bedrock, any pre-existing archaeological deposits located closer to the surface would have remained potentially undisturbed.

Subsurface subway lines are an important element in the development of an urban subway system, but sections of the subsurface lines have not previously been listed by the Transit Authority as archaeological resource property types.

There are several subway lines existing within the APE. The locations and construction of each of these will be addressed within the geographic section of the APE that it falls within. Although not presented as potential archaeological resources, any significant features of these subway lines, including any stations or other features which have been listed on or determined eligible for listing on the State and National Registers of Historic Places or designated as New York City Landmarks, are discussed in a separate report as historic resources.

Reservoir and City Water Systems

Evidence of early private and public wells, in addition to water distribution systems, may exist throughout Lower Manhattan. Although some sections of the project site are considered potentially sensitive for deep wells, extending to level of the water table and possibly much deeper, others are not. In 1687 a system of public wells was established in Lower Manhattan. Closest to the APE a public well was sunk behind the Stadt Huys in 1671 at the intersection of Coenties Slip and Pearl Street, one block west of Water Street (Koeppel 2000:17). Some of these early wells were reportedly at least 36 feet deep (Ibid.:21).

After these public wells failed, in 1774 Christopher Colles proposed to establish a network of Pitch Pine pipes to distribute water. While Colles completed the earthen reservoir and pump for the project, there is no clear evidence as to how much of the piping, if any, was actually laid (Koeppel 2000:49). However, The Manhattan Company did lay pipes through many of the streets in Lower Manhattan in the early 19th century (Ibid.:96). Early piping from this water delivery system, some being hollowed tree trunks, has been recovered beneath city streets.

Until 1842 when the gravity-fed Croton Aqueduct brought fresh water into Manhattan, many of the city residents relied on well water, cisterns, hand-delivered water from off-site locations, and centralized pump stations. The introduction of a reliable water source was met with enthusiasm and piped delivery to sections of the city began in earnest. Concurrent with the need to bring water into the city proper, was the need to dispose of vast quantities of sewage. In response to this need elaborate and massive brick sewer lines were installed in street beds throughout Manhattan during the 19th century. These early infrastructure systems, underlying many of the city's earliest streets in Lower Manhattan constitute a potential historical resource.

Also in this category is the issue of drainage and piping, created throughout streetbeds and on individual lots to control water. Early street drains were trenches built of stone, brick or cement, some with plank bottoms (Goldman 1988:51). These were graded to promote drainage to the city's margins. Open sewers soon turned putrid, and were eventually buried below the street beds. Evidence of these early water control systems could potentially be found in historic street beds, and on historic lots - especially in proximity to the waterfront where shallow water tables were an issue.

Landfill

For the past several decades, archaeologists have focused on research documenting changes in urban landfill and the growth and development of the urban waterfront. These two issues have important implications for our understanding of the process of urbanization. While much of the research on this issue has been undertaken in Philadelphia, Boston, and other waterfront cities, much of the research on these types of sites has been conducted within the boundaries of New York City, centering in Manhattan because of the intensive development currently occurring on the island. Beyond increasing our knowledge of Manhattan's development, archaeologists are also interested in the possibility that information from these archaeological resources might cast light on the process of urbanization in general. This might be done through comparison of data from sites located in different cities and associated with different time periods.

Archaeological research in Lower Manhattan, and particularly in the vicinity of the Water Street section of the APE, has shown that landfill and landfill retaining devices can be a potentially important resource, and differs in content and context from site to site. Additionally, ships were sometimes sunk as landfill between slips and along the shoreline. The Minutes of the Common Council record the stripping of sunken ships to remove valuable fittings and riggings which could be reused (Hartgen et al 1992b:8). In some cases the hulls were intentionally raised from the river bottom, while in other cases they were left as fill. Ships and their associated artifacts found in this context are often well preserved and can provide information of significant historical value regarding the shipping and mercantile industry.

The following sites with evidence of landfilling have been archaeologically investigated in Lower Manhattan in proximity to the Second Avenue Subway APE (note: most of these sites also bore evidence of *Residential* and/or *Commercial* activity.).

175 Water Street. In their early 1980s study of the 175 Water Street site (Block 71 bounded by Burling Slip, and Water, Front, and Fletcher Streets within the APE), Soil Systems, Inc. (1981,1983) concluded that this block was filled between 1730 and 1766-67. Archaeological deposits were found beneath the foundations of structures which stood on the block in the 19th and 20th centuries. Despite historic documents indicating that filling was completed by 1755-56, filling was, in fact, an on-going process that was probably completed after 1754 (Soil Systems Inc. 1983:692). Land west of 175 Water Street (within the APE at Water Street) was reportedly filled between 1660 and 1730.

The archaeological study of this block found that the process of land filling was complex and on-going, and that numerous primary and secondary fill episodes support this. Primary fill was noted as "trash and harbor-related accumulation" (Soil Systems Inc. 1983:706). Its matrix was composed of black to gray silt and sands, replete with cultural material. The presence of a late 17th, early 18th century merchant ship, and wharf/grillage provided evidence of retaining devices employed to create the block (Ibid.:685, 702). Secondary filling in a subsequently-built cofferdam box, dated to ca.1790-1820, was believed to have been employed to eliminate stagnant water (Ibid.:693).

Telco Block. In a documentary study of Block 74W, the Telco Block, located between John, Front, Fulton, and Water Streets (within the APE), the earliest episode of filling was found to date between 1732 and 1735 (Soil Systems Inc. 1980:42). This block lies within the South Street Seaport Historic District, which is currently on the National Register of Historic Places (Soil Systems 1982:2). Deeds, maps, and water grants were tracked through the 18th and 19th centuries to establish potential filling episodes, which continued for several decades (Ibid.:43). Excavations found numerous brick, stone, and wood features indicative of 18th century use. A final level of red-brown sandy silt was underneath the fill (Ibid.: Figure 3.3).

Schermerhorn Row. As part of the archaeological study of the Schermerhorn Row block, located between Fulton, Front, John, and South Streets, Kardas and Larrabee undertook an extensive review of fill retaining structures utilized in Manhattan dating from the 17th through 19th centuries (Kardas and Larrabee 1991:26). Their analysis of changes in the types of fill-retaining devices utilized over time concluded that 17th through mid-18th century structures tended to be wooden, and used more logs. These were frequently placed in horizontal layers, with each layer at a right angle to the one below it, and they exhibited "great variability in design and execution" (Ibid.).

Kardas and Larrabee report that in the late 18th century and early 19th century more open "cell-like" structures with modules were employed, as these could be easily assembled as needed (Ibid.). A solid layer or platform of logs created a floor, and "above these was an open grid of logs running in alternate directions, notched or fastened together with some cross bracing" (Ibid.:26). Finally in the second quarter of the 19th century, steam-powered pile drivers enabled advances in waterfront construction. Long vertical pilings could be driven to further depths than were previously allowed.

At the Schermerhorn Row site, primary landfill consisted of a retaining structure of large logs to provide cribbing, and landfill - consisting of large and medium-sized rocks placed around and over the cribwork. Within this was a dark gray to black muck with some clay, topped by a thin lens of oyster shell in black muck in some places (Kardas and

Larrabee 1991:277). On top of the timber cribbing was a stratum of reddish brown land, designated as secondary fill, which was presumably placed directly after stone foundations were built (Ibid.:278). Final fill levels were encountered within cellars, and represent discrete deposits within each structure that once stood on the block (Ibid.:280). The water level was encountered at about six to seven feet below grade (Ibid.:279).

55 Water Street. Archaeological salvage excavations were completed within Block 32 directly east of the APE, just south of Old Slip between Water and Front Streets, when a building was constructed at 55 Water Street (Huey 1984:17). In addition to the extensive trove of artifacts found in the remaining landfill within the block (most of the block has been affected by foundation excavations and little remained by the time archaeologists were permitted to proceed), the original log crib footing under the northeast end of Cruger's Wharf, dating to 1740, was visible (Ibid.:18). Cribbing extended 175 feet southeast from Water Street along the original line of Old Slip. Artifacts within the landfill were able to address issues regarding colonial trade patterns and waterfront development (Ibid.:23).

Block 31. Archaeological research at Block 31, bounded by Pearl, Wall, and Water Streets and by the south lot line of Lot 11, revealed that the site possessed landfill associated with a series of water lot grants dating to 1694-95, and some of the earliest commercial activities associated with the waterfront in that area (Note that this block is located on the west side of Water Street, just outside the APE.). By the middle of the 18th century and into the early 19th century, the block was mixed residential, with a cluster of chemists/druggists, artists and small scale merchants (Louis Berger & Associates 1987:11). The block was eventually used as brokerages and for warehousing; by the 1820s it was all commercial.

7 Hanover Square. Nearby at 7 Hanover Square, documentary research tracked the granting of waterfront property on Block 30 between Coenties Slip and Old Slip, and Pearl and Water Streets (directly west of the APE). Here, water grants were administered for the area about 9.5' west of Pearl Street between 1686 and 1694, and these were extended to low water mark (Water Street) in 1697 (Rothschild and Pickman 1990:I, 2). Excavations of these filled lots at Hanover Square encountered both domestic artifacts and structural remains, as well as evidence of landfilling (Ibid.:283). In contrast to the wood landfill retaining devices encountered further east, landfill to create this block was deposited behind stone walls which were also used as structural foundations.

209 Water Street. At the 209 Water Street site, located on the block between Water, Front, Beekman and Fulton Streets near but not within the APE, the partial remains of a ship were excavated (Henn 1978:3). Initially, wooden cribbing was encountered, but further investigations found this to be the frame of an 18th century ship (Ibid.). The outer hull of the ship was identified by the presence of horsehair and tar, applied to prohibit worm infestation. The lack of metal objects on the ship suggested that it was stripped of reusable material prior to sinking or abandonment (Ibid.:4). It is postulated that the ship was sunk as fill or to function as cribbing during the filling process. The ship apparently extended eastward and, if intact, may actually lie, in part, beneath Water Street on the block north of Fulton Street (Ibid.). This falls just outside of the APE. Filling at the site was datable to the period between 1755 and 1767.

Peter Minuit Park. In 1999 archaeological excavations in Peter Minuit Plaza identified one *in situ* landfill retaining structure at 5 to 9 feet below current grade (Louis Berger 2000:44). Only a limited extent of a cobb-type wharf structure was uncovered in one extended pit in the initial testing phase; no vertical guideposts were located. From the documentary sources it appears this structure was built between 1734 and 1776. Small and restricted intact layers of original eighteenth century fill deposits were recovered from one area directly above the retaining structure (Ibid.). Cultural material (identified as land-side trash rather than shipboard refuse) was also recovered from what appeared to be the river bottom at the relatively shallow depth of 5.4 feet below current grade.

Because so much work has already been done by professional archaeologists towards documenting the general filling process in Manhattan, many research issues appear to have been adequately addressed. Moreover, the various archaeological sites researched have, to some degree, demonstrated similar characteristics in terms of the technical aspects of land creation and the types of fill used in the process. Regardless, historic fill may still contain evidence of early lifeways in Manhattan, and is considered an important archaeological concern unless documentary studies conclude that it is of fairly modern origin (late 19th and 20th centuries).

Other (unimproved or wooded areas, marsh)

While these areas were identified by the NYCLPC, the question of archaeological visibility must be considered. As a resource, they should be considered only moderately important, and only minimally visible. However, identifying their former locations on the landscape is crucial toward establishing precontact sensitivity (See Chapter 2).

Churches

This category was not on the NYCLPC list but was added for this research as a possible indicator of pre-1830 cemetery lots. After the city's cholera and yellow fever epidemics of the early 1800s, in conjunction with the rapid spread of the population and the introduction of the "cemetery as a park" concept, larger cemeteries were concentrated in the outer boroughs. Prior to this shift, and even for some time afterward, cemeteries continued to be established in Manhattan. Earlier burials were often on family estates, in potters fields in various sections of the city, and within the confines of the church yard.

There were numerous churches throughout Manhattan, serving the diverse neighborhoods and populations. Early 18th century churches tended to be situated inland, in the center of Manhattan, rather than on the shoreline (Rothschild 1990:47). This pattern continued through the late 18th century, but as the city grew their placements became more spread out. Within several of the APEs, cemeteries were established within adjacent city blocks, but later street widenings may have caused them to become, in part, encompassed within the project corridor.

Although each site type is discussed above, some resource types are not found within any of the APEs. In the following chapters, the sensitivity of each APE for these types of resources is addressed.

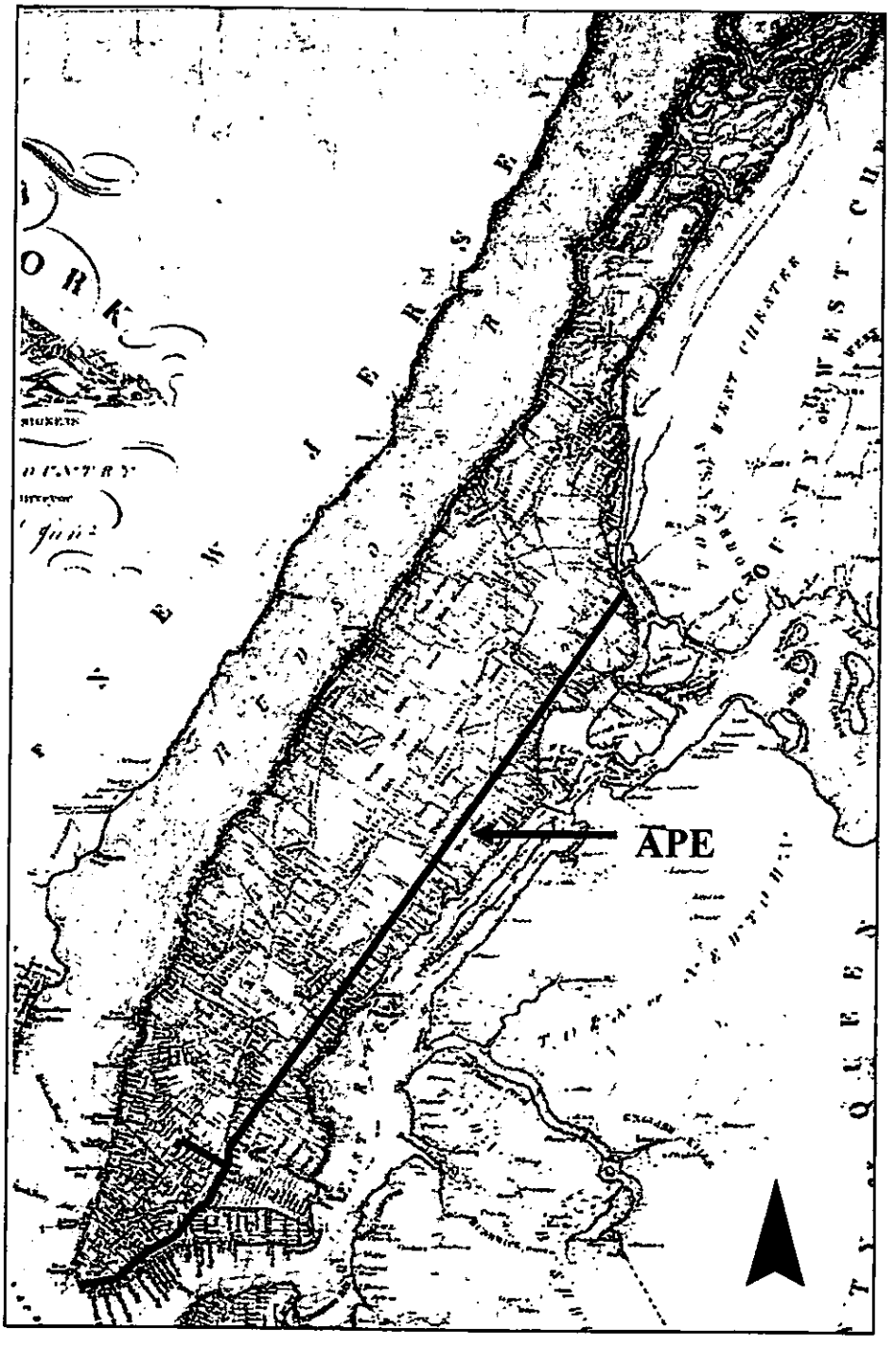


FIGURE 3-1

The City of New York as laid out by the Commissioners with the surrounding country. Randel 1814.

No Scale

4.0 SECOND AVENUE ALIGNMENT ARCHAEOLOGICAL RESOURCE EVALUATION

4.1. HARLEM RIVER TO EAST 125TH STREET

4.1.1 Study Area Description

The project may involve excavation of a tunnel segment for train storage between the Harlem River and East 125th Street under Second Avenue. It may also involve shaft or staging sites off the street in this area. Such sites were evaluated at the shoreline side of the Harlem River Drive at Second Avenue, and west of the Second Avenue roadbed, on Blocks 1793 and 1791. In addition, dredging in the Harlem River may be undertaken for barging operations at Shaft Site A. Therefore, the APE for this section is the Second Avenue roadbed from the Harlem River south to the northern-most boundary of East 125th Street, from building line to building line, and includes the locations of the potential shaft sites on Blocks 1793 and 1791.

This area impinges on Second Avenue and six current city blocks which, before the Harlem River Drive was constructed, were once nine blocks. When the Drive was built in the 1950's, three blocks were numerically consolidated into other blocks (1794 became part of 1793, and 1805 and 1804 became part of 1803). The nine former blocks are, from the Harlem River shoreline to East 125th Street west of Second Avenue: 1794, 1793, 1792, 1791, 1790, and east of Second Avenue: 1805, 1804, 1803 and 1802. The old block numbers will be used through this section, as it is easier to differentiate blocks that have since been consolidated (Figure 4.1-1). Four shaft or staging sites were evaluated in this area, Shaft Sites A, B, C and E. Shaft site A is located at Second Avenue and Harlem River Drive in former Blocks 1794 and 1805. Shaft site B is located on Block 1793 just north of East 128th Street on the west side of Second Avenue. Shaft Sites C and E are tangential and are located on Block 1791 between East 127th Street and East 126th Street, west of Second Avenue. Blocks 1792, 1804, 1803, and 1802 do not fall within the Second Avenue APE, but will be referenced since activities on these blocks had an effect on the areas within the APE.

4.1.2 Existing Conditions

4.1.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

The project corridor in this area was formerly flatlands called Muscoota by Native Americans. This region, which lies between the Harlem River and Morningside Heights northwest of what was once Harlem Creek, was surrounded by swamps (Rubinson 1989:3). "Rechgawanes" is reported by Grumet as the name of a point of land along the western shore near the confluence of the East and Harlem Rivers, and along an obliterated stream that roughly corresponded to the route of East 125th Street (1981:46). This tract could have extended into the current project corridor.

In this section of the project area, the Wickquasgeck trail ran several blocks to the west through what is now Central Park. An Indian Path veered off this trail at East 110th Street near Fifth Avenue, and headed northeast towards a habitation site on the Harlem River near East 124th Street. This Amerindian Trail was incorporated into the first road system of the village of Harlem. Passing through the meadows of Muscoota to the area called Conykeekst, it crossed First Avenue at East 124th Street and Second Avenue at East 121st Street within the project corridor (Bolton 1922:72,74-76). Arrowheads and flakes were found in East Harlem in 1855 during the excavation of a cellar on Avenue A between East 120th and 121st Streets (Riker 1904:123). Bolton concluded that this was either a fishing place or an intermittently used place of landing or trading (Bolton 1922:72).

NYSM Site #4063 was reported within a mile south of this section of the APE. Identified by Arthur C. Parker, this village/camp site was described as "...one of larger camps or fishing places of the Reckgawawancks...." (Parker 1920:26). He further characterized it as a "...camp or fishing place ....at Montagne's Point... on shore at Hellgate, just off 110th Street" (Ibid.). The site's boundaries and location are unknown, but it may have extended west into the vicinity of Second Avenue near East 110th Street.

Archaeological Potential

There is no precontact archaeological potential for the section of the APE outboard of the shoreline, in the Harlem River where dredging is proposed. The Harlem River Channel has been periodically dredged for a period of over a hundred years. Therefore, even if there may have once been precontact resources along the shoreline, they would have since been disturbed or removed.

Within this APE only the southern half of Second Avenue, from about East 128th Street to East 125th Street, was depicted as dry-land on topographic maps depicting conditions prior to development. However, water levels have fluctuated over the past few thousand years, and it is quite possible that what was under water 500 years ago, was dry land much earlier. The APE was portrayed as drained land on historical maps and atlases, with a marshy area along the shoreline that was farther inland than it is today. As such, sections of the APE may have been conducive to precontact living, providing a habitat of rich faunal and floral resources. As undulating meadow area, in close proximity to a knoll near East 125th Street between Second and Third Avenues, it would have been suitable for prehistoric settlement. Some historic maps portray a pond at Second Avenue and East 125th Street (Commissioners 1811, Figure 4.1-2) that may have been a source of fresh water. Therefore, this feature would have also made the area favorable to settlement.

The northern portion of the APE (from East 128th Street to what is now the Harlem River shoreline), and the APE for Shaft Site A, would have been completely under water in the late precontact period. Only a very small portion (the southwest corner) of Shaft Site B was depicted as dry land. It is unlikely that the shoreline itself would have been a living

area, as it most likely would have been marshy to a certain extent. However, it would have been a rich source of faunal resources. Shaft Sites C and E, on Block 1791, also could have precontact potential (Appendix 4.1.7.1).

For these reasons, precontact archaeological resources have a high potential of being present within the Second Avenue APE and near the locations of Shaft Site A and B (Figures 4.1-8a and 4.1-8b). Shaft Sites C and E have precontact potential (Figure 4.1-8c). It is possible that any precontact resources would have been buried beneath historic landfill, which may have served to preserve and protect any resources. However, the Harlem River also underwent periods of dredging to make a shipping channel during the historical period, and this may have resulted in disturbance. Nevertheless, soil borings indicate peat at 23.5-33' below surface, an indicator of a precontact estuarial environment (Soil Borings WPA IV:4:61, 1940; WPA IV:5:92-96, 1940). This indicator of precontact use suggests that habitation sites may be found in close proximity to the former marshland.

4.1.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

One previously inventoried historical site is located about a mile southeast of the APE. OPRHP number A061-01-0146, the Gracie Mansion site at East 90th Street and the East River, is noted as one of the first American fortifications. This appears to be same entry for site NYSM #31, reported in a New York Archaeological Council (NYAC) inventory document by Susan Kardas in 1978 as "Horns Hook" at Karl Schurz Park. Kardas writes in a very general overview that the historic site related to the Revolutionary War period but was never professionally excavated.

In addition, Historical Perspectives, Inc. conducted Stage 1A and 1B investigations for the East River Plaza Project in 1988, located approximately two blocks east of the APE, at the East River and East 116th to East 119th Streets (Survey #32). Stage 1A investigations revealed the possibility of the presence of late 19th century historic remains related to two-story brick buildings that stood until sometime between 1951 and 1976. However, due to disturbance from grading, only the remains of mid-20th century features were identified during Stage 1B investigations. Artifacts recovered from fill reflected a date range from the 19th century (ironstone whiteware) to the late 20th century (modern water bottles) within the same stratum.

Archaeological Potential

Historic archaeological resources can take many forms, but those most likely to be preserved included shaft features such as privies, wells, and cisterns, as well as building foundations. Shaft features often survive through later disturbances, because they are cut deep into the ground. They are particularly informative because during or after use, they are used as depositories for rubbish, including bone, ceramic, glass, and metal. If conditions in the shaft are appropriate, normally perishable materials such as leather,

cloth and wood may be preserved. Fill from these shaft features can also provide ecological and dietary information from items such as pollen or seeds.

Documentary research concluded that two areas in this section of the APE were found to be potentially sensitive only for the resource category of *Residential* (Chapter 3; Appendix 4.1.7.1). Two areas with this APE may be particularly sensitive for this resource type. Shaft Site B on Block 1793 has the potential to yield privies and/or wells with evidence of domestic occupation, as it was formerly the site of a row of residential structures from the latter half of the 19th century, and has only experienced some subsequent shallow disturbance (Appendix 4.1.7.1, Figure 4.1-8b). Shaft Site E on Block 1791 is similarly sensitive, and many of the residences stood there through the second half of the 20th century without disturbance (Figure 4.1-8c). Specifically, within the APE, Lots 6 through 20 had substantial back yards and Lots 21 through 24 were open in the 19th century. By 1911, Lots 21 through 24 had structures, but still had back yards. All structures had basements.

Another potential residential resource is a group of outbuildings associated with the Ingraham estate that once stood in what are now Blocks 1803 and 1804 between East 127th and East 126th Streets east of Second Avenue (Figure 4.1-8a). Although the main house would have been outside the APE, there were outbuildings indicated on historic maps that appear to fall within the Second Avenue footprint (Randel 1820; Dripps 1851). It is not clear whether utilities construction or construction of the Second Avenue Elevated stanchions in the Second Avenue road bed would have created disturbances to these resources.

Shaft Site A, which lies directly along the Harlem River shoreline spanning both Blocks 1794 and 1805, has no early historical potential since it was land under water until the latter half of the 19th century. After it was filled, it has been used solely for industrial purposes. Shaft Site C on Block 1791 also has virtually no historic archaeological potential, as it was utilized as a stable and then a garage, neither of which would contribute meaningful data toward research issues.

4.1.3 Summary of Archaeological Potential

Second Avenue

Precontact resources, if they are present, are estimated to exist between about 20 to 25' below the surface or deeper on Second Avenue from the Harlem River to East 125th Street. Historic resources that may also be present in the APE include the potential remains of outbuildings (such as foundations) and associated shaft features (wells, privies, cisterns) from an early to mid 19th century historical farm between East 126th and 127th Streets. The outbuilding remains would probably be shallow deposits, but it is not clear from map research whether these would be within the Second Avenue footprint or just outside it, and therefore whether they would have been subject to utility construction disturbances in the road bed. Privies or wells, if they were in the region of the

outbuildings, would be substantially deeper, extending from the surface down to at least 15' below grade.

Shaft Site A, Block 1794

It is likely that previous construction in this area would have compromised potential historical resources that had limited potential regardless. However, early precontact potential exists. These potential precontact resources could exist at about 25' below surface, suggesting that if effects occurred within this area, they could potentially disturb *in situ* resources.

Shaft Site A, Block 1805

Soil borings within this APE indicate the presence of shell and peat, suggesting that early precontact resources may lie between 15' to 25' below grade. However, this APE was found to lack historic archaeological potential. Outboard of Shaft Site A, the Harlem River bottom also lacks archaeological potential due to prior disturbance.

Shaft Site B, Block 1793

Construction of a shaft at Shaft Site B may cause effects to potential historical resources, such as privies and wells associated with mid 19th century residential structures, since the upper levels of these are likely to be no more than 10-15' below grade. Early precontact resources may also be affected, depending on the depth of the shaft. These are anticipated at a similar depth.

Shaft Sites C and E, Block 1791

Construction of a shaft on Shaft Site E could cause effects to potential historical resources, such as privies and wells associated with mid 19th century residential structures, since these are likely to extend from the surface down to at least 16' below grade, and possibly deeper if wells were excavated to reach potable water. Shaft Site C is unlikely to possess historical resources, so the project would not result in effects to potential historical resources on this site. However, effects to either site could affect possible precontact resources, both early and late, which may be located below the 16' of fill reported on this block, but would only be located to about a depth of 21' below grade.

4.1.4 Proposed Project Effects

For Second Avenue between the Harlem River and East 125th Street, cut and cover excavations to build a wide tunnel area for train storage are proposed to extend from the surface down to 50 feet below grade. In this scenario, potential precontact resources would be affected between 20-25 feet below grade for this entire APE and potential mid-19th century farm-related features between East 127th and East 126th Streets would be affected. These historic resources could potentially exist from the surface down to 15 feet below grade.

Based on a review of proposed construction plans (SYSTRA March 1, 2002), Shaft Sites A, B, C, and E may be affected. At each of these shaft sites, excavations may entail affecting an area of approximately 30 by 50 feet in size from the surface down to at least 50 feet below grade. In addition to this, there may be a staging area covering between 40,000 to 80,000 square feet. On Shaft Site A, Block 1805, this would affect potential precontact resources that may exist between approximately 15 and 25 feet below grade, except for the portion of the site within the Harlem River, which does not possess archaeological sensitivity. On Shaft Site B, Block 1793, this would affect potential precontact resources which may exist from the surface down to about 15 feet below grade, and potential mid-19th century domestic features at the same depths. At Shaft Sites C and E, Block 1791, potential precontact resources would be affected, which are estimated to lie between 16 and 21 feet below grade. Potential mid-19th century domestic features on Shaft Site E would also be affected from the surface down to approximately 16 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.

4.1.5 Recommendations

There is a possibility that this section of the APE was utilized at some time during the precontact and contact periods. Although the likelihood that resources would have survived the 19th and 20th century development of this part of the APE is considered moderate to minimal, there is a possibility that undisturbed pockets of the precontact and contact landscape may remain beneath deep levels of fill observed in soil borings from Second Avenue.

While the probability of finding intact, significant precontact or contact period resources eligible for inclusion on the National Register of Historic Places is remote, the scant possibility should be corroborated, if possible, by evidence from additional soil borings and/or subsurface testing, since proposed construction would potentially affect resources on Second Avenue and at Shaft Sites A, B, C, and E. The possibility that *in situ* precontact and contact period resources may exist in this part of Manhattan dictates further investigation of subsurface conditions. There is also a moderate to probable expectation of encountering intact, significant historical-period remains beneath the roadbed and sidewalks that line the APE where historical structures were noted.

Since the initial review of soil borings indicates potential precontact or historic sensitivity, a subsurface testing plan will be warranted to test these potentially sensitive

areas. 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, particularly since water table depths are not available north of 126th Street, but cannot always substitute for field verification.[1] Following the review of soil borings, some sites 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 prepared in consultation with SHPO. It is expected that the additional documentary research will aid in the formulation of a specific subsurface testing plan.

Where subsurface testing is indicated, its goal would be to establish the presence or absence of cultural resources, their horizontal and vertical extent, site integrity, and, their 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 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.

4.1.6 Figures and Photographs

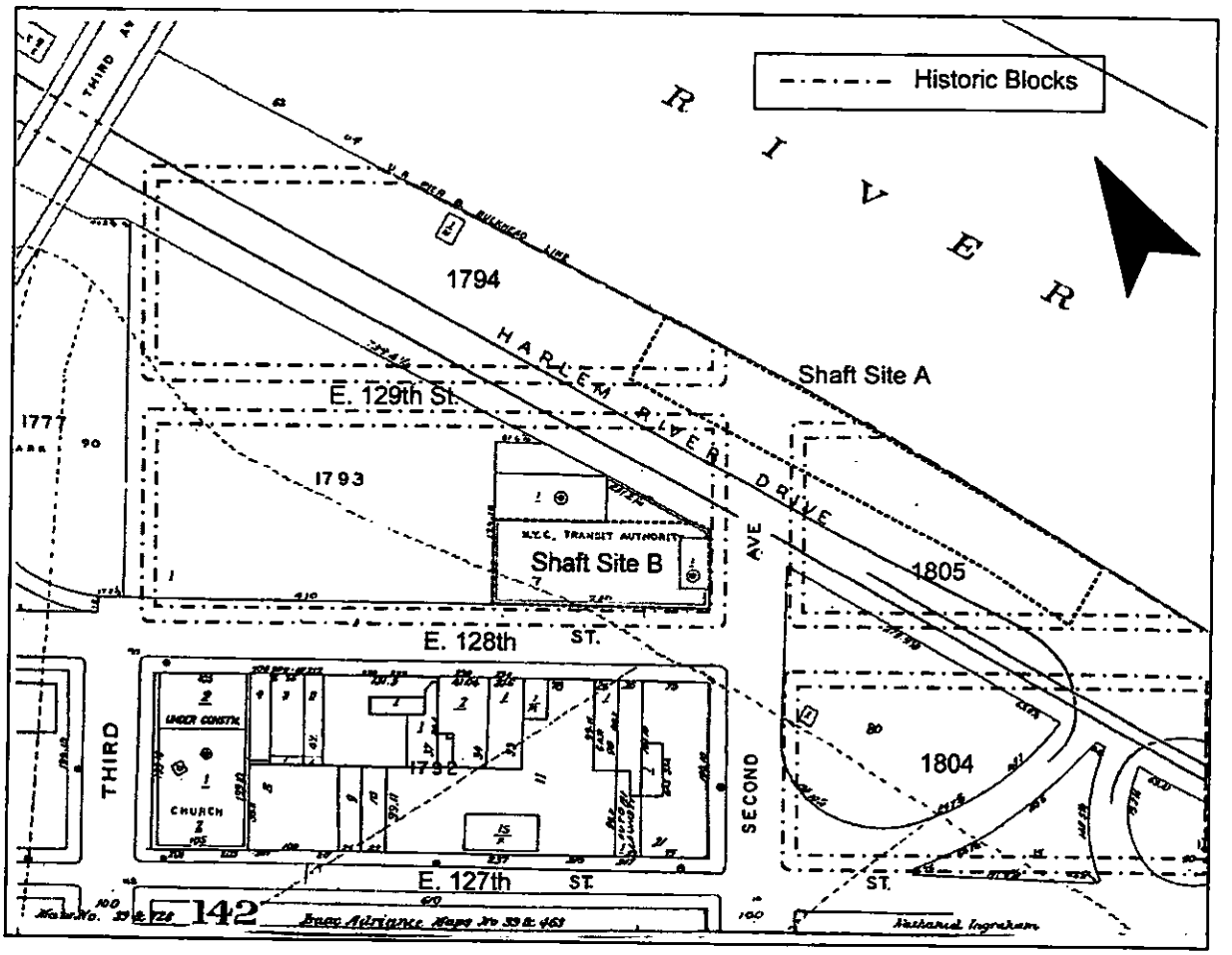


FIGURE 4.1-1

Diagram of Historic Block Numbering.
Second Avenue from the Harlem River to East 127th Street.

Approximate Scale: ½ inch = 100 feet

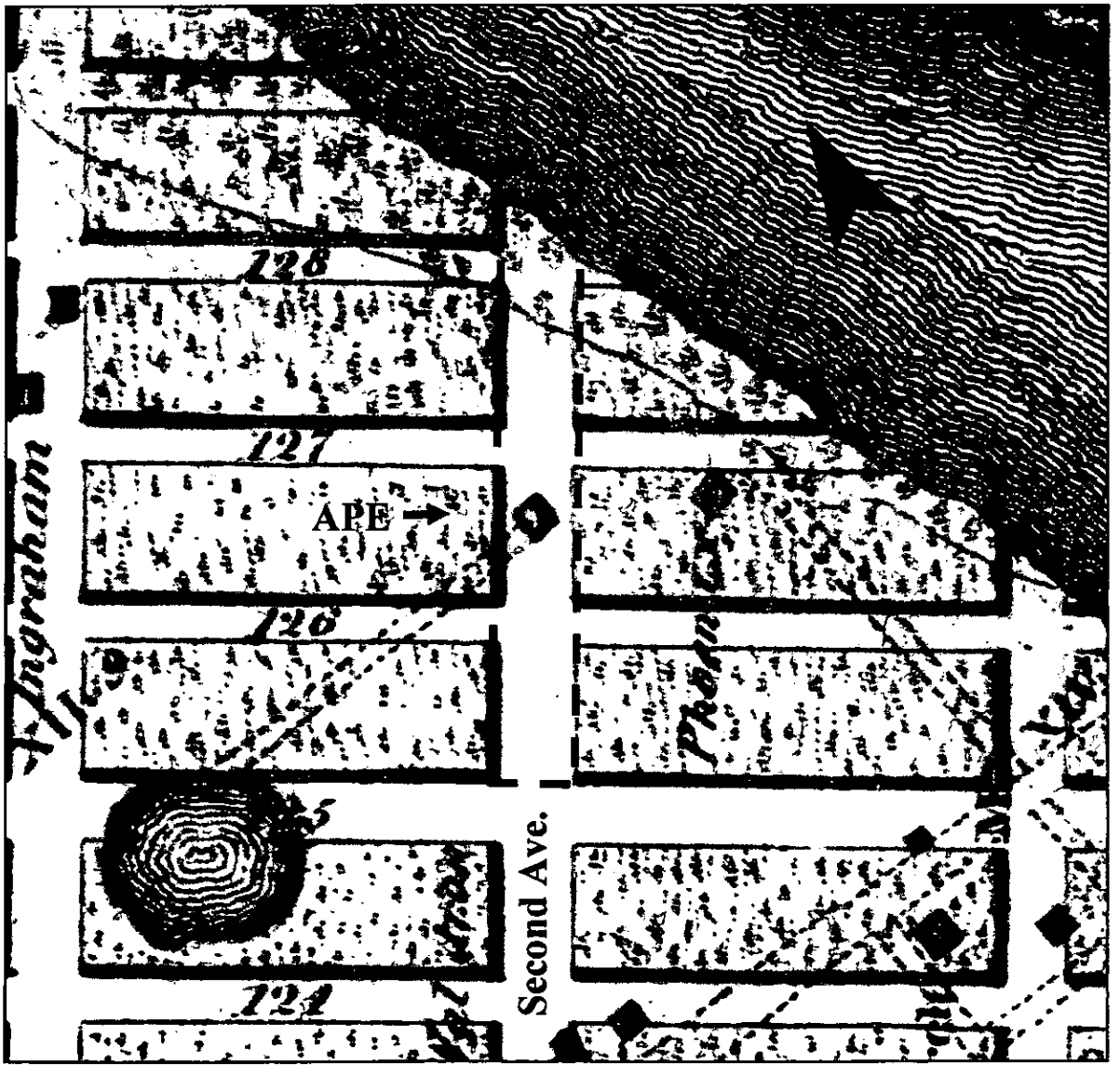


FIGURE 4.1-2

Map of the City of New York and Island of Manhattan as laid out by the Commissioners. Second Avenue from the Harlem River to East 125th Street. Bridges 1807-1811.

Approximate Scale: ½ inch = 100 feet

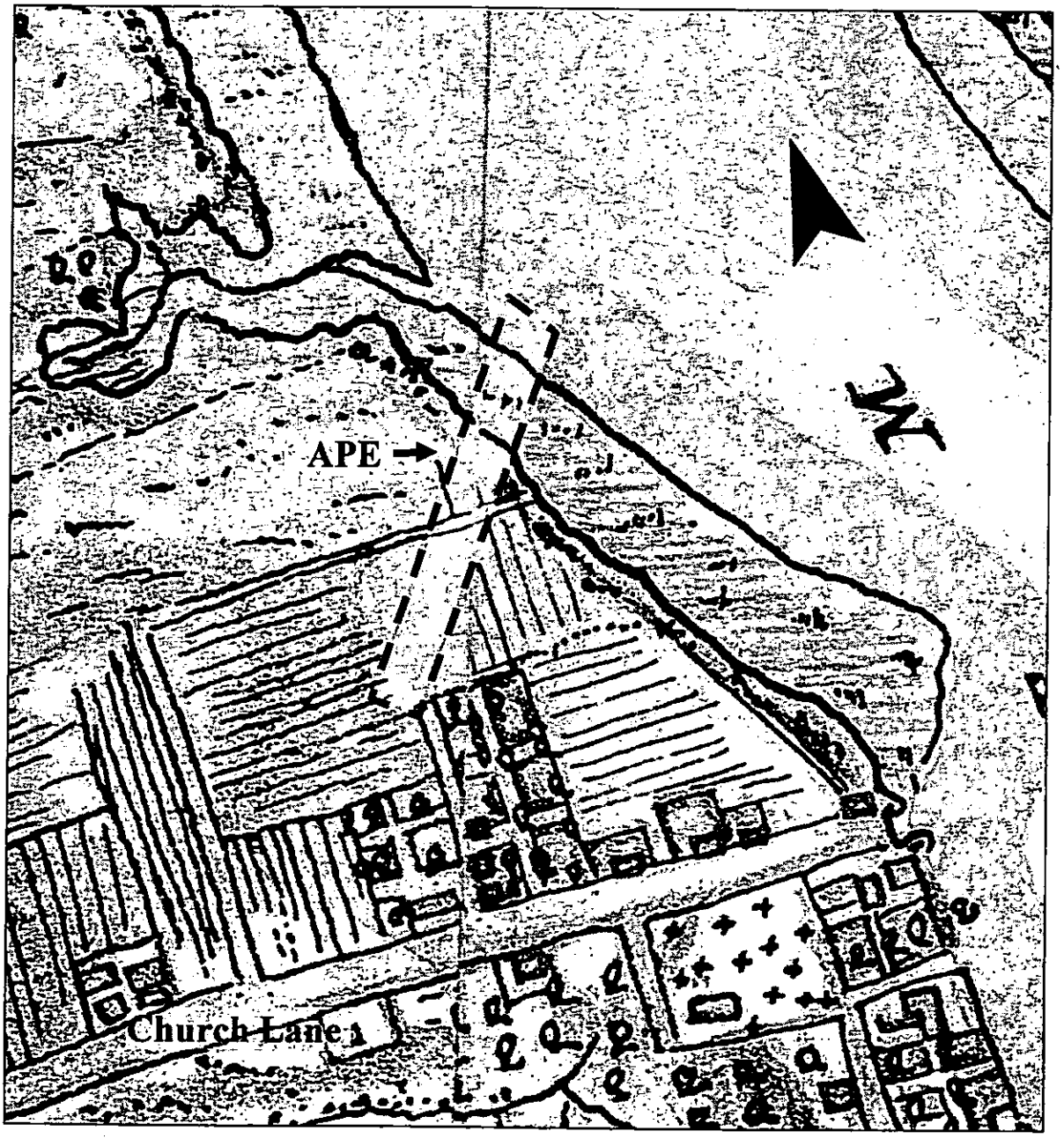


FIGURE 4.1-3

British Headquarters Map. 1782.
Second Avenue from the Harlem River to East 125th Street.

Approximate Scale: 3/8 inch = 100 feet

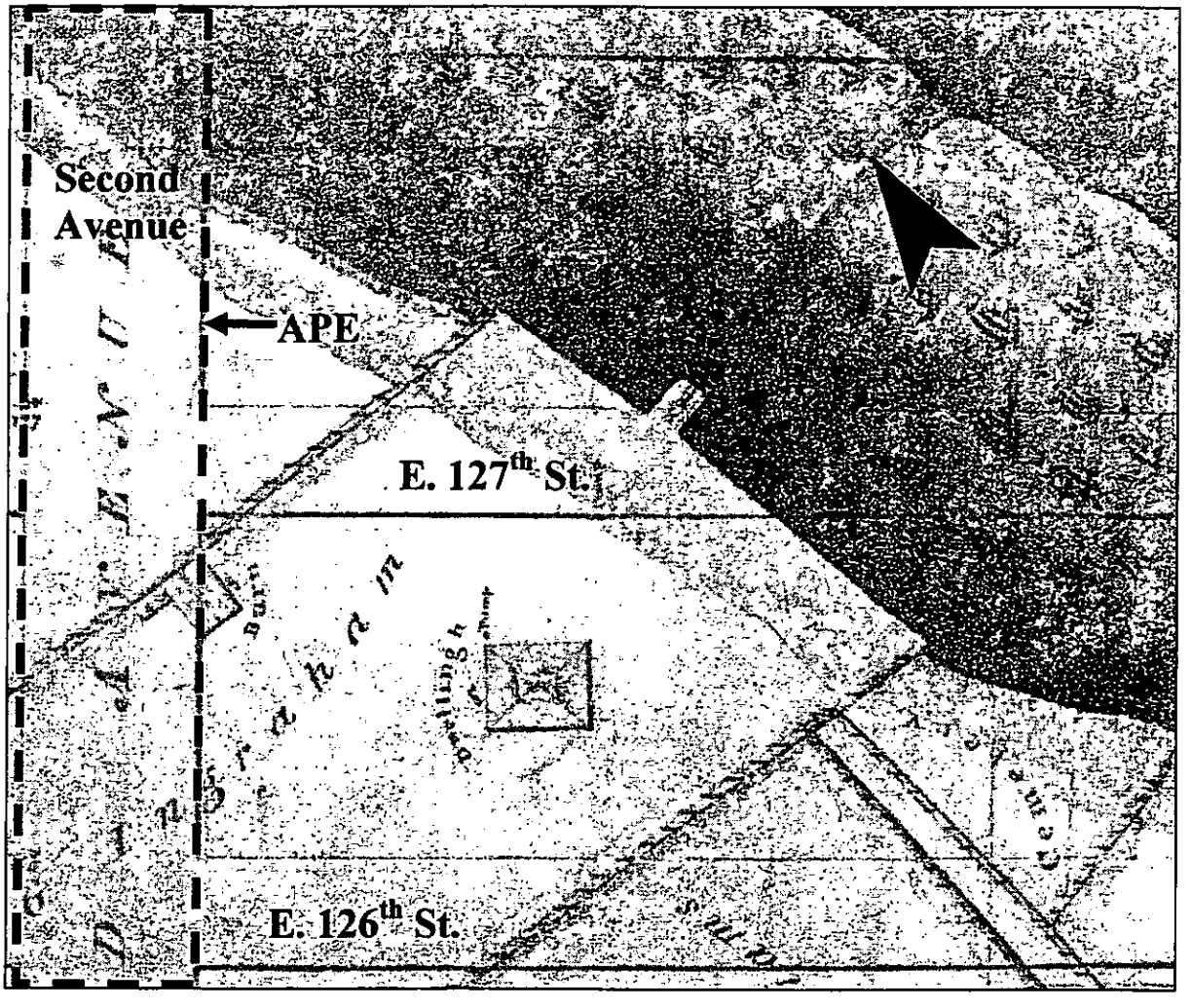


FIGURE 4.1-4

Farm Maps. Ingraham Estate. Second Avenue between East 127th and East 126th Streets. Randel 1820.

Approximate Scale: 1 inch = 100 feet

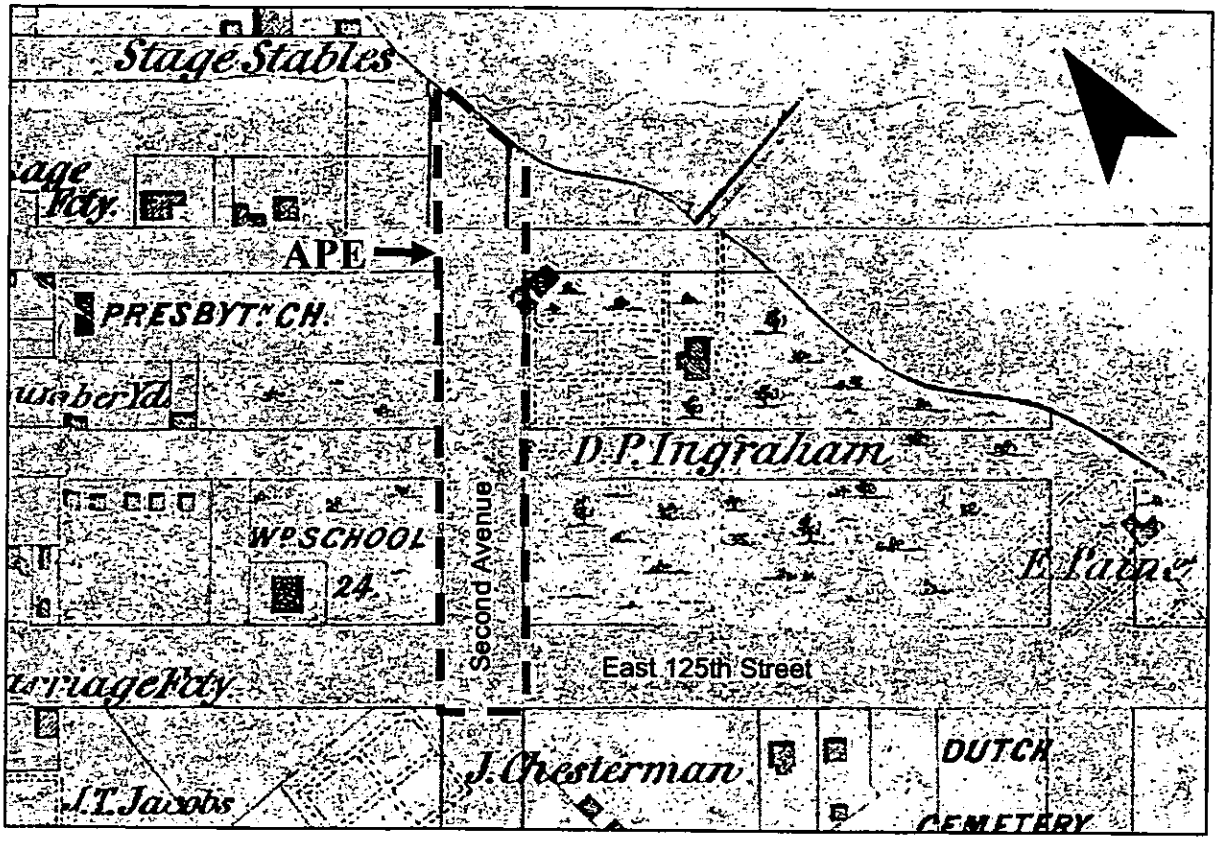


FIGURE 4.1-5

Map of That Portion of the City and County of New York North of 50th St. D.P. Ingraham Estate. Second Avenue between East 127th and East 126th Streets. Dripps 1851.

Approximate Scale: ½ inch = 100 feet

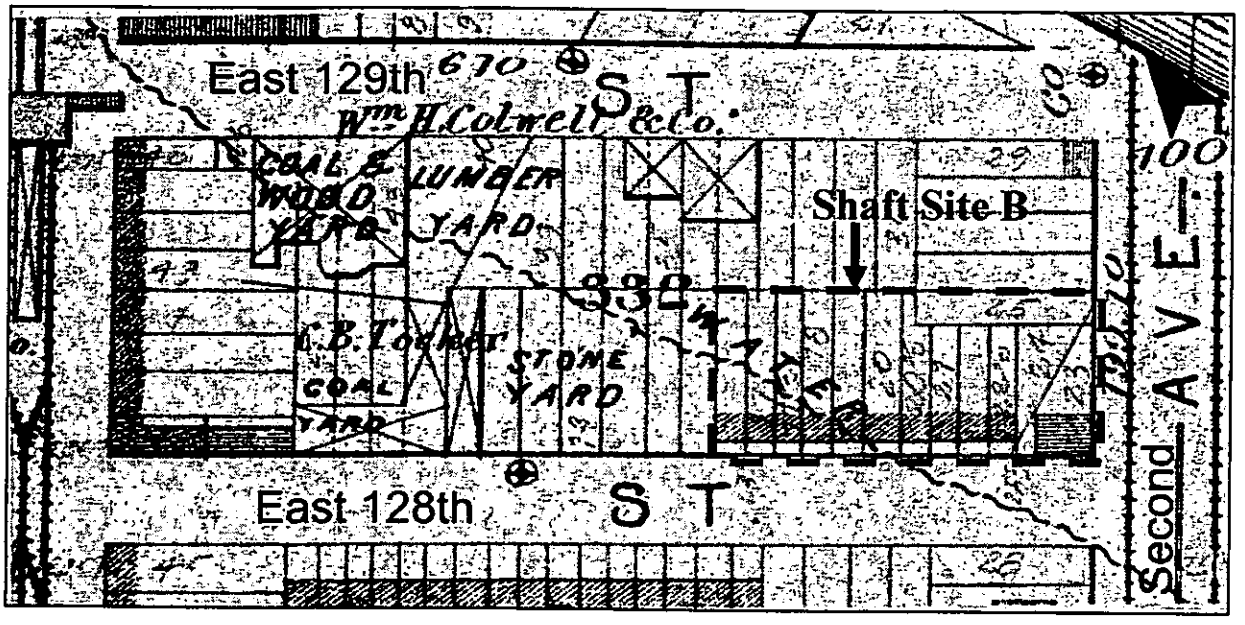


FIGURE 4.1-6

Atlas of the Entire City of New York.
Shaft Site B, Block 1793. Between Second and Third Avenues, East 129th Street to East 128th Street. Bromley 1879.

Approximate Scale: ¾ inch = 100 feet

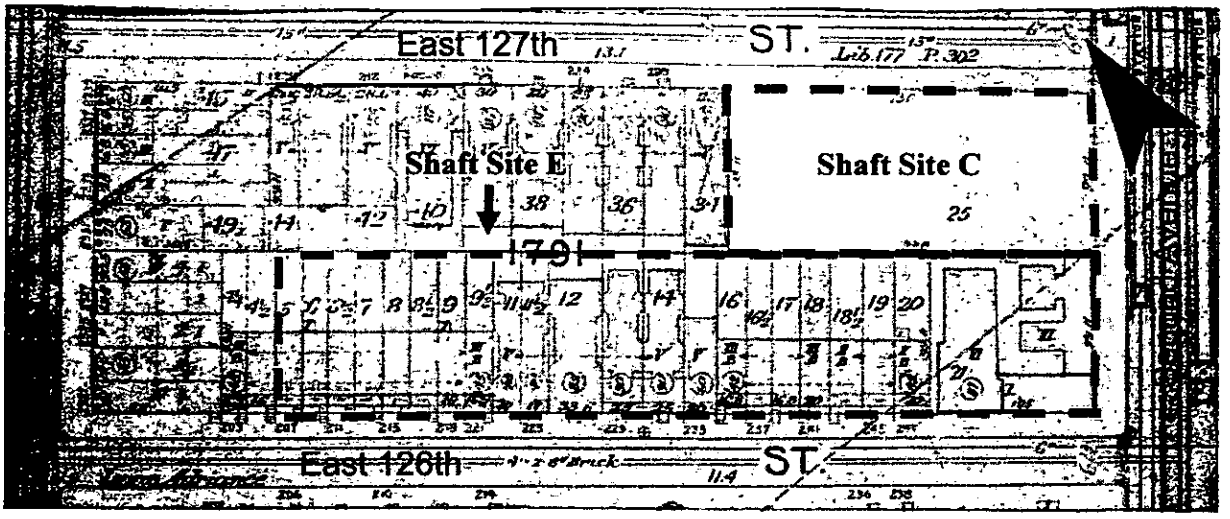


FIGURE 4.1-7

Atlas of the Borough of Manhattan.
Shaft Sites C and E, Block 1791.
Between Second and Third Avenues, East 127th Street to East 126th Street.
Hyde 1913.

Approximate Scale: ¾ inch = 100 feet

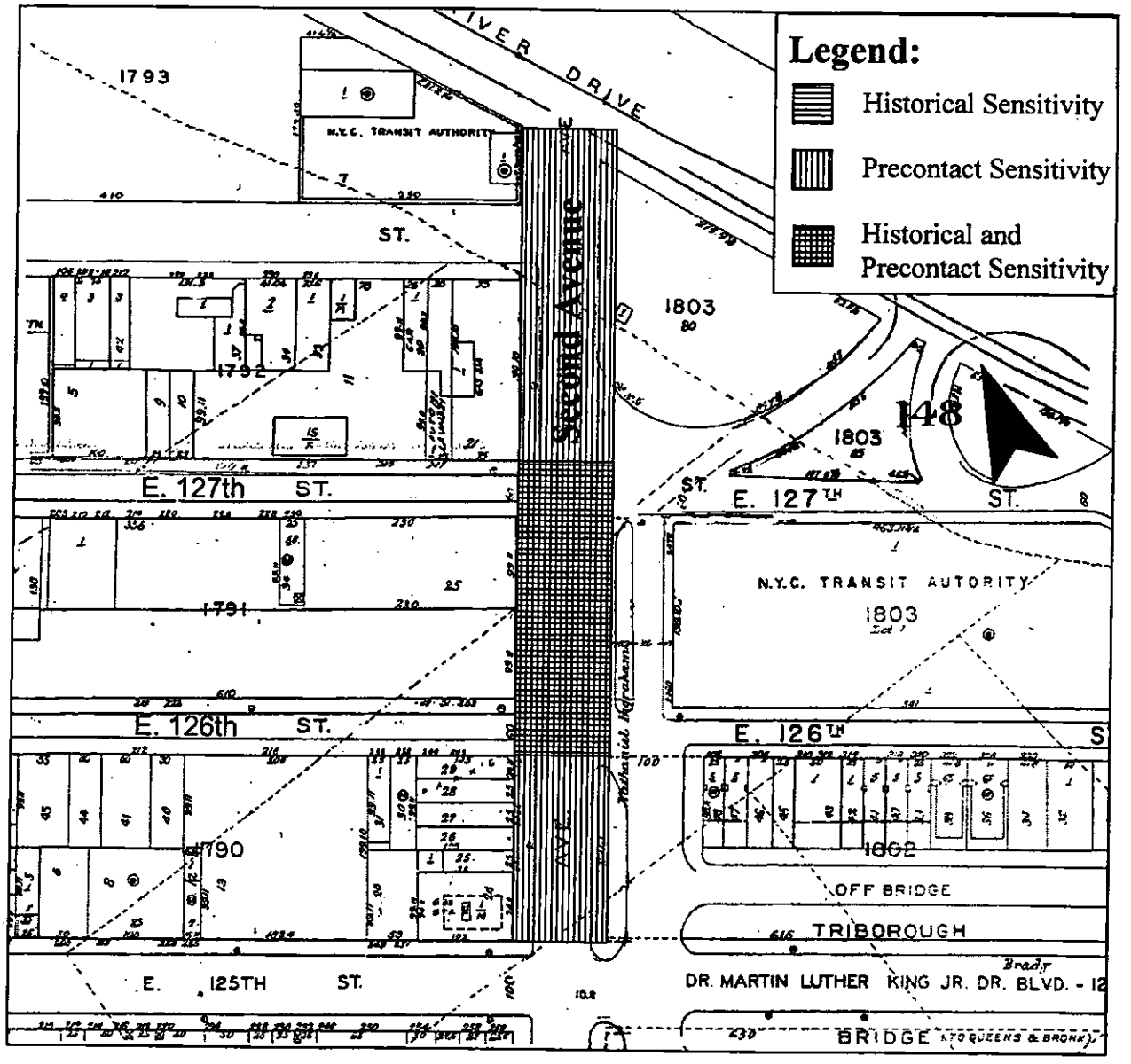


FIGURE 4.1-8a

Area of Potential Archaeological Sensitivity.
Second Avenue, Harlem River to East 125th Street.
Sanborn 2001.

Approximate Scale: ½ inch = 100 feet

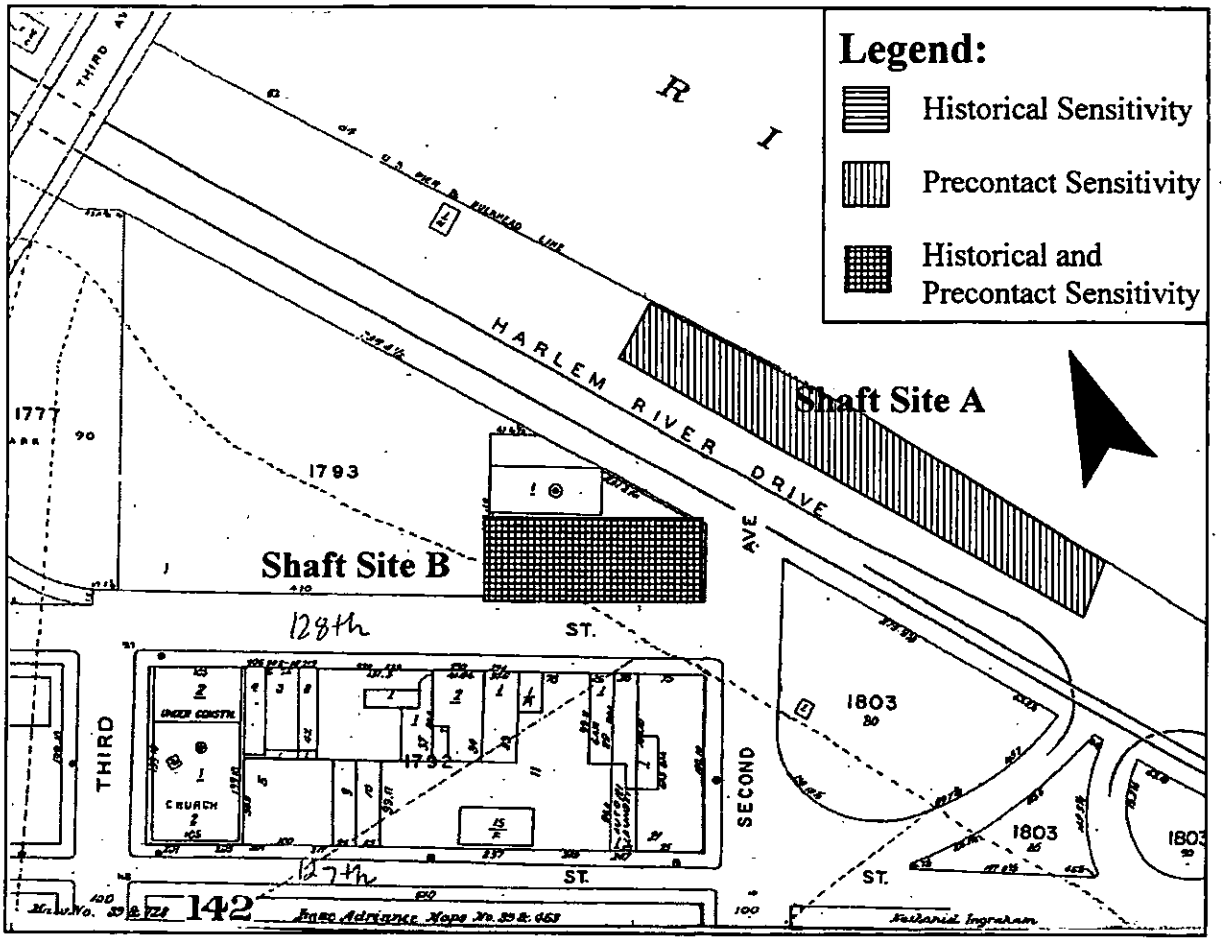


FIGURE 4.1-8b

Area of Potential Archaeological Sensitivity.
Shaft Site A, Harlem River at Second Avenue, and Shaft Site B, Second Avenue and East 128th Street. Sanborn 2001.

Approximate Scale: ½ inch = 100 feet

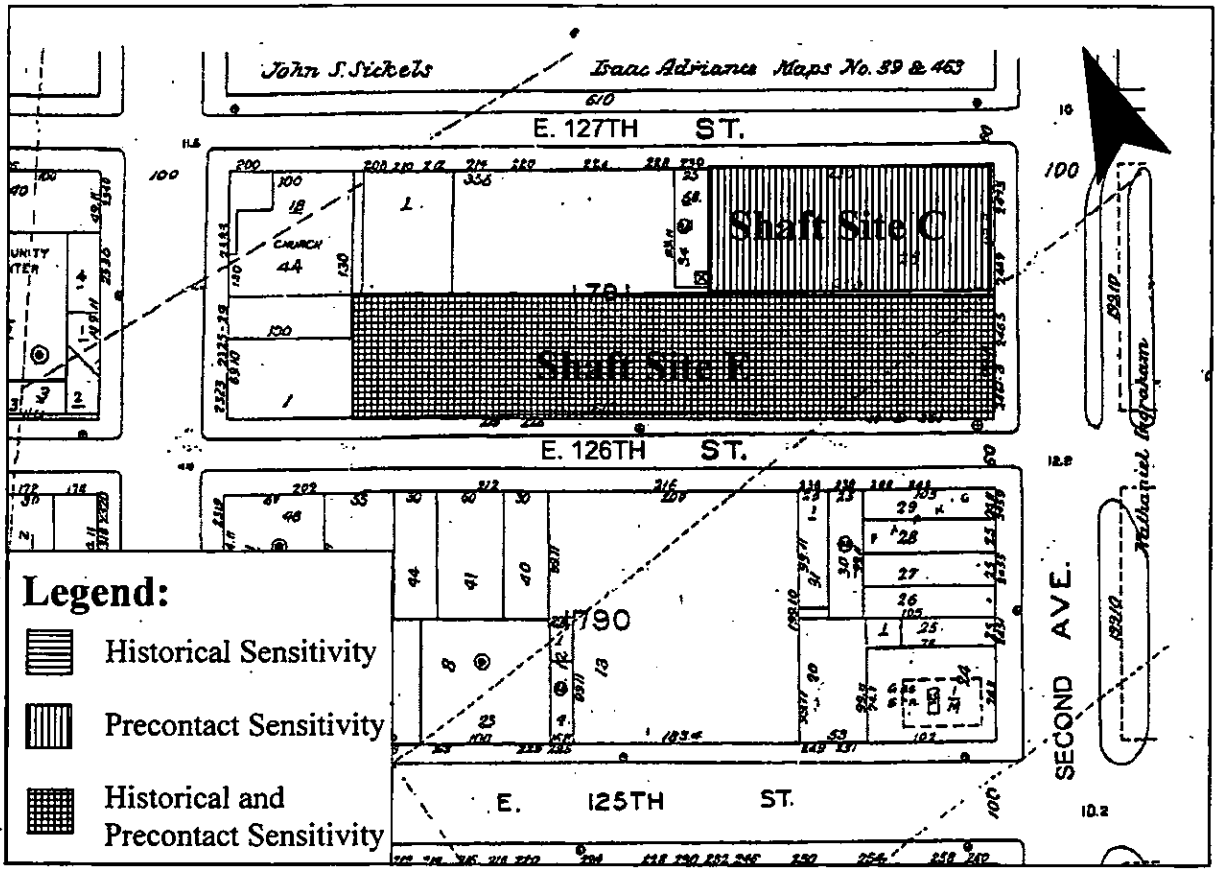


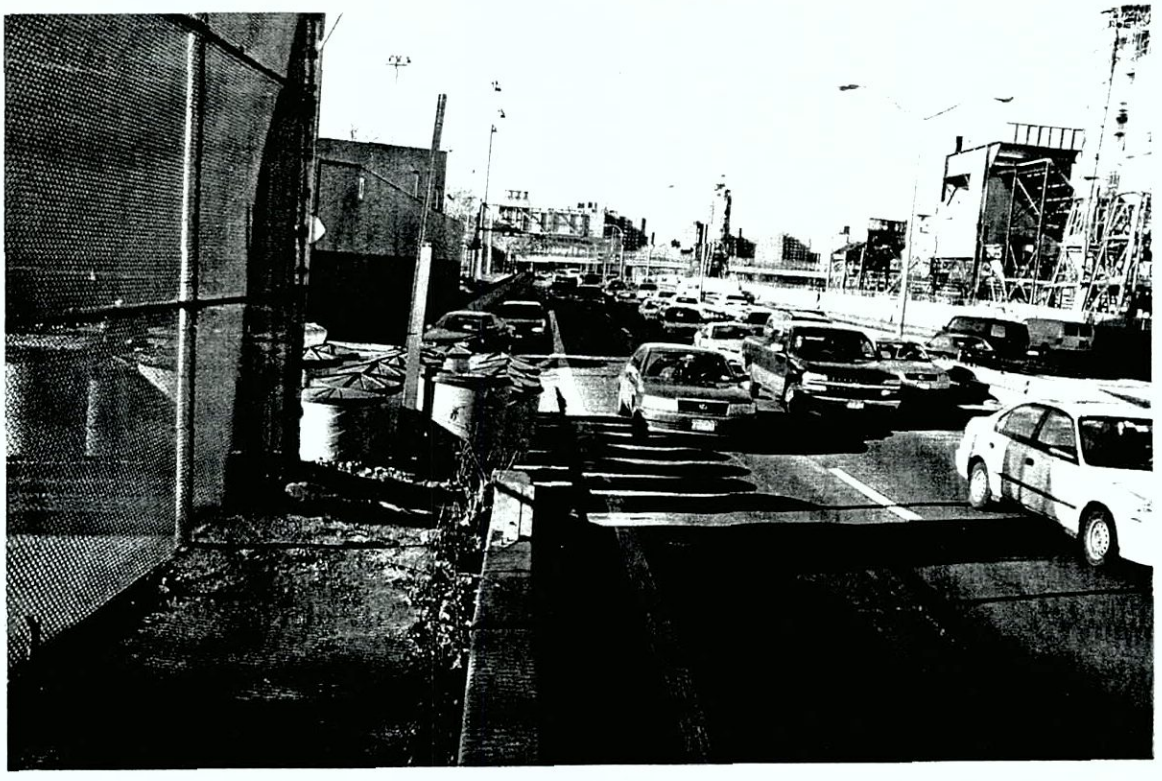
FIGURE 4.1-8c

Area of Potential Archaeological Sensitivity.
Shaft Sites C and E. Second Avenue, East 127th Street to East 126th Street.
Sanborn 2001.

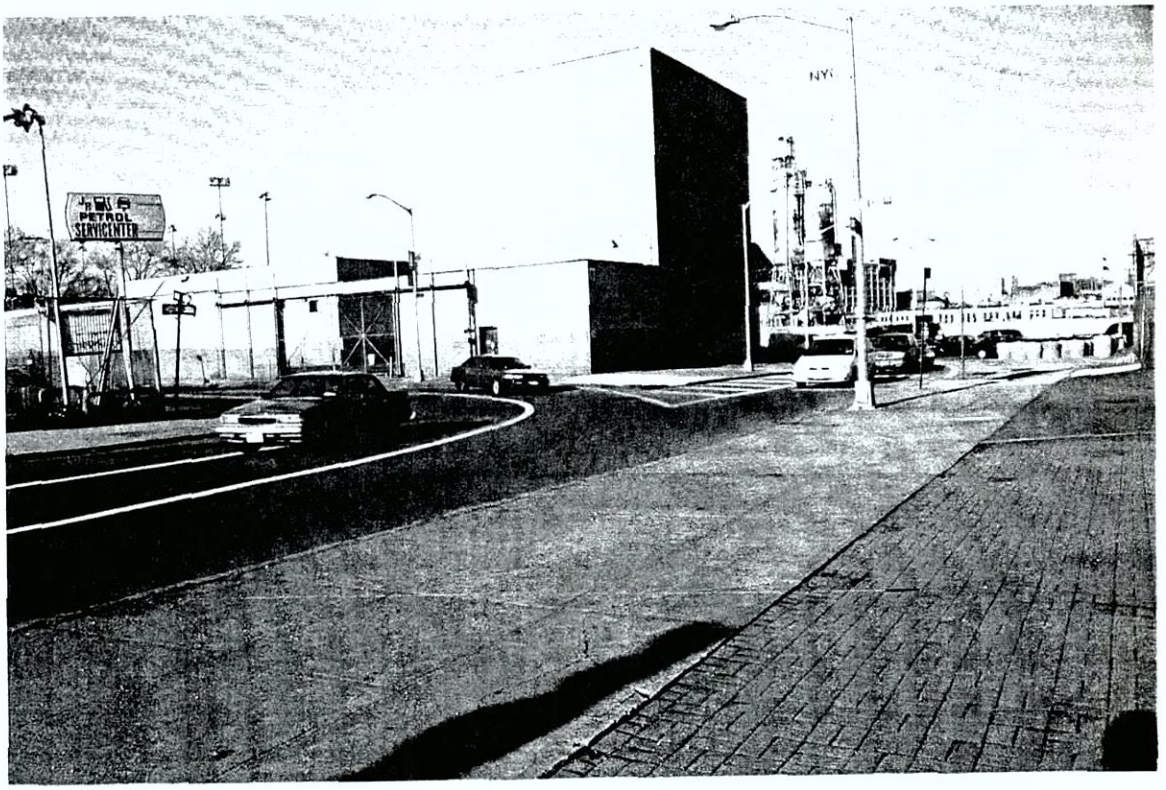
Approximate Scale: ¾ inch = 100 feet



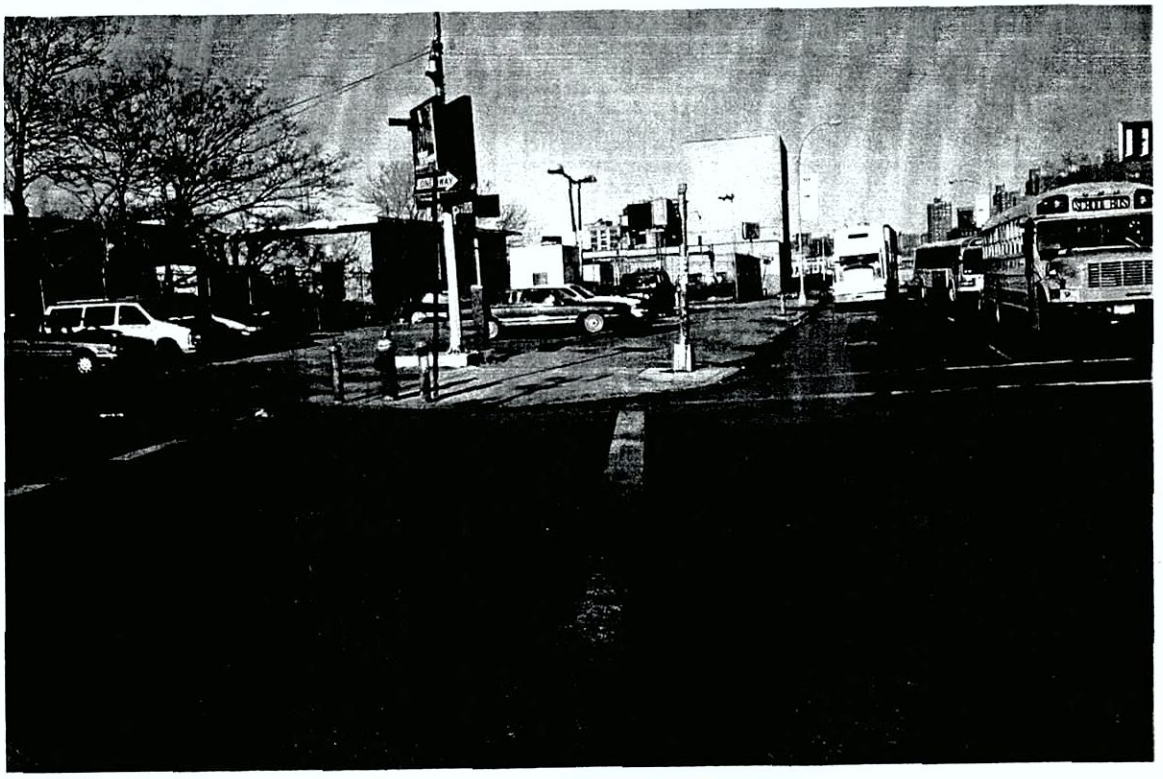
Photograph 4.1-1: View to the west from Harlem River Drive towards Shaft Site A.



Photograph 4.1-2: View to the east from Harlem River Drive.



Photograph 4.1-3: View to the northwest from the east side of Second Avenue from the corner of 128th Street and Second Avenue. Looking towards Shaft Site B.



Photograph 4.1-4: View to the north from the west side of Second Avenue from the corner of 127th Street and Second Avenue.



Photograph 4.1-5: View to the north from the west side of Second Avenue from the corner of 126th Street and Second Avenue. Looking towards Shaft Sites C and E.



Photograph 4.1-6: View to the west from the east side of Second Avenue from the corner of 127th Street and Second Avenue. Looking towards Shaft Sites C and E.



Photograph 4.1-7: View to the southwest from the east side of Second Avenue from the corner of 127th Street and Second Avenue. Looking towards Shaft Sites C and E.

4.1.7 Appendices

4.1.7.1 Documentary Assessment of APE

Second Avenue, Harlem River south to East 125th Street

The APE for this portion of Second Avenue consists of the roadbed from the Harlem River Drive south to East 125th Street, with the east-west boundaries being lines parallel with those property lines closest to Second Avenue of Blocks 1794, 1793, 1792, 1791, and 1790 on the west, and 1805, 1804, 1803, and 1802 on the east. Second Avenue underwent widening in the 1930's with the construction of the Triborough Bridge, as the approach to the bridge was built leading from East 125th Street. Approximately 80' of the west sides of Blocks 1802 and 1803 were razed during the widening. However, it is understood that the APE will only extend as far as the old block property line that is now demarcated by a series of islands on the east side of Second Avenue.

Cartographic History

British

Headquarters 1782: The earliest map to show the Harlem area is this map (Figure 4.1-3). The village of "Haerlem," an early Dutch settlement, was present. A main road of the village (Church Land) ran approximately from Third Avenue and East 120th Street to east of First Avenue and East 126th Street. The Second Avenue APE, although not in formally laid out at this time, would have only run north from the future East 125th Street, as far as East 127th Street. To the north of this point the land was under water. The land in the vicinity of the APE at that time was marsh, open land, and farm fields. A structure was present on the border of the Second Avenue APE; it is on the eastern edge of the future Second Avenue, between East 126th and East 127th Streets. It is most likely a farmhouse for the large property that existed in this area. Although it is not named here, it later became the Phoenix (Commissioners' 1811) and then the Ingraham property (Sackersdorf 1815). A lane extends west from the structure, and then south, to connect with Church Lane.

Commissioners' 1811: This map, showing the street grid for the first time, shows that the proposed Second Avenue route extends almost to East 128th Street, although there is still marshland along the shoreline (Figure 4.1-2). There was a structure in the footprint of Second Avenue, within the APE, presumably associated with the Phoenix farm, which covered what is now Block 1803 between East 126th and East 127th Streets east of Second Avenue. There is a roadway that leads from the structure to the pond in the footprint of East 125th Street between Third and Second Avenues. This could be the same lane as seen in

the British Headquarters 1782 map, and it is possible that this is the same structure as on that map. The Phoenix farmhouse is outside the APE.

Sackersdorf 1815: The footprint of Second Avenue runs through the property of the "Heirs of John Sickels," N. G. Ingraham, and a very small portion of land belonging to William Brady. The farmhouse on the property of N.G. Ingraham is indicated as standing at the corner of East 126th Street and Second Avenue (what would be the southwest corner of Block 1803), but the locations of structures on this map are not thought to be very accurate.

Randel 1820: This map shows the main dwelling for the farm of Nathaniel G. Ingraham squarely in the middle of what is now Block 1803, outside the APE, but it does show a barn associated with this farm within the footprint of the Second Avenue roadbed between what are now East 127th and East 126th Streets (Figure 4.1-4). This outbuilding consists of a large main building with second smaller structure connected to it, and is labeled "Barn." The structure is located at the northwest corner of what is now Block 1803 and extending into Second Avenue. Two water pumps are shown on the property, both outside the APE. One is next to the dwelling, and the other is north, located nearer the shoreline. Elevations are present at the intersections of Second Avenue and East 127th Street, East 126th Street, and East 125th Street, but are not legible.

Farm Map #40A 1823/1869: This map was drawn to shown the land division for the heirs of John Sickels. The northern portion of Second Avenue (up to the Harlem River, which is just below East 128th Street) is part of Sickels' land, which has been divided in city lots (Blocks 1792, 1791, the western half of 1790, and 1804). The land that was previously labeled as belonging to Ingraham is now labeled as belonging to the "Devisees of Dan. Phoenix," was not divided into lots. The unapportioned land is located on Blocks 1803, part of 1802, and the eastern half of 1790. No structures are shown on this map.

Colton 1836: A farm (presumably the Ingraham estate) is shown directly bordering Second Avenue on the east (Blocks 1803 and 1804), but did not appear to extend into the APE. However, because Second Avenue had not yet been formally laid out, land delineations are difficult to track on the modern landscape. It is a very large estate with a formal layout. A house is shown in the same location as in Randel 1820. Outbuildings are not shown, but see Dripps 1851.

Dripps 1851: A farm/estate is shown directly bordering the east side of Second Avenue between East 127th and 126th Streets (Block 1803). This is the same estate as shown in Randel 1820 and Colton 1836 (Figure 4.1-5). It is labeled D.P. Ingraham. There are two associated

outbuildings at the northwest corner of Block 1803, at Second Avenue and East 127th Street, falling within the Second Avenue footprint and the APE. These may be the same outbuildings as seen in Randel 1820.

Dripps 1863: A railway line is shown running on Second Avenue, but no structures are shown within the Second Avenue APE.

Viele 1865: Second Avenue prior to development is depicted as open meadow almost as far north as East 128th Street. From this point north, the APE is land under water. There is a small ridge running northwest to southeast running across Second Avenue near East 127th and East 128th Streets, with the down slope facing towards the river. No water pipes are shown running on Second Avenue.

Dripps 1867: Second Avenue is shown connecting with East 129th Street, which runs west of this point. A railway line (possibly elevated) is shown on Second Avenue. The property and house belonging to Nathan G. Ingraham are still shown on Block 1802, although the outbuildings on Second Avenue do not appear to be present. However, there are two structures just to the east of where the outbuildings were located, but it is unlikely these are the same buildings, and are outside the APE. According to tax records from 1869, S.P. Ingraham and D.P. Ingraham each had a house on Block 1803 (east of Second Avenue between East 127th and East 128th Streets). Second Avenue passes through property belong to several owners. From the north, John B. Coles, E. Ketcham, the heirs of J. Sickels, S.P. Ingraham, and Brady.

Viele 1874: This is similar to Viele 1865, although Second Avenue is only shown extending northwards to just below East 128th Street.

Watson 1874: A railroad line is shown on Second Avenue.

Bromley 1879: Tracks for both the elevated railway and a trolley line are shown on Second Avenue. There are connecting tracks from the trolley line to the railway stables on Block 1791. East 127th Street and East 126th Street east of Second Avenue are not open. There are hydrants located at the intersection of East 129th Street and Second Avenue, on both sides of the Avenue, and one midway on Second Avenue next to Block 1792 and one next to 1790. The Ingraham house, outside the APE, is still present, and the area around it undeveloped. It is now labeled "Harlem Park" however, and is presumably no longer a working estate. This is the last appearance of this structure on a map.

Robinson 1885: This atlas is similar to Bromley 1879. There is an additional hydrant at Second Avenue and East 129th Street, another one at the southeast corner of the intersection of East 127th Street and Second Avenue (next to Block 1803), and another one midway on the east side of Block 1791 (between 127th and 126th Streets) on Second Avenue.

Perris 1893: A 12" water pipe is shown running on Second Avenue, with connecting 6" pipes at each of the cross streets, except for East 125th Street, which has both 6" and 20" pipes. Railway tracks are not shown on this atlas, but stations are portrayed. There is a transfer station on the east side of Second Avenue between East 129th and 128th Streets, bordering on Block 1805. This is labeled "Suburban R.R. Transfer Station" and is an iron building. Between East 127th Street and East 126th Streets on Second Avenue is an elevated station, with uptown and downtown platforms. These are labeled "M.R.R. Up Station" and "M.R.R. Down Station," and are iron buildings. These cover almost the whole roadbed between these two blocks. At the northern end of Second Avenue is the footing for the Second Avenue railroad bridge to the Bronx.

Sanborn 1896: This map is similar to Perris 1893. An overhead iron trestle is also shown connecting the transfer station at Block 1805 to the railway buildings on Blocks 1793 and 1794. This crosses west over Second Avenue just below East 129th Street to an Ash House at the northeast corner of Block 1793, then crosses north over East 129th Street to Block 1794.

Bromley 1897: Railroad tracks are not indicated on this atlas. Sewer lines are shown in addition to water pipes. One runs down Second Avenue and connects with east-west pipes on East 127th, East 126th and East 125th Streets. There is no east-west pipe on East 129th Street below Block 1794, on East 128th Street below Block 1805, or on East 127th Street below Block 1804. The pipe running on East 128th Street below Block 1793 does not appear to connect with the Second Avenue pipe. The label "Station" appears at the intersection of East 127th Street and Second Avenue, but no buildings are indicated.

Sanborn 1911: Second Avenue between Blocks 1793 and 1805 was a hub of rail activity. Block 1793 housed a large railway yard, rail car shops, and numerous associated buildings. Several structures extend into the Second Avenue APE from Block 1793. However, it is not clear whether some or all of these buildings were elevated, and therefore would leave any residual materials within the APE.

Between East 129th Street and East 128th Street, the following buildings are shown: switch tower, oil house, pipe shop with balcony, two car shops, offices and stock room with balcony, recreation room for employees, lounging room for trainmen, freight station (elevated), one-story structure underneath the freight station, offices for the Wells Fargo Express and U.S. Express, several storage sheds, and watchman building. The car shop in the northeastern corner of Block 1793 extended well into the Second Avenue APE, and there were also a switch tower and an oil house in the APE. This car shop appears to have been elevated, as there

is an additional "Plan of Buildings Beneath R'way Structure," with a notation that there is "storage of materials (Manhattan R'way Co.)" underneath the car shop. That part of the car shop that extended into Second Avenue was the pipe shop and the offices and stock room.

Rail tracks came south from the Second Avenue Railroad bridge down Second Avenue, and connected across Block 1793 to tracks on Third Avenue. The freight station on Second Avenue next to Block 1805 also had connecting rails into that block. (See also entry for Sanborn 1911, under Block 1794 and 1793 below). Tracks are only shown for Sheet 92, which is the northernmost part of Second Avenue, but they are not shown for Sheets 90 and 91 (although they were present). Sheet 90 shows that there was a 12" pipe running on East 125th Street as well as a 6" and a 20" pipe, connecting with the 12" pipe running on Second Avenue.

Bromley 1911: The APE appears similar as shown on Bromley 1897, except that the East 128th Street sewer pipe below Block 1793 connects with the Second Avenue pipe. Railroad tracks are not indicated on this atlas, and there is no detailed information such as that given on the Sanborn 1911 map; the development shown does not seem to be consistent with this other map.

Hyde 1913: Tracks are indicated on this atlas, and both elevated and trolley lines are shown running on Second Avenue. The elevated lines continue across the Second Avenue Railroad Bridge, and turn west into Block 1793 where the IRT shop and yards are located, and east into Block 1805, where there is another yard.

The IRT shop building in the northeast corner of the block is shown extending into the Second Avenue APE from Block 1793. It is a brick one-story building, but more specific details are not given as they are on Sanborn 1911. There is another car shop in the southern half of Block 1793 which falls into the Shaft Site B APE; this is discussed below. The freight station next to Block 1805 may no longer be present. The elevated station is still present next to Blocks 1791 and 1803.

There is a sewer main on Second Avenue from between East 127th and East 128th Streets to the northern end of the avenue; it is a 3'7 ¼" x 2'4 ¾" brick pipe. There is also a 15" sewer pipe that begins south of East 126th Street and continues south. There is a 12" water main running through most of the Second Avenue APE, and it joins a 10" water main above East 128th Street.

Bromley 1916: The APE is similar to how it was portrayed on Hyde 1913. However, the car shop building, now labeled "Inspection Shed," now extends out from Block 1793 into the Second Avenue APE, and two small frame buildings, unlabeled, are portrayed within the roadbed.

Bromley 1925: The elevated station has been removed from between East 126th and East 127th Streets on Second Avenue, and another station was constructed two blocks south, between East 124th and East 126th Streets, with the main entrance being at East 125th Street. The inspection shed building remains the same.

Bromley 1930: The APE is unchanged from Bromley 1925.

Bromley 1934: The APE is unchanged from Bromley 1925, except that the entrance to the Triborough Bridge has been constructed through blocks 1801 and 1802 at East 125th Street. While this construction does not directly affect the Second Avenue APE, the western property lines for Blocks 1802 and 1801 were moved east about 100', and Second Avenue is subsequently wider.

Sanborn 1939: This map is similar to Bromley 1934, except that traffic islands have been constructed on Second Avenue adjacent to Block 1802 for the entrance ramp to the Triborough Bridge. This has reduced the main thoroughfare by about 20', although there is roadway to the east of the islands as well.

Sanborn 1951: The elevated station at East 125th and Second Avenue has been removed, and most likely the elevated tracks have also been removed (the tracks are not indicated on this map.) Block 1803 has now also been shortened by razing structures from the western end of the block, and Second Avenue is therefore wider in that section. The traffic island by Block 1802 has been enlarged. Second Avenue does not appear to continue north of East 128th Street. Demolition of most of the structures on Block 1793 entailed removing all railroad buildings that formerly extended into Second Avenue, including the previously discussed car shop/inspection shed.

Bromley 1955: Plans to extend the Harlem River Drive northward resulted in the demolition of several formerly developed blocks, including Blocks 1805, 1804, 1974, and 1793. The traffic island by Block 1802 has been remodeled, and another set of islands added by Block 1803. The overall street width of Second Avenue, from Block 1791 to Block 1803, property line to property line, is 174'. The actual continuous street width of Second Avenue, not including islands or sidewalks, is 60'. Including sidewalks and islands, it is 100'.

Bromley 1967: The APE is unchanged from Bromley 1955, although Blocks 1804 and 1805 have been consolidated, and now contain the ramps for access to the Harlem River Drive. However, this does not affect the Second Avenue APE.

Bromley 1974: The APE is unchanged from Bromley 1967.

Sanborn 1984-85: The APE is unchanged from Bromley 1967.

Sanborn 1990-91: The APE is unchanged from Bromley 1967.

Sanborn 2001: The APE is unchanged from Bromley 1967.

Precontact Sensitivity

The northern end of Second Avenue and the shaft sites, north of East 127th Street, were land under water until the 1860's, but earlier precontact water levels were probably lower than they are today. Therefore, while the APE was quite close to shoreline in the late precontact period, it is quite possible that the area was further inland in the early precontact period. The sections of Second Avenue that were depicted as land on the historical maps and atlases were meadowland in the early and late precontact period, with a marshy area along the shoreline. As such, it may have been conducive to precontact living, providing a rich habitat of faunal and floral resources. As undulating meadow area in close proximity to a knoll near East 125th Street between Second and Third Avenues (Figure 4.1-2), it would have been suitable for prehistoric settlement, with a potential fresh water source on East 125th Street between Second and Third Avenues (see Chapter 2).

When water tables were lower, it is unlikely that the shoreline itself would have been a living area, as it most likely would have been estuarial, as much of the New York Harbor was. However, it would have been a rich source of floral and faunal resources. Finding evidence for intermittent use areas is difficult, although features such as shell middens can be indicative of such use. There is evidence for shell in one of the soil borings just off Second Avenue on Block 1805 (Soil Boring WPA IV.5.92, 1940); however, as discussed below, this could also imply an estuarial environment. Nevertheless, the presence of shell, which could have been an abundant ecological resource, suggests precontact potential nearby.

Soil Boring WPA IV:5:96 (1940), in the middle of Second Avenue just below East 129th Street, indicates fill to 17.5' below grade, silt to 27' below grade, and then a layer of peat from 27'-31.5' below grade. Peat is also indicated in five other borings in this area. Four borings in Block 1805 (east of Second Avenue) show peat depths ranging from 21'-33' below grade, and one boring in Block 1793 (west of Second Avenue) shows a peat depth of 24.5'-25' below grade (Soil Borings WPA IV:5:92-95, 1940; Soil Boring WPA IV:4:61, 1940). Precontact resources could potentially be protected beneath the initial layer of fill or buried beneath silting episodes in the second, presumably natural layer.

Historical Sensitivity

The northernmost portion of Second Avenue lacks historical sensitivity since it was not filled from East 127th Street to East 129th Street until sometime between 1851 and 1867 (Dripps 1851; 1867). This section of the APE was historically in proximity to Harlem Village, and may be sensitive for historical farm-related dwellings and shaft features. There is a structure seen within the Second Avenue footprint between East 126th and East 127th Streets in 1782 (British Headquarters 1782, Figure 4.1-3), which was likely a farmhouse. This farmland belonged to Daniel Phoenix in 1811 (Commissioners' 1811), where a structure is shown in approximately the same location. By 1815 (Sackersdorf 1815) the land belonged to N.G. Ingraham. Although the main house of the Ingraham

estate would have been outside the APE, there are outbuildings indicated that fall within the Second Avenue footprint and are shown on an 1820 and an 1851 map (Randel 1820, Dripps 1851, Figures 4.1-4, 4.1-5). This area was farmland from at least 1670 (Romer and Hartman 1981:9), and so could potentially be sensitive for these types of buildings, as well as wells and privies, since that time. A soil boring taken at the southeast corner of East 127th Street and Second Avenue, near where the outbuildings are thought to have stood, shows a cinder fill going down only to 3.5' below grade, but unfortunately the water level is not provided (WPA IV:5:52, 1936). If the water table was at approximately 12' below grade, then a well shaft would be expected to extend at least 15' below grade.

Other borings performed close to Second Avenue in the northern section show fill depths ranging from 9.6' to 20' below grade (WPA IV:5: 94, 95, 97, 1940; WPA IV:4:58, 1940). In the southern section the fill appears more shallow, ranging from 2.6'-14' below grade (Raymond International 2-113, 2-114, 1970; Warren George, Inc. B-9, 1997; WPA IV:5:23, 1935). There are no water table depths for the northern half of Second Avenue; those in the southern half indicate a depth of 11'-12.5' below grade (Raymond International 2-113, 2-114, 1970; Warren George, Inc. MW-2, MW-3, 1994).

The rail car shop that existed from the late 1890's to the 1940's, between East 129th and 128th Streets in and west of Second Avenue, is unlikely to have left any potential remains. It appears from Sanborn 1911 and 1939 that the shop was elevated, although there were some shed structures on the ground surface, as well as an area for storage of railroad materials. Therefore, there would not be much likelihood of vestigial structures. Furthermore, the construction of the Harlem River Drive went through Second Avenue at the exact former spot of the shop. The small frame structures (such as the Switch Tower) that were in the Second Avenue roadbed may have been just outside the limits of the Harlem River Drive, but it is unlikely any foundations survived that period of construction. Another car shop that existed within the same block is discussed below (Block 1793, Shaft Site B).

Shaft Site A - Northwest of Second Avenue (Block 1794)

The APE for Shaft Site A extends from the northern edge of the Harlem River Drive to the Harlem River shoreline at Second Avenue. It encompasses part of former Blocks 1794 and 1805 (now parts of larger Blocks 1793 and 1803). Block 1805 is discussed below. Block 1794 is bounded by the Harlem River to the north, East 129th Street to the south, Third Avenue to the west, and to the east by the Harlem River and Second Avenue. Currently this block contains the Harlem River Drive and industrial areas. The APE also extends partly into the easternmost end of East 129th Street, which will also be discussed in this section. Furthermore, there is a section of the Harlem River where dredging is proposed to facilitate barging operations that is included in the APE.

Cartographic History

British

Headquarters 1782: Block 1794 is underwater/marshland, located of the eastern shore of the Haerlem Plains.

Commissioners' 1811: The block is all marshland. The plan shows that although the entire block was marshland at this time, it was intended to be at least partially filled in, since Third Avenue, Second Avenue, and East 129th Street are all shown extending into the marshy area.

Sackersdorf 1815: The block does not exist, as it is under water.

Randel 1820: The block does not exist, as it is under water.

Commissioners' 1821: Just a very small portion of the northeast corner of the block is shown to be land. However, the proposed street grid extends out into the river and appears that it is intended to be partially filled in.

Farm Map#40A 1823: The block does not exist, as it is under water.

Burr 1832: Just a small portion of the block, the northeast corner, is shown to be actually land. The rest is under water. Harlem Bridge is shown extending from the foot of Third Avenue across the river to the Bronx.

Colton 1836: The northwest corner of the block is shown present, and appears to be part of a large estate (see Block 1793 below) that extends south to East 127th Street. East 129th Street is faintly shown through this garden. Harlem Bridge is present crossing the Harlem River at the foot of Third Avenue.

Dripps 1851: The shoreline is shown at Third Avenue and East 129th Street. The small corner of land that was shown on previous maps is not shown here. The Third Avenue Bridge is present just northwest of the APE, and it is labeled as the "Harlem Old Bridge."

Dripps 1863: The APE is still shown as land under water, except there is a rectangular a spit of land or pier extending into it. The Third Avenue Bridge is labeled "Old Bridge."

Viele 1865: The entire block is shown under water.

Dripps 1867: Block 1794 has now been filled, so that there is land for about 3/4ths of the block, with the northeast corner still under water. East 130th Street is shown extending east halfway through the block to the Harlem River shoreline. East 129th Street extends east all the way to Second Avenue.

Three buildings are shown on the eastern half of the block; two very large ones are labeled "Paine and Co.'s Grain Mills." The center of the block is labeled "Lumber Yd."

There is a row of buildings on Third Avenue, on the western side of the block outside of the APE. Two lines are drawn at the shore; the outer one is labeled "Bulkhead & Pier Line."

It should be noted that there is shown a substantial portion of a block to the north of Block 1794; it is labeled "S.B. Landing"

(steamboat landing). In later maps, however, this block consists only of the landing, a much smaller area of land. This is outside the APE, but indicates substantial remodeling of the shoreline was being done.

Watson 1874: The shoreline on this map does not coincide with the shoreline portrayed on the Dripps 1867 map, as it more irregular, and there is less fill shown.

Viele 1874: The block appears similar to that in Dripps 1867. However, it is shown as meadow rather than made land, in contrast to Viele's 1865 map.

Bromley 1879: Block 1794 is labeled 333 (an older numbering system). The grain mills within the APE have been expanded and are labeled "Flour Mills" and are brick. The lumber yard is also still present in the middle of the block, and there is a coal yard in the northwest corner of the block. There are more lots on the western end of the block than portrayed in 1867 (Dripps). The block is labeled "Wm. H. Colwell and Co." in the middle of it (this may refer to the lumber yard, as the same name appears on Block 1793 where there is also a lumber yard, and Robinson 1885 shows that these two yards are together).

There is a hydrant located on East 129th Street in the middle of the block, and one at the southeast corner of the block. The Metropolitan elevated railway runs down Second Avenue.

Robinson 1885: This atlas is similar to Bromley 1879.

Lots 9-12, 22-44 The lumber yard still occupies the middle of the block, and is labeled to cross over into the southern block, 1793. There is a coal yard to the west of the lumber yard. This is just outside the APE.

Lot 21 The eastern most triangular lot, within the APE, appears to be empty.

Lot 13 The flour mill is labeled "Harlem Grain Mills." Some of the mill buildings are brick; others are frame. The easternmost edge of this lot may impinge upon the APE.

The steamboat landing north of this block is still present. There are two hydrants, both at the southeastern corner of the block. The elevated railway runs down Second Avenue.

Perris 1893: *Lots 9-12, 22-44* The lumber yard is still present to the west of the mills, as is the coal yard.

Lot 21 In the easternmost corner of the block, within the APE, is a frame building, unlabeled, with three steam boilers.

Lot 13 The mills are still present, with frame and brick buildings, and are labeled "Feed Mill & Elevator," with individual buildings labeled "Grain Drying," and "Coal."

On Second Avenue is an indication of 6" and 12" sewer lines. There are two hydrants present on East 129th Street. The block to

the south (1793) is now a rail yard, and within East 129th Street are railroad platforms. One, extending east about a third of the block, is labeled "H.R. & P.R.R. Platform." The second, extending east nearly all the way to Second Avenue, is labeled "Suburban R.T. Platform."

Sanborn 1896: The Second Avenue Railroad Bridge is shown extending across the Harlem River. There is an iron trestle shown extending across Second Avenue, to the northeast corner of Block 1793, northwards across East 129th Street, and then diagonally across Block 1794, ending at the "Feed Mill & Elevator" building. The building noted on the Perris 1893 atlas in the easternmost corner (Lot 21) is identified as having three steam boilers and a corrugated iron roof; no lot number is noted on the map. A dotted line just outside the shoreline is the "Established Bulkhead Line." At this point the block has been bisected north-south by the construction of a road leading to the Third Avenue Bridge. This road goes through what was the lumber yard and coal yard, but it is outside of the APE. There are 6" and 12" sewer pipes indicated on the corner of Second Avenue and East 129th Street. The Railroad Bridge from Second Avenue across the Harlem River to the Bronx is present.

Bromley 1897: *Lot 21* This atlas shows a similar view as Sanborn 1896; the easternmost building is only identified as a one-story masonry structure. The lot measures 125' along the shoreline, 172' along East 129th Street, 60.6' along Second Avenue, and 133.5' on the western edge of the lot, fronting Lot 13.

Lot 13 This lot still contains the grain mill, labeled "Hominy Mills."

Train tracks are not identified on this map. The western end of the block, outside the APE, still has two and three story buildings.

Bromley 1911: The buildings on the western end of the block, outside the APE, have been removed and replaced with a park; this was probably done in conjunction with the construction or widening of the Third Avenue Bridge approach.

Lot 21 In the eastern half of the block, this lot is now labeled the "Elevated Railway Co." and the framed structure is now labeled the "Boiler House."

Lot 13 The grain mill remains, labeled "Flour & Feed Mill."

The Second Avenue bridge is labeled the "Suburban Rapid Transit Railway Bridge." Roadbed elevations and sewer lines remain unchanged from Bromley 1897.

Sanborn 1911: By this time, this area has become dedicated to the railway system. Second Avenue and East 129th Street are full of railroad tracks (although some or all are elevated). The shoreline from the Second Avenue bridge across Second Avenue to Block 1794, and including the shoreline of Lot 21, is labeled as a "Coal Dock."

Lot 21 A steel frame structure labeled "Coal Carrier" and "MANH^{N} B'WAY CO" (in the same area as the Iron Trestle on Sanborn 1896) runs from the grain mills through Lot 21 into the eastern end of East 129th Street. The Boiler House building remains, and there is also a smaller unidentified building just north of it. The rest of Lot 21 is labeled "Coal Dump."

Lot 13 The grain mill has been slightly expanded to the west with storage sheds; the mill property appears to extend to the Third Avenue Bridge approach. The mill is labeled "Feed Grain and Hominy Mill."

Just south of the Boiler House within the East 129th Street road bed are four smaller structures. One is labeled "Switch Tower" and two are offices, presumably for the railway.

Hyde 1913: On this atlas, the APE is similar to that shown on Sanborn 1911 and Bromley 1911, although not as much detail as Sanborn 1911.

Lot 21 The size and shape of structures remain unchanged from Bromley 1897, and it is labeled "I.R.T. Co."

Lot 13 The grain mill on Lot 13 is labeled "W.H. Payne & Co. Grain Mill."

This map seems to show the old (planned but not built) approach to the Third Avenue Bridge as a line drawn to the west of the grain mill, although the constructed road is also shown. The elevated railway lines are shown on East 129th Street and on Second Avenue. No buildings are shown in the street as they are on Sanborn 1911.

Bromley 1916: This atlas is similar to Hyde 1913.

Lot 21 There is only one structure shown on this lot, which is frame and is labeled "Power House," which was formerly the boiler house. The lot size remains the same.

Lot 13 The grain mill remains, labeled "W.H. Payne and Son Grain Elevators."

Four frame structures are present within the East 129th Street road bed, directly south of Lot 21; three of these are within the APE. All are frame; one is labeled "Switch," another, "Trackmen."

The park remains in the area between Third Avenue and the Bridge Approach. The more westerly shoreline has been filled in to the bulkhead line (approximately 30' of fill), but the shoreline of Lot 21 has only been extended slightly at the western end. The elevated railway lines are shown on Second Avenue and East 129th Street.

Bromley 1925: The APE is similar to Bromley 1916.

Lot 21 This lot remains the same, although the Power House is now frame and brick.

Lot 13 Part of the grain mill has been removed, and there are now storage structures, labeled "Pittsburgh Fuel Co." although part remains and is still labeled "W.H. Payne & Son."

The park at the western end is named "Kuyter Park."
Sewer lines and roadbed elevations remain the same, as do the structures within the East 129th Street bed and the railway lines.

Bromley 1930: The APE is similar to Bromley 1925.
Lot 21 The Power House remains, but a new structure has been added on the shoreline (both are shown as brick). These are both within the APE.
Lot 13 The remains of the grain mill have been removed, but the Pittsburgh fuel storage structures remain.

Bromley 1934: The APE is unchanged from Bromley 1930.

Sanborn 1939: *Lot 21* The Power House is present, but the map does not show the shoreline building, although it does have the shoreline labeled as a "Coal Dock." There is another building present on the far eastern end of the lot, a storehouse, within the APE.
Lot 13 Outside the APE, the entire property is shown as belonging to the "Pittsburg Fuel Co." with associated structures such as a coal bin, hopper, conveyor, and coal elevator.
The railway structures in East 129th Street are still present.

Sanborn 1951: The APE is unchanged from Sanborn 1939.

Bromley 1955: All of Block 1794 east of the Third Avenue Bridge approach has been demolished to make way for the extension of the Harlem River Drive. The block is labeled as "Formerly Block 1794 Lot 8." The block has been extended out to the bulkhead line except at the eastern end.

Bromley 1967: Block 1794 has been incorporated into Block 1793 (Block 1794 as a label still exists but is now in the Harlem River). The Third Avenue Bridge approach has been demolished, and a new route constructed to the west, on Block 1777. A swath of land through the block is labeled "Taken for Extension to Harlem River Drive."

Bromley 1974: The Harlem River Drive has been constructed through the old Block 1794.

Sanborn 1984-85: The APE is unchanged from Bromley 1974.

Sanborn 1990-91: The APE is unchanged from Bromley 1974.

Sanborn 2001: The APE is unchanged from Bromley 1974.

Street elevations:

Block 1794	3rd x E. 130th	3rd x E. 129th	2nd x Harlem R.	2nd x E. 129th
1885 Robinson	6.3	8	under water	5.9
1897 Bromley	6.25	8	under water	5
1913 Hyde	6.3	8.0	under water	5.9
1934 Bromley	6.2	8	under water	5
1967 Bromley	6.2	8	under water	5
2001 Sanborn	-	-	under water	-

Tax and Directory Table:

LOCATION	LOT	1844	1858	1869	house, no. of stories	1876	house, no. of stories
BLOCK 1794	6-17	Isaack Adriance	J.B. Coles	No information		No information	
BLOCK 1804	1	No information	D.P. Ingraham	D.P. Ingraham	2½	D.P. Ingraham	
	2	No information		S.P. Ingraham	2	S.P. Ingraham	2
BLOCK 1805	1	No information	No information	Edgar Ketcham	dock	Edgar Ketcham	
	2	No information	No information			D.P. Ingraham	
	3	No information	No information			S.P. Ingraham	

Precontact Sensitivity

In the 19th and 20th centuries, the Harlem River was dredged periodically to keep it open to passage. During the 1860s efforts were made to improve navigation on the Harlem River. A survey of depth soundings was completed, and a navigable channel with a uniform depth of ten feet at mean low water was proposed (County of New York 1860). The proposed 150 foot wide channel was thought to be wide enough and deep enough to allow smaller and mid-sized vessels safe passage. The plan called for dredging 19,720 cubic yards of soft mud from the section south of High Bridge within this narrow channel (Ibid.). The irregularly shaped shoreline alone the channel's edge was eventually filled and turned into fast land. Therefore, where dredging is proposed in the Harlem River for barging operations adjacent to Shaft Site A, the APE has no precontact potential.

Topographic maps indicate that the shaft site block would have been land under water in the late precontact period, but during the early precontact period when water tables were lower, it may have been drained, habitable land. Therefore, it this site was occupied during the early precontact period, there is a possibility that early precontact resources may exist below the 19th and 20th century fill. Soil borings, taken about 100' away from the APE, show the presence of peat between 24.5 and 25' below grade (WPA IV.4.61, 1940). While this does not necessarily indicate that the APE would have been habitable, it does suggest that the area was estuarial. As discussed above, this suggests that while habitation may have been nearby, the APE would have probably been a focal point for foraging resources. Middens and other deposits along the shoreline are common from similar environments.

Given that this block was not filled until the mid-19th century, and the following 150 years had industrial and then highway development, it is unlikely that there is anything of late precontact archaeological value in the project area. Soil borings show that at the current shoreline, river silt extends 26-55' below grade (WPA IV:5:142-144, 1945), while at East 129th Street and Second Avenue, fill extends down to 10' below grade, mud and

fill to 20' below, and river mud 31' below (WPA IV:4:58, 1940). Within Block 1794, there is 11' of fill, and within East 129th Street, there is 17' of fill (WPA IV:4:60, 62, 1940). Therefore, the APE is sensitive for early precontact resources, but probably not late precontact resources.

Historical Sensitivity

The Harlem River adjacent to Shaft Site A lacks historic archaeological potential since it was never filled or developed. The shaft site block was marshland when the grid plan was laid out (Commissioners' 1807-11), but landfill was added through the 19th century to make it a semi-rectangular block bordered partially to the north by East 130th Street (Dripps 1867). The construction of the Harlem River Drive in the 1950's took place through this block, and it lost its numbered designation (it was incorporated into Block 1793). All of Shaft Site A is north of the Harlem River Drive, so that although disturbances may have occurred during the construction of the Drive, the Drive itself does not affect the recovery potential of this APE. Shaft Site A encompasses only the southeastern-most corner of Block 1794. This includes part of Lot 21 (the easternmost lot) and a portion of the East 129th Street former roadbed adjacent to Second Avenue. Shaft Site A continues east across the footprint of Second Avenue and into Block 1805 (discussed below), and the northern border is the Harlem River.

Block 1794 was not made land until the late 1860's. Therefore, fill at Shaft Site A is considered relatively late, and probably lacks archaeological research potential.

Development on this block within the APE was almost completely industrial (grain mills, lumber yard, railway buildings). Subsequent building episodes, including the construction of the Harlem River Drive, may have destroyed any potential shaft features such as privies, wells, or cisterns associated with these industrial buildings, although the footprints of these industrial buildings may still be present below grade. However, the information to be gained from a resource such as this is considered limited primarily because any equipment that once served the complex was undoubtedly removed and reused or recycled, as it was too valuable to simply discard.

In a 1992 study of the archaeological potential of Lumber and Building Materials (Hartgen et al 1992), it was determined that "lumber yards, which were used only for air drying and storage, appear to have little archaeological visibility...and can be eliminated from further consideration" (Hartgen et al 1992:8). Since this complex was known to use steam power, it is probable that scraps and discarded wood was used as fuel. Therefore, the lumber yard is not considered to have potential archaeological visibility.

Shaft Site A - Southeast of Second Avenue (Block 1805)

As explained above, Shaft Site A will encompass parts of former Blocks 1794 and 1805. Block 1805 is a shoreline block, bounded by Second Avenue to the west, East 128th Street to the south, and the Harlem River along the northeast. In the mid 20th century, the

Harlem River Drive was constructed on the block, and Block 1805 was consolidated numerically into Block 1803, along with Block 1804. The project area will encompass much of Block 1805.

Cartographic History

British Headquarters 1782:	The block is under water.
Commissioners' 1811:	The block is under water.
Sackersdorf 1815:	The block is under water.
Randel 1820:	The block is water and marshland, although the grid is shown extending outward into the water, indicating the intention of having this block filled in.
Burr 1832:	The block is shown as tidal shoreline.
Colton 1836:	The block is shown as shoreline/under water.
Dripps 1851:	The block is under water.
Colton 1856:	Since individual blocks are not shown on this map, it is not possible to determine where Block 1805 would lie.
Dripps 1863:	The block is under water.
Viele 1865:	The block is shown under water.
Dripps 1867:	The block has been filled in to form a small triangular block. There are dashed lines indicating an old farm property line, labeled E. Ketcham. The property on the east side of the line belonged to S.P. Ingraham. There is one structure on the block, which is part of a lime and brick yard.
Viele 1874:	The block is shown as a shoreline, on a small triangular piece of meadow land.
Watson 1874:	The APE is unchanged from Viele 1874.
Bromley 1879:	The old numbering for this block is 244. Piers have been constructed on the shoreline, extending out to the bulkhead line. There are two on Block 1805 and one extending in the area of East 128th Street and the shoreline. East 128th Street east of Second Avenue is not a fully open street, as sections of it have not been created. There are four structures on the block; three are labeled as part of a coal yard. There is a hydrant at the northwest corner of the block and one on the western end of East 128th Street.
Robinson 1885:	This atlas is similar to Bromley 1879, but the buildings are identified as frame. One is labeled the "Consumers Coal Co."; the other is labeled "Peck Martin & Co. Building Materials."
Perris 1893:	Buildings shown present in 1885 are no longer present. There are two small frame structures (one containing two steam boilers) in the northwest corner of the block that are labeled "Manhattan Railway (Coaling Station)." On Second Avenue and the western edge of this block is the Suburban R.R. Transfer Station, but railway lines are not indicated on this map. At the northwestern

corner of the block, on the shoreline of Second Avenue, is a footing for the bridge. A 6" sewer pipe is indicated on East 128th Street and a 12" pipe on Second Avenue.

Sanborn 1896: This map delineates railroad tracks, and the buildings described above are directly associated with them. There is also a third small building shown on this map next to the others. All have corrugated iron roofs. The tracks run into those on Second Avenue. In addition there is a structure that crosses Second Avenue to Block 1793 associated with the railroad. There are no buildings on the eastern half of the block, and there is a notation that there is a proposed street that runs parallel with the shoreline.

Bromley 1897: The block is divided into two lots, Lot 1 and Lot 2. There is one frame structure in each of these lots, with no label. There is also a footing for the railway bridge in the northwest corner of the block.

Sanborn 1911: The APE is similar to Sanborn 1896, with the addition of a rubbish pit and incinerator associated with the railroad tracks on Lot 1, within the APE. There are also several piles of railroad ties indicated, one on Lot 1, the other on Lot 2. Two of the jetties east of the railroad tracks have had the space in between filled in, and are now labeled "Storage of R.R. Materials (Manhattan R'way Co.)." They extend to the established pierhead line. There are two small watchman buildings on the eastern end of this jetty. A pier further to the east with an iron-roofed building is labeled "Hecker, Jones, Jewell Milling Co."

Bromley 1911: No buildings are shown on the block at this time in contrast to the Sanborn 1911. Railroad tracks are not shown on this atlas. The Second Avenue bridge is shown, labeled Suburban Rapid Transit Co. There is a pier on the far eastern end of the block, actually at the end of East 128th Street, that has a frame building on it.

Hyde 1913: This atlas is similar to Sanborn 1911, but fewer buildings are indicated on the railway tracks. The two jetties that are indicated as being joined on Sanborn 1911 are shown as separated.

Bromley 1916: The APE is unchanged since Sanborn 1911, although less detail is given.

Bromley 1925: The APE is similar to that shown on Bromley 1916, with the addition of a frame building on Lot 2.

Bromley 1930: This atlas is similar to Bromley 1925, except the iron-roofed frame buildings on the railroad tracks on Lot 1 are indicated as being brick.

Bromley 1934: This atlas is similar to Bromley 1925, except that there no longer appears to be a structure on the easternmost pier.

Sanborn 1939: The APE is similar to Bromley 1925, with the rubbish pit and incinerator indicated by the railroad tracks, and an additional set of one story structures in the southwest corner of the block used for

storage. On Lot 2 there are two additional storage structures besides the one in the center of the lot.

Sanborn 1951: All buildings and railroad tracks are now gone, with the exception of a small one story building in the center of the block.

Bromley 1955: All structures on Block 1805 have been demolished in preparation for extending the Harlem River Drive. The block is labeled "Former Block 1805 Lot 2," and part of the shoreline area is labeled "Taken for Extension to Harlem River Drive."

Bromley 1967: Blocks 1805, 1804, and 1803 have been incorporated into each other in preparation for the construction of the Harlem River Drive, and are now all considered Block 1803. The new roadway will cut through most of what was formerly Block 1805, and is labeled "Taken for Extension to Harlem River Drive." East 128th Street east of Second Avenue no longer exists.

Bromley 1974: This atlas is similar to Bromley 1967, but the Harlem River Drive has been constructed and cuts through former Block 1805; part of the approach to the Drive (which takes up all of old Block 1804) goes through what was East 128th Street.

Sanborn 1984-85: The APE is unchanged from Bromley 1974.

Sanborn 1990-91: The APE is unchanged from Bromley 1974.

Sanborn 2001: The APE is unchanged from Bromley 1974.

Roadbed elevations:

Block 1805	2nd x E. 129th	2nd x E. 128th	NE	Harlem R. x E. 128th
Robinson 1885	-	7.11	under water	-
Bromley 1897	5	7.92	under water	-
Bromley 1911	5	7.92	under water	-
Bromley 1955	5	7.9	under water	-
Sanborn 2001	-	-	under water	-

Tax and Directory Table:

(See previous section)

Precontact Sensitivity

Topographic maps indicate that this block would have been land under water in the late precontact period, but lower sea levels in the early precontact period may have resulted in this section of the APE being drained and available for habitation. This suggests that this section of the APE has the potential to possess early precontact resources buried beneath late 19th century fill. Soil borings within the Shaft Site A APE show the presence of peat between 23 to 33' below grade, and the presence of shell between 15 to 23' below grade (WPA IV.5.92 and 94, 1940). The presence of peat may indicate a former living area or resource procurement site. Kearns et al (2001:25) discuss the precontact potential at

another site using similar evidence. Research undertaken by Dr. Dennis Weiss (1988), who examined estuarine and shoreline boundaries along parts of the Hudson River, determined that shell and peat could indicate an estuarial area. The area of the Harlem River bordering the APE was likely estuarial before becoming inundated (Kearns et al 2001:26). Although habitation probably would not have occurred in this area, it would have been a focal point for foraging resources. The presence of shell could indicate shell middens left at the water's edge; however, shellfish exploitation was unlikely during the period when precontact population were likely to have lived in the area, as abundant oyster beds were more likely to occur far south of this area. If, however, the area was exploited for food resources, although not for habitation, it is likely that the surrounding areas slightly inland may have been inhabited, and other parts of this project area might fall into one of these zones. Therefore, the APE may be sensitive for early precontact resources, but is probably not sensitive for late precontact resources as it would have been under water or marshland.

Historical Sensitivity

Originally under water (shallow marshland), Block 1805 was filled in during the late 19th century, and a small, triangular block was formed by the boundaries of Second Avenue, East 128th Street, and the Harlem River. The block experienced several mid-to-late 19th century episodes of infilling, as piers were expanded and then connected. Historically, its location on the shoreline made it ideal for industrial use, as evidenced by the presence of a lime and brick yard (Dripps 1867). This block was the site of shipping, and for the storage of building materials. Later, when the elevated railroad was constructed, it was utilized for storage of items such as railroad ties. Although a rubbish pit was present within the APE, it dates only from the early part of the 19th century, and is alongside an incinerator, indicating that there is unlikely that evidence of waste from industrial use remains (Sanborn 1911). Furthermore, any remnants from these structures and activities were likely to be shallow deposits, and the constructions of the Harlem River Drive probably resulted in their destruction. Therefore, the APE is not sensitive for historical archaeological resources.

Shaft Site B - Block 1793

Block 1793 is bounded by East 129th Street to the north, East 128th Street to the south, Third Avenue to the west, and Second Avenue to the east. Shaft Site B is located on the southeast corner of this block, on Lot 7. The APE encompasses this area and the Second Avenue sidewalk.

Cartographic History

British
Headquarters 1782: Block 1793 is mostly underwater/marshland, located of the eastern shore of the Haerlem Plains. An inlet or estuary is shown at this location.

Commissioners' 1811: Block 1793 is a shoreline block; only the southwest corner is depicted as land. The rest of the block, including the APE, is shown as being marshland (Figure 4.1-2).

Sackersdorf 1815: The block is shown as being approximately half land, on a northwest-southeast diagonal, and half under water. The northwest corner of the block, outside of the APE, is farmland belonging to John B. Coles; the rest of the upland portion of the block falls into property owned by Isaac Adriance.

Randel 1820: The APE is very similar to that shown on Sackersdorf.

Farm Map #40A 1823/1869: The block is still a similar size to that in Sackersdorf, but is shown divided into lots. However, the APE is most likely still under water at this time.

Burr 1832: The block is shown similarly to that of Sackersdorf, but no other details are shown.

Colton 1836: This block is similar in shape to that on Sackersdorf. This map shows a large estate covering nearly all of the block, as well as most of the block to the south, and going all the way to the shoreline.

Dripps 1851: Some land has now been added to this block, so that there is a jetty-like extension of land out into the Harlem River. Second Avenue does not yet extend as far north as this block. There are five structures indicated on the block, and three of these fall within the APE. The label "Stage Stables" is written on East 128th Street below these three structures.

Colton 1856: Individual blocks are not delineated on this map; however, the jetty-like projection is visible between Third and Second Avenues.

Dripps 1862: This shows a similar shoreline to that of Colton 1856, with an additional dock-like projection in the northwest corner of the block, outside of the APE.

Viele 1865: The shoreline is similar to that of Dripps 1851 and Colton 1856. The land portion of the block is designated as meadow. On East 128th Street is the demarcation of a rise in the elevation of the land to the south and west.

Dripps 1867: The block is shown as a full rectangular city block, the land having been filled in since 1862. About half of the block has been lotted, and contains approximately 22 lots. There is a coal yard on the western half of the block, but this is outside the Shaft Site B APE. There is a dotted line in the southeast corner of the block with the label "E. Ketcham." Elevated railway lines are shown running on Third and Second Avenues. On East 128th Street in the middle of the block is the label "Dunscomb Place," which appears to refer to a line of buildings on Block 1792, outside the APE.

Viele 1874: The block is shown completely filled in and is meadow. There is an incline in the land indicated running lengthwise along the block, with the downslope towards the water.

Watson 1874: No structure details are noted on this map, but the railway lines are shown on Third and Second Avenues, and Duncomb (sic) Place is labeled on East 128th Street.

Bromley 1879: The block is fully divided into lots, and the block is numbered 332 (Figure 4.1-6). Named entities (all in the western half outside of the APE) are a coal and wood yard, a lumber yard, another coal yard, and a stone yard. The lumber yard owner appears to be Wm. H. Colwell & Co. (with another yard in the northern block directly across East 129th Street), and the coal yard owner is C.B. Tocker. There is a row of about 10 structures fronting along East 128th Street in the southeast corner of the block within the APE, as well as a row along Third Avenue outside the APE; all appear to be residential. The lots within the APE are: 16, 17, 17 ½, 18, 19, 20, 20 ½, 21, 22, 22 ½, 23, 24, 25.

Lots 16-22½ These lots house residential structures.

Lot 23 There is another structure on this corner lot, also within the APE, that is larger and is probably not residential.

Lots 24 and 25 These lots are not developed.

The ca. 1600 shoreline is indicated running diagonally through the block from the northwest corner to the southeast corner. There is a hydrant located on East 128th Street halfway between Third and Second Avenues, and railway lines are shown on Third and Second Avenues.

Robinson 1885: This atlas is similar to Bromley 1879. T

Lots 16-22½ These residential buildings in a row on East 128th Street are all brick.

Lot 23 The building on this lot is frame.

The Tocker property with the coal yard remains on the south side of the block, as does the lumber yard on the north, but these are outside of the APE.

Perris 1893: *Lots 16-22½* The residential buildings within the APE remain unchanged. These are three-story brick dwellings, with large backyards. One building, at 251 East 128th Street (Lot 22), has a frame lean-to or similar structure in the back.

Lot 23 There are now two frame buildings on the corner lot. One is two-story, the other one-story, and both are indicated as having stores underneath.

The railroad lines have been extended through East 129th Street, and the north half of Block 1793 has been demolished and replaced by a railway car yard (M.R.R. Co. Car Yard). This is outside the APE. A platform (Suburban R.T.) runs nearly the entire length of the north side of the block and connects with two other platforms;

the H.R. & P.R.R. Platform in the middle of East 129th Street, and the M.R.R. Station on Third Avenue (this may encroach into the APE for Shaft Site A).
The coal yard is still present, as are the brick structures indicated on Robinson 1885. There is also a brick structure associated with the railroad in the northeastern corner of the block, and a small structure directly in the middle of the block, but all of these are outside the APE.

Sanborn 1896: Although railroad tracks are not indicated on this map, nearly the entire area of Block 1793 is given over to a rail yard, except for a row of buildings on the western end of the block, along Third Avenue outside of the APE. There are no longer residential buildings on the southern half of the block. The features on this atlas differ from the Bromley 1897 atlas, which shows only the northern half of the block as vacant, rather than the entire block. The label for the yard is "Manhattan Railway Compy. Platform Tracks on Trestle-work for Storing Cars." There are two structures associated with the yard, a storehouse in the center of the block, and an ash house in the northeastern corner of the block. The latter may border on the Shaft Site A APE (discussed above).

Bromley 1897: This atlas disagrees slightly with Sanborn 1896, in that Bromley shows that while all the brick residential buildings on East 128th Street within the APE have been demolished, two structures remain inside the APE; these are two frame buildings on Lot 23, on the southeast corner of the block. Sanborn 1896 does not show these frame buildings, and does not show the old (empty) lots as Bromley 1897 does. There is an iron-roofed building in the northeast corner of the block, presumably the Ash House on Sanborn 1896, that may border on the Shaft Site A APE (discussed above). Railroad tracks are not indicated on this map, nor is there any label on the otherwise empty northern half of the block.

Sanborn 1911: All structures formerly within the Shaft Site B APE have been razed. Rail tracks and associated buildings fill the entire block. These were mainly for the elevated railway, although there are some structures associated with the trolley line on the western end of the block, outside the APE. The elevated railway structures consist of the Manhattan Railway station, with four regular platforms (two of these are in the East 129th Street bed) and an "Express Cos Platform," two car shops, ticket office, offices for the Wells Fargo Express and U.S. Express, recreation rooms for employees, lounging room for trainmen, switch towers, and adjacent to the block, a freight station (discussed as part of the Second Avenue APE). One of the car shops, on the southern half of the block, encroaches into the western end of the Shaft Site B APE. The other car shop, in the northeast corner of the block,

extends into Second Avenue, and is discussed above in the Second Avenue APE. Many, if not all, of the rail platforms were elevated, and there were also buildings on the ground surface. The car shop in this APE appears to have been elevated, as underneath there were two store houses with cement walls, and an adjacent shed. These would also fall into the Shaft Site B APE. Two very small sheds stood in the southeast corner of the block, also within the Shaft B APE, as well as some small buildings within the Second Avenue roadbed, that were apparently surface buildings (the latter are discussed above).

Bromley 1911: The western end of the block is all part of the Third Avenue Bridge approach, and is outside of the APE. The rest of the block is devoted to the Manhattan Elevated Railway Station. Although tracks are not indicated on this map, there is a group of brick buildings on the western end, and a large two-story building that is presumably the car shop in the southern part of the block, detailed above on Sanborn 1911; this building extends into the APE. The northern car shop is not shown.

Hyde 1913: The block is now labeled "Interborough Rapid Transit Co." Both car shops are shown. The car shop partially within the Shaft Site B APE is two-story brick, and there is another adjacent large frame structure that may be underneath the elevated rails. This latter structure is fully within this APE. Elevated tracks also extend through this APE and connect with those running on Second Avenue. The car shop in the northeast corner of the block is discussed as part of the Second Avenue APE.

Bromley 1916: This atlas is similar to Sanborn 1911. The building that extends partially into the Shaft Site B APE, previously labeled car shop, is now labeled "Inspection Shed." There is also a small frame building within the APE, but the large frame structure seen on Hyde 1913 is not shown. On Second Avenue, the other brick inspection shed extends into the roadbed, and there are several small frame buildings that are within the Second Avenue APE.

Bromley 1925: The APE is unchanged from Bromley 1916.

Bromley 1930: The APE is unchanged from Bromley 1916.

Bromley 1934: The APE is unchanged from Bromley 1916.

Sanborn 1939: The APE is unchanged from Bromley 1916. This map has more detail than Bromley 1916, but is basically identical to Sanborn 1911.

Sanborn 1951: All structures except for four small sheds in the southeast corner of the lot (within the APE) have been demolished, as have many of the rail tracks, presumably in preparation for the extension of the Harlem River Drive.

Bromley 1955: All structures have been demolished in preparation for the extension of the Harlem River Drive.

Bromley 1967: Block 1793 and 1794 have been consolidated in preparation for the construction of the Harlem River Drive, and are now both considered Block 1793. The new roadway will cut through the northeast corner of the old block, and is labeled "Taken for Extension to Harlem River Drive." East 129th Street between Third and Second Avenues no longer exists.
In the southern one-third of the block covering all of the Shaft Site B APE, Lot 7 consists of a brick-walled enclosure and two brick structures belonging to the NYC Transit Authority.

Bromley 1974: The APE is similar to that shown on Bromley 1967, but the Harlem River Drive has been constructed and cuts into the northeast corner of the old Block 1793.

Sanborn 1984-85: The APE is unchanged from Bromley 1974.

Sanborn 1990-91: The APE is unchanged from Bromley 1974.

Sanborn 2001: The APE is unchanged from Bromley 1974.

Roadbed elevations:

Block 1793	3rd x E. 129th	3rd x E. 128th	2nd x E. 129th	2nd x E. 128th
Robinson 1885	8	9.8	5.9	7.11
Bromley 1897	8	9.74	5	7.92
Hyde 1913	8.0	9.8	5.9	7.11
Bromley 1955	8	9.7	-	7.9
Sanborn 2001	-	9.7	-	-

Tax and Directory Table:

LOCATION **BLOCK 1793**	LOT	1844	1858	1869	house, no. of stories	1876	house, no. of stories
235 E. 128th Street	16	Isaack Adriance	Isaac Adriance	C.A. Thurston	3	Mrs. A.J. Weed	3
237 E. 128th Street	17	Isaack Adriance	Abraham Carlock	C.A. Thurston	3	C.A. Thurston	3
239 E. 128th Street	17 ½	Isaack Adriance	Abraham Carlock	C.A. Thurston	3	C.A. Thurston	3
241 E. 128th Street	18		Richard Ditchett	C.A. Thurston	3	John B. Keller	3
243 E. 128th Street	19		Isaac Adriance	C.A. Thurston	3	C.A. Thurston	3
245 E. 128th Street	20		Isaac Adriance	C.A. Thurston	3	E. Gabler	3
247 E. 128th Street	20 ½		Isaac Adriance			E. Gabler	3
249 E. 128th Street	21		Isaac Adriance	C.A. Thurston	3	E. Gabler	3
251 E. 128th Street	22		Isaac Adriance	C.A. Thurston	3	E. Gabler	3

253 E. 128th Street	22 ½		Isaac Adriance	M. England	3	S. England	3
2501 Second Avenue	23		Isaac Adriance	E. Ketcham		E. Ketcham	
2503 Second Avenue	24		Isaac Adriance	M.G. Laine and others		M.G. Laine and others	
2505 Second Avenue	25		Isaac Adriance	M.G. Laine and others		M.G. Laine and others	

Precontact Sensitivity

Topographic maps depicting predevelopment conditions suggest that Block 1793 was along the shoreline in the late precontact period. It is unlikely that the shoreline itself would have been a living area, as it most likely would have been marshy to a certain extent. However, it would have been a rich source of faunal and floral resources. There is evidence for peat between 24.5-25' below grade within one of the soil borings in Block 1793 (WPA IV:4:61, 1940); however, as discussed above, this could also imply an estuarial environment. In the earlier precontact period, when sea levels were higher, there is the potential for habitation in the vicinity (see discussion under Block 1805 above). Therefore the APE is sensitive for early, but not late, precontact resources about 25' below grade.

Historical Sensitivity

Block 1793 was a shoreline block in the early historical period. It consisted of only a small triangular plot of land by the time the Commissioners' Map was made (1807-11). The part of the block that contains the APE was land under water until it was filled by the early 1850's (Dripps 1851), and the block was fully filled by 1867 (Dripps 1867). The northern half of the block outside the APE appeared to have been industrial, but the southern half was residential (Figure 4.1-6). A row of 10 buildings within the APE on Lots 16-22½ was constructed sometime between 1851 and 1867, and was demolished by 1896. They were three-story brick buildings, probably housing multiple residents. There is a high probability that the back yards that were associated with each of these residences contained privies and/or wells, since the area was still fairly remote when the buildings were constructed, and may not have had access to utilities. The subsequent construction of the rail yard should not have had a great effect on such shaft features, since some of the development on this block consisted of elevated structures, and all other buildings appear to be one-story storage sheds without basements. A soil boring within the APE gives a fill depth of 9.9' below grade (WPA IV:5:97, 1940), and other borings within the block show that fill depths vary between 13 to 20.3' below grade (WPA IV:4:58, 59, 61, 63, 1940).

An elevated railway was present on Second Avenue from the 1870's through the 1930's, and the subsequent use of this area as a large railroad complex, including a rail car shop/inspection shed from circa 1890 to the 1940's, might be valuable as an archaeological resource, but the area would likely only be sensitive for the storehouse features, since the actual car shop was on the second floor. The main repair and inspection shop of the Interborough Rapid Transit Company adjoins the car yards of the

company and occupies the entire block between Seventh Avenue, Lenox Avenue, East 148th Street and the Harlem River, outside the APE (New York City Subway Resources 1995-2001:Chapter 6). Therefore, given that the maps and atlases indicate that the car shops at this site were elevated, and that only storage rooms were at ground level, the site of the rail car shop has little, if no, research potential. However, as described above, the area is sensitive for the earlier 19th century shaft features from the surface down to about 15' below grade. The majority of the APE is currently a parking lot.

Shaft Sites C and E - Block 1791

Block 1791 is bordered by East 127th Street on the north, East 126th Street on the south, Third Avenue to the west, and Second Avenue to the east. Two shaft sites are proposed for this block, Shaft Sites C and E. The APE covers approximate two-thirds of the block.

Cartographic History

British
Headquarters 1782: This area containing this block is shown as farm fields.

Commissioners' 1811: This block is shown as open land, with part of a roadway that leads from a structure in the roadbed of the future Second Avenue to a pond at East 125th Street (Figure 4.1-2). The closest names of farm owners are Ingraham to the west at Third Avenue, and Phoenix east of Second Avenue.

Sackersdorf 1815: The majority of this block is shown as part of a large tract (38.0 acres) of open land belonging to the heirs of John Sickels. The northwest corner of the block is part of the property of Isaac Adriance, while the southeast corner is part of the holdings of N. G. Ingraham.

Randel 1820: The block is similar to Sackersdorf, but there is no land ownership shown by Adriance.

Farm Map #40A 1823/1869: This map was drawn to shown the land division going to the heirs of John Sickels. Nearly all of the block has been subdivided into smaller lots, except the tract that was previously labeled as belong to Ingraham, and is now labeled as belonging to the "Devisees of Dan. Phoenix." No structures are shown on this map.

Burr 1832: The block is shown as open land.

Colton 1836: The block is shown as open land.

Dripps 1851: There are now about half a dozen structures on the block on its western half and some appearing to fall within the APE.
Two structures fall within the APE for Shaft Site E.
Just north of the Shaft Site E APE is a Presbyterian church, whose lot appears to extend eastward into the APE of Shaft Site C.
In the southwest corner of the block are three structures and a lumber yard, but these fall outside of the APE.

Dripps 1863: Few details are noted on this map, but a church is shown midway along East 127th Street, outside of the APE.

Viele 1865: The block is depicted as meadowland, with a small ridge running from the northwest corner to the southeast.

Dripps 1867: Several additional structures are shown, and those in the eastern half are within the APE. The easternmost one-third of the block is still vacant, and is shown as two large lots. The Presbyterian Church and the lumber yard are still present outside of the APE. Old property lines are noted; most of the block belonged to the "Heirs of J. Sickels," with the northeast corner of the property of Nathan G. Ingraham.

Viele 1874: The APE is unchanged from Viele 1865.

Bromley 1879: The block is numbered 330 and has been completely divided into lots. Lots 5-24 comprise Shaft Site E, and Lots 25-33 comprise shaft site C.

Lots 5-20 There are 20 lots on East 126th Street within the APE, and all but Lots 14 and 20 have structures on them, most of which are frame. Most of these structures are small, and the lots have large backyards, and some have small front yards.

Lots 21-24 The southeast corner of the block is undeveloped.

Lots 25-33 The northeast quarter of the block has become the "2nd Ave. Railway Stables" and has a frame stable within the APE. These lots are consolidated into Lot 25 from this time onward. There are tracks leading from the Second Avenue lines to this stable.

The Presbyterian Church (brick) remains, outside of the APE. There is a hydrant located midway on the block on East 126th Street and midway on Second Avenue.

Robinson 1885: This atlas shows the following developments from Bromley 1879:

Lots 5-20 The buildings fronting on East 126th Street within the APE appear to have been replaced, mostly with somewhat larger stone-faced buildings, as they appear larger than on Bromley 1879. However, this atlas does contain more detail about the buildings, so they may be the same, although Lot 20 is newly developed. There are also some frame and brick buildings within the APE. Surrounding these structures are small front yards and larger backyards.

Lot 14 This lot has a frame stable in the rear of the lot, but no house.

Lots 21-24 The southeast corner of the block is still undeveloped.

Lots 25 The railway stables are now a brick structure, the "Second Ave. Railroad Depot."

Perris 1893: This atlas is similar to Robinson 1885.

Lots 11-14 These structures fronting East 126th Street are now larger brick five-story buildings instead of frame.

Lots 5-11, 15-20 The remaining buildings on East 126th Street are mostly three-story residential buildings with brownstone fronts. Two have commercial spaces on the ground level. These are all within the APE.
Lots 21-24 The southeast corner of the block is still undeveloped. The railroad depot building is labeled as the "Car House &c. of the Second Ave. R.R. Co." Basements are not indicated on this atlas. Six inch water pipes are present on East 126th Street and East 127th Street, and a 12" water pipe runs down on Second Avenue.

Sanborn 1896: The APE is unchanged from Perris 1893.

Bromley 1897: This atlas is similar to Perris 1893, but basements are indicated on this map. The APE includes the following lots (numbers in parentheses indicated new lot numbering system instituted between 1934 and 1955): 5, 6, 6½ (106), 7, 8, 8½ (108), 9, 9½ (109), 11, 11½ (111), 12, 13, 14, 15, 16, 16½ (116), 17, 18, 18½ (118), 19, 20, 21, 22, 23, 24, 25.
Lot 25 is the railroad depot building, labeled "2nd Ave. R.R. Co."
Lots 21-24 These lots in the southeast corner of the block are still undeveloped.
Lots 16-20 All of these lots have structures with basements, large backyards, and very small front yards,
Lots 11-15 These buildings are not labeled with basements, and do not have front yards. The building in Lot 12 is labeled "Storm King."
Lots 5-9½ All lots have structures with basements, large backyards, and very small front yards.
Sewer pipes are shown on East 126th Street, East 127th Street, and Second Avenue.

Sanborn 1911: The majority of the buildings within the APE remain unchanged, except as noted.
Lot 25 The depot has been demolished.
Lots 21-24 Three structures have now been erected on these lots, each of which is six stories tall and has a basement and storefront. Open yards remain behind each of these buildings.
Lots 11-15 Basements are indicated on this map for the buildings on these lots; these appear to be the same buildings indicated as having basements on the Bromley 1897 atlas.

Bromley 1911: The APE is unchanged from Sanborn 1911, although basements are not indicated for Lots 11-15 or 21-24.

Hyde 1913: The APE is similar to Sanborn 1911, although front stairs are shown for all buildings fronting on East 126th Street (Figure 4.1-7). Basements are not indicated for Lots 11-15 or 21-24.
Sewer lines are labeled as 4' x 2'8" brick on East 126th Street and a 15" pipe on East 127th Street. The hydrant midway on East 126th Street remains, but the one on Second Avenue is not portrayed.

Bromley 1916: The APE is nearly unchanged from Bromley 1911, except a hydrant has been added at the southeast corner of the block, on East 126th Street.

Bromley 1925: The APE is nearly unchanged from Bromley 1911, except for the following changes:
Lot 25 A garage has been built on this lot. The garage is one-story without a basement, except for a small boiler room with a basement within the northeast corner of the garage.
Lot 5 The building on this lot has been extended although the way to the rear property line with a one-story extension.

Bromley 1930: The APE is unchanged from Bromley 1925.

Bromley 1934: The APE is unchanged from Bromley 1925.

Sanborn 1939: The garage located on Lot 25 has a notation that two 550-gallon gasoline tanks are buried underneath the building.

Sanborn 1951: The garage has been converted to the "Crown Wire Manufacturing Co."

Bromley 1955: The APE is unchanged from Sanborn 1951, although Lot 25 is still labeled as a garage.

Bromley 1967: The APE is nearly unchanged from Bromley 1955, except that the building on Lot 106 (6 ½) has been demolished.

Bromley 1974: A number of buildings along East 126th Street have been demolished. The lots of the demolished buildings are: 5, 106, 7, 8, 108, 16, 116, and 17.

Sanborn 1984-85: All buildings along East 126th Street have been removed, and the APE is vacant.

Sanborn 1990-91: The APE is unchanged from Sanborn 1984-85.

Sanborn 2001: The APE is unchanged from Sanborn 1984-85.

Roadbed elevations:

Block 1791	3rd x E. 127th	3rd x E. 126th	2nd x E. 127th	2nd x E. 126th
1885 Robinson	11.5	11.9	10.11	12.3
1897 Bromley	11.49	11.80	10.08	12.25
1911 Bromley	11.49	11.80	10.08	12.25
1916 Bromley	11.5	11.8	10	12.2
1934 Bromley	11.5	11.8	10	12.2
1967 Bromley	11.5	11.8	10	12.2
2001 Sanborn	11.25	11.8	10	12.2

Tax and Directory Table:

LOCATION **BLOCK 1791**	LOT	1844	1858	1869	house, no. of stories	1876	hous e, no. of stori es

207 E. 126th Street	5	Daniel P. Ingraham	Daniel P. Ingraham	J. Adriance and others	sheds, etc.	Samuel Schiffer	
209 E. 126th Street	6		Daniel P. Ingraham	J. Adriance and others	sheds, etc.	Samuel Schiffer	
211 E. 126th Street	6½ (106)		Daniel P. Ingraham	J. Adriance and others	sheds, etc.	Samuel Schiffer	
213 E. 126th Street	7		Daniel P. Ingraham	J. Adriance and others	sheds, etc.	Samuel Schiffer	
215 E. 126th Street	8		Daniel P. Ingraham	J. Adriance and others	sheds, etc.	Samuel Schiffer	
217 E. 126th Street	8½ (108)		Daniel P. Ingraham	J. Adriance and others	sheds, etc.	Samuel Schiffer	
219 E. 126th Street	9		Daniel P. Ingraham	J. Adriance and others	sheds, etc.	Samuel Schiffer	
221 E. 126th Street	9½ (109)		Daniel P. Ingraham	J. Adriance and others	sheds, etc.	Samuel Schiffer	
223 E. 126th Street	11		Mr. Clark	A. Clark	2	Alpheus Clark	2
225 E. 126th Street	11½ (111)			A. Clark		Alpheus Clark	
227 E. 126th Street	12		J.W. Colwell	J. Wiley	2½	Wm. Brown	2½ ex
229 E. 126th Street	13		Daniel P. Ingraham	Jas. Colwell	2	James Colwell	2½ ex
231 E. 126th Street	14		Daniel P. Ingraham	Jas. Colwell		James Colwell	
233 E. 126th Street	15		Daniel P. Ingraham	J.B. Haskins		L. Richter	2
235 E. 126th Street	16		Daniel P. Ingraham	J.B. Haskins		Lucy D. Holmes	3
237 E. 126th Street	16½ (116)		Daniel P. Ingraham	J.B. Haskins		Elizet. Blue	3
239 E. 126th Street	17		Daniel P. Ingraham	J.B. Haskins		G. and E. Brettell	3
241 E. 126th Street	18		Daniel P. Ingraham	A.B. Tappin		Elizh. Evans	3
243 E. 126th Street	18½ (118)		Daniel P. Ingraham	A.B. Tappin		E. Brettell	2
245 E. 126th Street	19		Daniel P. Ingraham	A.B. Tappin		G. Brettell	2
247 E. 126th Street	20		Daniel P. Ingraham	A.B. Tappin		G. and E. Brettell	2
249-51 E. 126th Street	21 (23)	Elizabeth Ingraham	Daniel P. Ingraham	D.P. Ingraham		D.P. Ingraham	
2461-63 Second Avenue	22/23 (21)	Elizabeth Ingraham	Daniel P. Ingraham	D.P. Ingraham		D.P. Ingraham	
2461-63 Second Avenue	22/23 (21)	Elizabeth Ingraham	Daniel P. Ingraham	D.P. Ingraham		D.P. Ingraham	
2465-67 Second Avenue	24 (22)	Elizabeth Ingraham	Daniel P. Ingraham	D.P. Ingraham		D.P. Ingraham	
230 East 127th Street	25 (-33)	Daniel P. Ingraham	William S. Ingraham	J.K. Eccles?		Second Avenue Rail Road Company	depot & stables
	26	Daniel P. Ingraham	William S. Ingraham	J.K. Eccles?		(consolidated into Lot 25)	
	27	Daniel P. Ingraham	William S. Ingraham	J.K. Eccles?		(consolidated into Lot 25)	
	28	Daniel P. Ingraham	William S. Ingraham	J.K. Eccles?		(consolidated into Lot 25)	

	29	Daniel P. Ingraham	William S. Ingraham	E. Ketcham		(consolidated into Lot 25)	
	30	Daniel P. Ingraham	William S. Ingraham	E. Ketcham		(consolidated into Lot 25)	
	31	Daniel P. Ingraham	William S. Ingraham	E. Ketcham		(consolidated into Lot 25)	
	32	Daniel P. Ingraham	John Helms	E. Ketcham		(consolidated into Lot 25)	
	33	Daniel P. Ingraham		E. Ketcham		(consolidated into Lot 25)	

Precontact Sensitivity

Block 1791 was about 250' inland from the shoreline as it was depicted on predevelopment maps. As a meadow area in close proximity to a knoll near East 125th Street between Second and Third Avenues, it would have been suitable for prehistoric settlement, with a potential fresh water source on East 125th Street between Second and Third Avenues. This area would have been in close proximity to faunal resources in and near the Harlem River. Soil borings show that fill depths range from 14-16' below surface in the middle of the block (Warren George, Inc. B-7, B-8, B-9, 1997). In contrast, borings taken on the north side of the East 126th Street sidewalk do not show any fill (Warren George, Inc. MW-2, MW-3, 1994). Therefore, the block is sensitive for precontact resources below the fill that extends to about 16' below grade. However, the sidewalk area may no longer retain sensitivity since a lack of fill here suggests it was graded and paved, or that precontact living surfaces would have been unprotected from historical development.

Historical Sensitivity

The earliest development cartographically depicted in this APE dates to 1851 when two structures were shown on Shaft Site E (Dripps 1951). By 1867 there were three structures on Shaft Site E (Dripps 1867), and by 1879 (Bromley 1879), there were buildings on every lot fronting onto East 126th Street, except for Lots 14 and 20. A number of these buildings may have been replaced by 1885 (Robinson) as the dimensions differ from the earlier map, but this could simply be due to better cartographic detail. Most of the buildings remained standing through the 1970's.

Lots 5, 6, 6½ (106), 7, 8, 8½ (108), 9, and 9½ (109) contain adjacent brownstones by 1885 (Robinson). These are possibly the same buildings as shown on Bromley 1879, but could possibly be new constructions since then. They have large back yards. They are shown on Perris 1893 to be three-story buildings. Most of these remain until sometime between 1967 and 1974 (Bromley), except for Lots 9 and 109, which were razed by 1984-85 (Sanborn). The building on Lot 106 was demolished between 1955 and 1967. A few of these had additional small structures erected in the back yards, except for the building on Lot 5, which was adjoined to Lot 5½, had a one-story brick addition added to fill in the entire back of the lot.

In the next set of lots, three structures are shown in the middle of East 126th Street in Dripps 1867. These may be the same three buildings shown on Lots 10, 12, and 13 on Bromley 1879. Lot 14 is empty in 1879. Several lots in this section were added together or separated during the late 19th century, so that Lots 10, 12, 13, and 14 existing in 1879 (Bromley) become 11, 12, 13, and 14 by 1885 (Robinson), and then become 11, 11½ (111), 12, 13, and 14 by 1897 (Bromley). Three small frame structures existing in 1885 (Robinson) were replaced by four large brick five-story apartment buildings by 1893 (Perris). Lot 14, empty in 1879, contained a frame stable in 1885 (Robinson), and was replaced by a five-story brick building by 1893 (Perris). The building on Lot 12 may

have had a commercial enterprise on the ground floor, as it is labeled "Storm King" from 1897 through 1911 (Bromley). This group of buildings was demolished between 1974 and 1984-85.

The last group of residential buildings, along East 126th Street within this APE, have a history similar to the first group of buildings. Lots 15, 16, 16 ½ (116), 17, 18, 18 ½ (118), and 19 are developed by 1879 (Bromley), and Lot 20 is empty. Robinson 1885 shows that Lot 20 has now been developed, and all are brownstones but the building on Lot 18, which is brick. They all have large back yards. Perris 1893 indicates that all are three-story buildings, except for the one on Lot 15, which was a five-story building. Between 1967 and 1974 the buildings on Lots 16, 116, and 17 were demolished (Bromley 1967, 1974). The rest of the row was demolished by 1984-85 (Sanborn1984-85).

The southeast corner of this block remained undeveloped until sometime between 1897 and 1911, when three six-story buildings were constructed. These were probably apartment buildings, with street front stores. These were demolished between 1974 and 1984-85 (Bromley 1974, Sanborn 1984-85).

Given that there were residential structures in the APE by 1852, prior to the availability of sewer and water, and they possessed back yards that by and large remained clear of construction, there is a high potential for finding shaft structures such as wells and privies on Block 1791 related to these residential episodes (Figure 4.1-7). Specifically, within the APE of Shaft Site E, Lots 6 through 20 had substantial back yards and Lots 21 through 24 were open in the 19th century. By 1911, Lots 21 through 24 had structures, but still had back yards. All structures had basements. The demolition of these residential buildings did not occur until the late 1960's through the early 1980's, and the lots remained undeveloped since that time. Although the area was ostensibly provided with sewer and water hookups by the late 19th century, the housing reform acts of 1867 and 1888 show that houses were often not connected to these. Fill depths within this block ranges from 14-16' below surface (Warren George, Inc. B-7, B-8, B-9, 1997). Therefore, Shaft Site E has a high probability of possessing mid-19th century historical resources such as privies and wells from the surface down to about 15' below grade.

Shaft Site C is unlikely to possess historical resources, as the earliest documented development in this APE was a railway stable built in the 1870's, which was demolished in the early 20th century. The Second Avenue Railroad Car Depot was never cartographically depicted to possess work areas, and was probably a storage facility. As such, the APE would have only held any tracks and structural foundations, neither of which have research potential. After the building was razed in the 1920's, a garage was built in its location and underground gasoline tanks were installed which would have caused extensive surface disturbance to the location of the depot. In the late 1970's or early 1980's, the garage building was demolished and replaced by a parking lot. The entirety of Shaft Site C has always been occupied by a single building with no open space surrounding the structure. The lack of archaeological research potential for the depot

and/or any other structures in Shaft Site C indicates it lacks historical archaeological sensitivity.

4.1.7.2 Site File Search Results

SITE FILE SEARCH RESULTS

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

~~Village~~ City 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 ~~21~~ 19

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
7248 X		~~2- A061.01.0014 D03~~	survey in the 1970's
		3- A061.01.0623 X D023	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 @ SHPO		A061.01.01286 X	
		A061.01.0541 X	
		A061.01.00542 X	
		A061.01.09531 X	

ATIONAL REG[illegible]ER E[illegible]GIBLE and LISTED ___X___ Eligible [illegible] ___1___ Listed [illegible] ___X___ Building Inven[illegible]

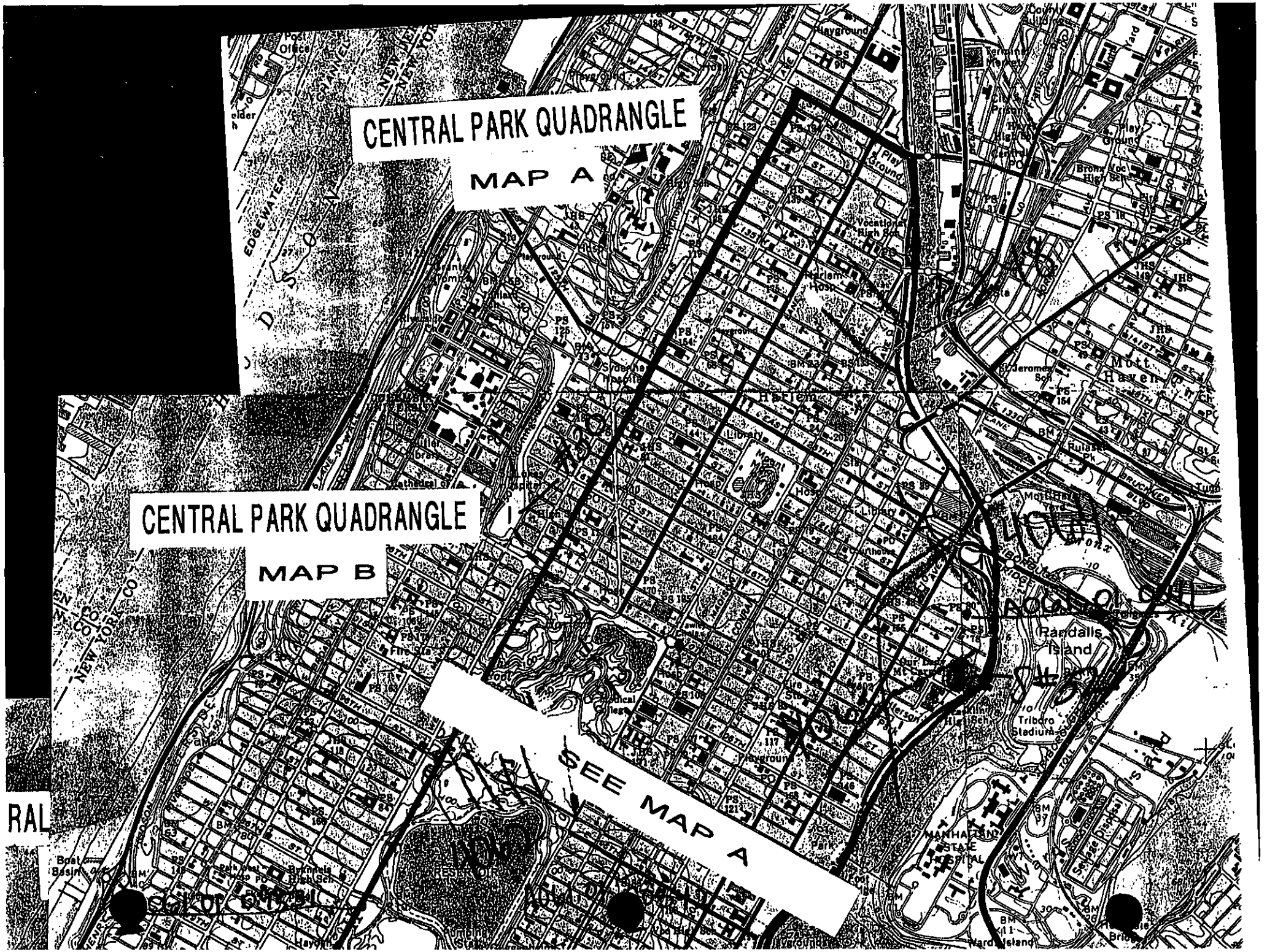
ilding Inventory #	NR Status	Form Copied	Property Description	Roads Checked
06101.000604	NRL	✓	South Street Seaport Historic District 209 Water Street	

EVIOUS SURVEYS <17 previous surveys w/in Radius>

8 Westside Highway Program – 1983
William D. Hersey – 1963 Castle Clinton at the Battery
Broad Street Financial Center Greenhouse January 1985
X
64th Pearl Street 17th Landfill Arnold Pickman & Nan Rothschild May 1981
Stone Street Historic District 9/17, 8/[illegible] NYC Landmarks Pres. Comm. Trackler
9 Barclays Bank Site – 100 Water St. Berger – 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block. Kardon & Larrabee – Aug 1991

209 Water St. – Schuyler – ? Date
East River Road – New York Harbor Collection Kardon & Larrabee October 1977
10 Sheridan Square – 1983 – Rutgers University
Lower Eastside Service Center – Louis Berger – Jan '98
27 750 Sixth Ave. HPI – February 1998
Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1989 / December 1989
32 East River Plaza HPI Sept. 1998
Stone Street Historic District NYC Landmark Pres. Comm. February 1998

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


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A
Randalls Island
Triboro Stadium
Mott Haven
Harlem
Harlem Hosp
Vocational High Sch
Play Ground
Library
Medical College
Boat Basin
Ward Island
MANHATTAN STATE HOSPITAL
EDGEWATER
NEW YORK CO
RAL


SEE MAP C
Long Island City
Astoria
Ballets Cove
Rainey Park
Playground
Health Center
Athletic Field
Park
Library
Hospital
Main Library
Carnegie Hall
Coliseum
Roosevelt Hosp
Pharmacy College
Fire Sta
Playground
Park
S#27
S#25
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DEPTH CURVES
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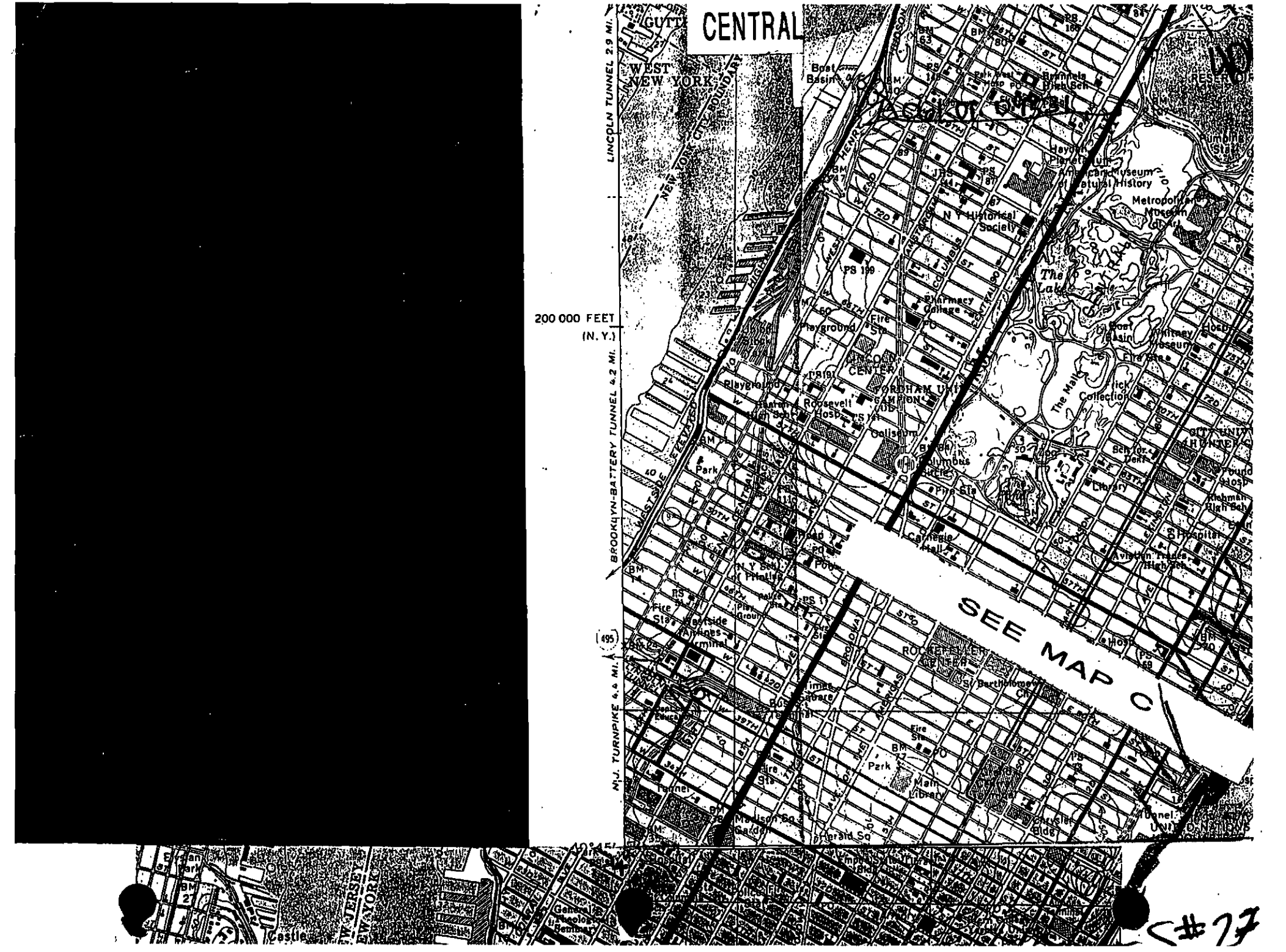
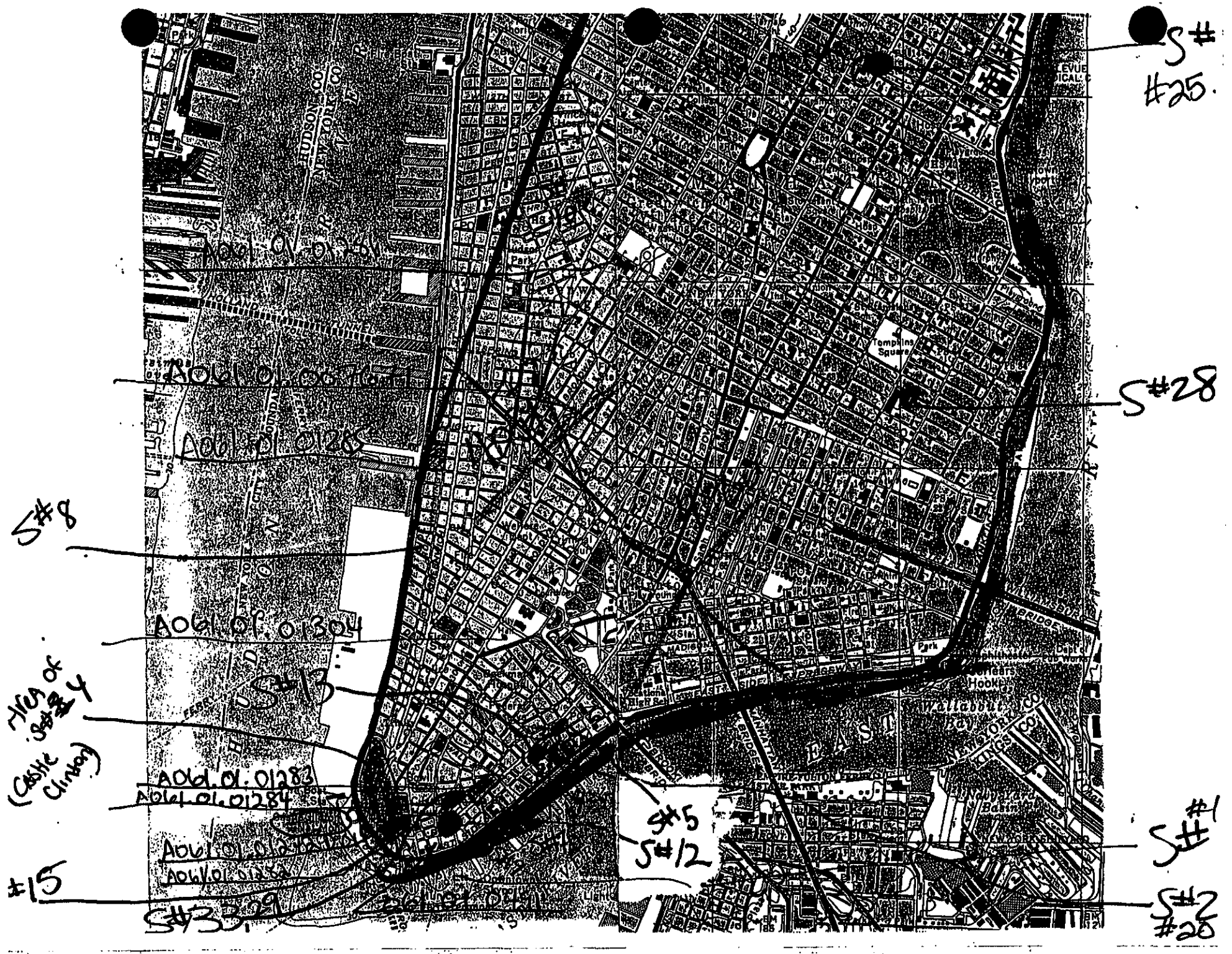
FOR SALE BY
A FOLDER DESCRIBING


CENTRAL
WEST NEW YORK
NEW YORK CITY BOUNDARY
LINCOLN TUNNEL 2.9 MI.
BROOKLYN-BATTERY TUNNEL 4.2 MI.
N.J. TURNPIKE 4.4 MI.
200 000 FEET
(N. Y.)
Boat Basin
Brannels High Sch
Hayden Planetarium
American Museum of Natural History
Metropolitan Museum of Art
N Y Historical Society
PS 199
Pharmacy College
Fire Sta
Playground
LINCOLN CENTER
FORDHAM UNIV
Roosevelt Hosp
Coliseum
Columbus Circle
Park
Carnegie Hall
The Lake
The Mall
Frick Collection
Whitney Museum
Library
Hospital
Aviation Trades High Sch
SEE MAP C
ROCKEFELLER CENTER
St Bartholomew Ch
Westside Airlines Terminal
Times Square
Main Library
Madison Sq Garden
Herald Sq
Tunnel
Castle
Elysian Park
NEW JERSEY
NEW YORK
General Theological Seminary
Pumping Sta
Hospital
Fire Sta
Park
Tunnel
495

S#77


S# #25.
A061.01.01284
A061.01.00 7671
A061.01.01285
S#28
S#8
A061.01.01304
S#13
Area of S#4 (Castle Clinton)
A061.01.01283
A061.01.01284
S#5
S#12
S#1
#15
S#2 #20
S#33,29
Tompkins Square
Wallabout Bay
Navy Yard Basin
HUDSON CO
NEW YORK CO
KINGS CO
EAST

4.1.7.3 Soil Boring Logs

Raymond International 2-113, 1970
West side Second Avenue between 125th and 126th Street
Elev. 111.62

concrete	0.0' to –0.5'
stone and cinder fill	-0.5' to –2.6'
medium coarse brown sand, gravel, some silt	-2.6' to –18.0'
medium brown sand, traces of silt	-18.0' to –42.0'
varved clay, silt, traces of sand	-42.0' to –51.6'

Water at –11.0'

Raymond International 2-114, 1970
East side Second Avenue between 125th and 126th Street
Elev. 113.20

concrete	0.0' to –0.4'
cinders, concrete, brick, wood fill	-0.4' to –12.0'
loose fine to medium brown sand	-12.0' to –23.0'
fine brown sand, trace of silt, thin layers of clay	-23.0' to –38.0'
fine gray and brown silty sand, varved clay	-38.0'to -61.6'

Water at –12.2'

Warren George, Inc. B-7, 1997
126th Street Bus Depot
East of Third Avenue between East 127th and East 126th Streets; middle of Block 1791.
Elev. +112.06

misc. fill (gray-black to yellow medium to fine silty sand, gravel, brick, rock and concrete fragments, asphalt)	+0.0' to –14.0'
brown coarse to fine sand, medium to fine gravel	-14.0' to –16.0'

No water level recorded.

Warren George, Inc. B-8, 1997
126th Street Bus Depot
Between Third and Second Avenues and between East 127th and East 126th Streets; center of Block 1791.
Elev. +113.25

no samples taken	+0.0' to –12.0'
misc. fill (brown coarse to fine silty sand, gravel, brick, rock and concrete fragments)	-12.0' to –16.0'
brown coarse to fine sand, medium to fine gravel	-16.0' to –18.0'

No water level recorded.

Warren George, Inc. B-9, 1997
126th Street Bus Depot
West of Second Avenue between East 127th and East 126th Streets; middle of Block 1791.
Elev. +114.12

misc. fill (gray-black to yellow medium to fine silty sand, gravel, brick, rock and concrete fragments, asphalt)	+0.0' to –14.0'

No water level recorded.

Warren George, Inc. MW-2, 1994
126th Street Bus Depot
Middle of north side of East 126th Street between Third and Second Avenues.
Elev. +114.61

concrete sidewalk	+0'0" to –0'4"
brown medium to fine sandy silt, trace gravel	-0'4" to –6'0"
brown fine sandy silt, trace gravel	-6'0" to –12'0"
reddish-brown coarse to medium sand, some gravel	-12'0" to –21'0"

Water at –12'5"

Warren George, Inc. MW-3, 1994
126th Street Bus Depot
North side of East 126th Street at Second Avenue.
Elev. +113.66

concrete sidewalk	+0'0" to –0'4"
brown medium to fine sandy silt, trace gravel	-0'4" to –6'6"
brown fine sandy silt, trace gravel	-6'6" to –12'6"
reddish-brown coarse to medium sand, some gravel	-12'6" to –20'6"

Water at –12'6"

WPA IV:4:58
P.J. Healey, Inc., Harlem River Drive, 1940
Southeast corner East 129th Street and Second Avenue.

misc. fill	+5.5' to –4.5'
mud and fill	-4.5' to –14.5'
river mud	-14.5' to –25.'5
some gravel, fine sand and clay	-25.5' to –34.3'
some clay and fine sand	-34.3' to –40.5'
coarse sand	-40.5' to –58.1'
boulders, sand, and disintegrated rock	-58.1' to –66.5'
brown clay	-66.5' to –75.6'
sand and gravel	-75.6' to –86.5'
disintegrated rock	-86.5' to –86.8'
limestone	-86.8' to –94.8'

No water level recorded.

WPA IV:4:59
P.J. Healey, Inc., Harlem River Drive, 1940
Just south of East 129th Street, east of Second Avenue.

misc. fill	+6.7' to –7.3'
sand, clay, gravel fill	-7.3' to –10.3'
gray silt	-10.3' to –18.8'
sand, gravel, clay	-18.8' to –26.3'
medium brown sand	-26.3' to –40.8'
fine brown sand and traces of clay	-40.8' to –60.3'
brown sandy clay	-60.3' to –97.9'
limestone	-97.9' to -105.9'

No water level recorded.

WPA IV:4:60
P.J. Healey, Inc., Harlem River Drive, 1940
East 129th Street near Second Avenue.

earth fill (6" granite block on surface)	+5.2' to –12.3'
gray clay	-12.3' to –24.4'
gray sand, gravel and some clay	-24.4' to –30.3'
brown sand and some gravel	-30.3' to –42.3'
medium brown sand	-42.3' to –52.8'
brown sandy clay	-52.8' to –63.3'
fine brown sand	-63.3' to –72.3'
brown sandy clay	-72.3' to –96.3'
fine gray sand	-96.3' to –98.1'
limestone	-98.1' to –106.1'

No water level recorded.

WPA IV:4:61
P.J. Healey, Inc., Harlem River Drive, 1940
East 129th Street between Second and Third Avenues.

wood	+7.3' to +6.8'
sand, clay, and ash fill	+6.8' to –6.2'
sand and mud	-6.2' to –11.9'
gray clay	-11.9' to –17.2'
peat	-17.2' to –17.7'
brown sandy clay	-17.7' to –23.7'
brown sandy clay	-23.7' to –34.7'
brown clay	-34.7' to –46.2'
brown sand, gravel and clay	-46.2' to –53.6'
boulders	-53.6'to –59.7'
fine brown sand	-59.7' to –73.7'
red and gray clay	-73.7' to –84.7'
sandy gray and red clay	-84.7' to 94.2'
boulders	-94.2' to –102.2'
boulders	-102.2' to –109.2'
limestone	-109.2' to –112.2'

No water level recorded.

WPA IV:4:62
P.J. Healey, Inc., Harlem River Drive, 1940
East 129th Street near Second Avenue.

misc. fill, brick, concrete gravel, cinders	+6.6' to –4.4'
gray clay	–4.4' to –24.9'
medium brown sand and gravel	-24.9' to –42.4'
fine brown sand	-43.4' to –54.6'
medium and coarse brown sand	-54.6'to –72.4'
coarse brown sand	-72.4' to –75.6'
medium brown sand	-75.6' to –82.4'
brown sandy clay	-82.4' to –99.7'
firm sand and boulders	-99.7' to –101.3
limestone	-101.3' to 109.3'

No water level recorded.

WPA IV:4:63
P.J. Healey, Inc., Harlem River Drive, 1940
East 129th Street between Second and Third Avenues.

earth and cinder fill (bluestone flag on surface)	+7.90' to –12.4'
gray sand	–12.4' to –19.7'
gray clay and sand	-19.7' to –30.1'
gray clay	-30.1' to –51.6'
gray clay and sand	-51.6' to –58.6'
fine brown sand	-58.6' to –76.1'
red brown clay and sand	-76.1' to –88.3'
limestone boulder	-88.3' to –91.8'
mica schist limestone	-91.8' to –94.3'
pegmatite	-94.3' to –96.8'
limestone	-96.8' to –98.8'

No water level recorded.

WPA IV:5:23
Triborough Bridge, 1935
Southeast corner of Second Avenue and East 126th Street.

fill	+11.8' to +8.8'
loam	+8.8' to +4.8'
brown sand, gravel and boulders	+4.8' to –2.2'
gray sand, gravel and boulders	-2.2' to –14.2'
fine mica sand	-14.2' to –20.6'

No water level recorded.

WPA IV:5:24
Triborough Bridge, 1935
East side of Second Avenue between East 125th and East 126th Streets.

fill and loam	+11.2' to +8.2'
sand and gravel	+8.2' to -5.8'
gray sand and gravel	-5.8' to –10.8'
fine gray mica sand	-10.8' to –21.0'

No water level recorded.

WPA IV:5:52
Wards Is. Intercept Sewer, 1936
Southeast corner of Second Avenue and East 127th Street.

cinder fill	+11.5' to +8.0'
sand and gravel	+8.0' to –3.8'
red sand	-3.8' to –22.0'

No water level recorded.

WPA IV:5:53
Ward Is. Intercept Sewer, 1936
Southeast corner of Second Avenue and East 128th Street.

yellow clay	+9.2' to –4.8'
blue clay	-4.8' to –9.8'
sand and gravel	-9.8' to –18.8'
red clay and sand	-18.8' to –21.8'

No water level recorded.

WPA IV:5:92
P.J. Healey, Inc., Harlem River Drive, 1940
East of Second Avenue, north of East 128th Street.

ash, earth, wood and rock fill	+5.9' to –0.1'
fine sand, clay, and cinder fill	-0.1' to –9.1'
clay, cinder and ***shells***	-9.1' to –17.1'
clay and ***peat***	-17.1' to –19.1'
coarse sand and clay	-19.1' to –27.1'
brown clay	-27.1' to –34.1'
fine brown sand and clay	-34.1' to –51.7'
boulder	-51.7' to –55.2'
medium white sand	-55.2' to –67.1'
white sand and gravel	-67.1' to –74.4'
boulders	-74.4' to –90.8'
limestone	-90.8' to –96.8'
limestone	-96.8' to –102.8'

No water level recorded.

WPA IV:5:93
P.J. Healey, Inc., Harlem River Drive, 1940
North side of East 128th Street, east of Second Avenue.

earth and cinder fill	+6.9' to –2.8'
cinder, sand and gravel	–2.8' to –9.5'
med. gray sand	–9.5' to –11.4'
gray clay	–11.4' to –16.6'
peat	–16.6' to –18.1'
fine brown sand and clay	–18.1' to –37.1'
fine gray sand	-37.1' to –46.1'
brown sandy clay	-46.1' to –56.9'
gray coarse sand, gravel and clay	-56.9' to –58.4'
boulders and layers of fine gray sand	-58.4' to –70.6'
fine white sand and boulder chips	-70.6' to –75.1'
boulder	-75.1' to –76.6'
fine gray sand	-76.6' to –82.0'
limestone	-82.0' to –90.0'
disintegrated	-90.0' to –93.0'
disintegrated	-93.0' to –95.2'
limestone	-95.2' to –98.0'

No water level recorded.

WPA IV:5:94
P.J. Healey, Inc., Harlem River Drive, 1940
East side of Second Avenue near East 129th Street.

cinder and earth fill	+6.3' to –3.2'
wood and some clay	-3.2' to –8.4'
clay and gravel	-8.4' to –20.7'
peat	-20.7' to –23.0'
clay and ***peat***	-23.0' to –26.7'
medium brown sand	-26.7' to –32.2'
medium sand and clay	-32.2' to –36.7'
fine sand and clay	-36.7' to –49.7'
clay and fine sand	-49.7' to -55.2'
fine gray sand	-55.2' to –56.4'
boulder	-56.4' to –57.7'
fine gray sand	-57.7' to –58.6'
boulder	-58.6' to –59.2'
limestone	-59.2' to –78.2'

No water level recorded.

WPA IV:5:95
P.J. Healey, Inc., Harlem River Drive, 1940
East side of Second Avenue, north of East 128th Street.

sand, gravel and ash fill	+7.3' to –2.7'
sand	-2.7' to –6.7'
silt	-6.7' to –13.7'
peat, sand, gravel, clay	-13.7' to –17.2'
gray sand, gravel, some clay	-17.2' to –25.7'
brown sand and gravel	-25.7' to –36.2'
fine brown sand and stiff clay	-36.2' to –55.7'
med. white sand	-55.7' to –56.8'
disintegrated limestone	-56.8' to –62.7'
limestone	-62.7' to –70.7'

No water level recorded.

WPA IV:5:96
P.J. Healey, Inc., Harlem River Drive, 1940
Second Avenue near East 129th Street

granite block	+5.5' to +5.0'
concrete	+5.0' to +4.3'
sand, gravel and ash fill	+4.3' to –12.5'
gray silt	–12.5' to –21.5'
peat	–21.5' to –26.0'
gray sand and gravel, some clay	–26.0' to –35.5'
medium brown sand and gravel	-35.5' to –46.7'
boulder	-46.7' to –46.9'
medium gray sand and gravel	-46.9' to –56.0'
boulder	-56.0' to –56.5'
brown clay and sand	-56.5' to –69.5'
fine gray sand, some boulders	-69.5' to –78.5'
limestone	-78.5' to –86.5'

No water level recorded.

WPA IV:5:97
P.J. Healey, Inc., Harlem River Drive, 1940
West side Second Avenue between East 129th and 128th Streets.

sand, gravel and fill	+6.6' to +1.3'
cinder and gravel fill	+1.3' to –3.0'
sand, clay, mud, gravel, some silt	-3.0' to –14.3'
clay and river mud	-14.3' to –18.3'
coarse brown sand	-18.3' to –28.3'
clay, gravel	-28.3' to –34.7'
brown sand	-34.7' to –44.8'
fine brown sand, white sand, some clay	-44.8' to –50.1'
coarse gravel, med. white sand	-50.1' to –53.0'
sand and clay	-53.0' to –66.0'
med. white sand	-66.0' to –70.0'
disintegrated rock	-70.0' to –72.7'
limestone	-72.7' to –86.2'

No water level recorded.

WPA IV:5:142
Sprague and Henwood, 1945
Harlem River, just outside shoreline east of Second Avenue, north of East 129th Street.

decking	+5.0' to +4.5'
space	+4.5' to +0.0'
river	+0.0' to –10.0'
black organic silt and wood	–10.0' to –28.5'
gray medium sand	–28.5' to –38.0'
red and gray silt and sand	–38.0' to –66.0'
red silt, trace of clay	–66.0' to –70.8'
boulder	-70.8' to –72.3'
fine to coarse gray sand and gravel	–72.3' to –81.0'
red silt, trace of clay	-81.0' to –91.0'
gray fine to coarse sand and gravel	-91.0' to –112.0'
white crystalline limestone	-112.0' to –120.0'

No water level recorded.

WPA IV:5:143
Sprague and Henwood, 1945
Harlem River, just outside shoreline of Second Avenue, north of East 129th Street.

river	+0.0' to –20.0'
soft black river silt	–20.0' to –55.0'
gray uniform medium sand	–55.0' to –67.0'
reddish fine to medium sand and gravel	–67.0' to –79.0'
red silt	–79.0' to –81.0'
fine, dark gray sand (micaceous) and red silt	–81.0' to –87.0'
boulders	-87.0' to –91.0'
red fine to medium sand	-91.0' to –96.0
coarsely crystalline white limestone	-96.0' to –104.0'

No water level recorded.

WPA IV:5:144
Sprague and Henwood, 1945
Harlem River, just outside shoreline west of Second Avenue, north of East 129th Street.

concrete platform	+5.0' to +4.0'
space	+4.0' to +0.0'
river	+0.0' to –17.0'
v. soft black sandy organic silt	–17.0' to –26.0'
brown fine silty sand	–26.0' to –33.5'
brown fine micaceous sand	–33.5' to –63.0'
brown and gray medium to coarse sand and rock fragments	–63.0' to –73.0'
gray and brown fine sand and silt	–73.0' to –80.0'
reddish silt	–80.0' to –83.0'
very fine gray sand	–83.0' to –91.0'
reddish very fine sand	–91.0' to –94.5'
gray fine micaceous sand and silt trace	–94.5' to –112.5
heavy silicated limestone over limestone	–112.5' to –120.5'

No water level recorded.

4.2 EAST 125TH STREET, SECOND AVENUE TO FIFTH AVENUE

4.2.1 Study Area Description

New tunneling efforts would be undertaken on East 125th Street from Second Avenue west to Fifth Avenue. This would allow connections to both the Lexington Avenue subway line and the 125th Street station of the MTA Metro-North Railroad. Construction here may either include mining through soil and rock, and/or cut-and-cover excavations. Therefore, the APE for this section includes the East 125th Street roadbed from the western boundary of Fifth Avenue, east to the eastern boundary of Second Avenue, from building line to building line. Also included in this APE is a section of city Block 1789, located at the southwest intersection of Second Avenue and East 125th Street, and the southwest corner of Second Avenue and East 124th Street, part of Block 1788, where the proposed tunnel would curve from Second Avenue to 125th Street. Current city Lots 10 through 45 on Block 1789 and Lots 28 and 29 on Block 1788 fall within the APE, as does part of East 124th Street between Second and Third Avenues.

4.2.2 Existing Conditions

4.2.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

The project corridor in this area was formerly flatlands called Muscoota by Native Americans. This region, which lies between the Harlem River and Morningside Heights northwest of what was once Harlem Creek, was surrounded by swamps (Rubinson 1989:3). "Rechgawanes" is reported by Grumet as the name of a point of land along the western shore near the confluence of the East and Harlem Rivers, and along an obliterated stream that roughly corresponded to the route of East 125th Street (1981:46). This tract could have extended into the current project corridor.

In this section of the project area, the Wickquasgeck trail ran several blocks to the west through what is now Central Park. An Indian Path veered off this trail at East 110th Street near Fifth Avenue, and headed northeast towards a habitation site on the Harlem River near East 124th Street. This Amerindian Trail was incorporated into the first road system of the village of Harlem. Passing through the meadows of Muscoota to the area called Conykeekst, it crossed First Avenue at East 124th Street and Second Avenue at East 121st Street within the project corridor (Bolton 1922:72,74-76). Arrowheads and flakes were found in East Harlem in 1855 during the excavation of a cellar on Avenue A between East 120th and 121st Streets (Riker 1904:123). Bolton concluded that this was either a fishing place or an intermittently used place of landing or trading (Bolton 1922:72).

NYSM Site #4063 was reported within a mile south of this section of the APE. Identified by Arthur C. Parker, this village/camp site was described as "...one of the larger camps or

fishing places of the Reckgawawancks...." (Parker 1920:26). He further characterized it as a "...camp or fishing place ....at Montagne's Point... on shore at Hellgate, just off 110th Street" (Ibid.). The site's exact boundaries and location are unknown, but it may have extended west into the vicinity of Second Avenue near East 110th Street.

Archaeological Potential

The East 125th Street APE, beginning at Fifth Avenue, has a gentle downhill slope of about 10' as it heads east toward Second Avenue. Several hundred years ago, the high peak of Mount Morris (also known as Snake Hill) just to the south would have provided a commanding view of the flat meadowlands to the north, and the marshy environs to the south (Figure 4.2-1). Hundreds of years before that, a somewhat different view might have presented itself, as sea levels and water tables have fluctuated over the past few thousand years. Since, as described in Chapter 4.1, this area is already known for somewhat intensive, if seasonal, precontact use, it is expected that there might be a high potential for habitation sites throughout the APE. The marshy areas to the south and along the Harlem River would have provided a habitat conducive to faunal and floral resources. Some historic maps portray a pond on East 125th Street between Second and Third Avenues (Commissioners 1811) that may have been a source of fresh water. This feature would have also made the area favorable to settlement.

The pond on East 125th Street between Second and Third Avenues impinges on the East 125th Street APE and part of the APE in Block 1789. It is unlikely that habitation would have occurred very close to this pond, but as a fresh water source, it would have been heavily utilized. There is a high potential that early precontact archaeological resources may be present within this entire APE, with the exception of the pond area.

Fill from the historic period may have protected precontact sites, although fill levels vary greatly. Levels of organic silt are present at 8' below grade near Fifth Avenue (Department of General Services 2695:2, 1996). Other borings between Fifth and Madison Avenues on East 124th Street show fill levels from 3-5' below grade (Department of General Services 2695:2, 8, 10, 1996). On East 126th Street between Madison and Park Avenues, fills range from 3-12' below grade (DGS 2695:12, 15, 16, 19, 1996). There are other areas with shallow or no fill; between Lexington and Third Avenues near East 125th Street, there are two borings with no fill indicated (WPA III:30:10, 17, 1935), and another where there is only 2.7'of fill, and rock was hit just a few more inches down (WPA III:30:9, 1935). But within the same block there are reported fill levels extending from the surface down to between 13-15' below grade (Department of Public Works 9990:1, 4, 5, 1969). Farther to the east, on Second Avenue, there are several borings showing loam going to 7-11' below grade (WPA IV.5.14-16, 1935). Historic disturbances to East 125th Street include the construction of utilities in the road bed and the construction of the Lexington Avenue subway line and station at East 125th Street that has a depth of 47' below grade (SYSTRA Engineering 2001). However, this area would have already been likely to have only shallow deposits, as rock is found only a few feet below grade here.

4.2.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

One previously inventoried historical site is located about three blocks east of the APE. OPRHP number A061-01-0146, the Gracie Mansion site at East 90th Street and the East River, is noted as one of the first American fortifications. This appears to be same entry for site NYSM #31, reported in a New York Archaeological Council (NYAC) inventory document by Susan Kardas in 1978 as "Horns Hook" at Karl Schurz Park. Kardas writes in a very general overview that the historic site related to the Revolutionary War period but was never professionally excavated.

In addition, Historical Perspectives, Inc. conducted Stage 1A and 1B investigations for the East River Plaza Project in 1988, located approximately two blocks east of the APE, at the East River and East 116th to East 119th Streets (Survey #32). Stage 1A investigations revealed the possibility of the presence of late 19th century historic remains related to two-story brick buildings that stood until sometime between 1951 and 1976. However, due to disturbance from grading, only the remains of mid-20th century features were identified during Stage 1B investigations. Artifacts recovered from fill reflected a date range from the 19th century (ironstone whiteware) to the late 20th century (modern water bottles) within the same stratum.

Archaeological Potential

Historic archaeological resources can take many forms, but those most likely to be preserved included shaft features such as privies, wells, and cisterns, as well as building foundations. Shaft features often survive through later disturbances, because they are cut deep into the ground. They are particularly informative because during or after use, they are often used as depositories for rubbish, including bone, ceramic, glass, and metal. If conditions in the shaft are appropriate, normally perishable materials such as leather, cloth and wood may be preserved. Fill from these shaft features can also provide ecological and dietary information from items such as pollen or seeds.

Documentary research concluded that this section of the APE was found to be potentially sensitive only for the resource category of *Residential* (Chapter 3; Appendix 4.2.7.1). The APEs of Blocks 1788 and 1789 have the potential to yield privies and/or wells with evidence of domestic occupation, and possibly farm outbuildings, from potentially as early as the late 17th century through the late 19th century. The Dutch settlement of New Harlem (Figure 4.2-2; Chapter 3) was situated within the vicinity of Blocks 1788 and 1789, and this area was continuously occupied through the 20th century. The likelihood of finding early historic resources is not high, since subsequent development in this area was heavy during the late 19th century. However, there are areas that have remained relatively undisturbed to the present day, possibly under the East 124th Street roadbed, or within rear yard areas of Block 1789, and late historic archaeological resources may still be present within Block 1789.

4.2.3 Summary of Archaeological Potential

East 125th Street

Precontact resources, if they are present, are estimated to exist between about three and 15' below the surface, although it is presumed that more shallow deposits would have been destroyed during the historic period through road grading, utility installation, and construction of rail transportation routes. There is no historic potential within this APE.

Blocks 1788 and 1789

Precontact resources are likely to lie below fill, ranging between about five to 15' below grade but these depths are based on soil borings taken near, but within, the APE. These possible resources could range from habitation sites to seasonal camps, but potential depths need to be clarified with further soil borings.

Historic resources such as late 17th or 18th century building foundations or early 19th century farm outbuilding foundations might be found on the historic surface, which would be expected to about 5-11' below grade. Shaft features such as wells may extend from the surface down to a depth of at least 15' below grade, since the water table is recorded at 12-14' below grade; privies might also be expected to extend nearly as deeply. Areas within the APE that did not experience post-depositional subsurface disturbances include yards that were open through history and structures that did not have basements. On Block 1788, only Lot 28 had a small extant yard. Neither of the lots in the Block 1788 APE, Lots 28 and 29, had basements. On Block 1789, those lots with extant small to medium sized yards include Lots 10-21½, 23-25, 27, 28, 30-33, 35, 39, and 41-45. Of these, Lot 39 was entirely open space in the middle of a coal yard throughout much of the 19th century. Lots without basements include Lots 21-25, 36-39 and 42.

4.2.4 Proposed Project Effects

Between Second and Fifth Avenues, proposed construction plans include cut and cover excavations from the surface down to approximately 80 feet below grade to build the subway tunnel and 125th Street Station (SYSTRA Drawing CT-22, March 2, 2002). This proposed construction would affect potential precontact resources, which are estimated to lie between about three and 15 feet below grade. Mining through soil beneath existing buildings is proposed for the area between East 125th and 123rd Streets, connecting 125th Street with Second Avenue. The shallowest depth of proposed mining is expected between approximately 50 to 60 feet below the surface, with the tunnel to be located between 65 and 70 feet below grade. Therefore, potential precontact and early 19th century resources on Blocks 1788 and 1789 would be avoided since their estimated depth is above 15 feet below grade. However, if additional soil borings indicate that resources

could be deeper, or if mining occurs less than 15 feet below grade, then these potential resources would be affected.

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.

4.2.5 Recommendations

The likelihood that precontact resources would have survived the 19th and 20th century development of this part of the APE is moderate to minimal, particularly given the shallow depths of fill in some areas of East 125th Street. However, there is a possibility that undisturbed pockets of the precontact landscape might remain, since there are some relatively deep areas of fill near Block 1789 and some parts of East 125th Street. There is also a moderate to probable expectation of encountering historical-period remains within Blocks 1788 and 1789, and that part of East 124th Street within the APE.

Additional soil borings, as an indicator of both potential precontact or historic sensitivity would help to establish the potential depth of resources to verify that the effects assessment is correct. 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, particularly since only a few water table depths are available for this APE, but cannot always substitute for field verification.[1] Following the review of soil borings, some sites 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

[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.

address meaningful research issues according to National Register criteria. A protocol for any additional research will be prepared in consultation with SHPO. It is expected that the additional documentary research will aid in the formulation of a specific subsurface testing plan.

The objective of subsurface testing, where indicated, would be to determine the presence of cultural resources, and if such resources exist, establish their horizontal and vertical extent, the integrity of the site, and potential significance with respect to eligibility requirements 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 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.

4.2.6 Figures and Photographs

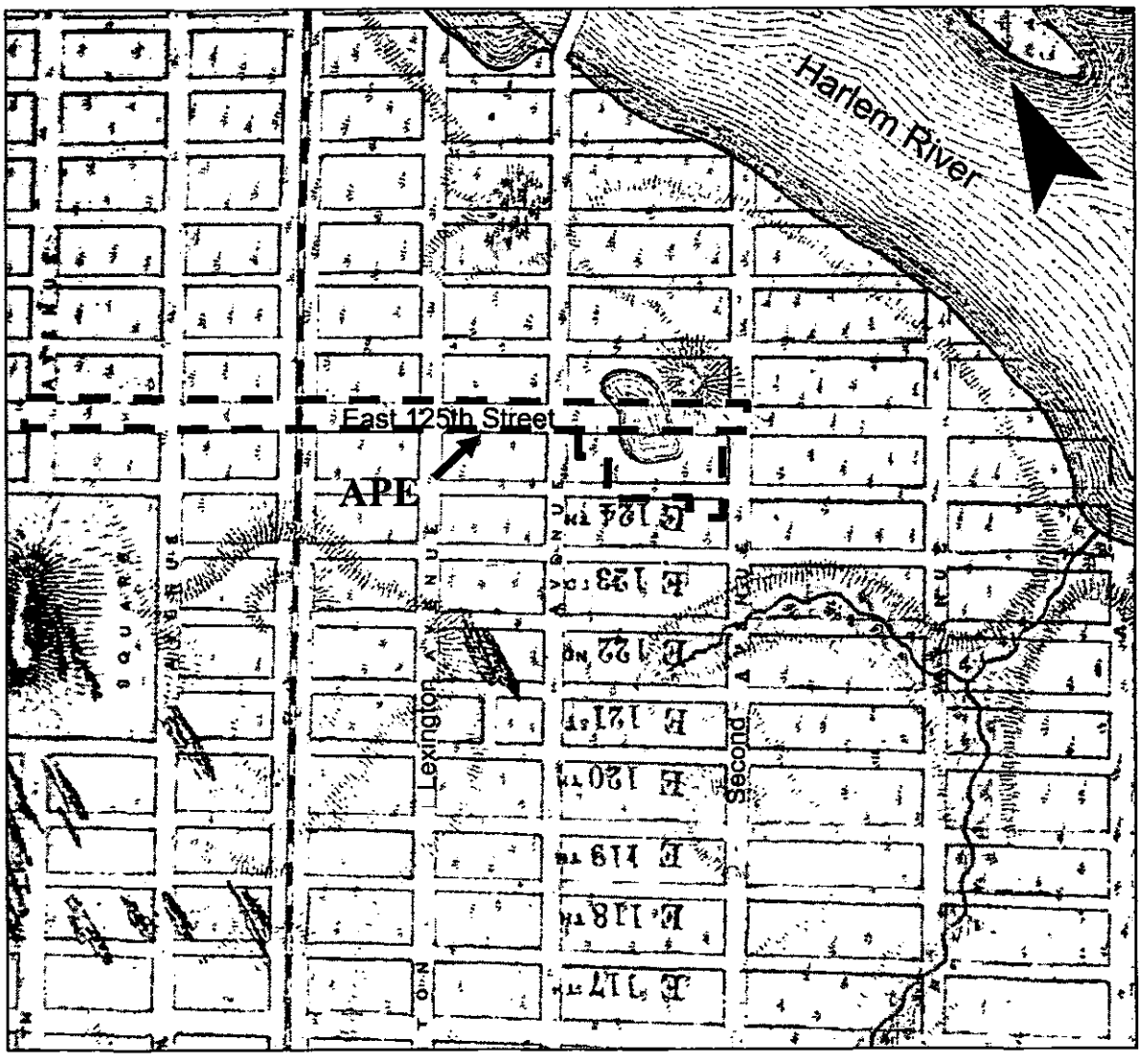


FIGURE 4.2-1

Topographical Atlas of the City of New York.
East 125th Street from Fifth Avenue to Second Avenue
and Blocks 1788 and 1789. Viele 1874

Approximate Scale: 1/8 inch = 100 feet

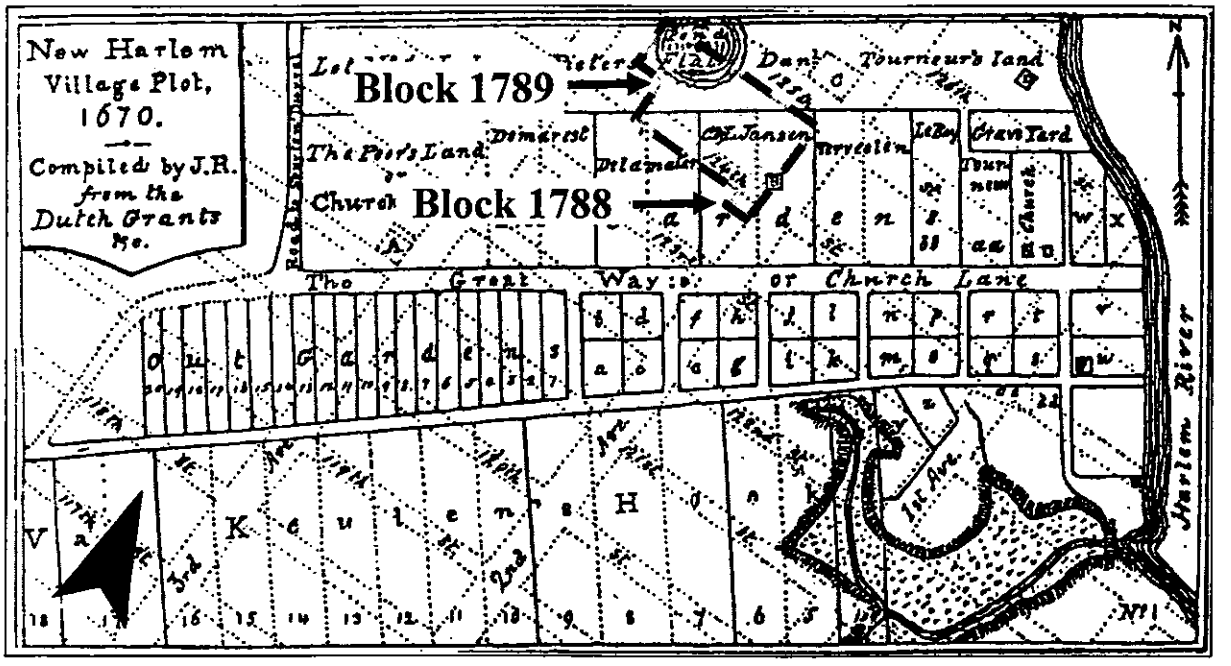


FIGURE 4.2-2

New Harlem Village Plot, 1670.
Blocks 1788 and 1789. Between Second and Third Avenues, East 125th Street to East 124th Street. Romer and Hartman 1981:9.

Approximate Scale: ¼ inch = 100 feet

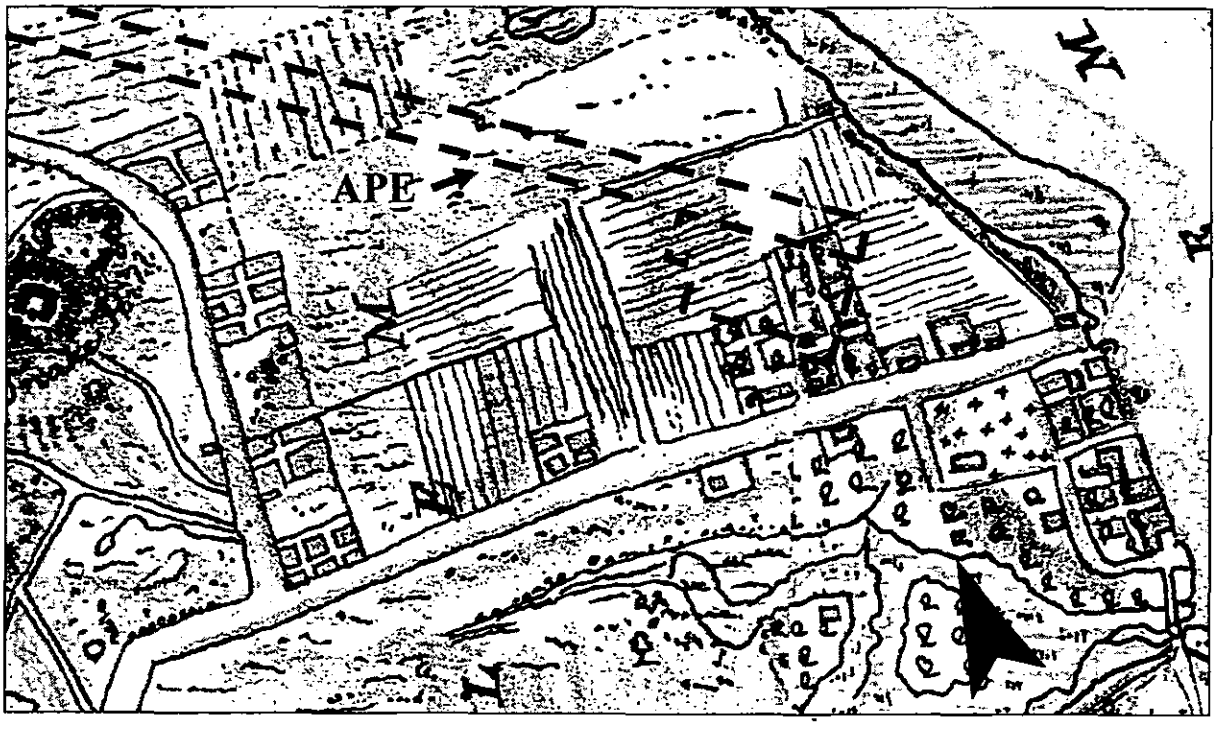


FIGURE 4.2-3

British Headquarters Map.
East 125th Street from Fifth Avenue to Second Avenue
and Blocks 1788 and 1789. 1782.

No Scale

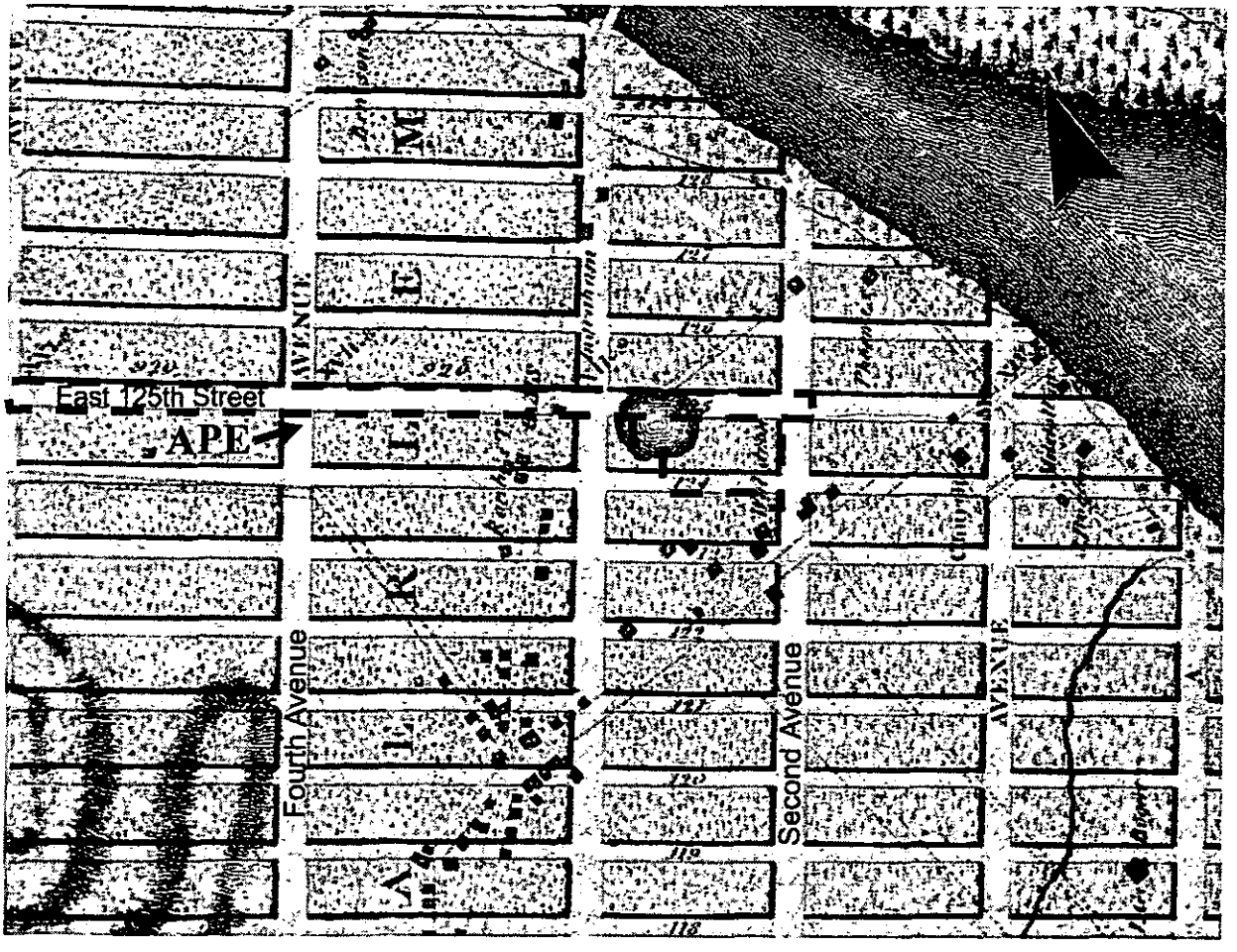


FIGURE 4.2-4

Map of the City of New York and Island of Manhattan as laid out by the Commissioners.
East 125th Street from Fifth Avenue to Second Avenue and Blocks 1788 and 1789. Bridges 1807-1811.

Approximate Scale: 3/16 inch = 100 feet

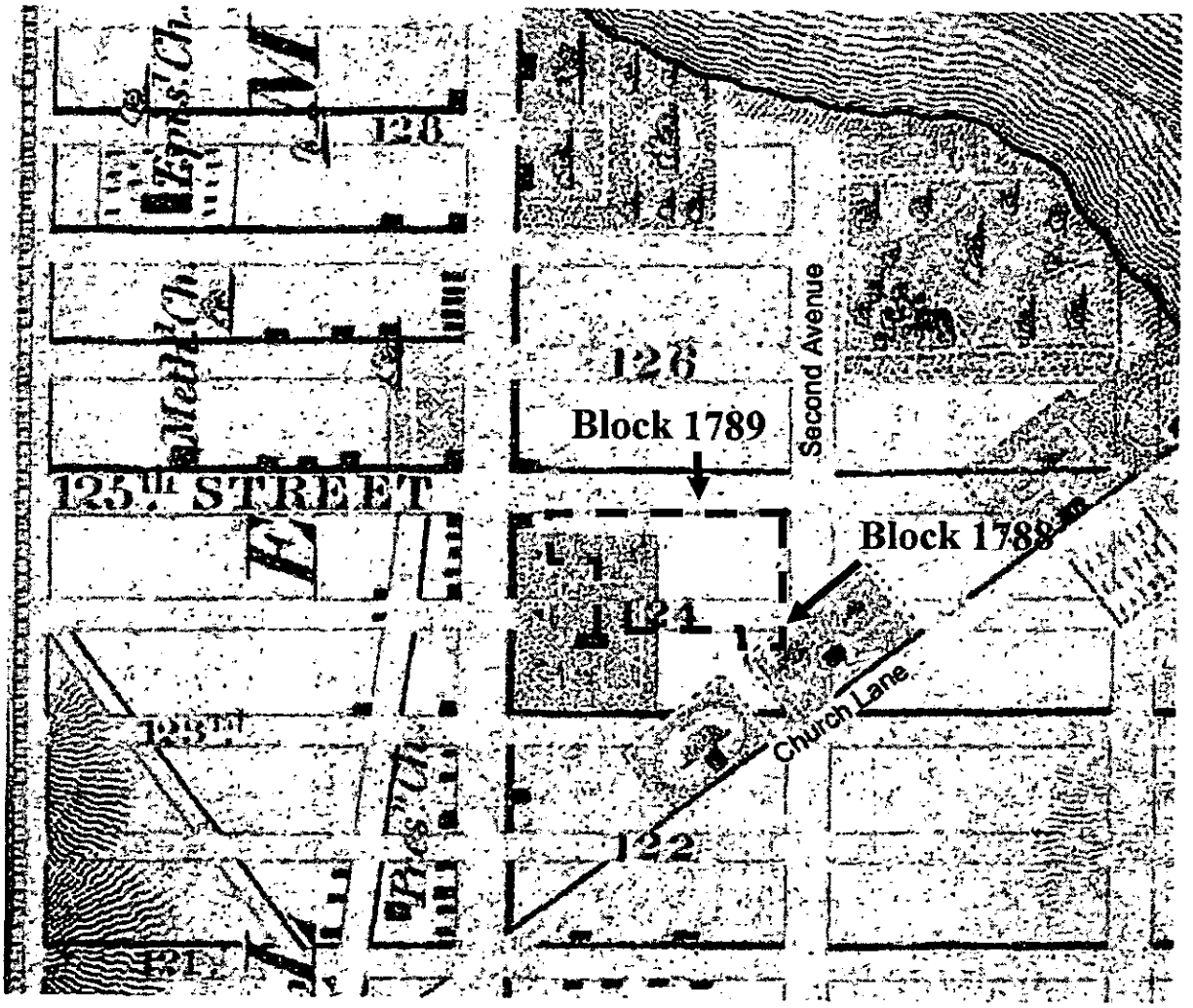


FIGURE 4.2-5

Topographical Map of the City and County of New York. Blocks 1788 and 1789. Between Second and Third Avenues, East 125th Street to East 123rd Street. Colton 1836.

Approximate Scale: ¼ inch = 100 feet

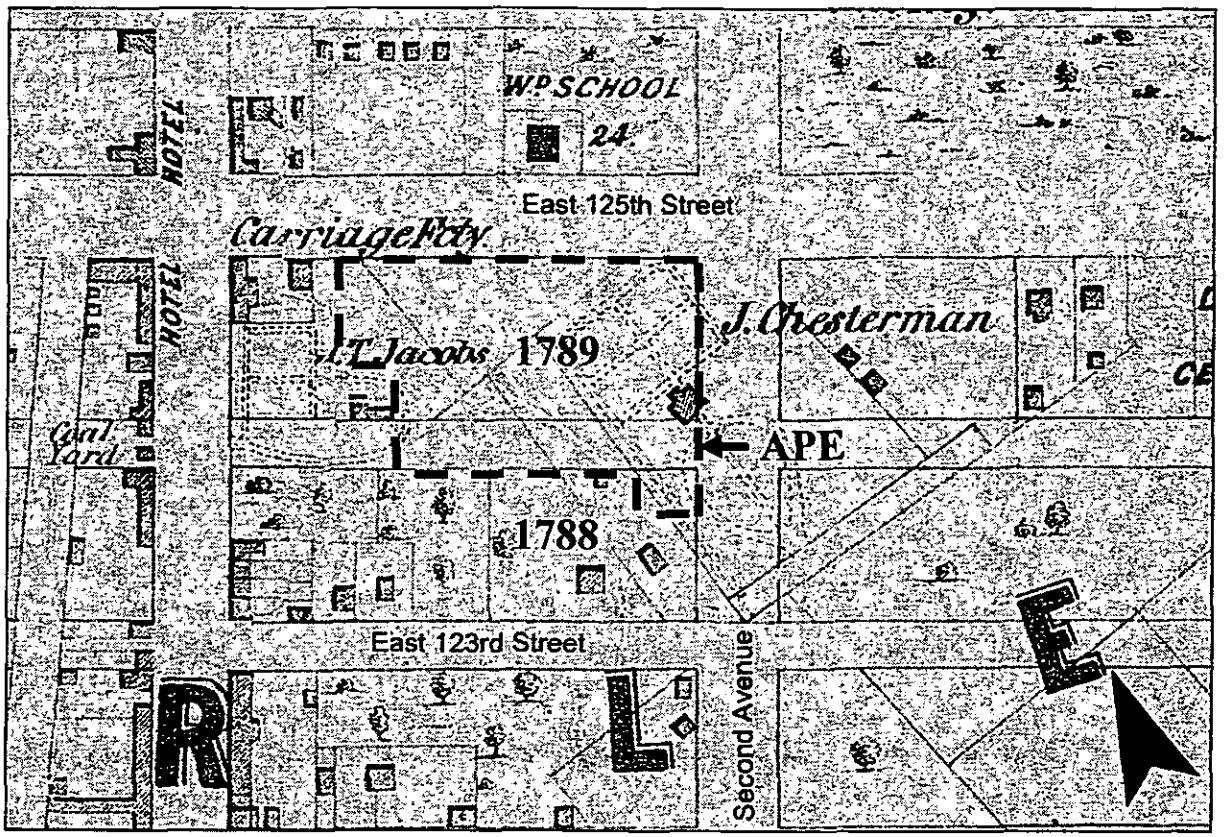


FIGURE 4.2-6

Map of That Portion of the City and County of New York North of 50th St. Blocks 1788 and 1789. Between Second and Third Avenues, East 124th Street to East 125th Street. Dripps 1851.

Approximate Scale: 3/8 inch = 100 feet

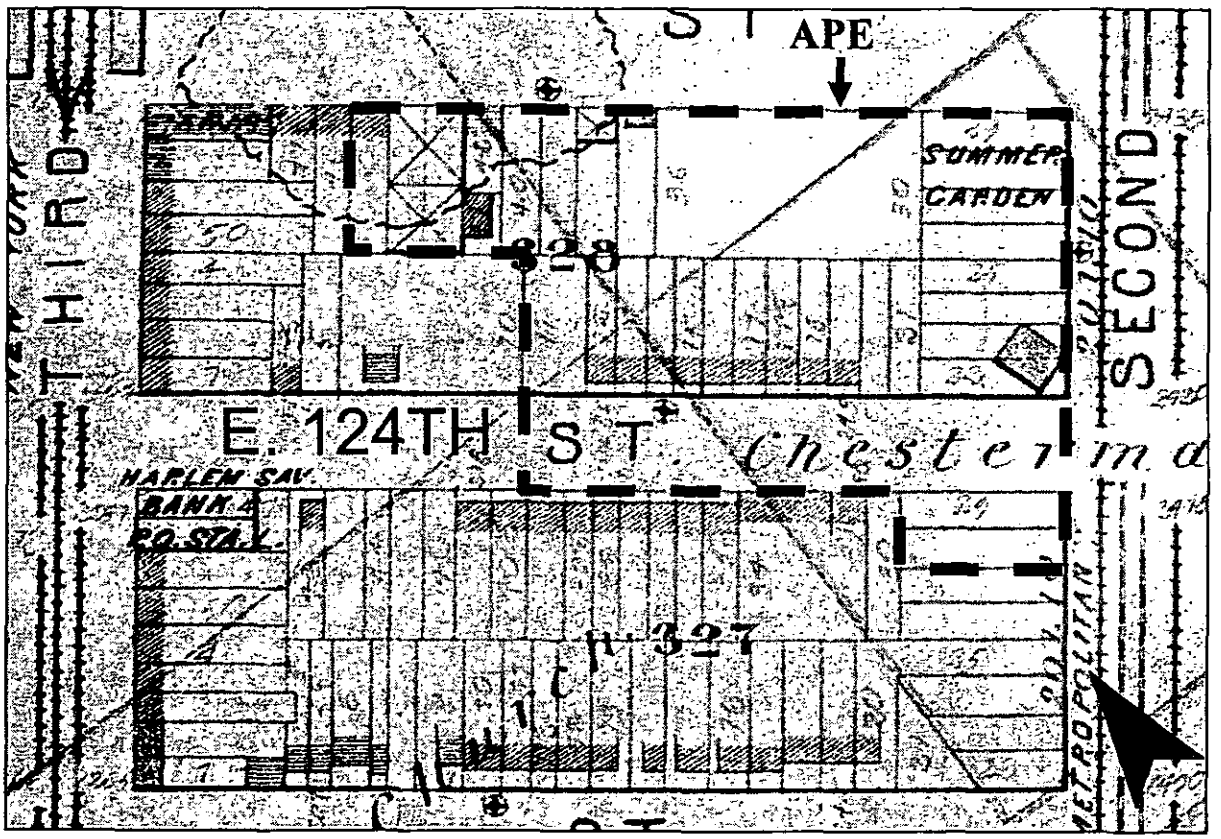


FIGURE 4.2-7

Atlas of the Entire City of New York.
Blocks 1788 and 1789. Between Second and Third Avenues,
East 125th Street to East 124th Street. Bromley 1879.

Approximate Scale: 1 inch = 100 feet

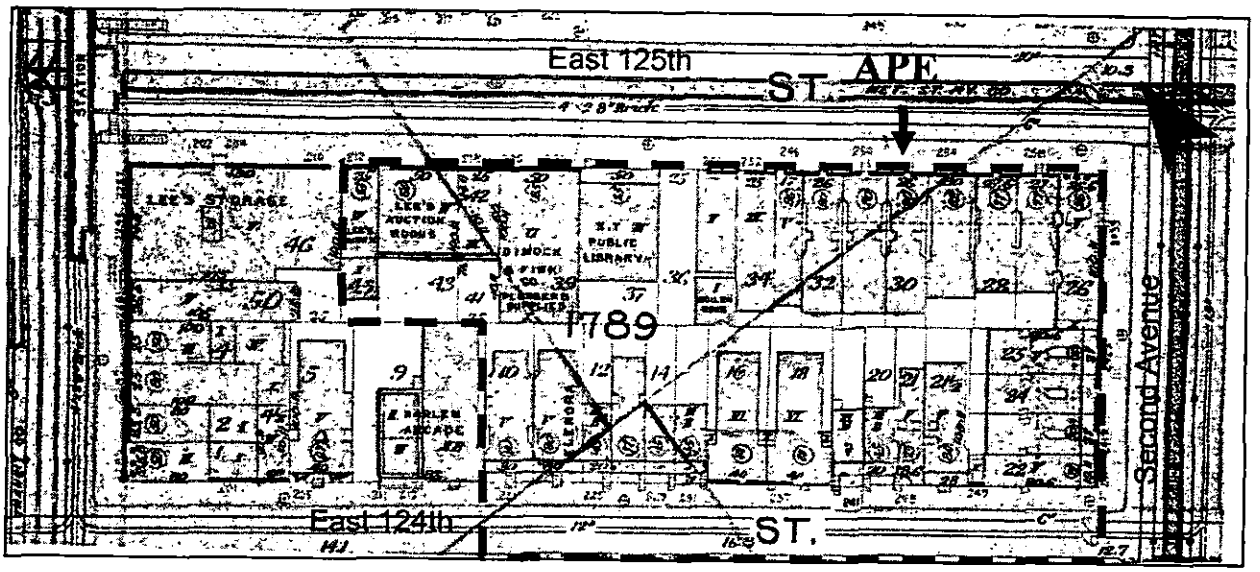
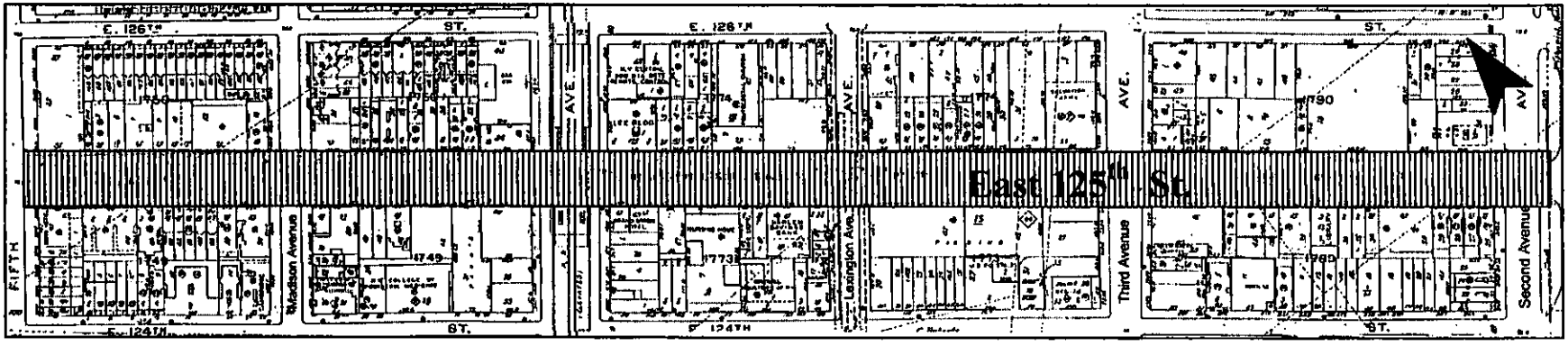


FIGURE 4.2-8

Atlas of the Borough of Manhattan. Block 1789. Between Second and Third Avenues, East 125th Street to East 124th Street. Hyde 1916.

Approximate Scale: 1 inch = 100 feet



Legend:

- Historical Sensitivity
- Precontact Sensitivity
- Historical and Precontact Sensitivity

FIGURE 4.2-9a

Area of Potential Archaeological Sensitivity.
East 125th Street, Fifth Avenue to Second Avenue.
Sanborn 2001.

Approximate Scale: ¼ inch = 100 feet

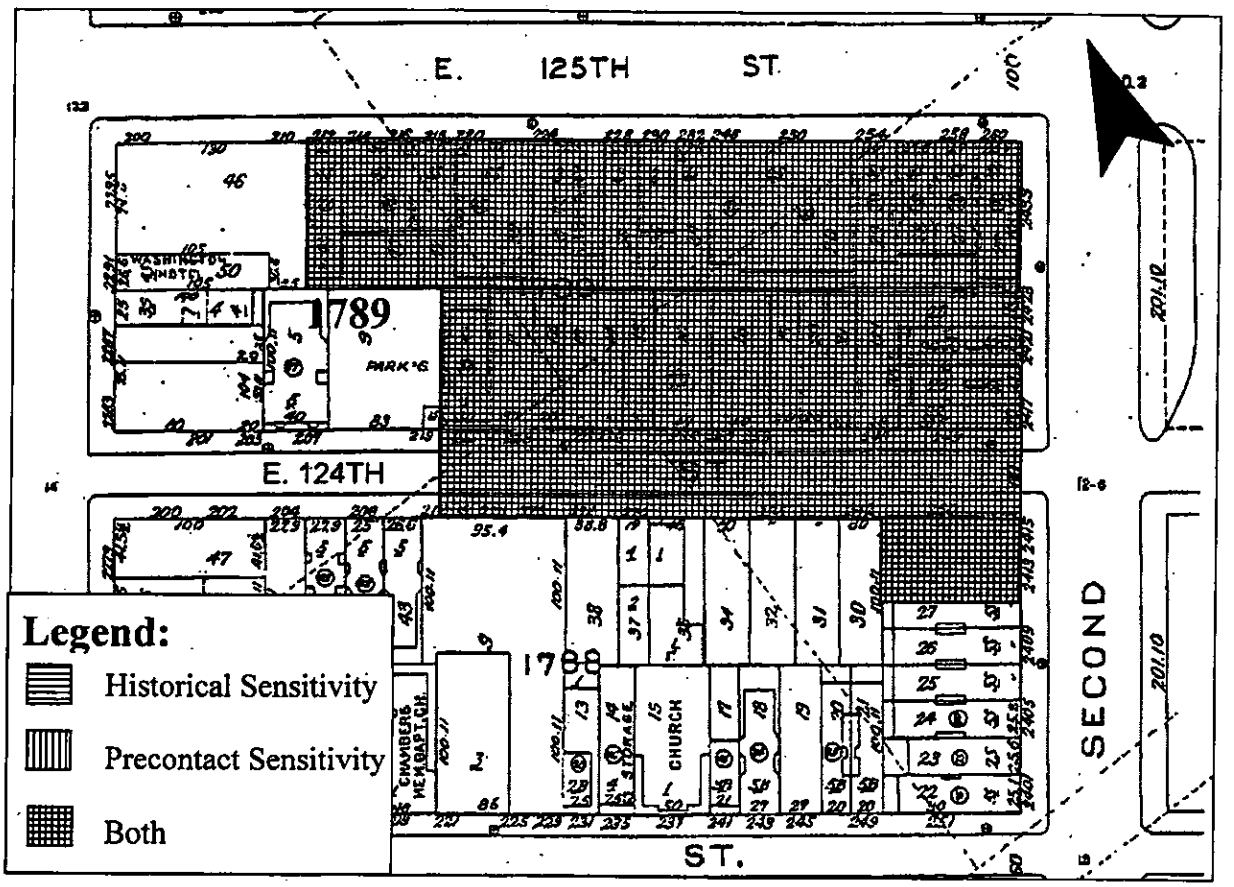


FIGURE 4.2-9b

Area of Potential Archaeological Sensitivity.
Blocks 1788 and 1789. Second Avenue, East 125th Street to East 124th Street.
Sanborn 2001.

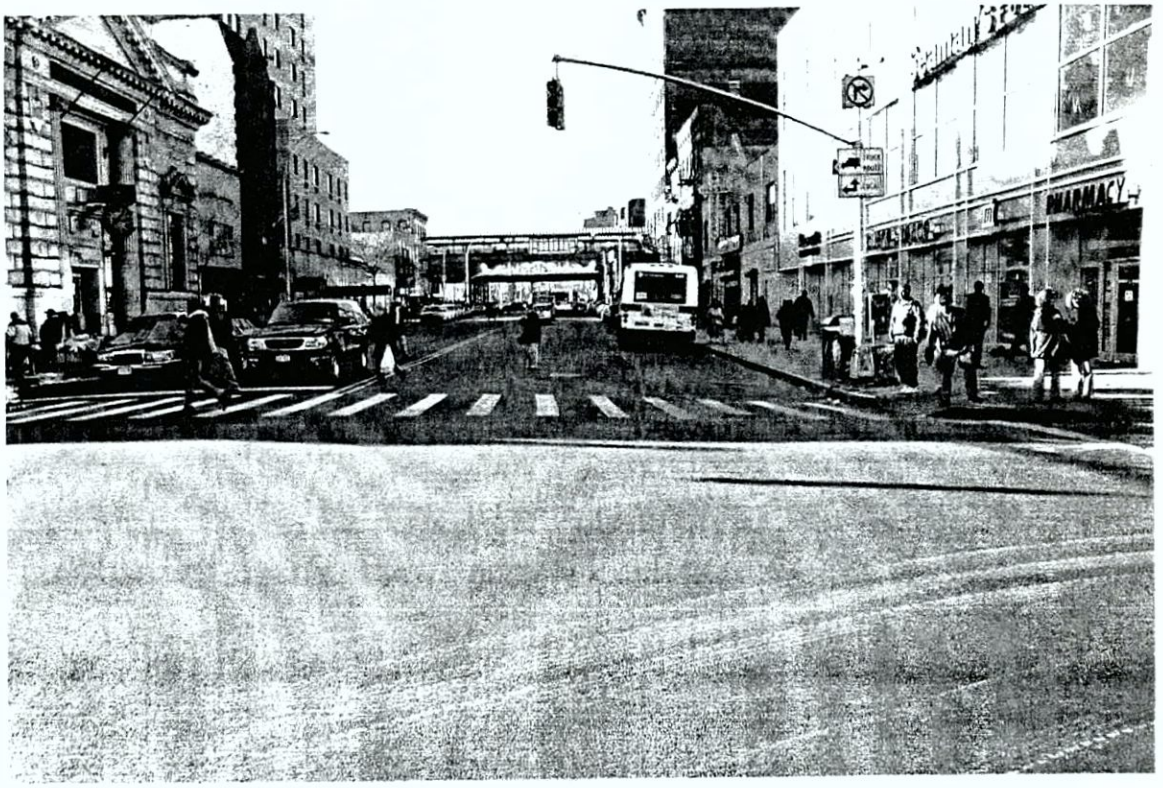
Approximate Scale: ¾ inch = 100 feet



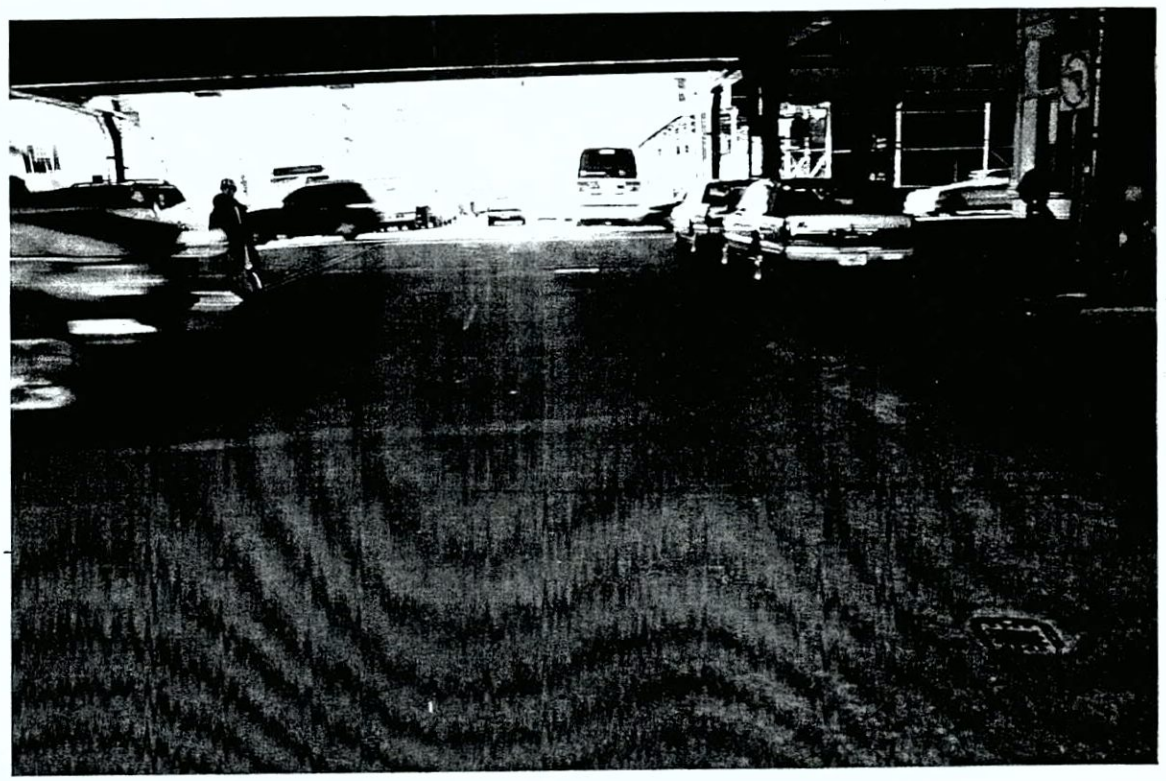
Photograph 4.2-1: View to the west on 125th Street from Second Avenue looking towards Third Avenue.



Photograph 4.2-2: View to the east on 125th Street from Third Avenue looking towards Second Avenue.



Photograph 4.2-3: View to the west on 125th Street from Lexington Avenue looking towards Park Avenue.



Photograph 4.2-4: View to the west on 125th Street from Park Avenue looking towards Madison Avenue.



Photograph 4.2-5: View to the west on 125th Street from Madison Avenue looking towards Fifth Avenue.



Photograph 4.2-6: View to the south from the west side of 125th Street on the corner of 125th Street. Block 1789 on the right side.



Photograph 4.2-7: View to the northwest from the east side of Second Avenue from the corner of 124th Street and Second Avenue towards Block 1789.



Photograph 4.2-8: View to the west from the east side of Second Avenue from the corner of 124th Street and Second Avenue. Looking towards the northeast corner of Block 1788.

4.2.7 Appendices

4.2.7.1 Documentary Assessment of APE

East 125th Street from Fifth Avenue to Second Avenue

The APE for this area consists of the roadbed of 125th Street, from Fifth Avenue to Second Avenue, with the north-south boundaries paralleling those property lines closest to East 125th Street of Blocks 1750, 1774, and 1790 on the north, and 1749, 1773, and 1789 on the south. Cross-streets of Madison Avenue and Lexington Avenue were added after the original grid plan was designed, so that Blocks 1749, 1750, 1773, and 1774 were divided by the creation of these new streets. These blocks retained their old numbers.

Cartographic History

Romer and Hartman 1670: This is a map of the "New Harlem Village Plots." The road ("The Great Way or Church Lane") shown here veers east from the main route from Lower Manhattan at East 120th Street just west of Third Avenue. The road passes just south of the APE, but the map shows some of the property areas that fall within the APE. There are four double lots that are labeled "The Gardens." Of these, a portion of one labeled C.L. Jansen falls within the APE just west of Second Avenue and East 125th Street (Figure 4.2-2). This lot extended diagonally across the middle of Block 1789 from East 125th Street southeast to East 123rd Street, and is discussed further in the Block 1789/1788 section below. Another portion of one falls into the intersection of Second Avenue and East 125th Street. It is labeled "Terveslen"; it passes just to the northeast corner of Block 1789 at East 125th Street and Second Avenue. North of these properties a pond is shown on East 125th Street just east of Third Avenue. It covers the entire width of the street and part of each block to the north and south. On the west side of the pond is the label "Lot No. 1 Jochem Pieters' Flat," and to the east, "Dan'l Tourneur's Land." It is not clear when this map was made; it is labeled as "Compiled by J.R. from the Dutch Grants." It was clearly made after 1811 since the street grid is imposed upon it.

British Headquarters 1782: The earliest map to show the contemporary Harlem area is this map. The village of "Haerlem," an early Dutch settlement, was present near the eastern portion of the APE (Figure 4.2-3). A main road of the village (Church Road) ran approximately from Third Avenue and East 120th Street to east of First Avenue and East 126th Street, and so ran from the southwest to the northeast about two blocks south of the APE, just west of Second Avenue at East 123rd

Street. The main road traveling north of Manhattan (later Kingsbridge Road), veered to the northwest, north of "Snake Hill," and several other elevated areas of ground. Here the road corresponded with the future footprint of East 124th Street. There are only farm fields and meadows within the APE. There are a few structures along this main road, but all are well outside the APE

Commissioners' 1811: A large pond is visible on East 125th Street, spanning the street from the middle of the southern block (Block 1789) to just into the northern block (Block 1790) (Figure 4.2-3). As discussed in other maps, it is not clear whether or not this was a natural or constructed pond. It is not visible on the earlier map (British Headquarters 1782). Although it is visible in the 1670 map (Romer and Hartman 1981:9), this map was drawn after 1811, and it may have been assumed that the pond existed in 1670. Or, it may simply not have been depicted on the British Headquarters map. There is only one structure shown within the APE; this is just east of Third Avenue on East 125th Street. It fronts onto the road that connects the center of Harlem Village at East 120th Street just west of Third Avenue to the Harlem Bridge that connects Third Avenue and the Bronx across the Harlem River. This road was known as the Harlem Bridge Road, and also as The Old Boston Post Road. It crossed East 125th Street just west of Third Avenue. The structure is unlabeled. To the south is property belonging to Raub, and to the north, Ingraham.

Sackersdorf 1815: The pond is shown on East 125th Street. The APE falls into several farm properties. Much of East 125th Street between Third and Second Avenues belongs to N.G. Ingraham. Just southeast of his property, there is a small corner of East 125th Street, west of Second Avenue, which is part of the property of John P. Waldron. Just east of this, at the intersection of East 125th Street and Second Avenue, the land belongs to William Brady. The rest of East 125th Street, from Ingraham's property almost to Fifth Avenue, belongs to the heirs of John Sickels. The area of East 125th Street west of this property, to Fifth Avenue, belonged to Lawrence Benson. These property lines are still visible on Sanborn 2001. No structures are seen within the APE.

Randel 1820: This shows a similar view to Sackersdorf 1815, with slightly more details. No structures are visible within the APE.

Farm Map #40A 1823/1869: This map was drawn to shown the land division for the heirs of John Sickels, when this property was divided into city lots and sold. It shows East 125th Street from Fourth Avenue to Second Avenue. It has no designations west of Third Avenue. The entire block north of East 125th Street between Fourth and Third Avenues has been divided into lots. The western half of the block south of

East 125th Street between Fourth and Third Avenues has been divided into lots. The Old Bridge Road is still shown crossing East 125th Street just west of Third Avenue. There are some lots that seem to extend into East 125th Street just east of Third Avenue, and into the pond on East 125th Street, so it is not clear if the pond was in existence at the time, or why lots would extend into the street. No structures are shown on this map. The Ingraham property noted in Sackersdorf 1815 and Randel 1820 is labeled as "Devisees of Dan. Phoenix;" this area has not yet been divided into lots.

Burr 1832: A railroad route is shown running all the way along East 125th Street (and on West 125th Street), labeled "Cross Route of Rail Road." It is not clear if this railroad is actually operating at this time, based on how it is depicted in Colton 1836. A railroad is also shown on Fourth Avenue. The pond is shown on East 125th Street between Third and Second Avenues. No structures are shown.

Colton 1836: The pond on East 125th Street is not shown. East 125th Street has some development along it, mainly between Third and Fourth Avenues. A railroad is shown on Fourth Avenue. From Fourth Avenue westward on East 125th Street, a line is shown labeled "Proposed Branch of R. Road." The Old Bridge Road no longer crosses East 125th Street, and is not present north of it, although it still exists to the south. There are no structures within the APE.

Dripps 1851: No railway is shown on East 125th Street, although one is shown on Fourth Avenue. East 125th Street is somewhat more developed than in Colton 1836, although structures are still fairly sparse. The Old Bridge Road is still present south of East 125th Street. No structures are present within the APE.

Dripps 1863: Railway lines are shown running on Second, Third, and Fourth Avenues. No structures are shown within this APE (the map does not give these details).

Viele 1865: The pond is shown on East 125th Street between Second and Third Avenues. There is a knoll directly to the east of this pond that also goes across East 125th Street. Otherwise, the rest of the land in the APE is shown as meadow. A pipeline is shown on Fifth and Third Avenues.

Dripps 1867: Railway lines are shown running on Second, Third, and Fourth Avenues. The Old Bridge Road is now closed south of East 125th Street, and is shown as a dotted line there, as well as crossing East 125th Street and continuing north. Development along East 125th Street has increased, but there are still many empty lots along the street. There are no structures within the APE.

Viele 1874: This is similar to Viele 1865, except that the knoll next to the pond is smaller and does not extend south of East 125th Street. A railroad line is shown on Fourth Avenue. Madison Avenue and

Lexington Avenue are shown running all the way north to the Harlem River.

Watson 1874: Railway lines are shown running on Second, Third, and Fourth Avenues. Madison Avenue is shown open up to East 124th Street. Lexington Avenue only extended to East 98th Street at this time. No other detailed information is shown.

Bromley 1879: The areas along East 125th Street have become somewhat more developed. There are elevated railways on Second and Third Avenues. A station is present at the intersection of Third Avenue and East 125th Street, within the APE. A railroad runs along Fourth Avenue below street level. A trolley line is shown on Second Avenue, and on East 125th Street west of Third Avenue. An outline of the old pond can be seen on East 125th Street. There are hydrants present on the north side of East 125th Street at Madison Avenue, Fourth Avenue, Lexington Avenue, and between Third and Second Avenues. On the south side of East 125th Street hydrants are present at Madison Avenue, Fourth Avenue, and between Third and Second Avenues.

Robinson 1885: Most lots fronting on East 125th Street within the APE are now developed. Train and trolley lines are the same as on Bromley 1879 on Second Avenue, with the additions of trolley lines on East 125th Street continuing east of Third Avenue to First Avenue, and on Madison Avenue.

Perris 1893: The APE is similar to Robinson 1885. Tracks are not indicated on this atlas. The Third Avenue Elevated Station on East 125th Street has an up station and a down station, both of which extend partially past the intersection into East 125th Street. There are 6" and 20" water pipes on East 125th Street in the APE. The cross-streets have the following pipes: Madison Avenue—12"; Park Avenue (Fourth Avenue)—6" and 12"; Lexington Avenue—12"; Third Avenue—6" to the south, 12" to the north; Second Avenue—12." There are steam boilers in front of some buildings. These are at 26 East 125th Street, south side, between Fifth and Park Avenues, 81 East 125th Street, north side, between Park and Lexington Avenues, 110 East 125th Street, south side, between Park and Lexington Avenues, 210 East 125th Street, south side, between Third and Second Avenues, and 211 East 125th Street, north side, between Third and Second Avenues.

Sanborn 1896: The APE is the same as on Perris 1893, with additional information that Fifth Avenue has 6" water pipes to the north of East 125th Street and 12" pipes to the south. There are sidewalk steam boilers in front of 220-22 East 125th Street, south side, between Third and Second Avenues.

Sanborn 1911:	The APE is unchanged from Sanborn 1896. The railroad station on Park Avenue at East 125th Street is shown; it is fully north of the East 125th Street, outside the APE.
Bromley 1911:	The APE is unchanged from Sanborn 1911.
Hyde 1913/1916:	Trolley car lines are shown running on East 125th Street, Second Avenue, and Third Avenue. Elevated railroad lines are shown on Second and Third Avenues. Sewer lines are identified as 4' x 2'8" brick on East 125th Street between Fifth and Park Avenue, 3'6" x 2'4" brick between Park Avenue and Third Avenue, and 4' x 2'8" brick between Third and Second Avenues. On the cross-streets, the sewer lines are 3' x 2'8" brick on Fifth Avenue, 3'6" x 2'4" brick on Madison Avenue south, and 12" on Madison Avenue north, 3'6" x 2'4" brick and 15" on Park Avenue south and 15" on Park Avenue north, none indicated on Lexington Avenue, 4' x 2'8" brick on Third Avenue, and 15" on Second Avenue. There are numerous manholes on East 125th Street. Water pipes are the same as Bromley 1897; Fifth Avenue also has 6" and 12" pipes.
Bromley 1916:	The APE is similar to Hyde 1916. The 125th Street railroad station is shown extended from north of East 125th Street, to part way between East 125th and East 124th Street. However, the railway is elevated at this point, so there should have been minimal effect to the APE. There is now a subway on Lexington Avenue, with an underground station at East 125th Street. This extends north and south from East 125th Street, and the tunnel is as wide as the street.
Bromley 1925:	The APE is shown similar to Bromley 1916. The elevated station that was previously located between East 126th and East 127th Streets on Second Avenue has been removed, and another station constructed two blocks south, between East 124th and East 126th Streets on Second Avenue, with the main entrance being at East 125th Street.
Bromley 1930:	The APE is unchanged from Bromley 1925.
Bromley 1934:	The APE is unchanged from Bromley 1925.
Sanborn 1939:	The APE is unchanged from Bromley 1925.
Sanborn 1951:	The APE is unchanged from Bromley 1925, except that the elevated station at East 125th and Second Avenue has been removed, and most likely the elevated tracks have also been removed (the tracks are not indicated on this map.)
Bromley 1955:	The APE is unchanged from Sanborn 1951, except that the elevated station at East 125th and Third Avenue has been removed.
Bromley 1967:	The APE is unchanged from Sanborn 1955.
Bromley 1974:	The APE is unchanged from Sanborn 1955.
Sanborn 1984-85:	The APE is unchanged from Sanborn 1955.
Sanborn 1990-91:	The APE is unchanged from Sanborn 1955, except that East 125th Street is now also known as Martin Luther King Jr. Boulevard.
Sanborn 2001:	The APE is unchanged from Sanborn 1990-91.

Precontact Sensitivity

This area has a moderate probability of being sensitive for precontact resources (Figure 4.2-9a). As described above (Section 4.2.2.1), there are known precontact sites in the area, and habitation or processing sites could be found somewhere within the APE. The marshy areas to the south and along the Harlem River would have provided a habitat conducive to faunal and floral resources. The pond on East 125th Street between Second and Third Avenues (Commissioners 1811, Figure 4.2-4), may have been a source of fresh water and made the area favorable to settlement.

Fill from the historic period may have protected precontact sites, although fill levels vary greatly. Levels of organic silt are present at 8' below grade near Fifth Avenue (Department of General Services 2695:2, 1996). Other borings between Fifth and Madison Avenues on East 124th Street show fill levels from 3-5' below grade (Ibid. 2695:2, 8, 10, 1996). On East 126th Street between Madison and Park Avenues, fills range from 3-12' below grade (Ibid. 2695:12, 15, 16, 19, 1996). There are other areas with shallow or no fill; between Lexington and Third Avenues near East 125th Street, there are two borings with no fill indicated (WPA III.30.10, 17, 1935), and another where there is only 2.7' of fill, and rock was hit just a few more inches down (WPA III.30.9, 1935). But within the same block there are also reported fill levels extending to depths of 13-15' below grade (Department of Public Works 9990:1, 4, 5, 1969). Farther to the east, on Second Avenue, there are several borings showing loam going to 7-11' below grade (WPA IV.5.14-16, 1935). Historic disturbances to East 125th Street include the construction of utilities in the road bed, such as sewers, which were installed in East 125th Street in 1861 (Board of Aldermen 1861:78). Disturbances also include the construction of the Lexington Avenue subway line and station at East 125th Street has a depth of 47' below grade (SYSTRA Engineering 2001). However, this area would have already been likely to have only shallow deposits, as rock is found only a few feet below grade here.

Historical Sensitivity

East 125th Street was designed to be a major east-west route across the island, although it did not become a major thoroughfare until 25 years after the city's grid plan was laid in place in 1811 (Stokes 1928:63), when the portion from Third Avenue east to the Harlem River was opened in 1836. There was little in the way of development before the road was constructed, because this area was sparsely inhabited in the early historical period, and there was no development once it was put in place. The only historic structure shown to be within the footprint of East 125th Street is shown in the Commissioners' Map of 1811, just east of Third Avenue (Figure 4.2-4). This structure is not seen in Sackersdorf 1815 or Randel 1820, however. It is unlikely that any archaeological potential exists, because the area around Lexington and Third Avenues has extremely shallow or no fill (WPA III:30:10, 17, 1935); thus nothing is likely to have survived subsequent development.

Block 1789 and 1788

When the proposed subway tunnel turns from East 125th Street south onto Second Avenue, there may be an effect to surrounding Blocks 1788 and 1789. Block 1789 is bordered by East 125th Street to the north, Third Avenue to the west, Second Avenue to the east, and East 124th Street to the south. Block 1788 is bordered by East 124th Street to the north, Third Avenue to the west, Second Avenue to the east, and East 123rd Street to the south. Much of Block 1789, along with a small portion (the northeastern corner) of Block 1788, may be affected as the subway tunnel curves from East 125th Street to Second Avenue. Also, part of East 124th Street between Third and Second Avenues will be affected, which will be discussed in this section. Therefore, the APE for this area consists of 29 lots within Block 1789, the portion of East 124th Street beginning at the western property border of 21 East 124th Street (Lot 10 in Block 1789), and continuing eastward to Second Avenue, and Lots 28 and 29 in Block 1788, at Second Avenue and East 124th Street (Figure 4.2-9b).

Cartographic History

Romer and Hartman 1670: This is a map of the "New Harlem Village Plots." The main road is named "The Great Way or Church Lane," and veers east from the road from Lower Manhattan at East 120th Street just west of Third Avenue. The road passes just south of the APE, but a number of the properties fronting onto the north side of this road fall within the APE. There are four double lots that are labeled "The Gardens." Of these, a large portion of one falls within the APE, and small portions of two others do (Figure 4.2-2). The larger one belonged C.L. Jansen, and extended diagonally across the middle of Block 1789 from East 125th Street southeast to East 123rd Street. There is a square marked at the southeast corner of Block 1789, at East 124th Street and Second Avenue; it is not clear if this is a structure or designates something else, but it is within the APE. The other properties were to either side of the Jensen property. The one to the west is labeled "Delamater," and just the northeast corner of this property falls into Block 1789 in the middle of East 124th Street. The property to the east is labeled "Terveslen"; it passes just to the northeast corner of Block 1789 at East 125th Street and Second Avenue. It is not clear when this map was made; it is labeled as "Compiled by J.R. from the Dutch Grants." It was clearly made after 1811 since the street grid is imposed upon it. A pond is shown on East 125th Street between Second and Third Avenues.

British Headquarters 1782: This is the earliest map to show the contemporary Harlem area. The village of "Haerlem," an early Dutch settlement, was present.

A main road of the village (Church Lane) ran approximately from Third Avenue and East 120th Street to east of First Avenue and East 126th Street, and so ran from the southwest to the northeast about one block south of the APE, just west of Second Avenue at East 123rd Street (Figure 4.2-3). The APE shows farm fields and orchards belonging to houses that fronted onto the north side of this road. No structures are shown within the APE.

Commissioners' 1811: A large pond is visible on East 125th Street between Third and Second Avenues (Figure 4.2-4), spanning the street from the middle of the southern block (Block 1789) to just into the northern block (Block 1790). As discussed in other maps below, it is not clear whether or not this was a natural or constructed pond. It is not visible on the earlier map (British Headquarters 1782). The grid in this area was not actually put into place at this time, so that one of the original Harlem Village roads, Church Lane, as described above in the British Headquarters map (1782), was the road in use in the area, and is depicted on this map. Within the area of East 123rd Street and Second Avenue (outside the APE), there are about eight structures shown. One of the closest to the APE is labeled Waldron (this is the only building out of this group that is labeled). There are no structures shown within the APE.

Sackersdorf 1815: The pond is shown on East 125th Street. The APE falls into four farm properties. To the north is that of N.G. Ingraham, to the east, John P. Waldron, the south, Johns Adriance, and to the west, the heirs of John Sickels. The last is a very large property, of which the portion within the APE is very small. The Adriance and Waldron properties front onto the old Church Lane. They each show a house on the property, but these are outside the APE. The Ingraham property is north of these. These property lines are still visible on Sanborn 2001.

Randel 1820: This shows a similar view as Sackersdorf 1815, with slightly more detail. The Waldron property now belongs to Chesterman. Unfortunately the current owner of the Adriance property is not visible on the map. No structures are visible within the APE.

Farm Map #40A 1823/1869: This map was drawn to shown the land division for the heirs of John Sickels, when this property was divided into city lots and sold. The western portion of the block near Third Avenue between East 125th Street and East 124th Street, including part of the APE, is shown divided into lots. No structures are shown on this map. The pond is visible on East 125th Street, and into part of the APE in Block 1789, although lots are drawn through this pond, so it is not clear if it was in existence at the time. The Ingraham property noted in Sackersdorf 1815 and Randel 1820 is labeled as "Devisees

of Dan. Phoenix." The two other properties are off the edge of the map.

Burr 1832: A railroad is shown running all the way across East 125th Street. The pond is also shown on East 125th Street.

Colton 1836: Two estates are shown within the APE, both unlabeled (Figure 4.2-5). One is at approximately the location of the former Waldron/ Chesterman property, fronting along the old Church Lane. The house on this estate is outside of this APE, at approximately the east side of Second Avenue below East 124th Street (although it may impinge into the Second Avenue APE discussed in Section 4.3), but the property runs northwest all the way through Second Avenue, and the northernmost property edge cuts across the northeast corner of Block 1788 west of Second Avenue and East 124th Street. This is the area of modern Lots 28 and 29 in Block 1788. The second estate is shown fronting along Third Avenue. It runs from just below East 125th Street to East 123rd Street, and the depth is about halfway through both blocks to the east. It is in the far western portion of this APE. The house itself appears to be located on the southern side of East 124th Street, just outside the APE. It is not established that the demarcations of property features on this map are exact. Therefore, there is the possibility that both houses shown on this map are the same ones as depicted in later maps belonging to Chesterman and Jacobs, respectively (Dripps 1851, Dripps 1867, Bromley 1879), although only the Chesterman house falls within this APE. The pond on East 125th Street is not shown. There are no other structures within the APE.

Dripps 1851: The two estates shown in Colton 1836 are still present (Figure 4.2-6). The Chesterman property shown in Randel 1820 and Colton 1836 still appears to belong to Chesterman. The Chesterman estate is large, extending from East 125th Street and Second Avenue to East 123rd Street and Second Avenue. The main house of the estate is located at the northwest corner of the intersection of Second Avenue and East 124th Street (Second Avenue would not open until 1858, according to the Manhattan Borough Presidents Office). The old Church Road is no longer present. The house falls within the APE, at the approximate location of modern Lots 22-24 in Block 1789. There are lanes within the property extending well into Block 1789, and also covering the APE of Block 1788. Outbuildings are not shown. It is not clear whether this is the same house as shown in Colton 1836. The second estate is labeled J.T. Jacobs. The property seems to be slightly contracted since that shown in Colton 1836. The property is in the southwest corner of Block 1789 and in the roadbed of East 124th Street. Although the property lines may extend into the APE, it appears

that the main structure and all paths are outside of it. The pond on East 125th Street is not shown.

Dripps 1863: A railway line is shown running on Second Avenue, but no structures are shown within this APE (the map does not give these details).

Viele 1865: The pond is shown across East 125th Street and within the Block 1789 APE. There is a knoll directly to the east of this pond that also goes across East 125th Street and into Block 1789. Otherwise, the rest of the land in the APE is shown as meadow. A pipeline is shown on Third Avenue, but this is outside the APE.

Dripps 1867: Second Avenue is now open. Block 1789 is only partially developed, particularly within the APE. Block 1788 is more developed, but there are no buildings within the Block 1788 portion of the APE. The Chesterman and Jacobs estates do not exist as such, but it is not clear whether or not the original houses are still present. There is a structure located in the same place as the Chesterman house in Dripps 1851 (at the corner of Second Avenue and East 124th Street); however, it is oriented differently (along the modern grid rather than the old road system), and is not the same shape (but see Bromley 1879). It is labeled J.M. Long, and is within a large lot. The old property lines are shown, and the Chesterman name is still present within the old designation. The main house of the Jacobs estate appeared to be just outside of the APE in Dripps 1851; there is a house in the same location here, of the same shape, and labeled J.T. Jacobs, as it was in Dripps 1851. Presumably it is the same house, and there do not appear to be any outbuildings associated with the estate in the area. The other buildings within the APE are two structures fronting onto East 125th Street; there is the label "Adams Coach Fac." near these buildings. However, it is not clear if the label refers to these buildings, or buildings farther west outside the APE; on Dripps 1853 the label "Carriage Fcty." was assigned to a building just to the west, outside the APE.

Viele 1874: This map is similar to Viele 1865, except that the knoll next to the pond is smaller and does not extend south of East 125th Street.

Watson 1874: A railroad line is shown on Second Avenue. No other detailed information is shown.

Bromley 1879: The APE has become somewhat more developed (Figure 4.2-7). Several lots on Block 1789 have structures while some remain vacant. Lots within the APE on Block 1788 are all vacant.

Lots 22 and 23 (as marked on this atlas) The question of the former Chesterman estate is not made clear, as a house is portrayed here that is similar to that in Dripps 1851, but not Dripps 1867. This is a large house in the southeast corner of Block 1789, at Second Avenue and East 124th Street, kitty-corner to the street grid,

as was the original Chesterman house. It is approximately the same size and shape as the house shown in Dripps 1851.

Lots 27-29 (modern Lots 26-28) Just north of the house above, on the northeast corner of the block, is the label "Summer Garden." There are no structures between this garden and the house just described.

Lot 10 (modern Lots 9 and 10) There is a house in the location of the Jacobs house previously described. However, the house itself is outside of the APE.

Lots 12-19 (modern Lots 12-20) Within the APE there is a row of houses on East 124th Street.

Lots 38, 43, 44 (as marked on this atlas) On East 125th Street there are a few structures within the APE. These include three stables (Lots 38 and 43-44) and four other structures.

Tracks for both the elevated railway and a trolley line are shown on Second Avenue. An outline of the old pond can be seen on East 125th Street. There are hydrants present on the south side of East 125th Street between Third and Second Avenues, on the west side of Second Avenue between East 125th and East 124th Streets, and on the north side of East 124th Street between Third and Second Avenues. The old number for this block is 328.

Robinson 1885:

The area of the APE is more developed on both blocks.

For Block 1789, on the north side of East 124th Street between Third and Second Avenues, the following lots are involved in the APE:

Lots 10 and 11 These lots have been combined into a double building named "Florence," a named apartment building listed in the Perris and Browne Maps, Volume 8, 1886/1893 apartment house index. The structure is a stone-faced brick building.

Lots 12-17, 17½, and 18-20 Each of these lots has a stone-faced brick building with a substantial back yard.

Lot 21 This lot is occupied by a brick structure.

Lot 21½ This lot has a stone-faced brick building.

On Block 1789, the west side of Second Avenue between East 125th and East 124th Streets, the following lots are involved in the APE:

Lots 22-25 Each of these lots has a stone-faced brick building, each with a small back yard except Lot 22, which has no open yard area.

On Block 1789, the south side of East 125th Street between Second and Third Avenues, the following lots are within the APE:

Lots 26-29 Each lot contains a brick structure with a small back yard, except Lot 26 which has no yard area.

Lots 30-35 These lots are vacant.

Lots 36-40 Together these contain a frame coal yard with stables. The only area with open yard space is Lot 39.
Lots 41-44 These lots contain the "W. Greene Jr. Livery Stables," the rear of which is frame and the front brick.
Lot 45 A brick building occupies the lot with a small rear yard.
On Block 1788, the following lots are within the APE:
Lots 28 and 29 Each contains a brick building. There is a small rear yard on Lot 28, and none on Lot 29.
Train and trolley lines are the same as in Bromley 1879 on Second Avenue, but there are now trolley lines indicated on East 125th Street.

Perris 1893: Although lot numbers are not designated on this atlas, for consistency all structures will be referred to by their lot numbers.
Lots 10-11 All house five-story brick buildings with stone fronts, with small rear yards. The structures are set back slightly from the road.
Lots 12-20 Each lot houses a three-story brick building with a stone front. All have large yards, except the building in Lot 13 that has a four-story extension in the rear that takes up much of the rest of the lot. All buildings are set back slightly from the road.
Lot 21 The lot has a five-story brick building with a medium back yard.
Lot 21½ This lot contains a five-story brick building with stone front, and a rear yard.
Lots 22-25 These lots on Second Avenue appear to be the same as those on Robinson 1885. They are all five-story brick buildings with stone fronts and a commercial space on the ground floor. They all have small rear yards, except for Lot 22 which has a one-story extension that occupies this space.
Lots 26-28 These lots fronting onto East 125th Street appear to be the same as those on Robinson 1885. They are five-story brick buildings with ground-floor stores. The buildings in Lots 27 and 28 have rear yards, while that on Lot 26 has none, and has a one-story addition in the rear.
Lot 29 The lot appears to have new construction replacing the old building; it is a five-story brick building, and is coded as a one-dot special hazard building, but no other details are available.
Lots 30-33 The lots on East 125th Street, previously empty, now have five-story brick buildings with commercial space on the ground floor, and small rear yards.
Lot 34 A three-story brick building occupies this lot with a steam boiler in the rear and ground-floor commercial space. There is no yard.
Lot 35 The lot contains a two-story brick building labeled "School Annex." This structure only covers about two thirds of the lot;

there is empty space and then a one-story frame building in the rear of the lot.

Lots 36-40 Together these lots contain the coal yard that is portrayed on Robinson 1885, with open yard in the area of Lot 39.

Lot 41 This lot is actually in the rear of Lot 42. On Lot 41, which fronts onto East 125th Street, is a small five-story brick building with ground-floor commercial space.

Lot 42 It is empty here, although previously there was a small stable building that had been attached to the Livery Stables in Lots 43-44

Lots 43-44 These lots together now house a four-story brick building with a steam boiler in the rear.

Lot 45 The lot has a four-story brick building.

A 12" water pipe is shown running on Second Avenue, a 6" pipe on East 124th Street, and both 6" and 20" pipes on East 125th Street.

Sanborn 1896: This map is broadly similar to Perris 1893, but some changes have been noted within the APE.

In Block 1789, some of the residences on East 124th Street have small one-story additions or lean-to in the rear of the building. On East 125th Street, further specific changes within the APE are as follows:

Lot 29 The building here is no longer coded as a special hazard, although it is the same structure shown earlier.

Lot 30 This structure on this lot is now coded as a one-dot special hazard.

Lot 34 The structure on this lot is now classed as a Second Class Warehouse, brick, with a four-dot hazard level, the highest level. It is not indicated what type of warehouse it is.

Lots 39-40 (now Lot 39) These lots now contain a six-story brick building with an elevator, as the coal yard has been reduced in size. There are also two steam boilers in front of this building, in the sidewalk or roadbed.

On Block 1788, the following changes have been noted:

Lot 28 This lot contains a five-story brick building and a rear yard.

Lot 29 The lot is completely covered by a five-story brick building with a one-story addition in the rear. Both buildings have commercial enterprises on the ground floor.

Bromley 1897: This atlas is similar to Sanborn 1896. The APE in Block 1788 appears the same.

In Block 1789, the following changes are noted within the APE:

Lots 12-20 The buildings in are indicated as having basements; these are all residences.

Lot 35 The frame building at the rear of Lot 35 is not present.

Sewer lines are shown in addition to water pipes; they are present on Second Avenue and East 125th and East 124th Streets.

Sanborn 1911: Similar to Bromley 1897.

In Block 1789, the following changed in the APE are noted:

Lots 10 and 11 Buildings are shown as having basements.

Lots 16, 16½, 17, and 18 (now Lots 16 and 18) The previous buildings have been torn down and replaced with two double-lot buildings. These are both six-story buildings with basements and commercial enterprises on the ground floor. One of these is labeled "Bookbinder." The buildings take up much of the lots.

Lot 23 The building contains a bakery, and a large oven in the rear yard.

Lots 26-27 These buildings are shown with basements that were not shown on Bromley 1897 (although they are the same buildings).

Lot 28 This building also contains a bakery, has a basement, and a large oven in the rear yard.

Lot 29-33 These buildings are shown with basements that were not shown on Bromley 1897.

Lot 34 The building is coded for light manufacturing and has a basement.

Lot 35 This lot houses a steam laundry with a basement. There is a boiler that partially extends to the sidewalk. The rear yard contains structures associated with this.

Lot 36 Once part of the coal yard, this lot is now empty.

Lots 37-38 Also once part of the coal yard, these lots now house a brick three-story public library.

Lot 40 On this lot remains the same building, although now labeled with a basement. It is a factory and store for plumber's supplies, and has its own power supply. A 50HP boiler is in front of this property, on the sidewalk/roadbed. There is a one-story with basement extension in the rear that takes up the rest of the lot.

Lot 41 The building on this lot appears to be new, but still only takes up half the lot. It is three-story brick with basement, and is a candy factory.

Lots 43-45 These may have been demolished since 1897, but there are discrepancies on Bromley 1897, so that actually only the rear portions of these buildings were taken down. Two four-story brick buildings with basements are shown on these lots; they are adjacent to, and associated with, a large building on the northwest corner of the block that is outside the APE. The entire complex is labeled "Auction Rooms and Storage of Furniture (Lee Bro's)."

On Block 1788, the two buildings within the APE remain the same. The building on Lot 29 has a Chinese Laundry in the rear.

Bromley 1911: This atlas is very similar to Sanborn 1911. The apartment building on Lot 11 on Block 1789 is named "Eleanora."

Hyde 1916: This atlas is very similar to Bromley 1911 (Figure 4.2-8).
On Block 1789, the following details within the APE are noted:
Lot 29 The building has three black dots that indicate a "Saloon or Hotel with Liquor License."
Lot 36 This lot is still vacant.
Lot 39 The Plumbers' Supplies is labeled "Dimock & Fink Co."
Lot 46 The auction room complex is labeled in more detail. While the large building on Lot 46 outside the APE is labeled "Lee's Storage," within the APE the building in Lot 43 is labeled "Lee's Auction Rooms," and the one on Lot 45 is labeled "Lee's Annex."
In Block 1788, the following detail is noted:
Lot 29 The building has four black dots, but it is not known what this designates.
Trolley car lines are shown running on East 125th Street, Second Avenue, and Third Avenue. Elevated railroad lines are shown on Second and Third Avenues. Sewer lines are identified as 4' x 2'3" brick on East 125th Street, 15" on Second Avenue, and 12" on East 124th Street.

Bromley 1916: The APE is unchanged from Hyde 1916.

Bromley 1925: The APE is similar to Hyde 1916. The elevated station that was previously located between East 126th and East 127th Streets on Second Avenue has been removed, and another station constructed two blocks south, between East 124th and East 126th Streets on Second Avenue, with the main entrance being at East 125th Street. On Block 1789, a brick one-story building has been erected on the previously empty Lot 36, and takes up the entire lot.

Bromley 1930: The APE is very similar to Bromley 1925. Both buildings on Lots 35 and 36 on Block 1789 are labeled "Laundry," and the more recent one on Lot 36 is labeled a two-story building rather than one-story as in 1925.

Bromley 1934: The APE is unchanged from Bromley 1930. The entrance to the Triborough Bridge has been constructed through blocks 1801 and 1802 at East 125th Street, east of Second Avenue. While this construction does not directly affect this APE, the western property lines for Blocks 1802 and 1801 were moved east about 100', and Second Avenue is subsequently wider directly across from this APE, between East 125th and East 124th Streets.

Sanborn 1939: This atlas is very similar to Bromley 1934. On Block 1789, the following details within the APE are shown:
Lots 23 and 28 Each of these lots still houses a bakery.
Lot 35 The building is labeled as vacant.
Lot 36 The building is labeled as a store and factory.

Lot 40 The building, previously a plumbers' supply store, sells groceries and wines from the basement to the second floor, and is vacant from the third to the sixth floors. The area where the boiler in front of the building was located is now shown as a dotted rectangle, indicating the steam boiler may be beneath the surface.
Lots 43-45 The buildings on these lots are labeled "Emergency Relief Bureau Offices."

Sanborn 1951: The APE is similar to Sanborn 1939.
On Block 1789, the following details are noted:
Lot 21 The building on this lot has been removed, and the lot is vacant.
Lot 29 The building is labeled "Tire Sales & Re-Cap."
Lots 30-33 The five-story buildings on these lots have been torn down and replaced with a two-story brick building with a basement. These are stores and factories, no longer dwellings.
Lots 43-45 The buildings are now just labeled "Offices."
The elevated station at East 125th and Second Avenue has been removed, and most likely the elevated tracks have also been removed (the tracks are not indicated on this map.)

Bromley 1955: The APE is unchanged from Sanborn 1951.

Bromley 1967: The APE is unchanged from Sanborn 1951.

Bromley 1974: On Block 1789, the buildings on Lots 19 and 20 have been removed. Lots 19-21 are vacant. Otherwise the APE is the same as Sanborn 1951.

Sanborn 1984-85: On Block 1789, the buildings on Lots 11, 12, 13, 15, 16, and 21 (21½) have been removed. All of these lots are vacant.

Sanborn 1990-91: On Block 1789, the buildings on Lots 14 and 18 have been removed. Lots 11-21, a continuous section of 11 lots, are vacant. Otherwise the APE is the same as Sanborn 1951.

Sanborn 2001: The APE is unchanged from Sanborn 1990-91, except that the building on Lot 25 has been removed and the lot is vacant.

Street elevations

Block 1789	3rd x E. 125th	3rd x E. 124th	2nd x E. 125th	2nd x E. 124th
1885 Robinson	13.35	14.1	10.3	12.75
1897 Bromley	13.29	14.08	10.25	12.62
1916 Hyde	13.3	14.1	10.3	12.7
1934 Bromley	13.3	14	10.2	12.6
1967 Bromley	13.3	14	10.2	12.6
2001 Sanborn	13.3	14	10.2	12.6

Tax and Directory Table:

LOCATION **BLOCK 1789**	LOT	1844	1858	1869	house, # stories	1876	house, # stories
221 E. 124th Street	10	Joseph T. Jacobs	Joseph D. Jacobs	Geo. Eberts	2	Geo. Ebert	2 ex
223 E. 124th Street	11	Joseph T. Jacobs	lot not listed	Geo. Eberts		Geo. Ebert	
225 E. 124th Street	12	Joseph T. Jacobs	Joseph D. Jacobs	Geo. Chesterman		Sanford A. Hayes	3 ex
227 E. 124th Street	13	Joseph T. Jacobs	lot not listed	lot not listed		Sanford A. Hayes	3 ex
229 E. 124th Street	14	Joseph T. Jacobs	lot not listed	lot not listed		Sanford A. Hayes	3 ex
231 E. 124th Street	15	James Chesterman	lot not listed	lot not listed		Sanford A. Hayes	3 ex
233 E. 124th Street	16	James Chesterman	George Chesterman	Geo. Chesterman		Sanford A. Hayes	3 ex
235 E. 124th Street	17 (16½)	James Chesterman	George Chesterman	Geo. Chesterman		Sanford A. Hayes	3 ex
237 E. 124th Street	17½ (18)	James Chesterman	George Chesterman	Geo. Chesterman		C. A. Marsh	3 ex
239 E. 124th Street	18	James Chesterman	George Chesterman	Geo. Chesterman		L? A. Agnew	3 ex
241 E. 124th Street	19	James Chesterman	George Chesterman	Geo. Chesterman		N. M. Parker	3 ex
243 E. 124th Street	20	James Chesterman	George Chesterman	Geo. Chesterman		N. M. Parker	3 ex
245 E. 124th Street	21	James Chesterman	George Chesterman	Geo. Chesterman		Geo. Chesterman	
247 E. 124th Street	21½ 121	lot not listed	lot not listed	lot not listed		lot not listed	
249 E. 124th Street	22	James Chesterman	George Chesterman	Geo. Chesterman	2½	Geo. Chesterman	2½
2417 Second Avenue	22	James Chesterman	George Chesterman	Geo. Chesterman		Geo. Chesterman	
2419 Second Avenue	23	James Chesterman	George Chesterman	Geo. Chesterman		Geo. Chesterman	
2421 Second Avenue	24	James Chesterman	George Chesterman	Geo. Chesterman		Geo. Chesterman	
2423 Second Avenue	25	James Chesterman	George Chesterman	Geo. Chesterman		Geo. Chesterman	
2433 Second Avenue	26	James Chesterman	George Chesterman	Geo. Chesterman		Geo. Chesterman	
260 E. 125th Street	26	James Chesterman	George Chesterman	Geo. Chesterman		Geo. Chesterman	
258 E. 125th Street	27	James Chesterman	George Chesterman	Geo. Chesterman		Geo. Chesterman	
256 E. 125th Street	28	James Chesterman	George Chesterman	Geo. Chesterman		Geo. Chesterman	
254 E. 125th Street	29	James Chesterman	George Chesterman	Geo. Chesterman		Geo. Chesterman	
252 E. 125th Street	30	Elizabeth Ingraham	George Chesterman	Geo. Chesterman		Geo. Chesterman	

250 E. 125th Street	31	Elizabeth Ingraham	lot not listed	lot not listed		no owner given	
248 E. 125th Street	32	Elizabeth Ingraham	lot not listed	lot not listed		no owner given	
246 E. 125th Street	33	Elizabeth Ingraham	lot not listed	lot not listed		no owner given	
232 E. 125th Street	34	Elizabeth Ingraham	lot not listed	lot not listed		no owner given	
230 E. 125th Street	35	Elizabeth Ingraham	lot not listed	lot not listed		no owner given	
228 E. 125th Street	36	Elizabeth Ingraham	lot not listed	Geo. Chesterman		Geo. Chesterman	
226 E. 125th Street	37	Elizabeth Ingraham	Ja.? Brown	W. Brown		John J. Sperry	
	38	Elizabeth Ingraham	lot not listed	lot not listed		John J. Sperry	
224 E. 125th Street	39	Elizabeth Ingraham	lot not listed	lot not listed		John J. Sperry	
220 E. 125th Street	40	Elizabeth Ingraham	lot not listed	lot not listed		John J. Sperry	
	41	William D. Bradshaw	lot not listed	lot not listed		George Ebert	assessed w/ Lot 10
218 E. 125th Street	42	William D. Bradshaw	Levi Adams	Levi Adams	5	Levi Adams	5
216 E. 125th Street	43	William S. Ingraham	Levi Adams	Levi Adams	shed	Levi Adams	4
214 E. 125th Street	44	William D. Bradshaw	Levi Adams	Levi Adams	shed	Levi Adams	ext.
212 E. 125th Street	45	Isaack Adriance (factory, Levi Adams pays)	Levi Adams	Levi Adams	sm. house	Levi Adams	4
BLOCK 1788							
2413 Second Avenue	28	James Chesterman (stables)	Est. James C. Chesterman	Geo. Chesterman		no information	
2415 Second Avenue	29	James Chesterman (stables)	Est. James C. Chesterman	Geo. Chesterman		no information	

Precontact Sensitivity

Blocks 1789 and 1788 were about 700' inland from the Harlem River shoreline as it was depicted on predevelopment maps. As a meadow area next to a knoll near East 125th Street between Second and Third Avenues, the area would have been suitable for precontact settlement, with a potential fresh water source on East 125th Street between Second and Third Avenues. This area would have been in close proximity to faunal resources in and near the Harlem River (Figure 4.2-1).

Later development may have had some effect on precontact resources, as a number of structures within the APE from the 19th century had basements. However, most building

episodes were small-scale. Soil borings show that just east of the APE across Second Avenue loam was recorded from the surface to depths ranging from 12-13' below surface (WPA IV:5:14, 15, 16, 1935); no fill was recorded in these borings. A later boring showed 8' of gravel fill below grade; this may indicate a more recent deposition event (Raymond International 2-112, 1970). Outside the western end of the APE, on Third Avenue, fill depths range from none (WPA III:30:16, 17, 1935) to 15' below surface (Department of Public Works Soil Boring 9990:4, 1969). It is not clear if the lack of fill in some of the soil borings reflect grading and leveling episodes in the past. These soil borings are in close proximity to the pond that existed on East 125th Street. The water table is recorded at 12-14' below grade (Ibid., Soil Boring 9990:4, 1969; Boring 2-112. Raymond International 1970). Soil borings from within the APE would clarify the depth of potential precontact resources, but based on the borings taken from the adjacent streetbed, the block may be considered sensitive for precontact resources that might be expected to exist anywhere from five feet to greater than 15' below grade (bedrock was not reached in any of the indicating it lies at least greater than 50' below the surface (Ibid.) (Figure 4.2-9b).

Historical Sensitivity

The earliest development of this section of the APE was associated with Harlem Village. Part of the APE is shown as land plots that front along Church Lane, a major thoroughfare in historic Harlem Village, in a depiction of the area in 1670 (Romer and Hartman 1981:9, Figure 4.2-2). The estates that developed in and just outside of the APE were present for many years, until urban development began in earnest in the 1880's (Robinson 1885).

From the late 17th century through the early 19th century, there were two properties in proximity to the APE with structures on them. These would be the properties indicated as belonging to Jansen and Delamater in 1670 (Romer and Hartman 1981:9), and Adriance and Waldron in 1815, respectively (Sackersdorf 1815). These two properties fronted onto Church Lane. However, any structures within this APE most likely would have been outbuildings, not dwellings. In 1670, the houses themselves would have been close to the main road, not set back. In 1782 (British Headquarters Map; Figure 4.2-3), both areas are shown as farm fields; although there are houses nearby on Church Lane, these are outside of the APE. In 1815 both properties are indicating as having houses along Church Lane, but the Sackersdorf map is not thought to accurately portray the actual locations of houses (based on conversations with Alice Hudson, Map Division, New York Public Library). The outbuildings could be barn or shed structures, and there is also the possibility of privies or wells associated with these properties within the APE.

In the 19th century two estates were present on or near this APE; one belonged to James Chesterman, and the other to Joseph T. Jacobs (Dripps 1851, Figure 4.2-6). The APE may be sensitive for historic features associated with the Chesterman estate between East 125th and East 123rd Streets, and Second and Third Avenues, as the Jacobs structure appeared to fall outside of the APE on East 124th Street. The Chesterman estate, the same

property earlier owned by Jansen in 1670 and Waldron in 1815 (Romer and Hartman 1981:9, Sackersdorf 1815), and indicated on the Colton 1836 map (Figure 4.2-5), contained a house within the APE in 1851 (Dripps 1851; Figure 4.2-6). This house, built in 1821, stood until it was razed in 1883 (Stokes 1918:Landmark map; Riker 1904:191; Liber Deeds MDCCXLVI:5: Bromley 1884). Therefore this area may be sensitive for associated shaft features, such as privies and wells, and any unmapped outbuildings (see Chapter 4.3).

By the late 19th century, this area was mixed residential and commercial. In the 1870's a number of residential buildings were built within the APE (Bromley 1879, Robinson 1885, Figure 4.2-7). Most of these were three-story brick buildings, but it is not clear whether these were built as single-family residences or housed multiple residents. Although sewer lines were installed on East 125th Street by 1861 (Board of Alderman 1861:78), there is still the possibility that the back yards of these residences contained privies and/or wells. As late as 1884, only 30% of the tenements in Manhattan had water closets, and few had water provisions above the first floor (Plunz 1990:33). The level of affluence in the area may have affected this.

Most of the late 19th century buildings within the APE on East 125th Street were commercial and light industrial (e.g. baking, laundry) through the late 19th and 20th centuries. The locations of these structures areas would not be archaeologically sensitive, since the activities performed there would have been contained within buildings, leave few traces, and have little research potential value. In contrast, most of the buildings within the APE on East 124th Street were residential (Figure 4.2-8). Some of the brownstones built between 1867 and 1879 remained until they were demolished in the late 1970's through the early 1980's (Sanborn 1984-85). These lots have remained undeveloped since that time. Some of the original housing from the late 19th century was replaced with larger apartment buildings in the early 20th century (Sanborn 1911), but at least one five-story apartment building from before 1885 is still present. If privies and/or wells did exist for the residences on East 124th Street, there is the potential for finding such shaft structures.

The water table is recorded at 12-14' below grade (DPW Soil Boring 9990:4, 1969; Raymond International 2-112, 1970) in this area, indicating that shaft depths for well should be approximately 15' below grade. Fill levels vary; unfortunately there are no soil borings for either Block 1788 or 1789. Soil borings from surrounding streetbeds indicate fill and loam depths of 8-13' below surface (WPA IV.5.14, 15, 16, 1935; Boring 2-112 Raymond International Inc., 1970) to the east, and range from none (WPA III.30.16, 17, 1935) to 15' below surface (DPW Soil Boring 9990:4, 1969) to the west. This fill would have protected both historic and precontact resources.

The specific areas within the APE that escaped disturbance through 19th century development are lots that had open yards through time and structures that never had basements. While surface remains associated with those living surfaces would not have survived through everyday continued use, there is the potential for subsurface

archaeological resources to remain. These resources include the remains of wells and privies from the 19th century associated with structures that were not yet hooked up to utilities, as well as similar shaft features, but also older house foundations or cellars associated with earlier historic occupation, or deposits associated with precontact use.

On Blocks 1789 and 1788, several lots had open yards throughout the 19th century and beyond. On Block 1789, those lots with small to medium sized yards include Lots 10-21½, 23-25, 27, 28, 30-33, 35, 39, and 41-45. Of these, Lot 39 was entirely open space in the middle of a coal yard throughout much of the 19th century. On Block 1788, only Lot 28 had a small extant yard. Fewer lots had structures that never had basements. On Block 1789, the lots without basements include Lots 21-25, 36-39 and 42. Both lots in the Block 1788 APE, Lots 28 and 29, did not have basements. The type of archaeological resource these areas may contain depends on the specific depth of fill at any location. 19th century resources such as wells or privies would be found in areas of open yards, and could penetrate below the pre-fill surface. Pre-19th century development or precontact archaeological resources such as wells, privies, house foundations, cellars, or middens, would be found below any fill level. These could also include possibly truncated deep shaft features such as wells that were disturbed during 19th century development.

Therefore there is a high probability of intact or partially intact historical resources within this APE (Figure 4.2-9b). Historic resources such as late 17th or 18th century building foundations or early 19th century farm outbuilding foundations might be found on the historic surface, which would be expected to about 5-11' below grade. Shaft features such as wells would be expected to extend to a depth of at least 15' below grade, and privies might also be expected to extend nearly as deeply.

4.2.7.3 Site File Search Results

SITE FILE SEARCH RESULTS

Project Name 2nd Ave. Subway IAA 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

4059 X
4060 X
4061 X
4062 X
4063 X
4064 X
7178 X

*Missing

209 Water St. South Street Seaport HP

*Missing

576 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 2003
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 2nd found historic Remains. no other info was found.)

NYAC = New York Archeological Council.

ATIONAL REGISTER E. GIBLE and LISTED ___ Eligible ___ Listed ___ Building Inventory

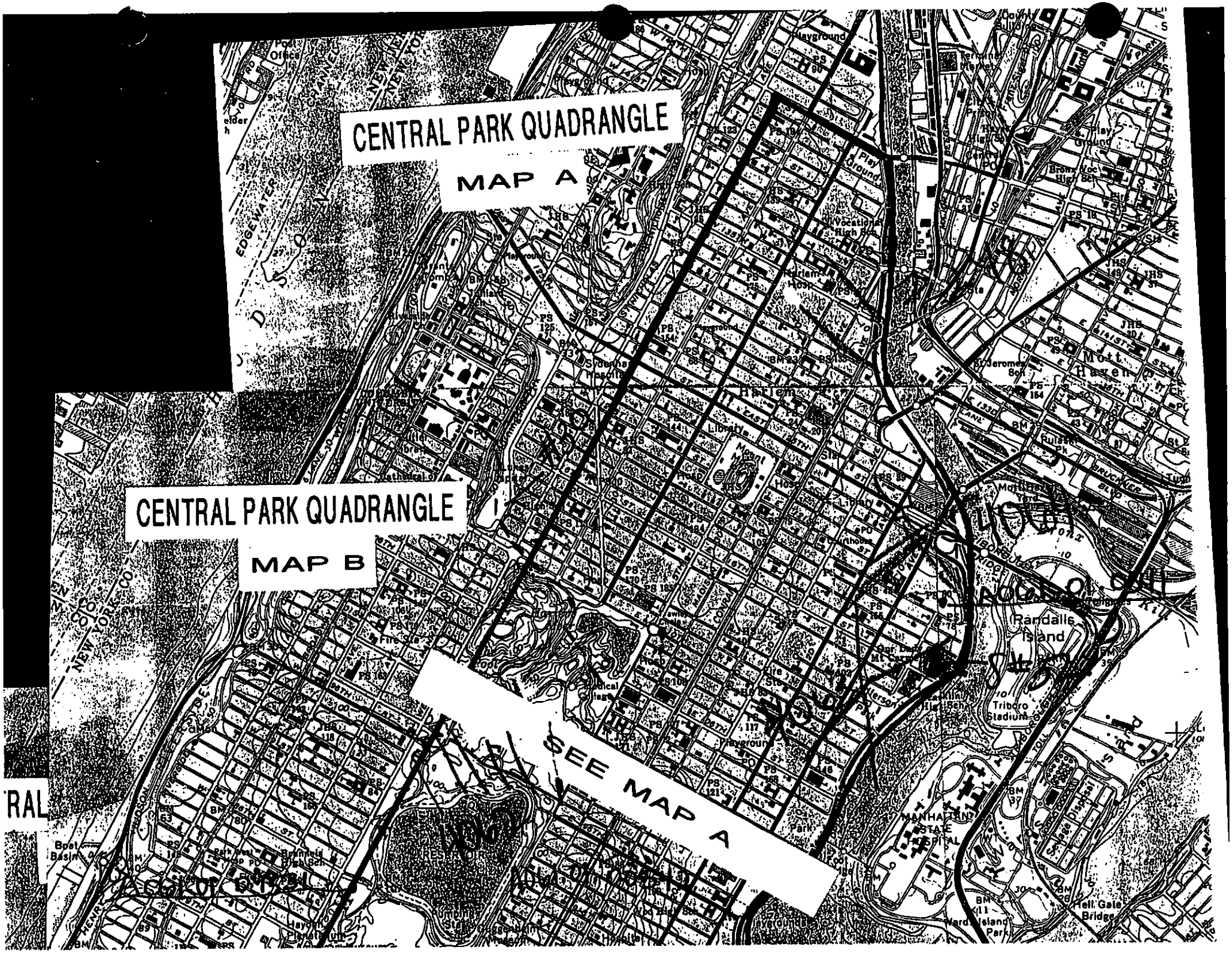
ilding Inventory #	NR Status	Form Copied	Property Description	Roads Checked
06101.000604	NRL	✓	South Street Seaport Historic District 209 Water Street	

EVIOUS SURVEYS <17 previous surveys w/in Radius>

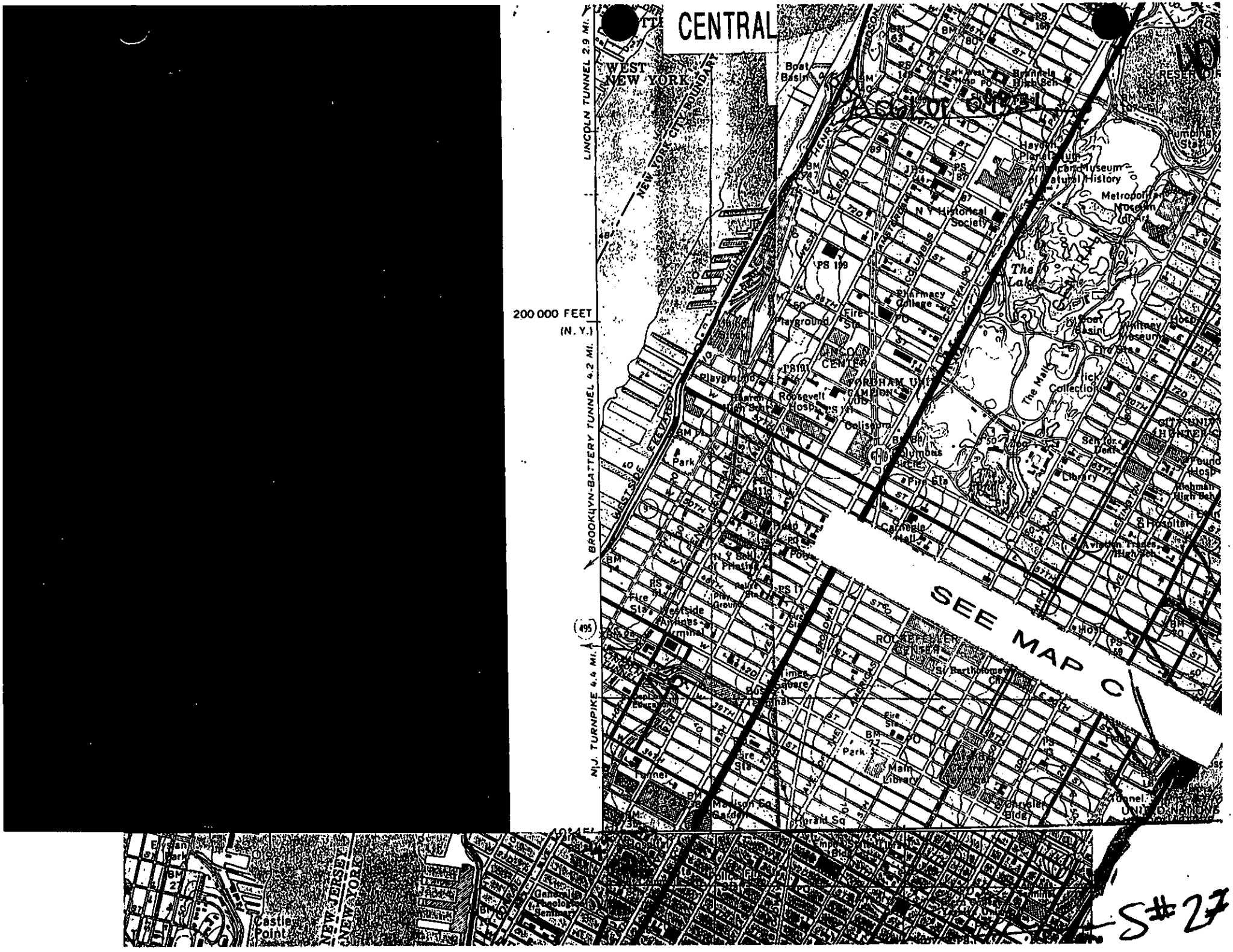
8 Westside Highway Program – 1983
William O. Hersey – 1963 Castle Clinton at the Battery
Broad Street Financial Center Greenhouse January 1985
X
64th Pearl Street (7th Cl. Landfill) Arnold Pickman & Nan Rothschild May 1981
Stone Street Historic District 9/17, 8/17 NYC Landmarks Pres. Com. M. Tracker
9 Barclays Bank Site – 100 Water St. Berger – 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block Kardon & Larrabee – Aug 1971

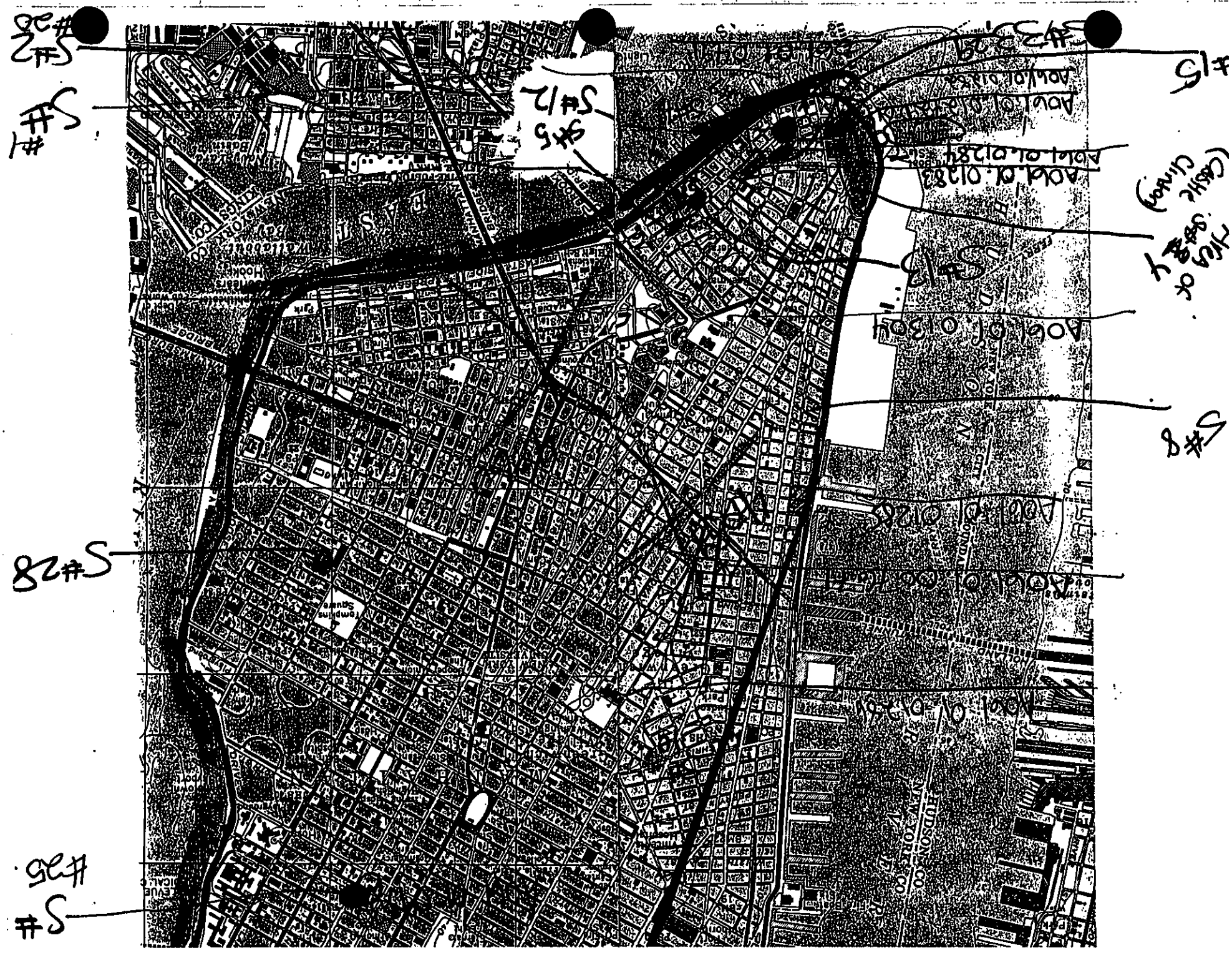
209 Water St. – Schuyler – ? Date
East River Roach – New York Harbor Collection Kardon & Larrabee October 1977
10 Sheridan Square – 1983 – Rutgers University
Lower Eastside Service Center – Louis Berger – Jan '98
27 750 Sixth Ave. HPI – February 1998
Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1989 / December 1989
32 East River Plaza HPI Sept. 1998
Stone Street Historic District NYC Landmark Pres. Com. February 1998

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


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A
Harlem
Randalls Island
Triboro Stadium
MANHATTAN STATE HOSPITAL
Hell Gate Bridge
Ward Island Park
Mount Morris Park
Harlem River
Harlem River Drive
Edgecombe Ave
Bruckner Blvd
Bronx Kill
Hell Gate
Post Office
Playground
Library
Park
Pool
Fire Sta
Public Bath
Boat Basin
Hayden Planetarium
Brookfield High Sch
Vocational High Sch
Displ
Tunnel
Bridge
Lane
Place
Street
Avenue
Road
Drive
Terrace
Boulevard


SEE MAP C
S#27
S#25
1000
0
DEPTH CURVES
SHORELINE SHO
4 FEET
THIS MAP CO
FOR SALE BY
OLDER DESCRIBING


CENTRAL
WEST NEW YORK
NEW YORK CITY BOUNDARY
LINCOLN TUNNEL 2.9 MI.
BROOKLYN-BATTERY TUNNEL 4.2 MI.
N.J. TURNPIKE 4.4 MI.
200 000 FEET
(N. Y.)
495
Boat Basin
Brandeis High Sch
Hayden Planetarium
American Museum of Natural History
Metropolitan Museum of Art
N Y Historical Society
The Lake
Pharmacy College
Playground
Fire Sta
LINCOLN CENTER
FORDHAM UNIV CAMPION
Roosevelt Hosp
Coliseum
Columbus Circle
Park
Carnegie Hall
Whitney Museum
The Mall
Frick Collection
Library
Hospital
Aviation Trades High Sch
SEE MAP C
ROCKEFELLER CENTER
St Bartholomew Ch
Westside Airlines Terminal
Times Square
Bus Terminal
Main Library
Chrysler Bldg
Madison Sq Garden
Herald Sq
Tunnel
UNITED NATIONS
NEW JERSEY
NEW YORK
Castle Point
General Theological Seminary
S#27



#15
#8
#28
#25

4.2.6.4 Soil Boring Logs

Department of General Services, City of New York
Soil Boring 2695:2, 1996
Combined Sewer in 124th and 126th Streets.
South side of East 124th Street at Fifth Avenue.

fill: fine-coarse gray brown sand, little silt, little gravel, bricks, vegetation, etc.	+20.4' to +14.4'
gray organic silt	+14.4' to +12.4'
fine-coarse brown sand, little gravel, trace silt, cobbles	+12.4' to –11.1'

Water at +7.0' to +9.9'

Department of General Services, City of New York
Soil Boring 2695:8, 1996
Combined Sewer in 124th and 126th Streets
North side of East 124th Street, between Fifth and Madison Avenues.

misc. fill	+22.8' to +17.8'
brown silt, trace very fine sand, "bull's liver"	+17.8' to +14.2'
fine-coarse brown sand, little gravel, trace silt, cobbles	+14.2' to –8.7'

Water at +7.0' to +9.9'

Department of General Services, City of New York
Soil Boring 2695:10, 1996
Combined Sewer in 124th and 126th Streets
South side of East 124th Street at Madison Avenue.

misc. fill	+23.1' to +18.1'
brown silt, trace very fine sand, "bull's liver"	+18.1' to +14.1'
fine-coarse brown sand, little gravel, trace silt, cobbles	+14.1' to –8.4'

Water at +7.0' to +9.9'

Department of General Services, City of New York
Soil Boring 2695:12, 1996
Combined Sewer in 124th and 126th Streets
South side of East 126th Street east of Madison Avenue.

7" asphalt, 3" concrete, misc. fill	+22.9' to +19.9'
brown silt, trace very fine sand, "bull's liver"	+19.9' to +13.9'
fine-coarse brown sand, little	+13.9' to –0.1'

gravel, trace silt	
fine-medium sand, trace to little silt	-0.1' to –8.6'

Water at +7.0' to +7.3'

Department of General Services, City of New York
Soil Boring 2695:15, 1996
Combined Sewer in 124th and 126th Streets
North side of East 126th Street between Madison and Park Avenues.

6" asphalt, 6" concrete, misc. fill	+21.5' to +18.5'
brown silt, trace clay, trace very fine sand, "bull's liver"	+18.5' to +13.5'
fine-coarse brown sand, little gravel, trace silt	+13.5' to –10.0'

Water at +7.0' to +7.3'

Department of General Services, City of New York
Soil Boring 2695:16, 1996
Combined Sewer in 124th and 126th Streets
South side of East 126th Street between Madison and Park Avenues.

misc. fill	+21.7' to +18.7'
brown silt, trace clay, trace very fine sand, "bull's liver"	+18.7' to +11.7'
fine-coarse brown sand, little gravel, trace silt	+11.7' to –9.8'

Water at +7.0' to +7.3'

Department of General Services, City of New York
Soil Boring 2695:19, 1996
Combined Sewer in 124th and 126th Streets
North side of East 126th Street west of Park Avenue.

5" concrete, fill: fine-coarse gray brown sand, some silt, some gravel, brick, wood, iron, etc.	+21.4' to +9.4'
fine-coarse brown sand, little gravel, trace silt, cobbles	+9.4' to -10.1'

Water at +7.0' to +7.3'

Department of Public Works, City of New York
Soil Boring 9990:1, 1969
Engine Co. 35, Ladder Co. 14
North of East 124th Street, west of Third Avenue, in Block 1773.

fill; sand, gravel, brick and cinders	+14.8' to +0.8'
compact brown medium-fine sand, trace silt	+0.8' to –3.2'

compact brown fine sand and silt	-3.2' to –8.2'
v. compact brown medium-fine sand, little gravel, trace silt	-8.2' to –13.2'
compact brown fine sand and silt, trace mica	-13.2' to –18.2'
compact brown medium-fine sand, trace silt, trace gravel	-18.2' to –23.2'
compact brown medium-fine sand, trace silt	-23.2' to –31.7'

Water at +3.7'

Department of Public Works, City of New York
Soil Boring 9990:4, 1969
Engine Co. 35, Ladder Co. 14
West side of Third Avenue, north of East 124th Street.

misc. fill; sand, gravel, brick, wood, and cinders	+16.0' to +1.0'
compact white fine-medium sand, trace silt	+1.0' to –2.0'
compact brown fine-medium sand, trace silt	-2.0' to –11.0'
v. compact brown fine sand, trace gravel, trace mica	-11.0' to –17.0'
v. compact brown coarse-medium-fine sand, some gravel, trace silt	-17.0' to –22.0'
v. compact brown fine-medium sand, some silt, trace gravel	-22.0' to –27.0'
v. compact brown fine-medium sand, trace silt, trace gravel	-27.0' to –32.0'
v. compact brown fine-medium sand, some silt, trace gravel	-32.0' to –35.0'

Water at +2.2'

Department of Public Works, City of New York
Soil Boring 9990:5, 1969
Engine Co. 35, Ladder Co. 14
North of East 124th Street, west of Third Avenue, in Block 1773.

misc. fill; sand, gravel, brick, wood, silt	+15.3' to +2.5'
compact brown fine-medium sand, trace silt	+2.5' to –31.2'
compact brown fine-medium sand, trace silt, trace gravel	-31.2' to –36.2'

Water at +2.5'

Raymond International 2-112, 1970
East side Second Avenue between East 125th and 124th Street
Elev. 113.13

concrete	0.0' to –0.5'
cinders, sand, gravel fill	-0.5' to –8.0'
fine brown sand, little silt, trace of gravel	-8.0' to –13.0'
fine to medium light brown sand, little silt, layers of clay	-13.0' to –51.6'

Water at –12.0'

Raymond International 2-113, 1970
West side Second Avenue between 125th and 126th Street
Elev. 111.62

concrete	0.0' to –0.5'
stone and cinder fill	-0.5' to –2.6'
medium coarse brown sand, gravel, some silt	-2.6' to –18.0'
medium brown sand, traces of silt	-18.0' to –42.0'
varved clay, silt, traces of sand	-42.0' to –51.6'

Water at –11.0'

Raymond International 2-114, 1970
East side Second Avenue between 125th and 126th Street
Elev. 113.20

concrete	0.0' to –0.4'
cinders, concrete, brick, wood fill	-0.4' to –12.0'
loose fine to medium brown sand	-12.0' to –23.0'
fine brown sand, trace of silt, thin layers of clay	-23.0' to –38.0'
fine gray and brown silty sand, varved clay	-38.0'to -61.6'

Water at –12.2'

WPA III:30:9, 1935
B'd. of Transport, Dwg. No. 179
Lexington Avenue, between East 124th and East 125th Streets.

filled ground	+18.0' to +15.3'
rock, mica schist	+15.3' to +10.1

No water level recorded.

WPA III:30:10, 1935
B'd. of Transport, Dwg. No. 179
Lexington Avenue, southeast corner of East 125th Street.

sand	+17.8' to +13.8'
sand and gravel	+13.8' to +12.2'
disintegrated rock	+12.2' to +10.2'
mica schist rock	+10.2' to +7.1'

No water level recorded.

WPA III:30:16, 1935
B'd. of Transport, Dwg. No. 184
Third Avenue, northeast corner of East 124th Street.

coarse sand	+17.8' to +2.8'
sand	+2.8' to –33.0'

No water level recorded.

WPA III:30:17, 1935
B'd. of Transport, Dwg. No. 184
Third Avenue, southwest corner of East 125th Street.

coarse sand and gravel	+14.7' to –9.3'
sand	-9.3' to –11.9'
rock or boulder	-11.9' to -

No water level recorded.

WPA III:30:18, 1935
NY Central R.R.
Park Avenue (roadbed), southeast corner of East 125th Street.

sand and boulders, fill	+22.4' to –3.6'
red clay	-3.6' to –6.6'
coarse sand and boulders	-6.6' to –32.6'
medium coarse sand and boulders	-32.6' to –41.4'
mica schist, feldspar and spurious marble	-41.4' to –57.6'

No water level recorded.

WPA IV:4:45, 1935
B'd. of Transport, Dwg. No. 179
Lexington Avenue, northwest corner of East 125th Street.

clay	+17.4' to +12.4'
coarse sand	+12.4' to +5.8'
decayed rock	+5.8' to +5.3'
rock or boulder	+5.3' to -

No water level recorded.

WPA IV:5:14, 1935
Triborough Bridge
East 125th Street, east of Second Avenue.

loam and sand	+10.1' to –2.9'
gravel and boulders	-2.9' to –8.9'
medium brown sand	-8.9' to –17.9'
sand and gravel	-17.9' to –20.9
fine brown sand	-20.9' to –24.3'

No water level recorded.

WPA IV:5:15, 1935
Triborough Bridge
East side of Second Avenue between East 125th and East 124th Streets.

loam	+11.2' to –0.8'
medium brown sand	-0.8' to –11.8'
fine brown mica sand	-11.8' to –19.8'
fine gray mica sand	-19.8' to –21.8'

No water level recorded.

WPA IV:5:16, 1935
Triborough Bridge
East side of Second Avenue north of East 124th Street.

loam	+12.2' to –0.8'
fine brown sand	-0.8' to –11.8'
coarse gray sand	-11.8' to –15.8'
fine sand	-15.8' to –19.6'

No water level recorded.

WPA IV:5:23
Triborough Bridge, 1935
Southeast corner of Second Avenue and East 126th Street.

fill	+11.8' to +8.8'
loam	+8.8' to +4.8'
brown sand, gravel and boulders	+4.8' to –2.2'
gray sand, gravel and boulders	-2.2' to –14.2'
fine mica sand	-14.2' to –20.6'

No water level recorded.

WPA IV:5:24
Triborough Bridge, 1935
East side of Second Avenue between East 125th and East 126th Streets.

fill and loam	+11.2' to +8.2'
sand and gravel	+8.2' to -5.8'
gray sand and gravel	-5.8' to –10.8'
fine gray mica sand	-10.8' to –21.0'

No water level recorded.

4.3 EAST 125TH STREET TO EAST 63RD STREET

4.3.1 Study Area Description

The East 125th Street to East 63rd Street APE includes some sections of subway that were previously constructed in the 1970s. Existing tunnel sections are located between East 120th Street south to East 110th Street, and East 105th Street south to East 99th Street. These built areas are not considered potentially sensitive for archaeological resources since they have experienced severe subsurface effects which are documented in the text. However, directly outside of the existing tunnels and ventilation shafts, there may be potential effects to Second Avenue and adjacent sidewalks which were left undisturbed by the tunnel's construction.

Potential effects to this APE could result from cut-and-cover construction, linking existing tunnel segments, and cut and cover construction of proposed subway stations, pedestrian access ways, ventilation shafts, and shaft site/staging areas such as to insert the TBM below grade. Shaft sites evaluated are on Blocks 1668, 1646, and 1440. South of the TBM access shaft, construction is expected to occur in bedrock except at stations where cut-and-cover construction will be necessary. Since the precise locations of stations, pedestrian access ways, and ventilation shafts are unknown, they could conceivably cause effects to sections of the Second Avenue roadbed near existing tunnel sections, but outside of the area of prior effect. Therefore, the APE for this section includes the entire Second Avenue Roadbed, from building line to building line, from the south boundary of East 125th Street, to the south boundary of East 63rd Street. It also includes the potential shaft sites on Blocks 1668, 1646 and 1640.

Shaft Site B, Block 1668

An access shaft will be required to allow the tunnel boring machine (TBM) and other construction equipment to reach the below-grade tunnel construction area. This shaft would potentially be sited on property adjacent to Second Avenue. One of the sites evaluated was Shaft Site B, located on Block 1668, between East 97th and East 96th Streets, east of Second Avenue. The APE encompasses the western half of Block 1668 (Figure 4.3-1a).

Shaft Site C, Block 1646

An access shaft will be required to allow the tunnel boring machine (TBM) and other construction equipment to reach the below-grade tunnel construction area. This shaft would potentially be sited on property adjacent to Second Avenue. One of the sites evaluated was Shaft Site C, located on Block 1646, between East 97th and East 96th Streets, west of Second Avenue. The northeastern quarter of Block 1646 is the APE (Figure 4.3-1a).

Shaft Site B, Block 1440

An access shaft will be required to allow the tunnel boring machine (TBM) and other construction equipment to reach the below-grade tunnel construction area. This shaft could be sited on property adjacent to Second Avenue. One of the sites evaluated was Shaft Site B, located on Block 1440, between East 66th and East 65th Streets, east of Second Avenue. The APE includes all but one lot within the northeast quarter of the block (Figure 4.3-1b). The APE includes Lot 49 and part of Lot 3 on Block 1440.

4.3.2 Existing Conditions

4.3.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

The northernmost section of the project corridor is located near former flatlands called Muscoota by Native Americans, which lies between the Harlem River and Morningside Heights northwest of what was once Harlem Creek and its surrounding swampy area (Robinson 1989:3). Rechgawanes is reported by Grumet as a point of land along the western shore of the confluence of the East and Harlem Rivers, and a long obliterated stream that ran along the route of East 125th Street (1981:46).

Wickquasgeck Road, a Native trail which ran from the southern tip of Manhattan to the northern tip of Manhattan, ran west of the project site through the Upper East Side and then turned into Central Park to head northeast. The road was well traveled, and connected settlements at the southern part of the island with those on the north (Ibid. 1981:68).

In this section of the project corridor, the Wickquasgeck trail ran to the west through what is now Central Park. An Indian Path veered off this trail at East 110th Street near Fifth Avenue, and headed northeast towards a habitation site on the Harlem River near East 124th Street. This Native American trail was incorporated into the first road system of the village of Harlem. Passing through the meadows of Muscoota to the area called Conykeekst, it crossed First Avenue at 124th Street and Second Avenue at 121st Street (Bolton 1922:72,74-76). Arrowheads and flakes were found in East Harlem in 1855 during the excavation of a cellar on Avenue A between 121st and 120th Streets (Riker 1904:123). Bolton concluded that the site was intermittently used as a place of landing or trade, or perhaps a fishing place (Bolton 1922:72F, pl.IV as reported in Rubinson 1989:7). Named "Conykeekst" (NYSM Site #A061.01.0541), Susan Kardas of the New York Archaeological Council (NYAC) reported that the cultural affiliation and date of materials, as well as the location of any of the excavated materials is currently unknown (Bolton 1922:235, #98; Finch 1909:65).

An additional previously inventoried precontact site in the vicinity was the historic aboriginal village of Konaande Kongh, which was occupied until 1669 (NYSM Site #A061.01.00542). The site, located from Harlem Hill to 91st Street, as far west as 5th Avenue, and to Hellgate Bay on the East River, was once occupied by Rechewac – chief of the Reckgawawancks (Bolton 1922:221).

NYSM Site #4063 was reported near this northern section of the project corridor. Identified by Arthur C. Parker, this village/camp site was described as "...one of larger camps or fishing places of the Reckgawawancks...." (Parker1920:26). He further characterized it as a "...camp or fishing place ....at Montagne's Point... on shore at Hellgate, just off 110th Street" (Ibid.). The site's boundaries and location are unknown, but it may have extended west into the vicinity of Second Avenue near East 110th Street. NYSM Site #4064 was identified as a camp by Arthur C. Parker and was described similarly to NYSM Site #4063 above. Specific boundaries are unknown, though Parker recorded the site location as "...on the banks near 121st St...Pleasant Ave. or same loci as 4063" (Ibid.:1922:626). The boundaries of this site could also potentially fall within the vicinity of the project corridor.

Stage 1A and 1B Archaeological investigations for the East River Plaza Project were conducted by Historical Perspectives, Inc. in September and December of 1998, respectively. Though no precontact materials were recovered during excavations, the project was located between East 119th and East 116th Streets, in proximity to the above discussed site that was discovered in 1855, and "the whole area [was] identified as extremely sensitive by the NYCLPC and the NYSHPO" (HPI Stage 1A, 1998: 21).

Planting areas and old fields are shown along much of this area, especially in the vicinity of First and Second Avenues. In addition, in the vicinity of East 101st to East 97th Streets was "Konaande Kongh," defined by Grumet as a major Indian settlement. (1981:20). Bolton reported that this was a village located approximately between Lexington Avenue and Madison Avenue and East 98th to East 100th Streets, west of Second Avenue (Ibid.).

Arthur C. Parker also reported traces of occupation in the area of East 59th Street near First and Second Avenues (NYSM Site #4061). The nature and extent of the Native American presence is unknown, but it is possible that this site extended into the current project corridor and into the southern end of the corridor under discussion here.

Archaeological Potential

Second Avenue

Precontact archaeological sensitivity is determined, in part, by the topography of the project site before European settlement. Viele's "water map" is frequently used as a reference for early topography, as it shows such features as knolls, streams, meadows, marshes, shoreline, etc. (Viele 1865, 1874). His map suggests that numerous locations within the project site would have had characteristics attractive to Native Americans (Appendix 4.3.7.1).

Precontact period archaeological potential also depends on subsurface conditions within these areas. Typically precontact resources are found within several feet of the precontact living surface, except in alluvial areas. Therefore, there may be archaeologically sensitive areas where the precontact surface now lies buried beneath levels of fill, which may have been protected from modern disturbance. From north to south, subsurface conditions in these archaeologically sensitive sections of the project site

were assessed and the following areas were determined to have potentially retained precontact sensitivity:

1. between East 124th and East 121st Streets,
2. between East 120th and East 110th Streets outside of the footprint of the existing subway tunnel and ventilation shafts,
3. between East 110th and East 109th Streets,
4. between East 106th and East 95th Streets outside of the footprint of the existing subway tunnel and ventilation shafts between East 105th and East 99th Streets,
5. between East 79th and East 77th Streets, and,
6. between East 65th and East 64th Streets and west half of Second Avenue between East 64th and East 63rd Streets.

The above listed locations of sensitivity are approximate, as they reflect the locations that were determined to have potential precontact sensitivity, and where soil borings were taken and logs were available for review (Figures 4.3-7a through 4.3-7i). Subsurface depths of fill can vary dramatically within a small geographic area, and undoubtedly vary considerably throughout the areas designated as potentially sensitive. Since definite subsurface conditions are unknown for areas outside of the immediate vicinity of the borings, the areas listed above must be regarded as generalized rather than absolute.

The types of precontact resources that could potentially lie in the vicinity of the seven areas listed above vary from precontact living areas to hunting and collecting sites. Middens were also frequently deposited near the shoreline and along wetland areas, especially in regions where shellfish was abundant. Therefore, this section of the APE could be potentially sensitive for a variety of precontact-period resource types.

Shaft Site B, Block 1668

Prior to historical development Block 1668, which is situated between East 97th and East 96th Streets and First and Second Avenues, was depicted on maps as low-lying swamp or marsh (Bridges 1811; Colton 1836; Dripps 1852; Dripps 1867). A series of streams ran through this area and were surrounded by wetlands.

The NYCLPC did not identify any potential precontact sites in this area, nor were any precontact sites reported nearby (New York City Landmarks Preservation Commission 1982). Early topographic maps show this area as being inundated or covered with marshland. While this area might have provided resources suitable for Native American exploitation, they probably prohibited the types of activities which are leave an archaeologically visible footprint on the landscape, such as extended habitation (Appendix 4.3.7.1.).

Shaft Site C, Block 1646

Prior to historical development most of Block 1646, which is situated between East 97th and East 96th Streets and Second and Third Avenues, was depicted on maps as low-lying swamp or marsh (Bridges 1811; Colton 1836; Dripps 1851; Viele 1864). Though the block was surrounded by wetlands on its north, east, and most of its south side, hills and bluffs were located along the western border of the block at Third Avenue. These elevated areas overlooked a large water course that ran in a north-south direction through Block 1646 (Randel 1820; Colton 1836).

The NYCLPC did not identify any potential precontact sites in this area, nor were any precontact sites reported nearby (New York City Landmarks Preservation Commission 1982). Early topographic maps show this area as being inundated or covered with marshland, and soil borings here confirm the presence of peat and shells below fill, but these levels lay below the water table. Therefore, this section of the APE is considered potentially sensitive for precontact resources, but they may be inundated (Figure 4.3-7f; Appendix 4.3.7.1).

Shaft Site B, Block 1440

Prior to historical development, most of Block 1440, which is situated between East 66th and East 65th Streets and Second and First Avenues, was depicted on maps as a well-drained upland area that gradually sloped towards the east, dropping off sharply adjacent to a tributary of a stream that ran along its eastern border and through the northeastern corner of the block (Bridges 1811; Colton 1836; Viele 1874). A small stream also crossed Block 1439, between East 64th and East 63rd Streets, ending just south of Block 1440 between Second and First Avenues, in the vicinity of East 65th Street (Colton 1836; Viele 1874).

The NYCLPC has flagged the areas surrounding the stream that runs south of the APE through Block 1439, between East 64th and East 63rd Streets, for potential precontact sensitivity. This flagged area extends north into the southeastern corner of Block 1440 (NYCLPC 1982). Though the portion of the block within the APE is north and west of the flagged area, it is situated on elevated land within fairly close proximity to a water course fork. This would have provided both a good vantage point and may also have been an attractive area for habitation. The abundance of aquatic resources below, in addition to the availability of wildlife and vegetation, would have made this area even more attractive for resource procurement.

However, bedrock was extremely close to surface level in this area. According to soil borings taken at East 65th Street, it is questionable as to whether any natural soils exist between the fill and bedrock, and no natural soils remain between the fill and bedrock at East 66th Street (Raymond International, Inc., Borings 2-45 and 2-46).

Most of the archaeologically sensitive areas observed on historic maps have either been leveled with shallow layers of fill added above them, or have had the precontact living surface completely disturbed. Therefore, the portion of Block 1440 that falls within this

section of the APE is not considered potentially sensitive for precontact resources (Appendix 4.3.7.1).

4.3.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

One previously inventoried historical site is located about three blocks east of the APE. OPRHP number A061-01-0146, the Gracie Mansion site at East 90th Street and the East River, is noted as one of the first American fortifications. This appears to be same entry for site NYSM #31, reported in a New York Archaeological Council (NYAC) inventory document by Susan Kardas in 1978 as "Horns Hook" at Karl Schurz Park. Kardas writes in a very general overview that the historic site related to the Revolutionary War period but was never professionally excavated.

In addition, Historical Perspectives, Inc. conducted Stage 1A and 1B investigations for the East River Plaza Project in 1988, located approximately two blocks east of the APE, at the East River and East 116th to East 119th Streets (Survey #32). Stage 1A investigations revealed the possibility of the presence of late 19th century historic remains related to two-story brick buildings that stood until sometime between 1951 and 1976. However, due to disturbance from grading, only the remains of mid-20th century features were identified during Stage 1B investigations. Artifacts recovered from fill reflected a date range from the 19th century (ironstone whiteware) to the late 20th century (modern water bottles) within the same stratum.

Archaeological Potential

Second Avenue

Documentary research concluded that this section of the APE was found to be potentially sensitive for the resource categories of *Residential and Industrial* (Chapter 3; Appendix 4.3.7.1; Figures 4.3-7a, 4.3-7c, and 4.3-7h). Historically, the original Dutch city, taken over by the English in 1664, was on the southernmost tip of Manhattan Island. To the north was a vast undeveloped countryside, until scattered farms and then estates began to be established, some as early as the mid seventeenth century. The roads as we know them today did not exist, and much of the transportation was via the East River.

The first major road in the area was the Eastern Post Road, ordered made in 1669, to be finished in 1672. It forked off the Bloomingdale Road at 23rd Street and Fifth Avenue and ran a meandering course through Manhattan's East Side to the Harlem Bridge, much the same route as the old Indian trail (Stokes 1918:998). This road, which crossed the Second Avenue APE in several places, together with the East River formed the main transportation arteries and were the focal points for early development. Thus, a number of buildings which formerly fronted the Eastern Post Road were constructed in the middle of what is now Second Avenue when the city's streets were plotted on the Commissioners Map (Commissioners Map 1807-1811; Randel 1820). Although Second Avenue was plotted on these maps, the stretch from East 125th to East 113th Streets was not completed until 1836, from East 113th to East 110th Streets until 1825, from East 110th

to East 86th Streets until 1837, and from East 86th to East 63rd until 1839 (Manhattan Office of Borough President, Street Openings:77; WPA 1937:Project No. 609).

Industrial Sites

Although early maps and atlases show some 19th century development on the surrounding blocks, the actual APE which follows Second Avenue did not experience any other recorded historical land use. It should be noted that the Harlem Gas Works was operating on the east side of Second Avenue between East 111th and East 110th Streets by the 1850s, and operated through at least 1879 (NYCLPC Neighborhood Maps; Bromley 1879). Although this facility did not extend into the APE, undoubtedly there would have been an extensive system of underground inter-connecting pipes and possibly conveyor tunnels between coal sheds, gas tanks, and furnaces. Some of these may have extended into Second Avenue.

Residential Dwellings

One of the most sensitive historical archaeological resource types associated with the historic dwellings and outbuildings which once stood within the APE are potential wells. These were typically originally excavated as deep as the water table, but their exact locations cannot be determined from the study of historic documents. Because of their potential depths, their deeper levels would have probably escaped disturbance from the installation of utilities and from later street grading and paving. Other shaft features, such as privies and cisterns, are also potentially sensitive where historic structure were noted, but these tended to be originally excavated to shallower depths than wells. However, in Lower Manhattan, privy vaults investigated by archaeologists have been found to extend to 13' below the grade elevation at the time they were originally constructed (Geismar 1986:43).

1. East 124th to East 122nd Streets:

Cartographic evidence showed that the Old Haerlem Road once diagonally cut across Second Avenue from the southwest to northeast between East 123rd and East 124th Streets (Commissioners 1811; Randel 1820; Colton 1836; Figures 4.3-3, 4.3-4a, 4.3-6). In 1851 the corner of a large dwelling, possibly an estate, fell within the APE on the west side of Second Avenue at the northwest corner of the intersection of East 124th Street and Second Avenue (Dripps 1851). The parcel was owned by J. Chesterman, who also owned other additional parcels of land and buildings along the east side and west sides of Second Avenue (Ibid.; Figure 4.3-2a). Chesterman built his house in 1821 and it was demolished in 1883.

One of several tracts of land labeled "Waldron" was located within the Second Avenue APE between East 124th and East 123rd Streets (Commissioners 1811). In 1811 a building on this tract fronted the north side of the former Old Haerlem Road on what is now the east side of the Second Avenue roadbed just south of East 124th Street (Ibid.: Figure 4.3-6). By 1820 the dwelling had been removed (Randel 1820; Figure 4.3-4a). A later structure, surrounded by gardens and an elaborate system of drive or walkways, appeared in approximately the same spot in 1836, but this was probably the J.

Chesterman dwelling discussed above despite its location being slightly different in 1836 from its location in 1851(Colton 1836; Dripps 1851; Figures 4.3-3, 5.3-2a).

In addition, the corner of another building, also possibly owned by Waldron, was located within the APE on the west side of Second Avenue, between East 123rd and 122nd Street (Commissioners 1811; Figure 4.3-6). The structure once fronted the south side of Old Haerlem Road.

Current surface elevations are 14' at East 124th Street, 12.5' at East 123rd Street, and 10.8' at East 122nd Street (Sanborn 2001). Soil borings taken in the vicinities of the intersections of East 124th, East 123rd, and East 122nd Streets at Second Avenue show that fill and soil levels extend down to at least 50' below the surface before bedrock is encountered (Borings 2-110, 2-111, 2-112, Raymond International, Inc. 1970). The water table was encountered at 12' below grade on the west side of Second Avenue between East 124th and East 123rd Streets and at 18' below grade on the east side of Second Avenue. To the south of this, the water table was reported at 10' below grade on the east side of Second Avenue at East 122nd Street (Ibid.). This suggests that potential wells associated with any of these structures could extend at least this deep, and possibly deeper.

Currently there are a number of utility lines beneath the route of Second Avenue and the bordering sidewalks which would have caused effects to potential archaeological resources. Excavations for each of these utilities would have probably extended between one and two feet beyond the size of the pipe, both horizontally and vertically. Plans and profiles of the current project indicate that these lines run to a depth of between ten and fifteen feet below grade (Vollmer Associates 1997a: Drawing NS-06). The 1958 Sewer Plan map shows that at that time there were two sewer pipes in Second Avenue, each 4' in diameter, which ran from East 120th Street south to East 107th Street (City of New York 1958). The current sewer maps show two sewer lines beneath the street, each measuring 3'6" x 2'4", with larger sewers traversing the avenue at cross streets. there are other utility lines as well including ECS (telecommunication) ducts in Second Avenue over and under existing sewers; gas lines and regulators; steam lines; and abandoned lines (e.g. "postal" & "telegraph" lines; old phone lines; old sewer and water lines) which do not show up on current maps. Most probably fall within fifteen feet below current grade as is the case with those that appear on the City of New York 1958 Plan of Sewers map and the Works Progress Administration 1937 Subsurface Conditions Maps.

In addition to the subsurface utilities, the Second Avenue El train once ran above the APE. Footings and pylons to support the superstructure would have caused disturbance to discrete areas within the APE.

Despite the installation of sewers and subsurface disturbances discussed above, the relatively shallow depth of mapped subsurface utilities (WPA 1936) suggests that potential shaft features associated with the Chesterman and Waldron structures may have remained, at least in part, undisturbed (Appendix 4.3.7.1). Therefore, Second Avenue between East 124th and East 122nd Streets is considered sensitive for potential historical resources related to the J. Chesterman property (early to mid 19th century) from the

surface down to at least 12' below grade and the Waldron structure from the surface down to between 10 and 18' below grade, and possibly deeper

2. East 116th to East 115th Streets:

The eastern portion of another structure owned by J. Chesterman extended into the APE between East 116th and East 115th Streets, on the west side of Second Avenue (Figure 4.3-2b). However, a segment of the subway tunnel built between East 120th and East 110th Street has affected the structure's location. An extensive set of ventilation shafts extends west from the tunnel, under the sidewalk near where the structure once stood (DeLeuw Cather & Co.: Drawing D-20914-C-6 1970). Therefore, the APE is not sensitive for any potential resources associated with this structure.

3. East 112th to East 111th Streets:

A building was situated between the intersections of East 112th and East 111th Streets and Second Avenue on the east side of the avenue within the APE (Commissioners 1811). By 1820, two structures owned by George Bradish were located between the intersections of East 112th and East 111th Streets (Randel, Figure 4.3-4b). The southernmost of these structures was also was labeled as the "Brandish Home" on an 1825 survey map (Spielmann & Brush 1881).

Historical maps and atlases indicate that Margaret McGown (a.k.a. Widow McGown whose tavern and home were situated in Central Park - and for whom McGown's Pass, where the Colonial Army retreated in September, 1776, was named) sold this tract to Edward Sanford sometime in the late-eighteenth century. By 1836, these buildings were gone and the Bradish homestead was located closer to First Avenue, between East 111th and East 110th Streets, east of the APE (Colton). The Bradish structures fronted a small road that once diagonally crossed Second Avenue from northwest to southeast between East 112th and East 111th Streets, originating from the Kings Bridge Road (Figure 4.3-4b).[1] A rope walk was located at the southern end of the block, extending west from Second Avenue along East 111th Street, also outside the APE (Dripps 1851).

Surface elevations are 11.2' at East 112th Street and 10.6' at East 111th Street, and have remained unchanged since 1902 (Bromley; Sanborn 2001). The ground is fairly level. Soil borings at East 112th Street on the east side of Second Avenue reported two feet of fill above 36' of soil, which lies over bedrock at 38' below grade. On the east side of Second Avenue at East 111th there was 13.6' of fill and 55.4' of soil over bedrock, which was encountered at 69' below grade (Borings 2-99B and 2-99, Raymond International, Inc. 1970). Four feet of fill, and about 37' of sandy was found between East 112th and East 111th Streets, on the west side of Second Avenue, but no bedrock was encountered (Boring 2-99A, Raymond International Inc. 1970). The water table was reached at 12' below grade at East 112th Street and at 30.8' below grade at East 111th Street on the east side of Second Avenue, suggesting potential wells associated with the historic structure here may extend at least this deep, and possibly deeper.

[1] The structure on the west side of Second Avenue on this block was located at the corner of this road and a smaller drive. It may have, instead, fronted the drive.

As previously detailed, a section of subway tunnel was constructed between East 120th and East 110th Streets. Between East 112th and 111th Streets there is a broad ventilation shaft which extends out from the tunnel east toward the sidewalk just north of where the Bradish structure once stood. The site of the westernmost of the two structures was completely disturbed by the cut-and-cover construction of the tunnel. In addition, there are a number of utility lines beneath the route of Second Avenue and the bordering sidewalks which would have caused effects to potential archaeological resources, but these are fairly clustered and probably did not affect all potential resources from the Brandish structures.

If potential shaft features associated with the easternmost Bradish structure lie between 12' and about 30' below grade, the potentially sensitive historical features associated with it may have remained, at least in part, undisturbed. Therefore, the east side of Second Avenue between East 112th and East 111th Streets south of the ventilation shafts is considered sensitive for these potential historical resources (Appendix 4.3.7.1). Potential resources related to the George Bradish structure dating to the early 19th century may be found from the surface down to a depth of at least 12 to 30' below grade only on the east side of Second Avenue.

4. East 106th to East 105th Streets

An early 19th century homestead or estate called the "Red House," which was actually two structures, was sited directly east of Second Avenue between East 106th Street and East 105th Street by 1811 and stood through at least 1851 (Bridges 1811; Colton 1836; Dripps 1851). In 1851 the structures were labeled as the Red House Hotel complex (Dripps 1851). The St. Georges Cricket Club maintained another structure and a large green also east of Second Avenue between these two crossroads, just to the east of the Red House Hotel complex (Dripps 1851). Neither the Red House Hotel complex nor the Cricket Club fell within the path of the APE, as they were about 200' east of Second Avenue.

The only features associated with these structures which fell within the project corridor were an elaborate system of roads and drives which crossed Second Avenue (Colton 1836; Dripps 1851). These are not considered archaeologically visible due to their superficial nature. It is highly unlikely that other historical features associated with the Red House complex, such as wells, privies, or cisterns, were located within the APE. As noted above, these types of features, necessary to utilize on a daily basis, would have been situated closer to the main buildings, out of the project site (Appendix 4.3.7.1). Therefore, the APE is not considered potentially sensitive for resources related to the Red House.

5. East 84th to East 83rd Streets

Historically this area was on the western boundary of Yorkville - once a rural village centered on East 84th Street and Third Avenue. In the 1850s Yorkville was predominantly occupied by Germans (Jackson 1995:1285).

The east section of a building, depicted on both the 1811 Commissioners map and the 1820 Randel map, was located south of the intersection of East 84th Street and Second Avenue, on the west side of the avenue in the APE (Figure 4.3-4c). The dwelling, labeled "Yelles Hopper," was situated at the southeastern base of a knoll with another building at the top of the knoll immediately to its northwest out of the APE. By 1851 the building had been relocated onto the adjacent block and off of Second Avenue (Dripps; Figure 4.3-2c).

Current surface elevations are 59.4' at East 84th Street and 56.2' at East 83rd Street. These elevations are exactly the same as elevations in 1902 (Bromley). A soil boring taken just south of East 85th Street on the west side of Second Avenue reported only two feet of fill over bedrock, and another, taken between East 83rd and East 82nd Streets on the west side of Second Avenue, reported two feet of fill over 6.6' of soils. Bedrock was encountered at 8.6' below grade (Borings 2-69 and 2-67, Raymond International, Inc. 1970).

The bedrock is extremely close to the surface in this area and little or no soil lies beneath the fill, which ranges from two to six feet in depth here. Within this area of the APE many of the utility lines are buried within the bedrock and the installation of utility lines must have required drilling and blasting bedrock to accommodate them (Vollmer Associates 1997a: Drawing NS-04).

The subsurface conditions observed here suggests that potential historical resources in this area (e.g. wells, privies, and cisterns) which may have been associated with the Hopper house, (which stood through 1820), or the structure formerly located on the north corner of intersection of East 84th Street and Second Avenue, (which was standing in 1851), no longer remain (Commissioners 1807; Randel 1820; Dripps 1851).

The lack of sensitivity is due to two factors. First, if there were once natural soil levels over bedrock which could have accommodated subsurface shaft features, they have either been removed or so disturbed that they now appear as fill levels (as evidenced by the boring information presented above). Second, it is also possible that the shallow bedrock in this area actually prohibited the creation of these types of subsurface features, and thus they were sited elsewhere where deep soil deposits permitted shafts. In either scenario, there is no potential to encounter historical deposits associated with these structures within this APE (Appendix 4.3.7.1).

Shaft Site B, Block 1668

As discussed above, Block 1668 (located between First and Second Avenues and between East 96th and 97th Streets) was depicted on maps as low-lying swamp or marsh prior to historical development, and a series of streams ran through this area, which was surrounded by wetlands. This condition prevented early historical development in the area. It was not until after 1867, well after Second Avenue was regulated and opened and the wetlands were filled, that this block experienced any development. The fill which was used to create this block was deposited sometime between 1867 and 1879 (Dripps 1867; Bromley 1879).

The cartographic and documentary research concluded the Second Avenue Railroad Depot which stood in this APE between ca.1879 and ca.1940. The structure was removed by 1943 (Appendix 4.3.7.1). However, the nature of the structure at East 96th Street, which was utilized for storage, was such that it probably lacks archaeological visibility and potential importance. When facilities such as these were dismantled, machinery and mechanisms were removed for sale, recycling, or disposal. Once this building was emptied it would have been demolished, with any architectural refuse most likely left on site and buried. Therefore, any remains of this structure are likely architectural in nature, and do not have the potential to address any meaningful research issues (Appendix 4.3.7.1). Therefore, this APE has no potential historical archaeological sensitivity.

Shaft Site C, Block 1646

Located between Second and Third Avenues and between East 97th and East 96th Streets, Block 1646 was depicted on maps as low-lying swamp or marsh prior to historical development, and was surrounded by wetlands, with the exception of the elevated area along the western border of the block. In addition, a large stream ran through the block. This condition prevented early historical development in the area. It was not until after 1867, well after Second Avenue was regulated and opened and the wetlands were filled, that this block experienced any development (Dripps 1867; Bromley 1879). The northeast quarter of the block is encompassed by the APE (Sanborn 1896, Figure 4.3-5a).

By 1879 five of the lots in the APE had structures on them with open back yards (Bromley 1789), and by 1885 the entire APE was covered by four story brick or masonry structures with open rear yards (Robinson 1885). A two-story store remains standing at the corner of East 97th Street and Second Avenue.

All of the lots on Block 1646 were developed after they were filled in 1867. The first development was observed on these lots in 1879. However, by this date sewer and water lines had already been installed in Second Avenue. In 1866 contracts were made to sewer this northern district of Manhattan. Therefore, there is probably little, if no, potential for historic period shaft features to exist within the APE, and if they were present prior to the availability of sewer and water lines, they would represent only a minimal period of use (Appendix 4.3.7.1). Due to these factors, this APE has no historic archaeological sensitivity.

Shaft Site B, Block 1440

Prior to historical development most of Block 1440, which is situated between East 66th and East 65th Streets and Second and First Avenues, was depicted on maps as a well-drained upland area that gradually sloped towards the east, dropping off more sharply, adjacent to a tributary of a stream that ran along its eastern border and through the northeastern corner of the block (Bridges 1811; Colton 1836; Viele 1874). Though a small road or drive traversed the northern portion of the block from west to east, the block remained undeveloped at least through 1836 (Colton 1836).

By 1851, a structure was located at the northwest corner of the block near the Second Avenue and East 66th Street intersection, within the APE. The structure lay partially on Block 1440 and partially within the East 66th Street roadbed (Dripps 1851). By 1857, seven narrow two-story buildings had been built within the APE (Perris 1857). Two had shops and all had open rear yards. In addition, a narrow open area was located along East 66th Street, in front of two of the buildings. Shortly after this, water pipes were laid on East 65th Street (Board of Alderman 1859:46). Sewer pipes were planned for this area in 1866 (Goldman 1988:115).

By 1885, all the lots along Second Avenue within the APE were brick buildings with open back yards, except for one lot, which had a rear frame addition covering the remainder of the lot. The lots along East 66th Street retained their open yards and two of them had retained open areas in front of them (Robinson 1885). A combination of two and five story buildings existed on the block within the APE by 1916 (Bromley). The APE remained relatively unchanged for the first quarter of the 20th century. However, in 1952 the lots were reconfigured and a new structure was built over them. The building had two sections, the first containing one story and a basement, and the second with two stories which operated as the Beekman Theater (Bromley 1955). Current Sanborn maps indicate that the APE has remained unchanged since 1952 (Figure 4.3-1b).

Current elevations are 56.9' at East 66th Street and 54.1' at East 65th Street. A soil boring taken at East 66th Street reported that bedrock was encountered at eight feet below grade. Further, it was reported that "no water [was reached] after completion" (Boring 2-46, Raymond International, Inc. 1970). This may have made it difficult to excavate shafts for features such as wells or cisterns in the northern portion of the block within the APE. However, a soil boring taken at East 65th Street reported that the water table was reached at 17' below grade and bedrock was encountered at 20' below grade (Ibid.: Boring 2-45). It may be possible that archaeological shaft deposits, which may be as deep as 17' below grade and possibly deeper, lie toward the southern portion of the APE where the Beekman Theater now stands.

There is the potential for historical period shaft features, such as wells, privies, or cisterns to have remained partially undisturbed within the rear yard areas of former Lots 4½, 49¼, 49½, 50½, 51, 52, and Lots 1-4 which now lie beneath the Beekman Theater. This is dependent, however, on the depth of subsurface disturbance that occurred as a result of the construction of the Beekman Theater. Therefore, these lots are considered sensitive for potential 19th century historical resources from the surface (below the Beekman Theater) to a depth of at least 17' below grade and possibly to the depth of bedrock at 20' below grade (Appendix 4.3.7.1).

4.3.3 Summary of Archaeological Potential

Second Avenue

Although most of the proposed construction for this section of the APE would be completed with a TBM through bedrock, which is anticipated to be below the depth of potential resources, there may be excavations in specific areas extending from the surface

down to the tunnel, but the precise locations of these effect areas are unknown. Should they fall within the following approximate areas they have the potential to affect precontact resources (Appendix 4.3.7.1; Figures 4.3-7a though 4.3-7i):

East 124th and East 121st Streets between 12 to 17' below grade;
East 120th and East 110th Streets between 13 to 18' below grade (outside of the footprint of the existing subway tunnel and ventilation shafts);
East 110th and East 109th Streets between 18 to 23' below grade;
East 106th and East 95th Streets to a depth of 22' below grade (outside of the existing subway tunnel between East 105th and East 99th Streets);
East 79th and East 77th Streets between 14.5 to 20' below grade; and,
East 65th and East 64th Streets and west half of Second Avenue between East 64th and East 63rd Streets, between 2.5 and 17' below grade.

Similarly, if excavations extend from the surface down in the following areas, they may have the potential to affect historical resources (Appendix 4.3.7.1; Figures 4.3-7a, 4.3-7c, and 4.3-7h):

East 124th to East 122nd Streets: The J. Chesterman property (early to mid 19th century) from the surface down to at least 12' below grade and the Waldron structure from the surface down to between 10 and 18' below grade, and possibly deeper; and,
East 112th to East 111th Streets: The George Bradish structure (early 19th century) from the surface down to a depth of at least 12 to 30' below grade only on the east side of Second Avenue.

The horizontal and vertical extent of all potential resources that may be affected is considered to be approximate. The actual depths of potential resources could only be ascertained through Stage 1B field investigations.

Shaft Site B, Block 1668

The proposed creation of a tunnel boring access shaft in the western half of Block 1668, located between East 97th and East 96th Streets, east of Second Avenue will have no effect on potential precontact or historic archaeological resources, since this APE lacks potential sensitivity (Appendix 4.3.7.1).

Shaft Site C, Block 1646

The proposed creation of a tunnel boring access shaft in the northeast quarter of Block 1646, located between East 97th and East 96th Streets, west of Second Avenue, may potentially affect precontact period resources which could lie where shell and peat deposits were reported between approximately 13 to 29' below grade (Appendix 4.3.7.1).

Shaft Site B, Block 1440

The proposed creation of a tunnel boring access shaft in the northwest corner of Block 1440, located between East 66th and East 65th Streets, east of Second Avenue, will have no effect on precontact resources, since none are anticipated. However, the tunnel boring

access shaft may affect potential mid 19th century historic archaeological resources in the form of shaft features such as wells, privies, or cisterns, within the rear yard areas of former Lots 4½, 49¼, 49½, 50½, 51, 52, and Lots 1-4 which now lie beneath the Beekman Theater. The depth of features may extend from the surface (beneath the Beekman Theater), to at least 17' below grade or possibly to the depth of bedrock at 20' below grade (Appendix 4.3.7.1).

The horizontal and vertical extent of all potential resources that may be affected is considered to be approximate. The actual depths of potential resources could only be ascertained through Stage 1B field investigations.

4.3.4 Proposed Project Effects

For the section of the APE on Second Avenue between East 124th and East 122nd Streets, proposed construction of the subway tunnel entails either mining at a depth of 45 to 70 feet below the surface through earth or cut and construction from the surface down to approximately 45 to 70 feet below grade (SYSTRA Drawing CT-20, March 2, 2002). Potential mid-19th century residential features related to the Chesterman and Waldron dwellings would be affected by cut and cover construction, since these are estimated to extend from the surface down to approximately 18 feet below grade.

Between East 124th and East 121st Streets, potential precontact resources are estimated to lie between approximately 12 to 17 feet below grade. Cut and cover construction from the surface down to between 45 and 70 feet below grade would affect these potential resources. Mining at a depth of between 45 and 70 feet below the surface would not affect potential resources since the proposed work would be deeper than the level of any anticipated resources. However, if additional soil borings indicate that resources could be deeper, or if mining occurs less than 17 feet below grade, then these resources could be affected. Second Avenue, from East 120th to East 110th Streets (outside the area of the existing tunnel), was found to be potentially sensitive for precontact resources between approximately 13 and 18 feet below grade. No effects are proposed between 120th and 119th Streets. However, somewhere between East 116th and East 118th Streets, a station entrance may be excavated via cut and cover construction within the sidewalk. This excavation has the potential to affect precontact resources.

On the east side of Second Avenue between East 112th and East 110th Streets, early 19th century features related to the dwelling of George Bradish may exist from approximately zero to 12 feet below grade, and possibly to 30 feet below grade, outside the area of the existing tunnel. In addition, the area between East 110th and East 109th Streets on Second Avenue was found to be potentially sensitive for precontact resources between approximately 18 and 23 feet below grade. However, no new excavations are to occur in this area.

Between East 106th and East 95th Streets outside existing tunnels between East 105th and East 99th Streets, potential precontact resources are estimated to exist from the surface down to about 22 feet below grade. Proposed cut and cover construction between East 106th and East 105th Streets and between East 99th and East 95th Streets from the surface down to between 30 and 38 feet below grade would affect these potential resources.

In the area between East 79th and East 77th Streets, potential precontact resources are estimated to lie between approximately 14.5 to 20 feet below grade. According to proposed construction plans, TBM construction will occur through bedrock, and, therefore, will have no effect. However a vent shaft is proposed in this area in an unknown location which would connect the tunnel to the surface, and potentially affect precontact resources. In addition, potential precontact resources are estimated to lie between approximately 2.5 and 17 feet below grade between East 65th and East 63rd Streets. TBM construction and a vent shaft, which will be constructed in an unknown location, are proposed for this area. While deep tunnel boring will have no effect on potential precontact resources, excavations for the shaft would have the potential to affect precontact resources.

On Block 1646, Shaft Site C, potential precontact resources are estimated to lie between 13 and 29 feet below grade. However, this APE will not be affected by the proposed construction.

Shaft Site B, on Block 1440, which includes Lots 4½, 49¼, 49½, 50½, 51, 52, and Lots one through four, is potentially sensitive for mid 19th century residential features from approximately the surface level down to 20 feet below grade. However, no effect is proposed for this APE.

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.

4.3.5 Recommendations

Second Avenue

There is a possibility that this section of the APE was utilized at some time during the precontact and contact periods. Although the likelihood that resources would have survived the 19th and 20th century development of this part 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 throughout the APE.

While the probability of finding intact, significant precontact or contact period resources eligible for inclusion on the National Register of Historic Places is remote, the scant possibility should be corroborated, if possible, by evidence from additional soil borings and/or subsurface testing. The possibility that *in situ* precontact and contact period resources may exist in this part of Manhattan dictates further investigation of subsurface conditions. There is a moderate to probable expectation of encountering intact,

significant historical-period remains beneath the roadbed and sidewalks that line the APE where historical structures were noted.

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.[2] However, it is not certain that additional borings would significantly change conclusions given that most of those referenced in this section of the APE were taken in the 1970s, a fairly modern date. Following the review of soil borings, some sites 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 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 investigate the potentially sensitive areas that may be affected by project construction. Its goal would be to establish the presence or absence of cultural resources, their horizontal and vertical extent, site integrity, and, their 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 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

[2] 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.

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

Shaft Site B, Block 1668

Because research concluded that there is very low potential for significant archaeological resources to exist, no additional archaeological research or work is warranted for this APE.

Shaft Site C, Block 1646

Because this APE will not be affected, no additional archaeological investigations are recommended. Should project plans change, potential effects on archaeological resources would be reassessed. If adverse effects to potential resources are identified, additional archaeological investigations, including the review of boring logs, additional documentary research, and subsurface testing, will be warranted.

Shaft Site B, Block 1440

Because this APE will not be affected, no additional archaeological investigations are recommended. Should project plans change, potential effects on archaeological resources would be reassessed. If adverse effects to potential resources are identified, additional archaeological investigations, including the review of boring logs, additional documentary research, and subsurface testing, will be warranted.

4.3.6 Figures and Photographs

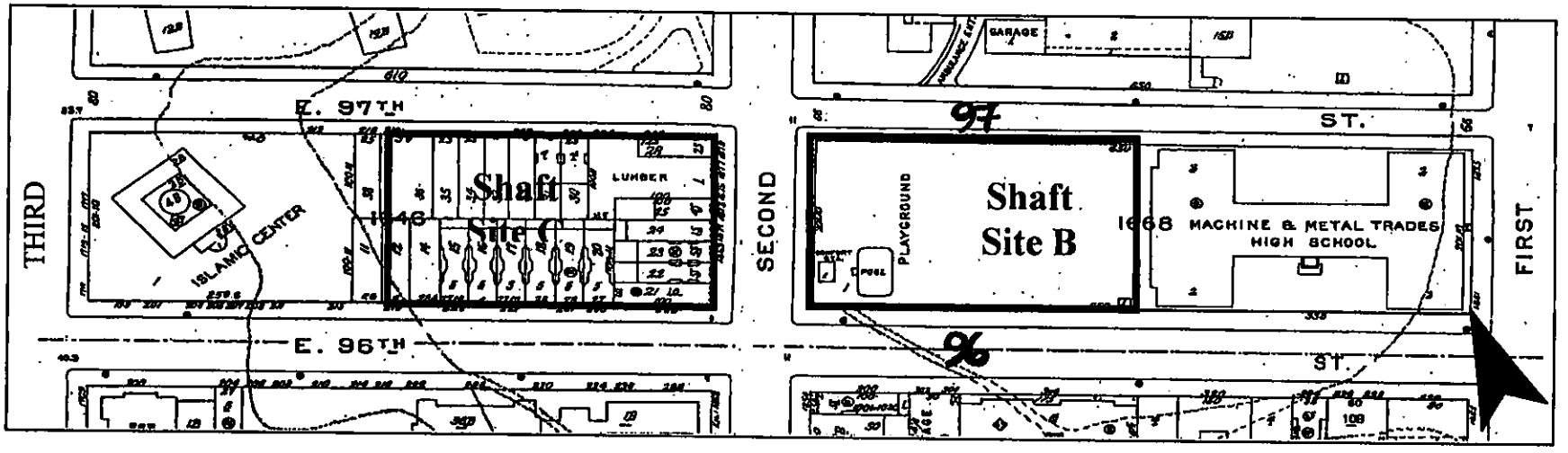


FIGURE 4.3-1a

Detail of Blocks 1668 & 1646. Sanborn 2001.

Approximate Scale: ½ inch = 100 feet

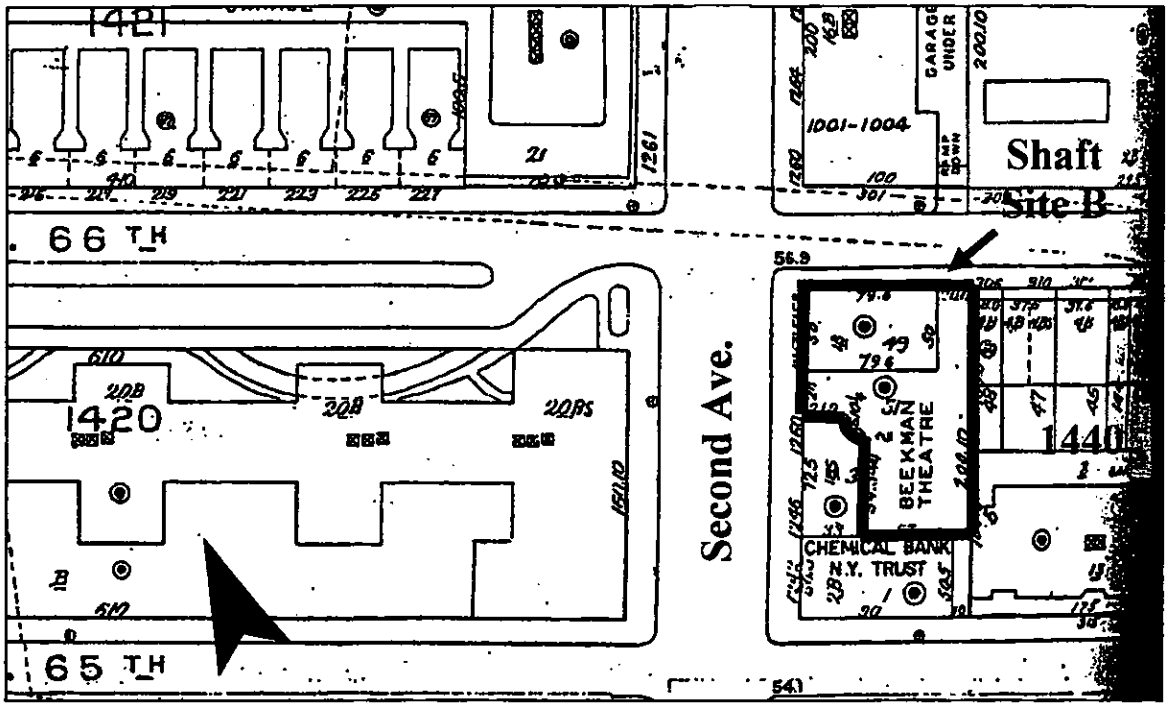


FIGURE 4.3-1b

Detail of Block 1440. Sanborn 2001.

Approximate Scale: ½ inch = 100 feet

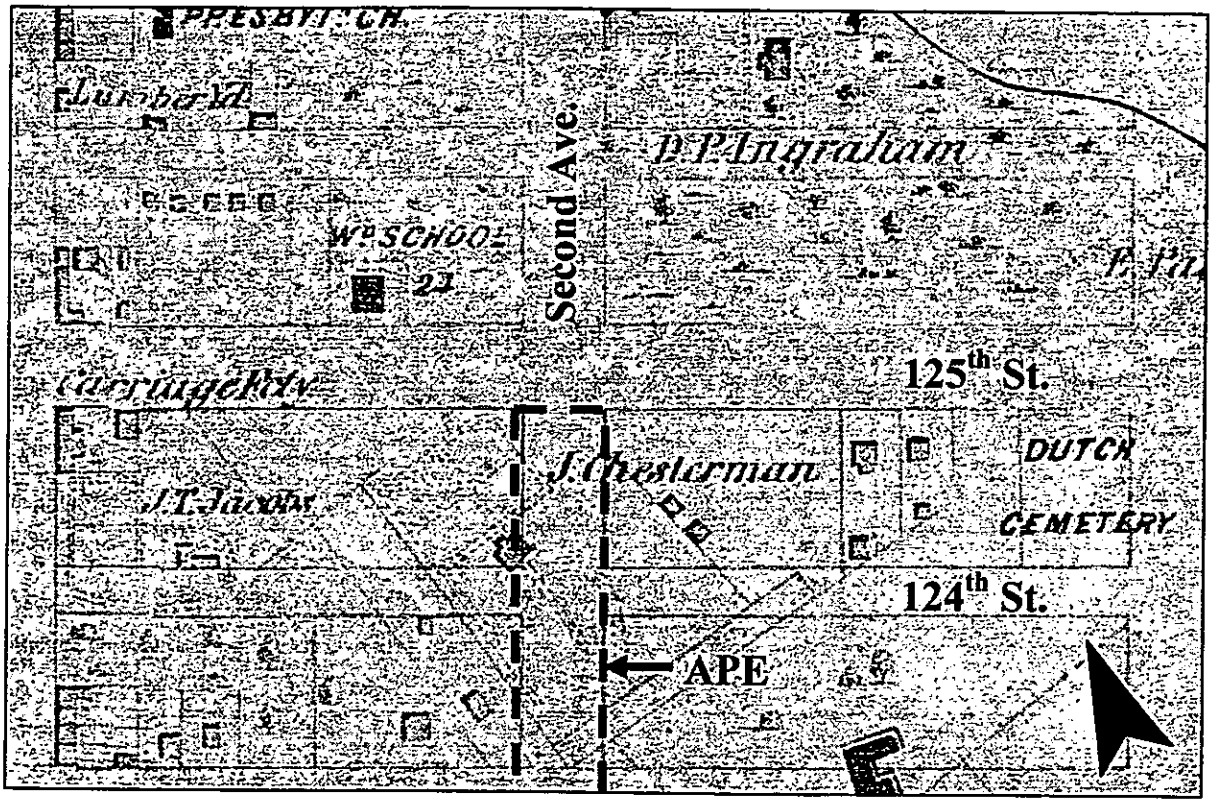


FIGURE 4.3-2a

Map of the City of New York Extending Northward to 50th Street.
J. Chesterman Property. Second Avenue and East 124th Street. Dripps 1851.

Approximate Scale: ½ inch = 100 feet

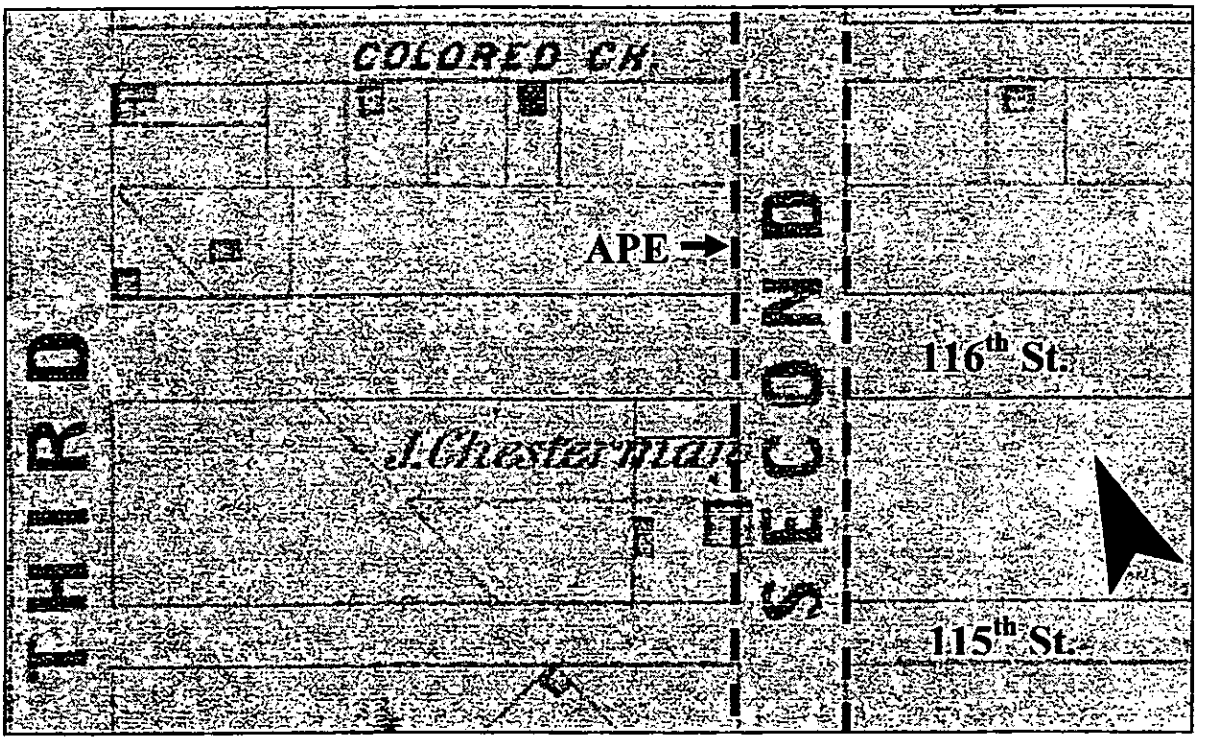


FIGURE 4.3-2b

Map of the City of New York Extending Northward to 50th Street. Additional J. Chesterman Property. Second Avenue, between East 116th Street and East 115th Street. Dripps 1851.

Approximate Scale: ½ inch = 100 feet

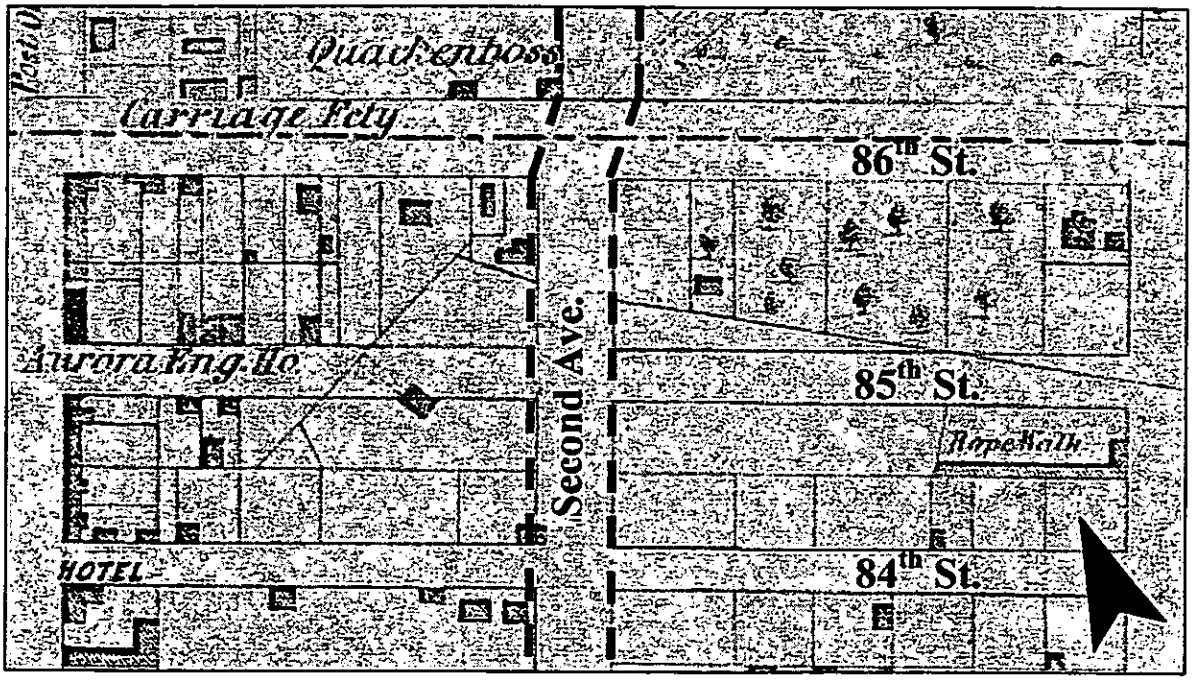


FIGURE 4.3-2c

Map of the City of New York Extending Northward to 50th Street.
Second Avenue and East 84th Street. Dripps 1851.

Approximate Scale: 3/8 inch = 100 feet

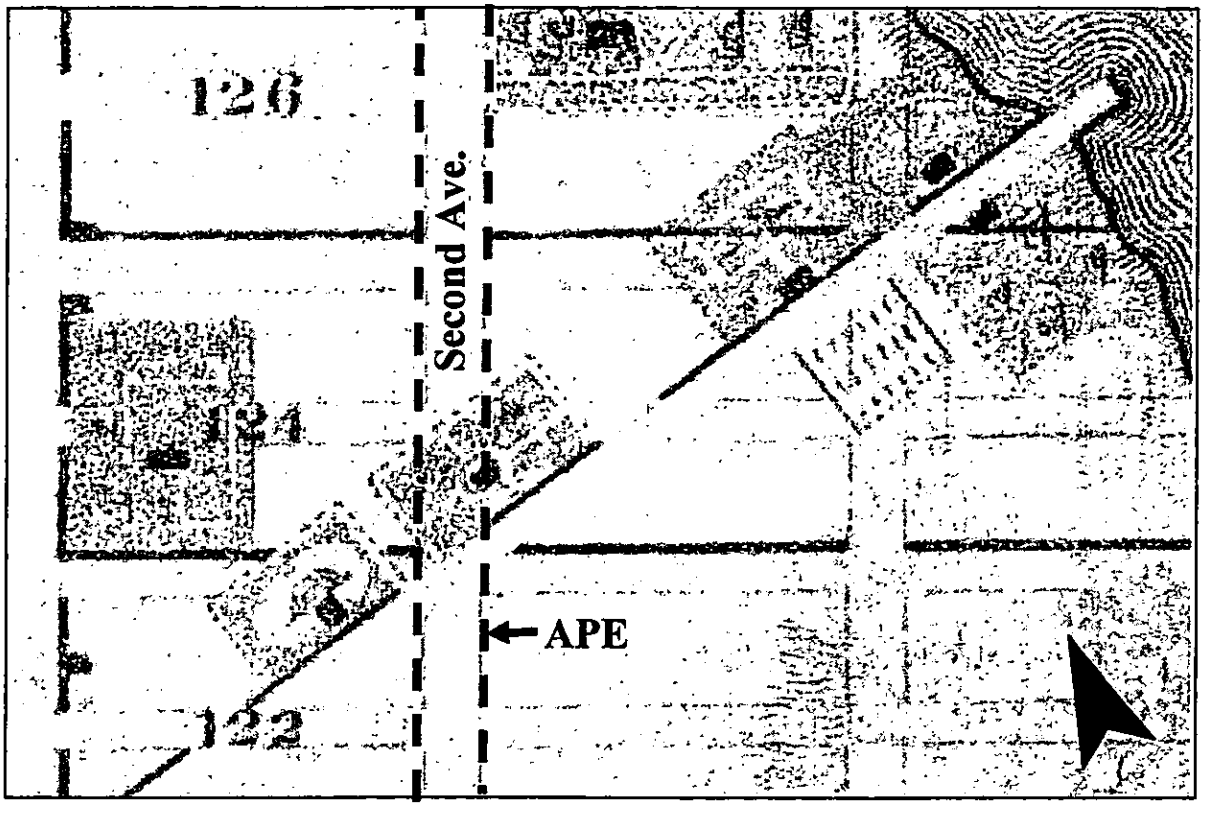


FIGURE 4.3-3

Topographical Map of the City and County of New York.
Second Avenue and East 123rd Street. Colton 1836.

Approximate Scale: 3/8 inch = 100 feet

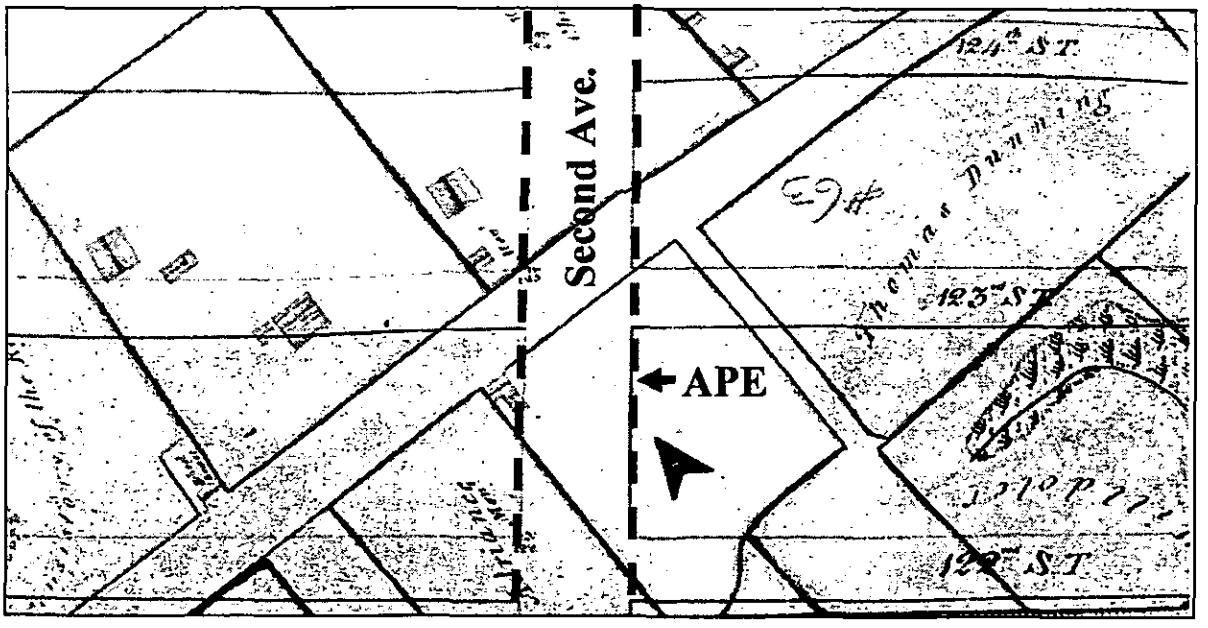


FIGURE 4.3-4a

Farm Maps. Waldron Property. Second Avenue, between East 123rd Street and East 122nd Street. Randel 1820.

Approximate Scale: 5/8 inch = 100 feet

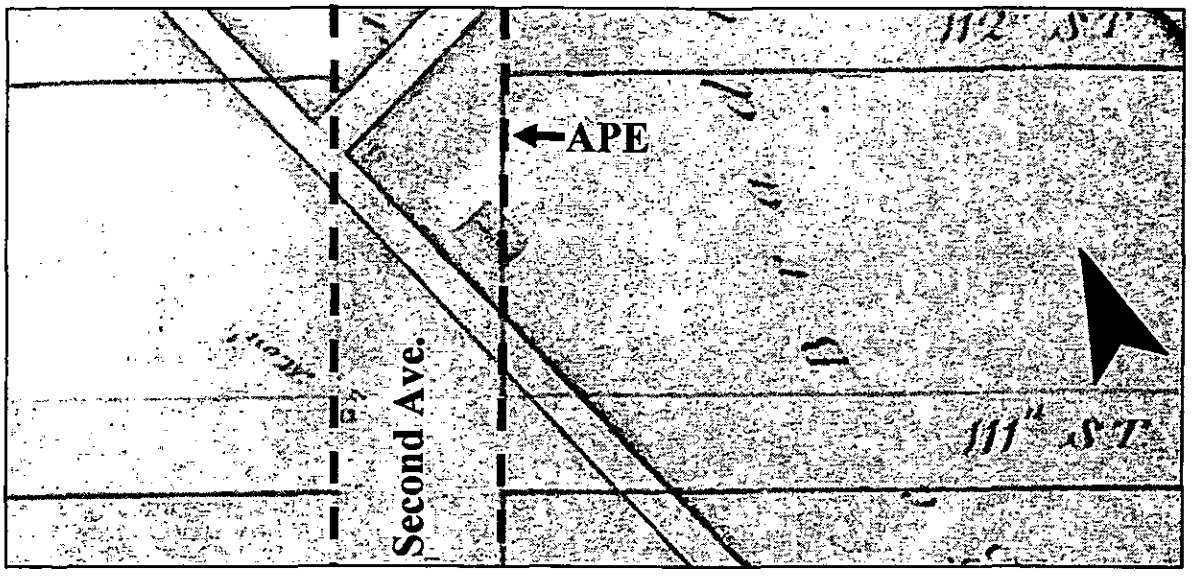


FIGURE 4.3-4b

Farm Maps. George Bradish Property.
Second Avenue, between East 112th Street and East 111th Street.
Randel 1820.

Approximate Scale: 7/8 inch = 100 feet

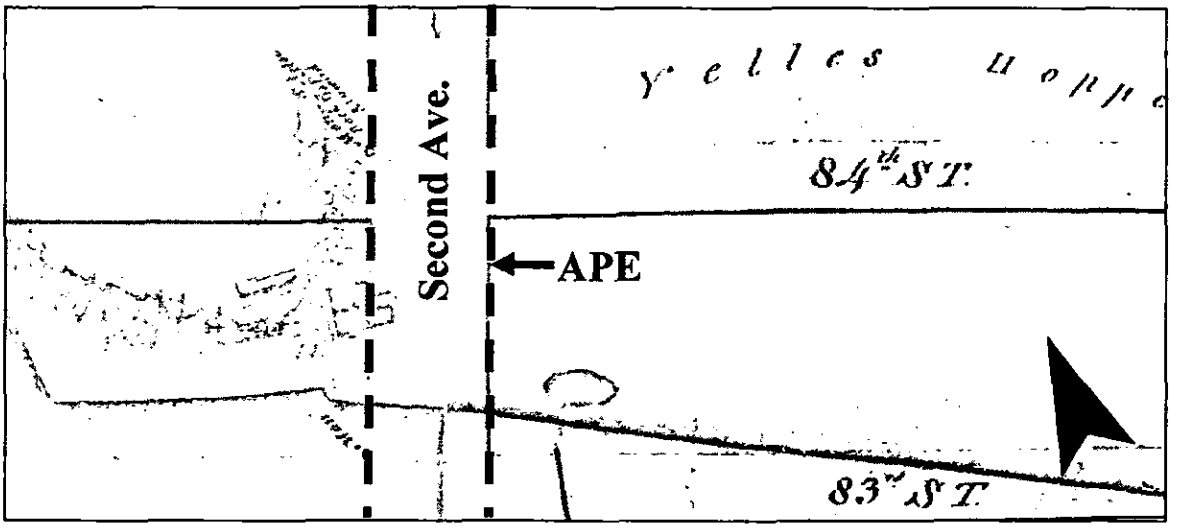


FIGURE 4.3-4c

Farm Maps. Yelles Hopper Property.
Second Avenue, between East 84th Street and East 83rd Street.
Randel 1820.

Approximate Scale: 7/8 inch = 100 feet

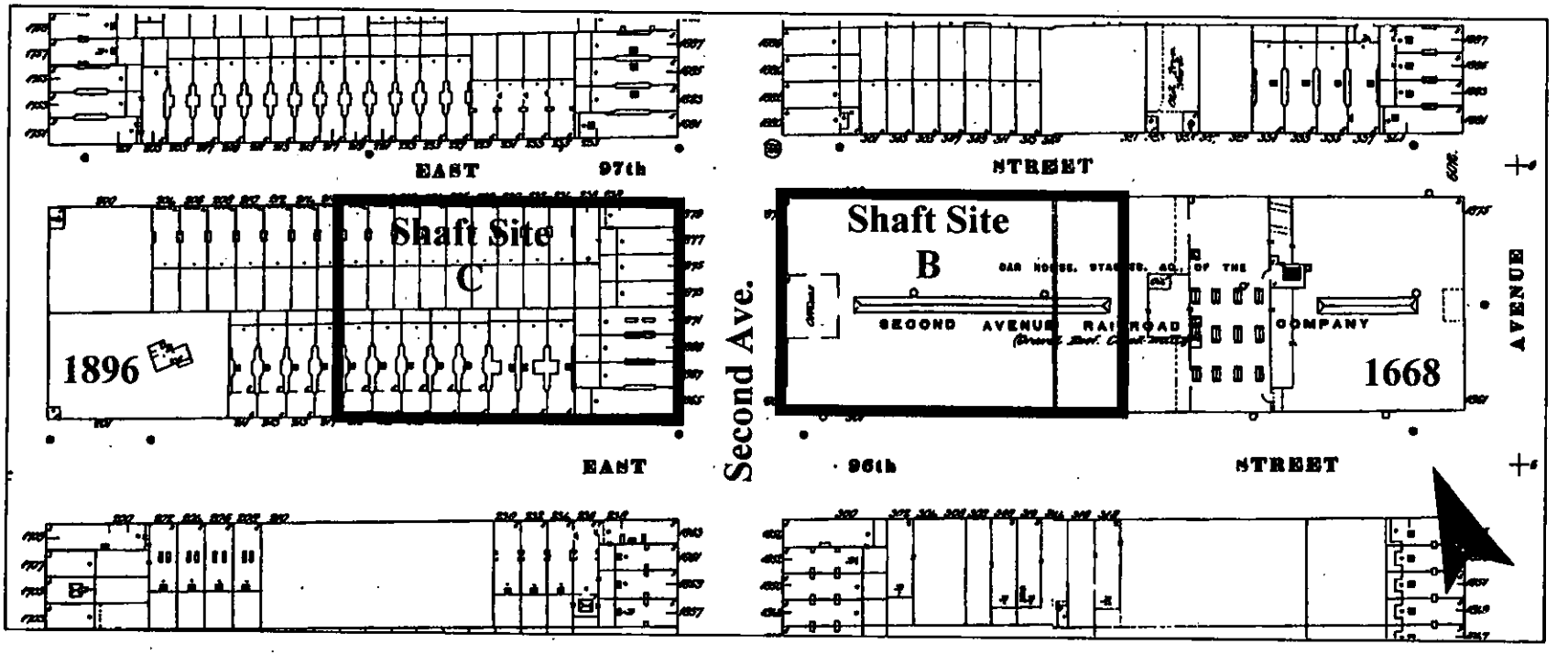


FIGURE 4.3-5a

Detail of Blocks 1668 and 1646. Sanborn 1896.

Approximate Scale:

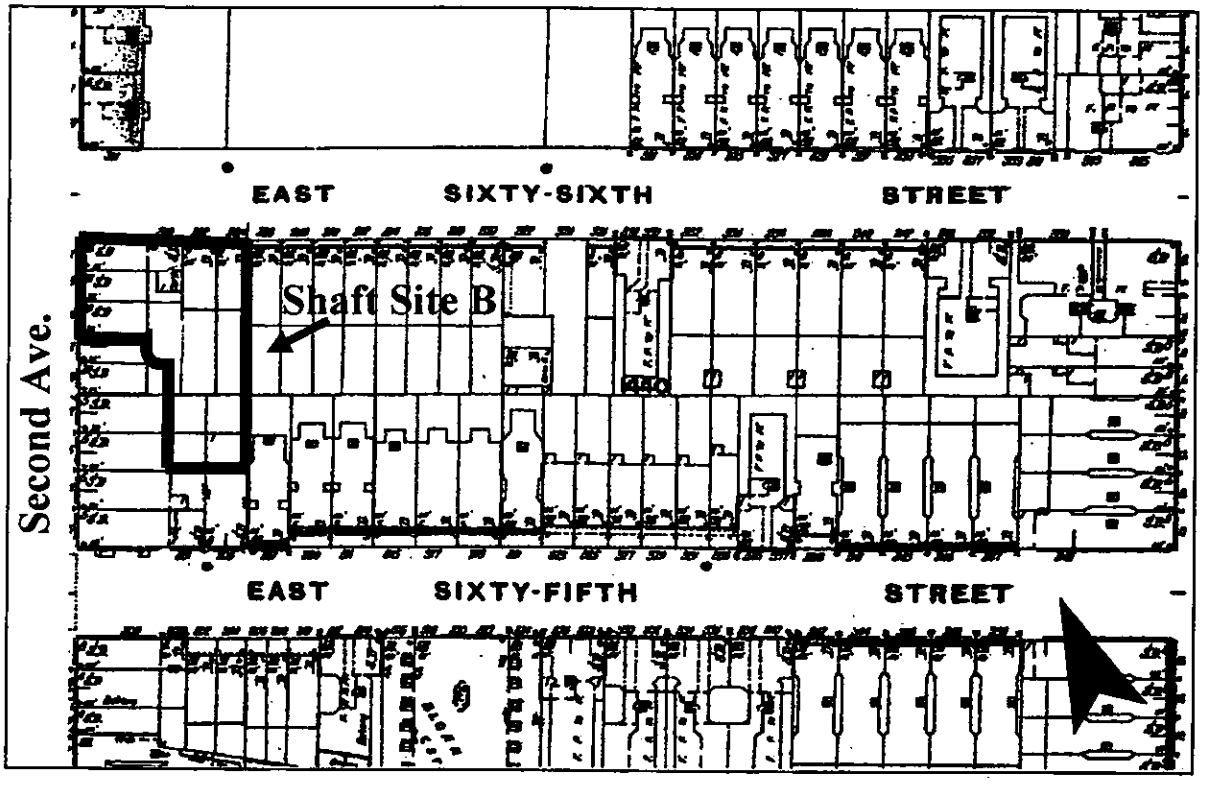


FIGURE 4.3-5b

Detail of Block 1440. Sanborn 1896.

Approximate Scale: 1 inch = 100 feet

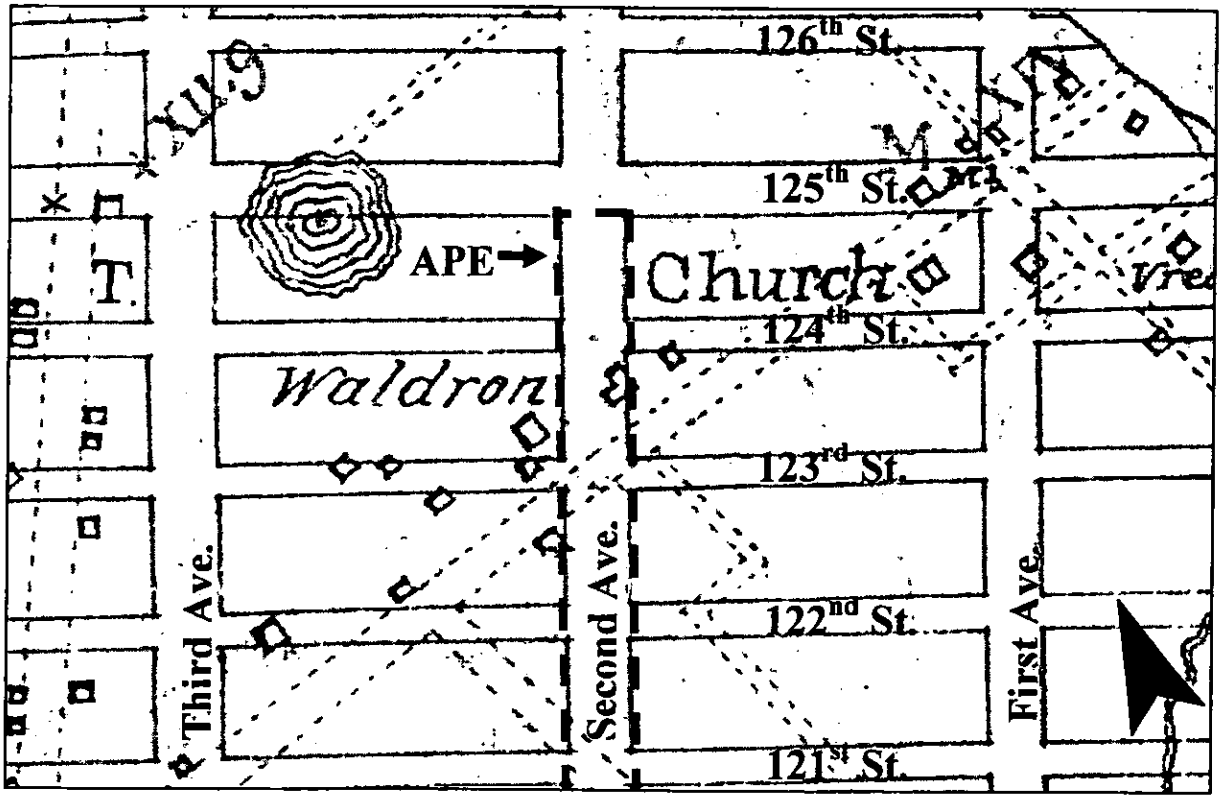


FIGURE 4.3-6

Map of the City of New York and Island of Manhattan as laid out by the Commissioners. Waldron Property. Second Avenue and East 123rd Street. Bridges 1807-1811.

Approximate Scale: 3/8 inch = 100 feet

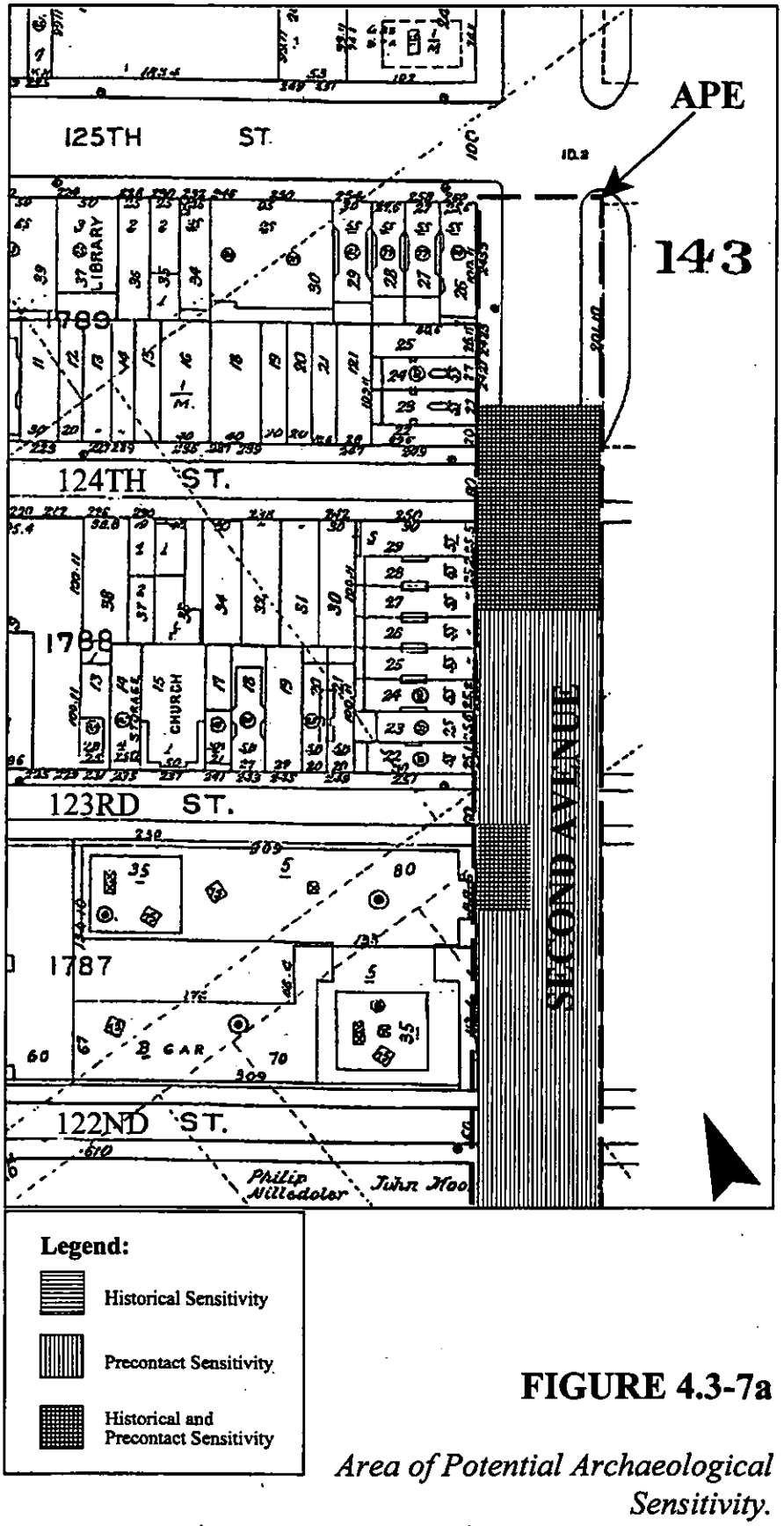


FIGURE 4.3-7a

Area of Potential Archaeological Sensitivity.
East 124th Street to East 122nd Street. Sanborn 2001.

Approximate Scale: ½ inch = 50 feet

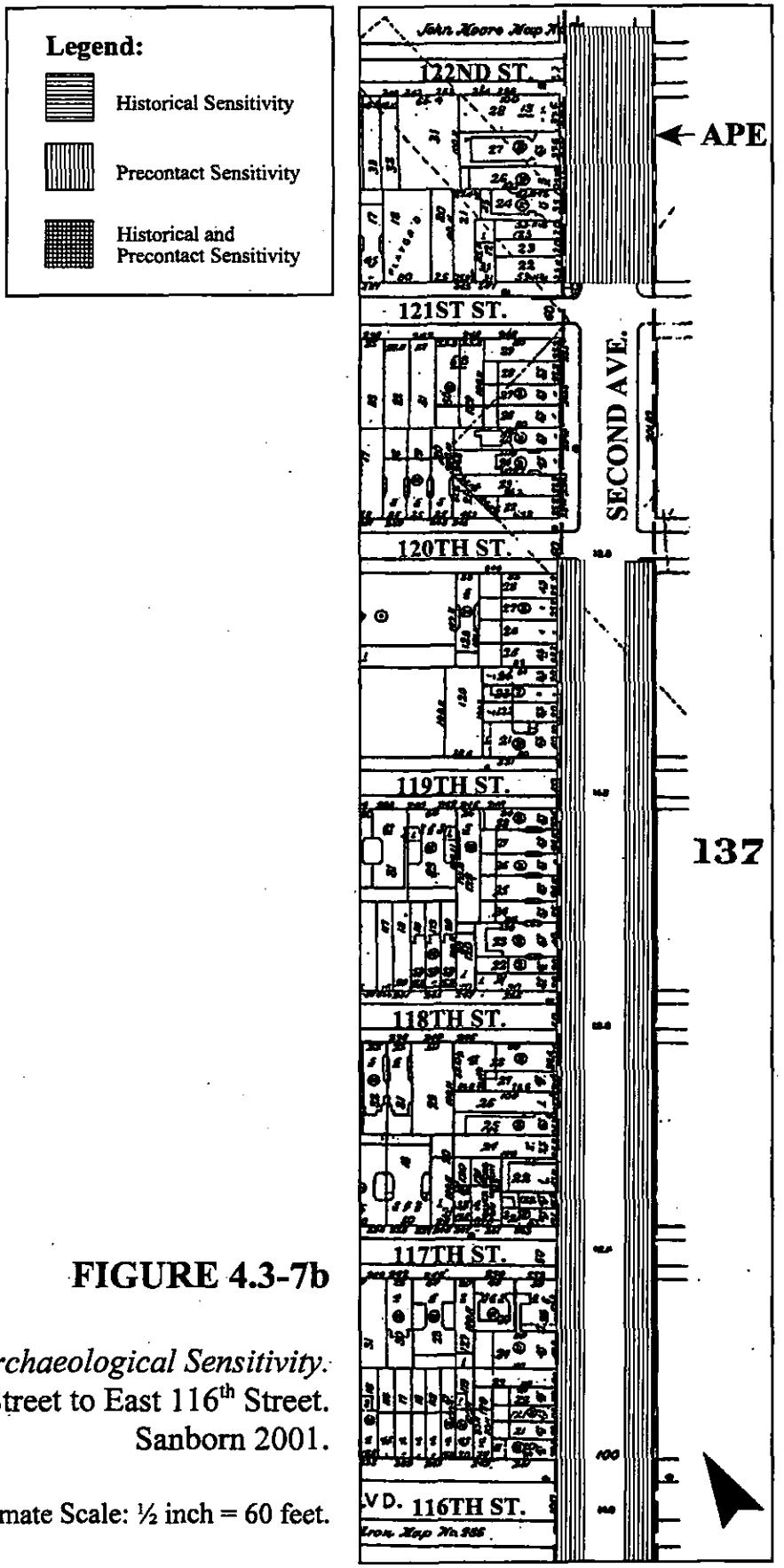


FIGURE 4.3-7b

Area of Potential Archaeological Sensitivity.
East 122nd Street to East 116th Street.
Sanborn 2001.

Approximate Scale: ½ inch = 60 feet.

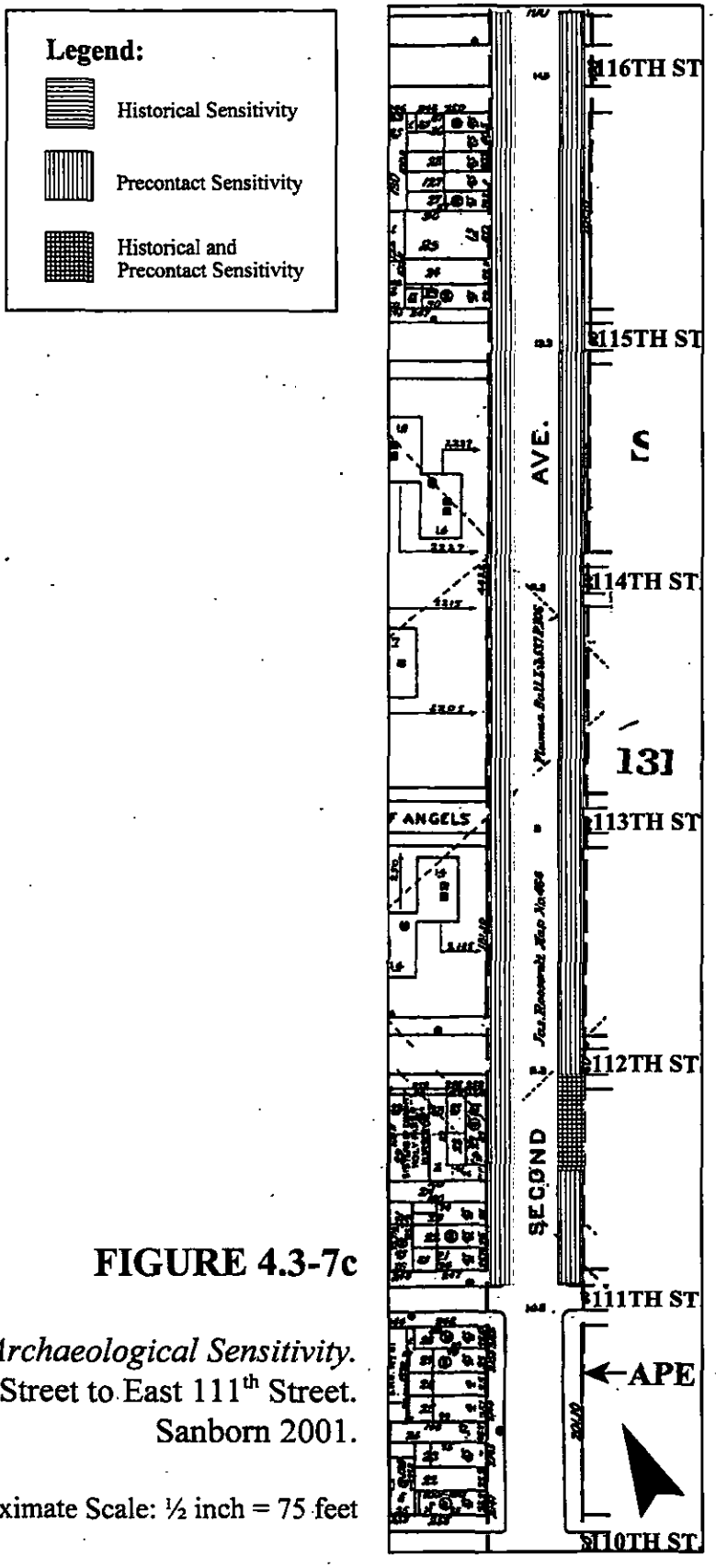


FIGURE 4.3-7c

Area of Potential Archaeological Sensitivity.
East 116th Street to East 111th Street.
Sanborn 2001.

Approximate Scale: ½ inch = 75 feet

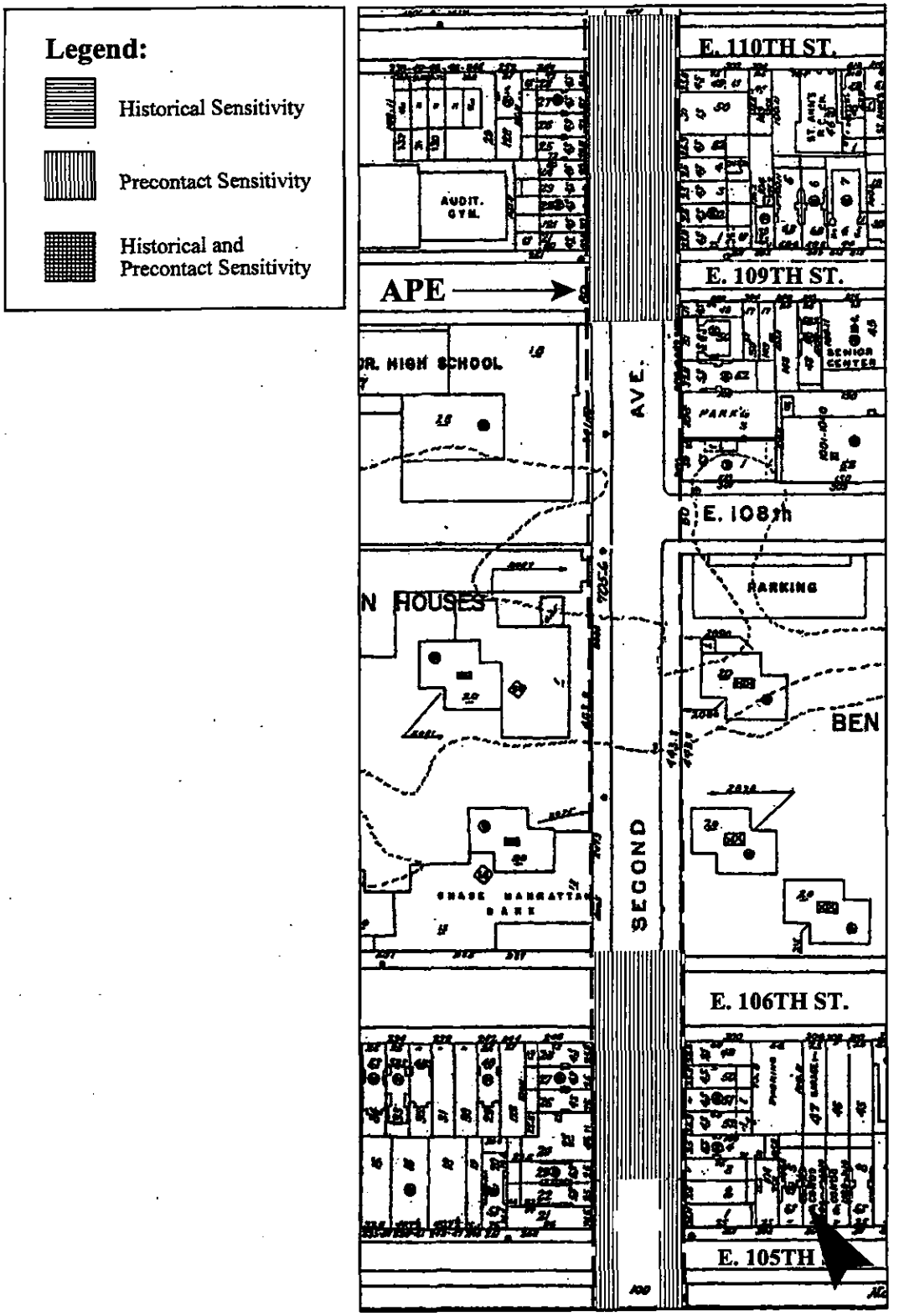


FIGURE 4.3-7d

Area of Potential Archaeological Sensitivity.
East 110th to 109th Streets, and East 106th to East 105th Streets. Sanborn 2001.
Approximate Scale: ½ inch = 80 feet

Legend:

- Historical Sensitivity
- Precontact Sensitivity
- Historical and Precontact Sensitivity

Note: gaps in sensitivity indicate the locations of existing ventilation shafts for the existing subway tunnel

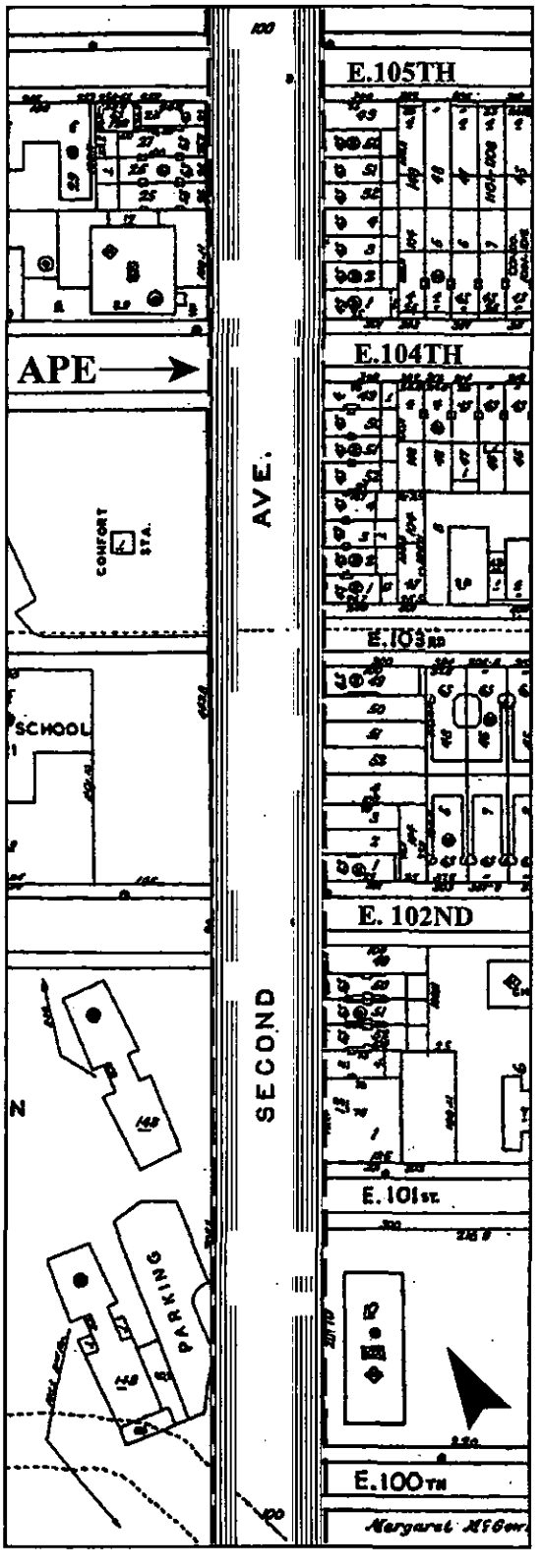


FIGURE 4.3-7e

Area of Potential Archaeological Sensitivity.
East 105th Street to East 100th Street. Sanborn 2001.

Approximate Scale: ½ inch = 80 feet

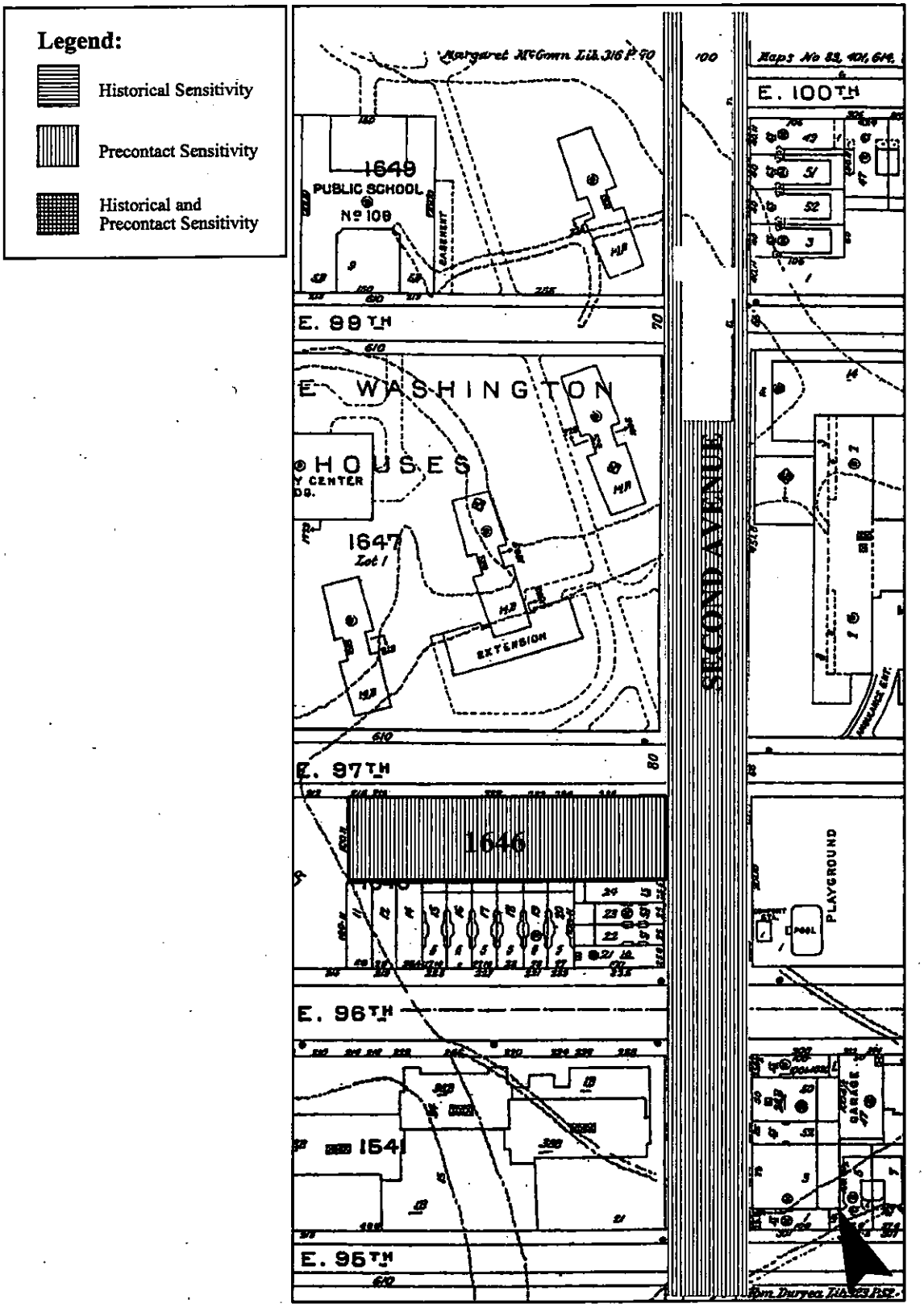


FIGURE 4.3-7f

Area of Potential Archaeological Sensitivity.

East 100th Street to East 95th Street and Block 1646. Sanborn 2001.

Approximate Scale: ½ inch = 80 feet

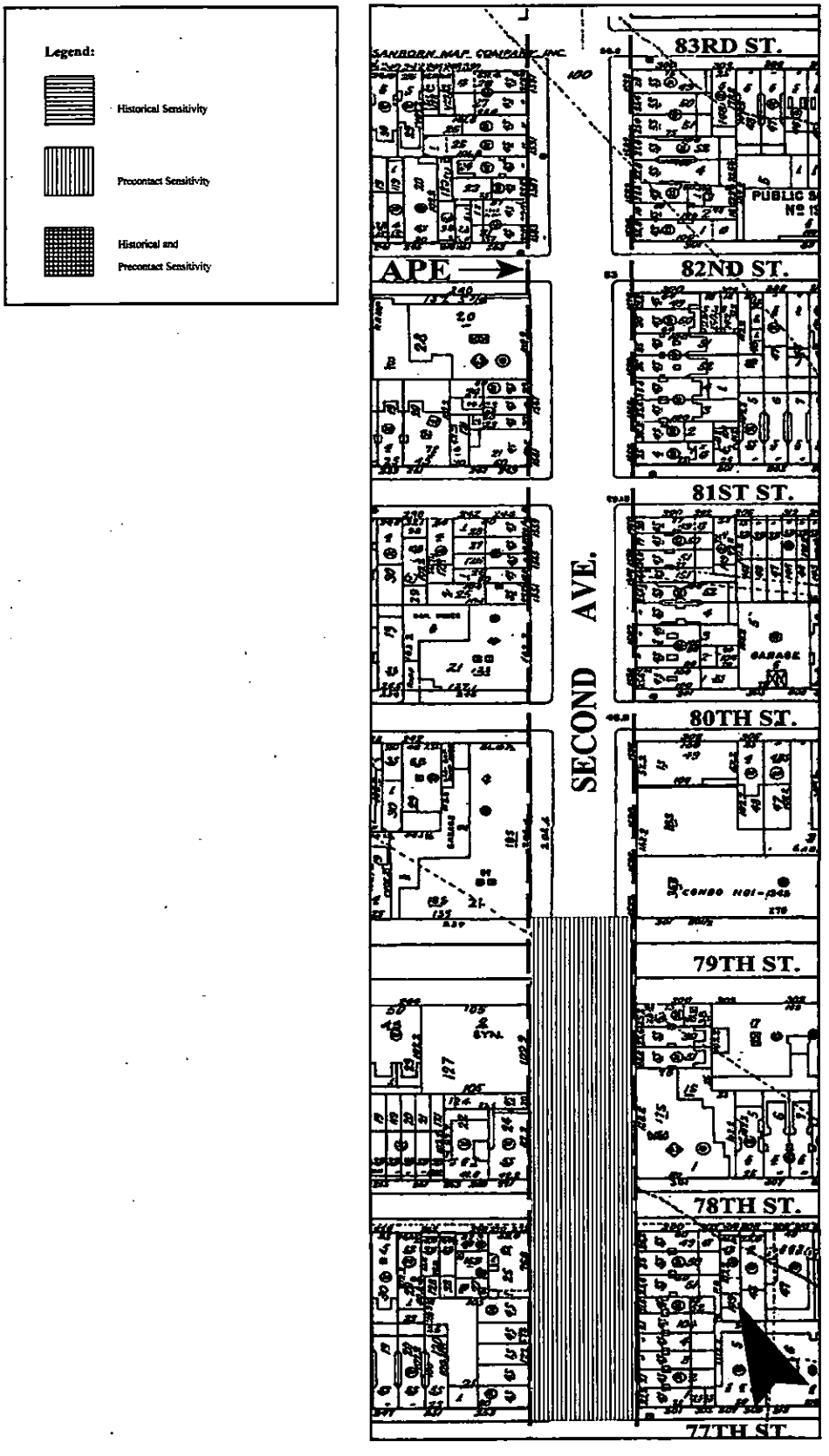


FIGURE 4.3-7g

Area of Potential Archaeological Sensitivity.

East 79th Street to East 77th Street. Sanborn 2001.

Approximate Scale: ½ inch = 80 feet

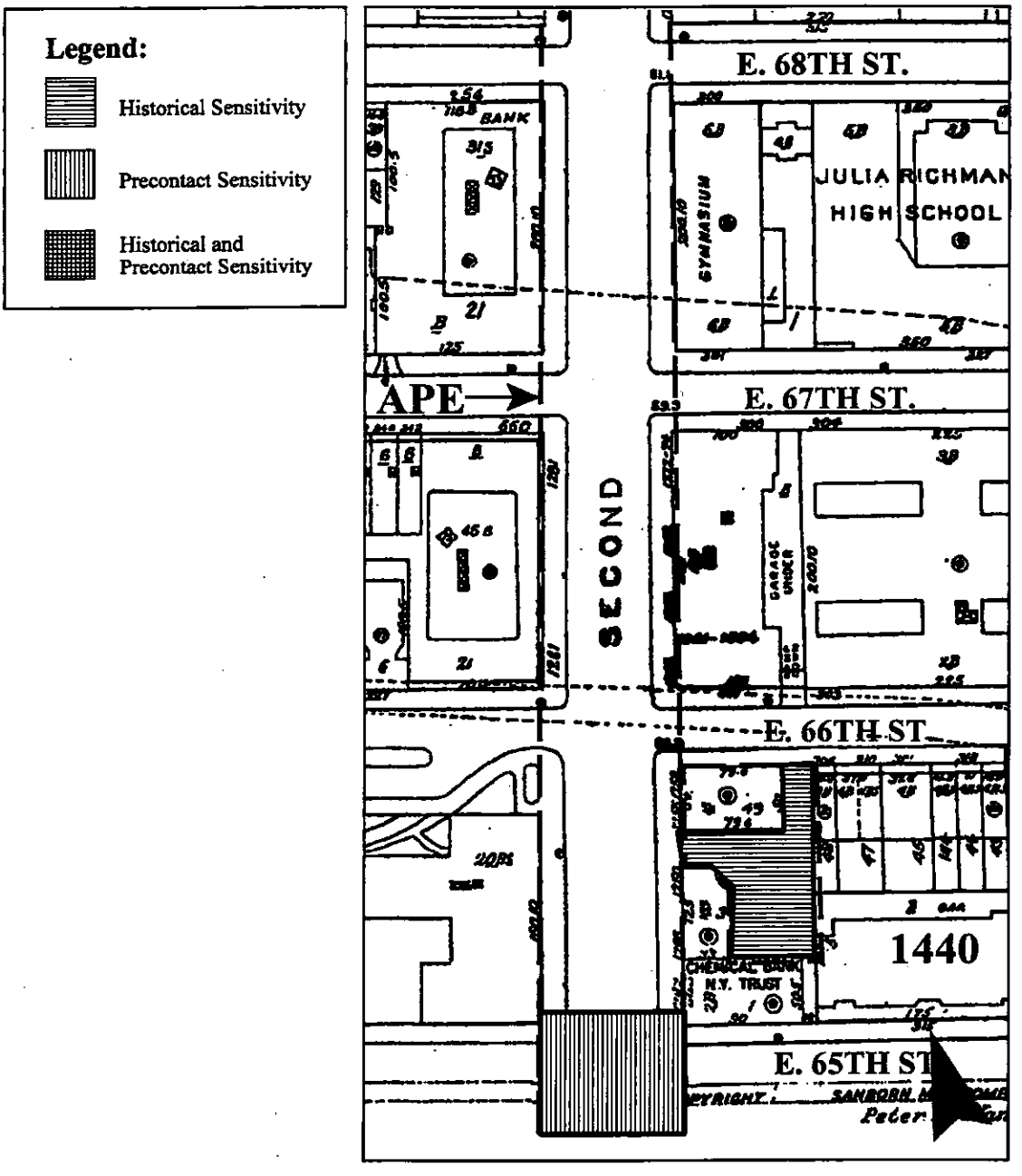


FIGURE 4.3-7h

Area of Potential Archaeological Sensitivity.
East 65th Street and Block 1440. Sanborn 2001.

Approximate Scale: ½ inch = 60 feet

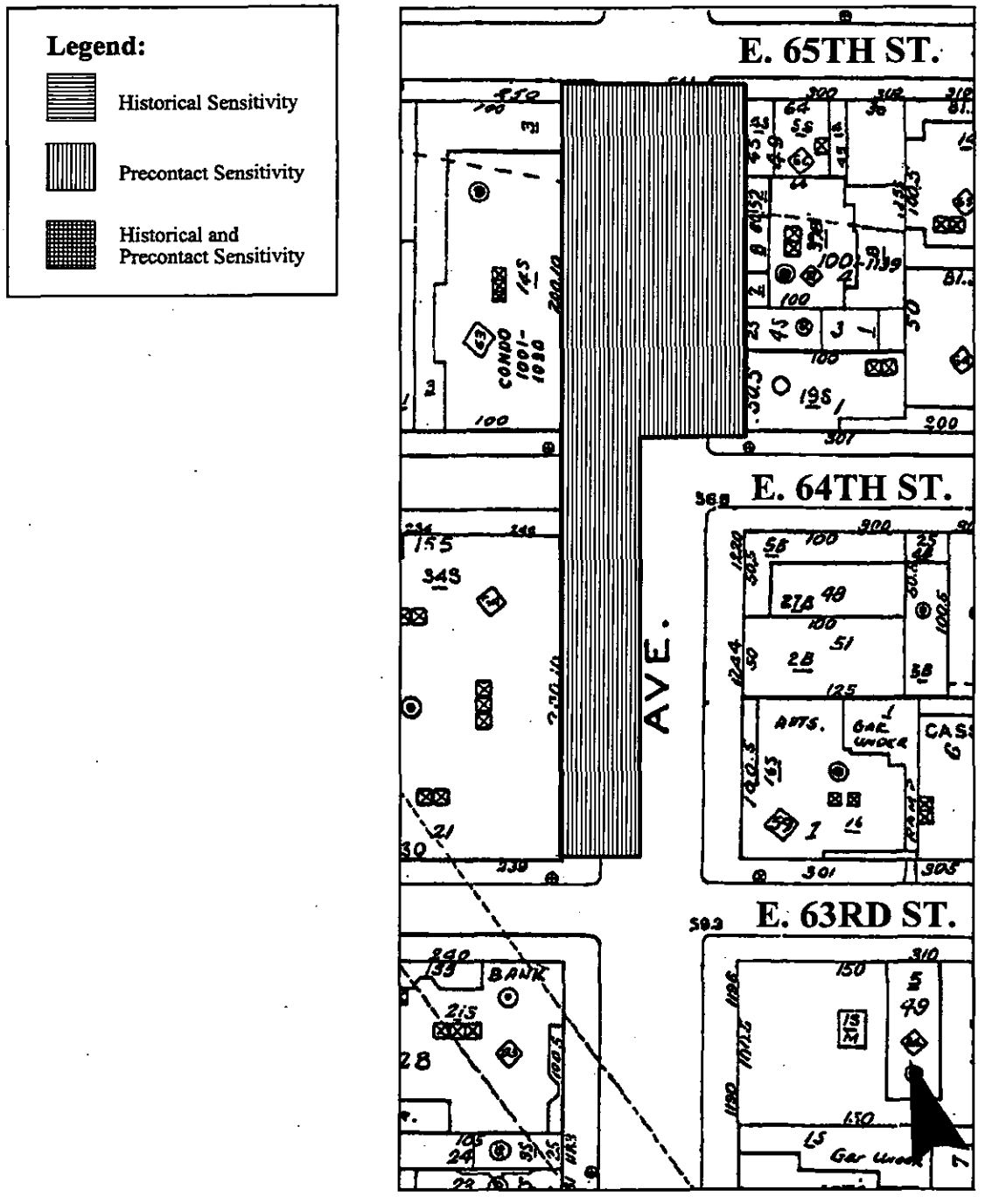


FIGURE 4.3-7i

Area of Potential Archaeological Sensitivity.
East 65th Street to East 63rd Street. Sanborn 2001.

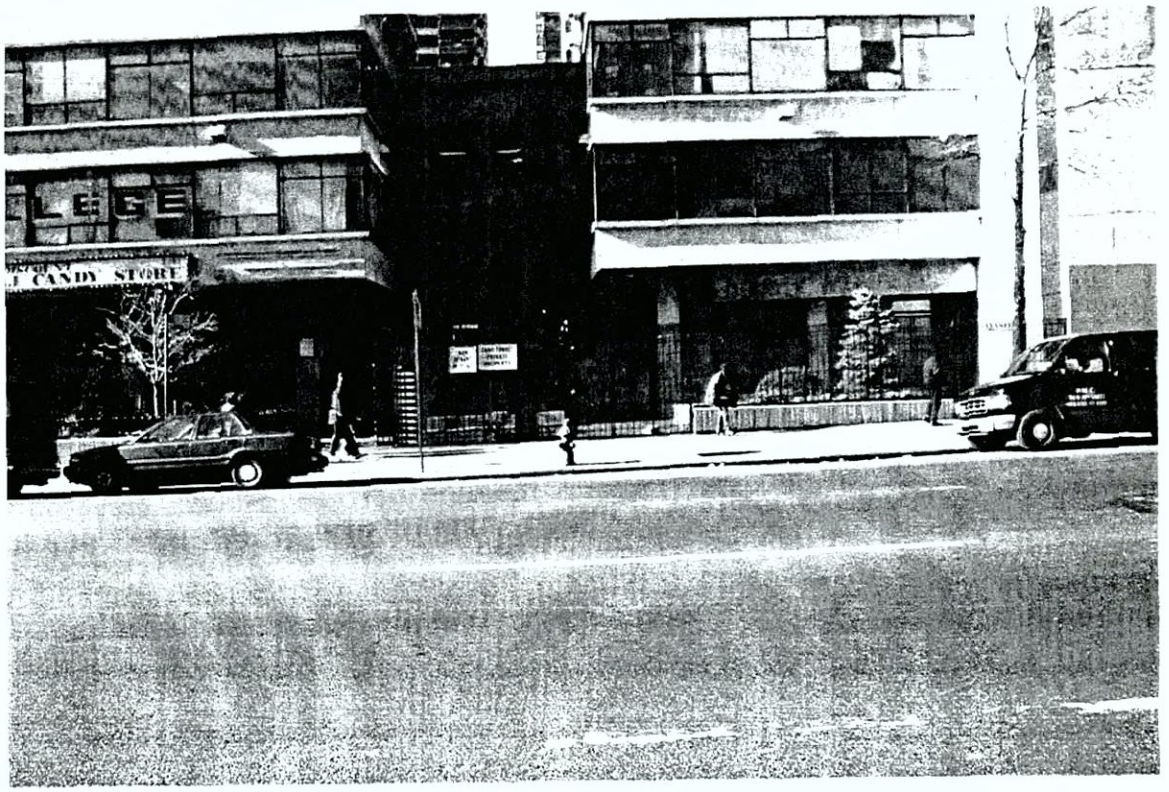
Approximate Scale: ½ inch = 60 feet



Photograph 4.3-1: View to the south on the east side of Second Avenue from the corner of 124th Street and Second Avenue.



Photograph 4.3-2: View to the south on the east side of Second Avenue on the corner of 123rd Street and Second Avenue.



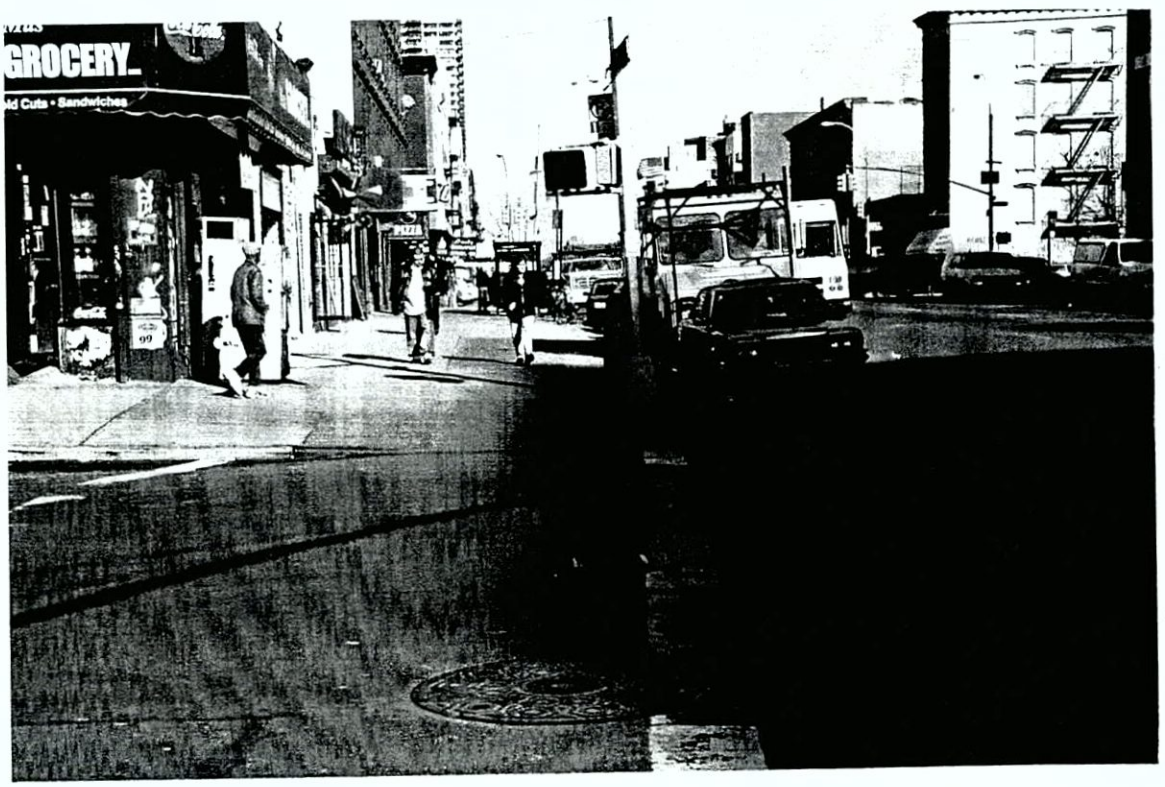
Photograph 4.3-3: View to the west on Second Avenue between 122nd and 123rd Streets.



Photograph 4.3-4: View to the north on the west side of Second Avenue on the corner of 122rd Street and Second Avenue.



Photograph 4.3-5: View to the south on the west side of Second Avenue on the corner of 116th Street and Second Avenue.



Photograph 4.3-6: View to the north on the west side of Second Avenue on the corner of 115th Street and Second Avenue.



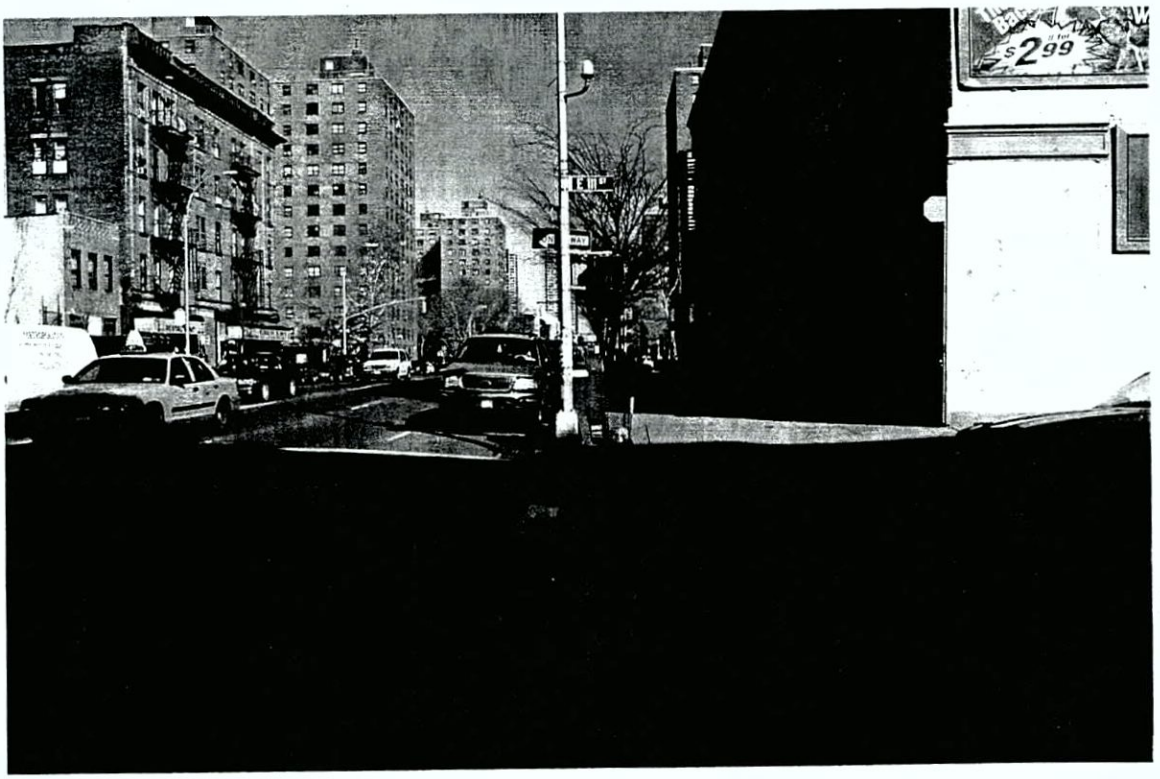
Photograph 4.3-7: View to the north on the west side of Second Avenue between 111th and 112th Streets.



Photograph 4.3-8: View to the south on the west side of Second Avenue on the corner of 112th Street and Second Avenue.



Photograph 4.3-9: View to the north on the west side of Second from the corner of 111th and Second Avenue.



Photograph 4.3-10: View to the north on the east side of Second Avenue on the corner of 111th Street and Second Avenue.



Photograph 4.3-11: View to the south on the east side of Second from the corner of 97th and Second Avenue toward Shaft Site B on the left.



Photograph 4.3-12: View to the south on the west side of Second Avenue on the corner of 97th Street and Second Avenue toward Shaft Site C.



Photograph 4.3-13: View to the north on the east side of Second from the corner of 96th and Second Avenue toward Shaft Site B on the right.



Photograph 4.3-14: View to the south on the west side of Second Avenue on the corner of 84th Street and Second Avenue.



Photograph 4.3-15: View to the west on the east side of Second between 83rd and 84th Streets.



Photograph 4.3-16: View to the north on the west side of Second Avenue between 83rd and 84th Streets.



Photograph 4.3-17: View to the north on the west side of Second on the corner of 83rd Street and Second Avenue.



Photograph 4.3-18: View to the southeast on the west side of Second Avenue on the corner of 66th Street and Second Avenue toward Shaft Site B.



Photograph 4.3-19: View to the east on the west side of Second between 65th and 66th Street toward Shaft Site B.



Photograph 4.3-20: View to the southon the east side of Second Avenue on the corner of 66th Street and Second Avenue toward Shaft Site B on left.

4.3.7 Appendices

4.3.7.1 Documentary Assessment of APE

Second Avenue

The APE extends from building line to building line from the south side of East 125th Street to the north side of East 63rd Street.

Cartographic History

Maerschalck 1754: This section of the APE lies north of the northern boundary of this map.

Montresor 1766: Same as Maerschalck 1754.

Ratzer 1766: Same as Maerschalck 1754.

Bridges 1803: This map only depicts the developed section of Lower Manhattan as far north as about East 16th Street. Second Avenue has not yet been laid out, but its route appears to run over farmland.

Commissioners 1811: Second Avenue and the present grid of proposed cross streets are shown superimposed on the streets in existence in 1811, with the widely scattered buildings aligned along the old streets, some encroaching into the Second Avenue roadbed and sidewalks. Topography (streams, marshes, hills, etc.) is depicted.

Within the APE a structure is located on the east side of what is now Second Avenue, just a few feet south of East 124th Street, and may have been Waldron property. The building fronts the north side of Old Haerlem Road, which crosses Second Avenue. Several other structures that may also be under the same ownership surround the house to its northeast and its southwest, also fronting the north side of Old Haerlem Road. However, all the buildings surrounding the Waldron structure are depicted outside the APE. Between East 123rd and East 122nd Streets on the west side of Second Avenue, a portion of another dwelling or structure appears within the roadbed, fronting the south side of Old Haerlem Road. This is also labeled as owned by Waldron.

Another structure falls within the Second Avenue roadbed on the east side of the avenue between East 112th and East 111th Streets, just south of the Second Avenue intersection. While no name is associated with the structure, it may be the property of Barclay, who owned a structure between East 111th and East 110th Streets and First and Second Avenues.

Two structures labeled "W. Waldron" are visible at the intersection of East 86th Street and Second Avenue. The southernmost of these structures is completely in the East 86th Street road bed and portions of it may fall within the APE on the west side of Second Avenue. The other structure is situated well within the block to the north of East 86th Street, outside the APE.

Farther south, a portion of the Hopper dwelling extends into the roadbed just south of East 84th Street, on the west side of Second Avenue. Another structure, also apparently owned by Hopper, is located to its west, but is outside the APE.

Randel 1820: The street grid and topography are similar to the Commissioner's Map which Randel also created, but included are the old farm lines and the Eastern Post Road. Wetlands lie east of Second Avenue, extending from East 123rd to approximately East 111th Streets. The Haerlem Creek crosses Second Avenue in the vicinity of East 108th Street and a large marsh area extends south to approximately East 92nd Street. Several streams/creeks within this marsh cross Second Avenue as well. There is, however, one large tract of slightly land between East 106th and East 104th Streets. In addition, a large hill is shown to the west of Second Avenue, between East 85th and East 83rd Streets and several knolls are visible between East 77th and East 75th Streets just to the east of the APE. Buildings shown in the Second Avenue road bed are as follows:

East 123rd to 122nd Street. A portion of one structure or dwelling extends into the Second Avenue roadbed between East 123rd Street and East 122nd Streets, on the west side of Second Avenue. Though the property boundaries are visible, no particular owner is associated with the structure.

East 112th and East 111th Street. One structure and a large portion of another are visible in the Second Avenue roadbed. The southernmost of the two structures is larger and may be a dwelling. It appears to front a small road that crosses Second Avenue diagonally from northwest to southeast. The smaller structure may be a smaller dwelling or barn. It is, however positioned at the intersection of the aforementioned small road and a second lane, which diagonally across Second Avenue toward the northeast.

East 86th Street. There are Cartographic two structures at East 86th Street and Second Avenue, one of which falls extremely close to the Second Avenue roadbed. This parcel is labeled "heirs of Wm. Waldron." The structure is possibly a dwelling and an elaborate system of roads and drives that crosses Second Avenue in this area.

East 84th Street. Two structures are situated just south of East 84th Street in the vicinity of Second Avenue. The southern one of these stood at the base of a hill directly south of East 84th Street while the northern building was directly south of East 84th Street, but atop the hill outside the APE. Both parcels were owned by "Yelles Hopper."

Colton 1836: Scattered farms are visible from East 63rd to East 125th Street. This is also a topographical map and shows wooded areas on and near Second Avenue. The marshland depicted from just north of East 108th Street, where Harlem Creek crosses Second Avenue, south to the vicinity of East 86th Street. Trees are visible in the Second

Avenue roadbed within this wetland area and also farther south in the vicinity of East 74th Street, where another smaller stream/creek crosses Second Avenue. Many roads and drives crossing Second Avenue that are not part of the Commissioner's grid plan are still visible on this map.

Cartographic information reveals that a portion of only one dwelling extends into the Second Avenue roadbed, at this time. *East 124th Street.* A dwelling is situated at the corner of East 124th Street on the east side of Second Avenue, and is surrounded by an elaborate system of drives and gardens which also extend into the Second Avenue roadbed.

A building labeled "Red House" is located east of Second Avenue to the south of Haerlem Creek between East 106th and East 104th Streets. However, this structure is well within the block. A system of drives associated with the structure crosses the Second Avenue road bed here.

Dripps 1851: The area surrounding the Second Avenue corridor is rural in character and the density of buildings is sparse along Second Avenue. Besides the Harlem Creek, water courses cross the avenue between East 100th and East 99th Streets, between East 99th and East 98th Streets, at East 95th Street, and at East 93rd Street. A rail or trolley line runs through the middle of East 86th Street, also crossing Second Avenue.

Three structures appear to extend into the Second Avenue road bed within this section of the APE.

East 124th Street. A structure at the northwest corner of East 124th Street and Second Avenue is labeled as "J. Chesterman." An elaborate system of drives surrounds the property, extending into and across Second Avenue.

East 116th and East 115th. A second structure between East 115th and East 116th Streets also belongs to J. Chesterman and is located on the west side of Second Avenue. The eastern portion of this structure falls within the Second Avenue roadbed. A much smaller structure, possibly a shed, is located just to its west, but well outside the APE.

East 84th Street. A third structure (not labeled) is located at the northwest corner of the intersection of East 84th Street and Second Avenue. The eastern portion of the structure extends into the Second Avenue road bed.

Dripps 1867: A railway runs along Second Avenue, and there are row houses alternating with manufacturing facilities.

Viele 1864: The predevelopment topography is shown on this map. Between East 125th and East 63rd Streets conditions vary considerably. A large wetland tract is visible from approximately East 109th to East 92nd Streets. Water courses cross the APE in the vicinity of East 90th to East 88th Streets, East 79th Street, and East 75th to East 74th Streets. Knolls are depicted between East 78th and East 75th

Streets.

Sanborn 1897-2001: The Second Avenue APE is depicted as roadbed, devoid of any structures. Second Avenue is completely lined with apartment buildings, row houses, condos, and an occasional shop, garage, bank, school, etc. from East 125th to East 63rd Streets.

Precontact Sensitivity

The northernmost section of the project corridor is located near former flatlands called Muscoota by Native Americans, which lies between the Harlem River and Morningside Heights northwest of what was once Harlem Creek and its surrounding swampy area (Rubinson 1989:3). "Rechgawanes" is reported by Grumet as a point of land along the western shore of the confluence of the East and Harlem Rivers, and a long obliterated stream that ran along the route of East 125th Street (1981:46).

Wickquasgeck Road, a Native trail which ran from the southern tip of Manhattan to the northern tip of Manhattan, ran west of the project site through the Upper East Side and then turned into Central Park to head northeast. The road was well traveled, and connected settlements at the southern part of the island with those on the north (Ibid. 1981:68).

In this section of the APE, the Wickquasgeck trail ran to the west through what is now Central Park. An Indian Path veered off this trail at East 110th Street near Fifth Avenue, and headed northeast towards a habitation site on the Harlem River near East 124th Street. This trail was incorporated into the first road system of the village of Harlem. Passing through the meadows of Muscoota to the area called Conykeekst, it crossed First Avenue at East 124th Street and Second Avenue at East 121st Street (Bolton 1922:72,74-76). Arrowheads and flakes were found in East Harlem in 1855 during the excavation of a cellar on Avenue A between 121st and 120th Streets (Riker 1904:123). Bolton concluded that the site was intermittently used as a place of landing or trade, or perhaps a fishing place (Bolton 1922:72F.,pl.IV).

Another site named "Conykeekst" (NYSM Site #A061.01.0541), was reported as having an unknown date and location of cultural materials (Bolton 1922:235, #98 and Finch 1909:65).

An additional previously inventoried precontact site reported by Susan Kardas of NYAC within the vicinity was the historic aboriginal village of Konaande Kongh, which was occupied until 1669 (NYSM Site #A061.01.00542). The site, located from Harlem Hill to East 91st Street, as far west as Fifth Avenue, and to Hellgate Bay on the East River, was once occupied by Rechewac – chief of the Reckgawawancks (Bolton 1922:221).

NYSM Site #4063 was reported near this northern section of the project corridor. Identified by Arthur C. Parker, this village/camp site was described as "...one of larger camps or fishing places of the Reckgawawancks...." (Parker 1920:26). He further characterized it as a "...camp or fishing place ....at Montagne's Point... on shore at Hellgate, just off 110th Street" (Ibid.). The site's boundaries and location are unknown,

but it may have extended west into the vicinity of Second Avenue near East 110th Street. NYSM Site #4064 was identified as a camp by Arthur C. Parker and was described in the same way as NYSM Site #4063 above. Specific boundaries are unknown, although Parker recorded the site's location as "...on the banks near 121st St...Pleasant Ave. or same loci as 4063" (Ibid.: 1922:626, Part 2). The boundaries of this site could also potentially fall within the vicinity of the project corridor.

Planting areas and old fields are shown along much of this area, especially in the vicinity of First and Second Avenues. In addition, in the vicinity of East 101st to East 97th Streets was "Konaande Kongh," defined by Grumet as a major Indian settlement. (1981:20). Bolton reported that this was a village located approximately between Lexington Avenue and Madison Avenue and East 98th to East 100th Streets, west of Second Avenue (Ibid.).

Arthur C. Parker also reported traces of occupation in the area of East 59th Street near First and Second Avenues, south of this APE (NYSM Site #4061). The nature and extent of the Native American presence is unknown, but it is possible that this site extended into the southern end of the East 125th to East 63rd Street APE.

Some of the environmental factors which contribute to potential precontact sensitivity include the predevelopment topography, distance to water, drainage conditions, soils, and resource availability, to name a few. A model for precontact sensitivity, completed in 1997 for the previous MESA study, highlighted several areas flanking Second Avenue as potentially sensitive for this resource type. The criteria used to predict sensitivity for the earlier study included soil types, precontact topography, and proximity to water and/or established precontact trails, as well as an earlier NYCLPC prepared predictive model of precontact site locations (1982). Using these criteria, potentially sensitive areas were identified roughly between East 125th and East 123rd Streets, between East 122nd and East 112th Streets, between East 105th and East 93rd Streets, between East 90th and East 88th Streets, and finally between East 67th and East 63rd Streets (Kearns et al 1998). However, the MESA study did not consider the possible presence of archaeological sensitivity in areas in which subway tunnels had already been constructed in the early 1970's (East 120th to East 110th Streets and East 103rd to East 99th Streets), because prior subsurface disturbance was well documented and no additional construction was to occur in those locations. In addition, only areas where "cut and cover" methods were planned were addressed. For this report, the entire Second Avenue corridor between East 125th and East 63rd Streets was addressed.

Additional cartographic and documentary studies for this report concluded that the following areas within the APE are moderately sensitive for precontact period resources:

1. Level and slightly elevated land within the APE along Second Avenue between East 124th and East 121st Streets (Commissioner's Map 1807-1811; Viele 1864; Stokes 1918; NYCLPC 1982).
2. East 120th to East 111th Streets (excluding the existing tunnel and vent shaft locations), a well-drained and fairly level upland area, once located within close proximity to a stream which ran from north to south, approximately one block to the east (British Headquarters 1782; Viele 1864; Stokes 1918; NYCLPC 1982).

3. East 110th to East 109th Streets, located on well-drained land north of the former Harlem Creek and marsh area, which once ran east to west, crossing East 108th and East 107th Street (British Headquarters 1782; Randel 1820; Viele 1864).
4. East 106th to East 95th Streets (excluding existing tunnel and ventilation shaft locations between East 103rd and East 99th Streets). East 106th to East 104th Street was situated on slightly elevated land within the marsh area just south of Harlem Creek, once known as Rechawanes or Montagne's Point (Randel 1820: Plate 55; Viele 1864; Stokes 1918). Also, soil borings indicate peat and/or decomposing vegetation lies below Second Avenue between East 102nd and East 95th Streets.
5. Upland areas to south of a small creek in the vicinity of Second Avenue East 90th and East 86th Streets (Viele 1986; NYCLPC 1982).
6. East 79th to East 77th Streets, located on elevated and well-drained land in the vicinity of two streams/creeks (Viele 1864 and 1874; Randel 1820; NYCLPC 1982).
7. Well-drained and elevated land between East 65th to East 63rd Streets, situated within close proximity to a stream or creek located less than one block to the east of Second Avenue (Viele 1874, NYCLPC 1982).

Precontact period archaeological potential also depends on subsurface conditions within these areas. Typically precontact resources are found within several feet of the precontact living surface, except in alluvial areas. Therefore, there may be archaeologically sensitive areas where the precontact surface now lies buried beneath levels of fill, which may have been protected from modern disturbance. From north to south, subsurface conditions in these archaeologically sensitive areas are reported as follows (Raymond International Inc. 1970s):

1. At East 124th to East 121st Streets:
   At East 124th Street eight feet of fill was found over five feet of fine brown sand, silt, and gravel, and 44.6' of fine to medium light brown sand, silt and layers of clay (Boring 2-112).
   At East 123rd Street fill was reported to 10' below grade, over 28' of coarse brown sand,
   gravel, and silt, in addition to 13.6' of medium-fine brown sand and silt (Boring 2-111).
   At East 122nd Street fill extends from the surface to eight feet below grade, over 6' of fine to medium coarse brown sand, silt, and coarse gravel, eight feet of fine brown silty sand and layers of clay, and over 34.6' of brown and gray silty sand and varved clay (Boring 2-110).
   At East 121st Street there was 12' of fill over 11' of fine coarse brown sand, gravel, and silt, 19' of medium fine brown silty sand, seven feet of varved clay, silt and sand, and 2.6' of fine gray silty sand (Boring 2-109).

Precontact resources could conceivably be located beneath the fill within this section of the APE, which ranges from a depth of eight feet below grade at East 124th Street to 12' below grade at East 121st. Though borings show no indication of bedrock, current bedrock elevations reportedly range between 40' and 45' below the current grade elevation (Vollmer Associates 1997a: Drawing NS-06). If the soils beneath represent

natural deposits, these areas could be potentially sensitive for precontact resources. Anticipated depths of resources here would be for several feet (five to be conservative) below the depth of fill, which at its maximum is 12'. Therefore, resources could lie as deep as 17' below grade.

2. At East 120th to East 111th Streets:
At East 120th Street 7.6' of fill was found over 9.4' of medium coarse brown sand, 15' of fine brown silty sand, and three feet of coarse brown sand, gravel with some clay, before bedrock was encountered at 21.6' (Boring 2-108).
At East 119th Street four feet of fill was reported over 13' of fine coarse brown sand, silt, and gravel, 12' of fine brown silty sand, and five feet of a mixture of medium brown sand, gravel, clay boulders, and drilled rock, before bedrock was encountered at 34' below grade (Boring 2-107).
At East 118th Street nine feet of fill was found over 10' of fine to medium reddish brown sand and gravel and 2.6' of fine brown silty sand, before bedrock was found at 21.6' below grade (Boring 2-106).
At East 117th Street there was 13' of fill over 10' of fine to medium brown sand, silt and gravel, and eight feet of loose fine to medium to coarse brown sand, silt, and gravel, before bedrock was encountered at 31' below grade (Boring 2-105).
At East 116th Street fill extended from the surface to eight feet below grade, followed by 19.6'of fine coarse brown sand, gravel and clay. Bedrock was encountered at 27.6' below grade (Boring 2-104).
Between East 116th and East 115th Streets on the east side of Second Avenue, concrete was laid directly over 10' of brick, boulders, sand, gravel, and silt. Beneath this was seven feet of fine to medium to coarse brown sand, silt and gravel. Below this was five feet of fine to medium brown sand, silt, and gravel, six feet of brown sandy silt and coarse sand over 9.6' feet of fine to medium to coarse loose sand, silt, and gravel, and finally four feet of fine brown sand and silt (Boring 2-103).
South of East 115th on the east side of Second Avenue, concrete was laid over eight feet of brown sandy loam, 20' of fine to medium to coarse brown sand, silt, and gravel, five feet of fine to medium brown sand and silt, and 23.6' of brown gray silty sand and varved clay (Boring 2-102). No fill was reported.
In the vicinity of East 113th Street on the west side of Second Avenue, there was two feet of fill over 21' of medium coarse brown sand, gravel, and silt, and this lay above 19' of brown clay and sand, and 17.6' of varved clay, silt, and sand. Bedrock was encountered at 59.6' below grade (Boring 2-101).
At East 112th Street, a boring from the west side of Second Avenue (2-100) indicates that 8.6' of fill was found over 4.4' of medium fine sand, gravel, and silt, followed by bedrock at 13'. Boring 2-99B indicates that two feet of fill was found over five feet of fine brown sand and silt, eight feet of fine to medium to coarse brown sand, silt, and coarse gravel, 18' of fine to medium brown sand, silt, and gravel, and eight feet of decomposed limestone, fine brown sand, and gravel. Bedrock was reached at 38' below grade.

On the west side of Second Avenue between East 112th and 111th Streets, four feet of fill was found over 14' of fine brown clayey sand, 11' of medium brown sand, gravel, and clay, and 12.6' of varved clay and silt with sand (Boring 2-99A).
At East 111th Street 13.6' of fill was reported over 15.4' of fine to medium brown sand, silt, and gravel, 35' of fine brown/gray silty sand and varved clay, and five feet of fine to medium to coarse brown sand, silt, and coarse gravel. Bedrock was reached at 69' below grade (Boring 2-99).

It is possible that precontact resources may be located beneath the fill within this section of the APE outside of the areas which were previously affected by subway tunnel and vent shaft construction between East 120th and East 110th Streets. Fill ranges in depths from 13' and 13.6' below grade at East 117th and East 110th Streets respectively, to two feet below grade at East 113th and 112th Streets to immediately below grade at East 115th Street where there was no fill. Bedrock was encountered between 21.6' and 69' below grade, although it was not reached in all the above borings. If the soils beneath the fill but above the bedrock represent natural deposits, these areas could be potentially sensitive for precontact resources. Anticipated depths of resources here would be for several feet (five to be conservative) below the depth of fill, which at its maximum is 13.6'. Therefore, resources could lie as deep as 18.6' below grade outside of previously affected areas.

3. At East 110th to East 109th Streets:
At East 110th Street 18.6' of fill was found over 25.4' of fine to medium brown sand, silt and gravel, and 6.6' of fine brown silty sand and varved clay (Boring 2-98).

If the soils beneath the fill above the bedrock represent natural deposits, it is conceivable that precontact resources may possibly be located beneath the fill within this section of the APE. Anticipated depths of resources here would be as deep as 23.6' below grade (below the 18.6' fill layer).

4. At East 106th to East 95th Streets:
In the vicinity of East 106th Street fill was reported to a depth of 2.6', over 25.4' of medium coarse brown sand, gravel, and clay, nine feet of varved clay, silt, and sand lenses, and 9.6' of medium brown sand and silt (Boring 2-95).
At East 105th Street, two borings were taken. On the east side of Second Avenue, 17' of fill was found over 14.6' of medium fine brown sand, silt, and gravel (2-94). On the west side of Second Avenue, 3.6' of fill was reported over 9.4' of medium coarse brown sand, gravel, and clay, followed by 15' of fine brown silty sand, 10' of medium coarse brown sand, gravel, and clay, and 8.6' of fine brown sand and silt (Boring 2-93).
At East 104th Street 15' of fill was found over 14' of fine to medium brown sand and silt, and 12.6' of fine brown silty sand (Boring 2-92).
At East 103rd Street there were 2.6' of fill over medium brown sand gravel and silt to 18' below grade. Beneath this were levels of fine silty sand to 41.6' (Boring 2-91).
At East 102nd Street sand and gravel fill extended to 19' below grade, followed by

9.6' of gray organic silt and a trace of shells, 4.4' of fine to medium gray sand, silt, and gravel, 15' of fine to medium brown sand and silt, 9' of fine brown silty sand, 37' of fine brown silty sand and varved clay, and 7.6' of fine to medium gray sand, a trace of silt, and a trace of gravel (Boring 2-90).

Between 102nd Street and East 101st Street on the west side of Second Avenue, 18' of fill was found over 7' of gray organic silt and traces of shells, 7.6' of fine to medium reddish gray sand, silt, and gravel, and 7' of fine reddish brown silty sand (Boring 2-89).

At East 100th Street sand and gravel fill was reported to a depth of 18' below grade, over 6' of fine to medium brownish gray sand, silt, and gravel, 6' of dark gray silt, traces of shells and organic material, and 6.6' of fine to medium coarse gray sand, silt, and gravel (Boring 2-88).

At East 99th Street fill extended to 18' below grade, followed by 10' of gray silt and some decomposed vegetation, 4' of fine gray silty sand, 6' of medium gray sand, some silt and trace of gravel, and 3.6' of fine reddish brown silty sand (Boring 2-87).

Between East 99th Street and East 98th Street on the east side of Second Avenue, 18' of fill was reported over 7' of gray organic silt and traces of shells, 3' of dark brown organic silt, 6' of fine to medium to coarse gray sand, some gravel, and traces of silt, and 7.6' of fine reddish brown silty sand (Boring 2-86).

At East 97th Street fill extended to a depth of 22' below grade, followed by 7' of gray silt, some shell, and decomposed vegetation, 4' of fine gray silty sand, and 8.6' of fine reddish brown silty sand (Boring 2-85).

In the vicinity of East 96th Street on the west side of Second Avenue, fill was reported to a depth of 17' below grade, followed by 11' of gray silt, some decomposed vegetation, and shells, 8' of gray silty sand, and 5.6' of medium brown clayey sand and gravel (Boring 2-84).

At East 96th Street 2.6' of fill was found over 19' of medium brown sand, gravel, and traces of clay, 5' of gray silt and decomposed vegetation, 6' of gray silty sand, and 8.6' of medium coarse brown sand, gravel, and a trace of silt (Boring 2-83).

At East 95th Street concrete slab material was directly over brown sand, gravel, and small boulders, which extended to 13' below grade, followed by 9' of dark gray sandy silt, with decomposed organic material, 4' of gray organic silt and traces of shells, 3' of peat, 1.6' of fine gray sand, traces of gravel and silt, and 16' of fine reddish brown silty sand (Boring 2-82).

According to the above soil borings, fill depths between East 106th and East 95th Streets range from 2.6' to 22' below grade. In addition, the water table within this area of the APE was encountered between 9' and approximately 15' below grade. Although the borings bear no indication of bedrock, current bedrock elevations reportedly range between 40' and 45' below the current grade elevation in this area, with the exception of between East 99th and East 95th Streets. At East 99th Street, the bedrock elevation reaches a depth of approximately 110' below grade and increases to approximately 100' below grade at East 97th Street, before gradually returning to approximately 45' below grade elevation at 95th Street (Vollmer Associates 1997a: Drawings NS-05 and NS-06). The drop in bedrock levels between East 100th and East 95th Streets correlates with a series of streams that historically traversed this area of marshland (British Headquarters 1782;

Bridges 1811; Randel 1820; Colton 1836; Dripps 1852). Anticipated depths of resources in this area of the APE would be as deep as 27' below grade.

Soil borings taken along Second Avenue between East 102nd to East 95th Street reported levels of decomposed vegetation and organic materials and shells at depths ranging from 13' to 24' below grade (Borings 2-82 to 2-90, Raymond International, Inc. 1970). In addition, a soil boring taken on the east side of Second Avenue, just below East 95th Street reported the presence of peat at 26' below grade, which is favorable material for organic preservation (Boring 2-82).

Site location models indicate that precontact habitation may have occurred in proximity to wetlands or marsh, but that these inundated areas may have predominantly been utilized for resource procurement. The presence of shell in all but two of the borings in this formerly marsh area (East 102nd to East 95th Streets) is suggestive of the precontact availability of shell fish. It is plausible that somewhere nearby a shell midden was left by former populations.

Recent archaeological research in the New York Harbor area has concluded that there is the possibility for intact archeological contexts to exist beneath tidal marsh within this region (Thieme 2000:27). Therefore, this APE is potentially sensitive for precontact resources, outside of the footprint of the existing subway tunnel and ventilation shafts which lie between East 103rd to East 99th Street. However, the soil borings indicate that organic materials encountered ranged in depth from two feet to as much as 14' beneath the current water table, so it may be that potential resources are inundated.

5. At East 90th to East 86th Streets:
   At East 90th Street one foot of fill was found over eight feet of brown fine silty sand, sandy silt, and gravel, four feet of brown gray sandy silt, and six feet of brown and gray fine to medium silty sand and gravel, where bedrock was encountered at 19' below grade (Boring 2-75).
   At East 89th Street fill extended to five feet below grade, above three feet of varved gray brown clayey silt and sand and 11.6' of coarse fine brown sand and decomposed rock. Bedrock was encountered at 19.6' below grade (Boring 2-74).
   At East 88th Street a thin layer of crushed stone was found over 11' of fine brown silty sand with decomposed rock, where bedrock was encountered (Boring 2-73).
   At East 87th Street fill extended to a depth of eight feet below grade, where bedrock was reached (Boring 2-72).
   At East 86th Street two feet of fill was found over five feet of fine brown sandy silt and four feet of medium or clayey sand, and bedrock was encountered at 11' (Boring 2-70).

   The above borings indicate that there is little to no potential for any undisturbed precontact archaeological resources within this section of the APE. Fill only lies between one and five feet below grade, lying over thin soil strata at East 90th and East 89th Streets respectively. In addition, only crushed stone lies over decomposing rock at East 88th Street (Borings 2-75 and 2-74). At East 87th Street

no natural soils are shown in the stratigraphy, as eight feet of fill existed directly over bedrock (Boring 2-72).

The NYCLPC identified the land surrounding a small creek in the vicinity of Second Avenue and East 86th Street as potentially sensitive for precontact archaeological resources. The upland areas just south of the creek near East 86th Street presumably would have been suitable for precontact habitation (1982). However, the bedrock was so shallow at East 86th Street that one of the soil borings was canceled because "rock [was] observed from street surface to 10' below street surface" (Boring 2-71). The lack of natural stratigraphy and the shallow depth of bedrock negate the precontact sensitivity of the street bed in this area. Where bedrock does not lie directly below grade, only fill levels remain above it. Any potential resources which may have once been deposited here were removed or disturbed with the regulating and opening of Second Avenue and the subsequent installation of utility lines.

6. At East 79th to East 74th Streets:
At East 79th Street on the east side of Second Avenue, 15' of fill was found over five feet of fine gray clayey silty sand. These strata lay over eight feet of medium fine red sand, gravel, and silt. Bedrock was encountered at 28' below grade (Boring 2-64).
Between East 78th and East 77th Streets on the west side of Second Avenue, 14.6' of fill was found over 4.4' of gray silty sand and sandy silt, three feet of fine red brown sand and silt, seven feet of red brown fine silty sand, four feet of red brown clayey silt and silty clay. These levels lay above another 2.6' of fine to medium gray silty sand and gravel and bedrock, which was encountered at 35.6' below grade (Boring 2-60).
At East 77th Street on the east side of Second Avenue, 11' of fill was reported directly over bedrock (Boring 2-59).
At East 75th Street on the east side of Second Avenue, two borings were taken, each reporting 4' of fill directly over bedrock (Boring 2-57 and 2-56). On the west side of the avenue between East 75th and East 74th Streets, it was not clear whether the soils above the bedrock were fill or natural (Boring 2-55).

It is possible that precontact resources may exist within the soils of a portion of this section of the APE. Soil Borings at East 79th and between East 78th and East 77th Streets indicate that 15' and 14.6' of fill was over 13' and 21' of soil respectively, before bedrock was encountered. If the soils beneath the fill above the bedrock represent natural deposits, precontact resources could conceivably be located beneath the fill within this section of the APE. Anticipated depths of resources here would be as deep as about 20' below grade.

The NYCLPC identified the land surrounding a creek that crossed Second Avenue in the vicinity of East 75th Street as potentially sensitive for precontact archaeological resources. The upland areas north and south of the creek presumably would have been suitable for precontact habitation (1982). However, soil borings indicate that there are no natural soils left beneath the fill between East 77th and East 74th Streets. This strongly

suggests that most of the archaeologically sensitive area observed on historic maps has been leveled with shallow layers of fill added above it, or shallow precontact deposits disappeared through natural processes, or the precontact living surface has been completely disturbed. Therefore, the land between East 77th and East 74th Streets within this section of the APE is not considered potentially sensitive for precontact resources.

7. At East 65th to East 63rd Streets:
   At East 65th Street 12.6' of fill extended below grade and over 4.4' of brown medium silty sand and gravel, where bedrock was encountered at 17' below grade (Boring 2-45).
   Two borings were taken at East 64th Street. On the west side of Second Avenue, 2.6' of fill was found over 5.4' of brown sandy clayey silt, over 4.6' of brown sandy silt and gravel, and 18.4' of brown silty sand, gravel, and rock fragments. Bedrock was reached at 20' below grade (Boring 2-44). On the east side of Second Avenue, 13' of fill extended below grade, where bedrock was encountered (Boring 2-43).

The NYCLPC identified the land surrounding a small creek that crossed First Avenue at East 64th Street and ended somewhere within the block between First and Second Avenues, as potentially sensitive for precontact archaeological resources. The areas surrounding the creek presumably would have been suitable for precontact resource exploitation or habitation (1982).

At East 65th Street where there was 12.6' of fill, beneath it was 4.4' of potentially natural soil. Therefore, if precontact resources were present here they could potentially exist between 12.6' and 17' below grade. At East 64th Street on the west side of Second Avenue, there was 28.4' of potentially sensitive natural soil beneath the 2.6' of fill. In contrast, no natural soil exists beneath the fill on the east side of Second Avenue at East 64th Street indicating that if precontact resources were once present here, they would have been disturbed through road grading, installation of utilities or sewers, and historical development.

The above listed locations of precontact potential are approximate, as they reflect the locations that were determined to have potential precontact sensitivity, and where soil borings were taken and logs were available for review. Subsurface depths of fill can vary dramatically within a small geographic area, and undoubtedly vary considerably throughout the areas designated as potentially sensitive. Since definite subsurface conditions are unknown for areas outside of the immediate vicinity of the borings, the areas listed above must be regarded as generalized rather than absolute.

The types of precontact resources that could potentially lie in the vicinity of the five areas listed above vary from precontact living areas to hunting and collecting sites. Middens were also frequently deposited near the shoreline and along wetland areas, especially in regions where shellfish was abundant. Therefore, this section of the APE could be potentially sensitive for a variety of precontact-period resource types.

Historical Sensitivity

Although the 1807-1811 Commissioners Plan called for the creation of a gridded street system throughout Manhattan, the actual completion of streets and avenues did not occur, in some cases, until years later. For example, East 111th Street was not opened until 1869 (Bradley 1881:np). Second Avenue was opened between East 125th Street and East 113th Street in 1836, between East 113th and East 110th in 1825, between East 110th Street and East 86th Street in 1837, and between East 86th Street and East 63rd Street in 1839 (Manhattan Office of Borough President, Street Openings:77). Historical fill used to create these streets is a potential archaeological resource, depending upon its date and whether it can be attributed to a specific depositional episode.

A large wetland area with accompanying streams crossed Second Avenue within the APE in two areas: between East 109th and East 106th Streets, and between East 104th and East 92nd Streets (Commissioner's Map 1811, Viele 1864, Stokes 1918).

The route of Harlem Creek and its surrounding marsh land crossed Second Avenue between East 109th and East 106th Streets. This was undoubtedly drained and filled to allow the creation of the street system, probably sometime after 1836 since the creek is still depicted on maps at that time (Colton 1836). As discussed above, Second Avenue was opened between East 110th Street and East 86th Street in 1837 (Manhattan Office of Borough President, Street Openings:77). Therefore, the fill beneath Second Avenue which covered the marsh and stream between East 109th and East 106th Streets probably dates to between 1825 and 1836 when the avenue was opened.

In addition, a stream and surrounding marsh land crossed Second Avenue between East 104th and East 92nd Streets. It follows that this was also undoubtedly drained and filled to allow the creation of the street system, probably sometime around 1836.

The late period of the fill, which dates to the mid-19th century, does not indicate archaeological sensitivity. Furthermore, there were no references in any of the historical literature consulted suggesting that these wetlands were filled with material from a single industrial, commercial, or residential source (Stokes 1929; Riker 1904). Maps and atlases revealed that there was almost no historical development through much of the 19th century in this area, thus there would be no industrial or domestic refuse from directly neighboring areas that could have been used as fill (Colton 1836; Dripps 1852; Dripps 1867). Rather, the fill is most likely the collection of trash from an unknown source, together with materials excavated elsewhere. It is also possible that surrounding upland was leveled and graded to create the fill over this wet area. Therefore, the landfill in this section of the APE lacks associative value and archaeological significance.

The documentary study found that the APE between East 125th and East 63rd Streets is potentially sensitive for the following historic period resources:

1. East 124th to East 122nd Streets:

J. Chesterman Structure

Cartographic evidence shows the front corner of a large dwelling, possibly an estate, within the APE on the west side of Second Avenue at the northwest corner with East 124th Street (Dripps 1851; Figure 4.3-2a). An elaborate driveway system is shown crossing the bed of Second Avenue, in addition to a drive or path that led to the rear portion of the property, where several gardens appear to have been located (Figure 4.3-2a). The Dripps map also indicates that J. Chesterman owned other additional parcel of land and buildings along the east side and west sides of Second Avenue at that time.

Documentary research indicates that the house of James Chesterman, located on the northwest corner of Second Avenue and East 124th Street, was erected in 1821 and demolished in 1883 (Stokes 1918:Landmark map; Riker 1904:191; Liber Deeds MDCCXLVI:5: Bromley 1884). This explains its appearance on the 1836 Colton map. However it's location on the Colton map on the east side of Second Avenue was likely a cartographic error.

Waldron Property Structures

One building or dwelling was located on one of several parcels owned by Waldron, within the APE just south of the intersection of East 124th Street and Second Avenue (Commissioners 1811; Figure 4.3-6). At that time the building, and several smaller structures that also appeared to have been owned by Waldron, fronted the north side of the former Old Haerlem Road within what is now the Second Avenue roadbed. The Old Haerlem Road originally cut diagonally across Second Avenue from the southwest to the northeast in the vicinity of East 123rd Street (Ibid.). Although this ca.1811 dwelling did not appear on the 1820 Randel map, a structure was present in the same approximate location on the 1836 Colton map. While in 1811 the building was shown as a rectangular in shape, by 1836 it was "L" shaped, and was surrounded by gardens and driveways or walkways. This suggests that the 1836 structure is not the 1811 Waldron building, but instead may be a 1821 structure owned by J. Chesterman and depicted on the 1851 Dripps map at the northwest corner of the intersection of East 124th Street and Second Avenue (Figure 4.3-2a). If this is correct, then the Waldron structure or structures, were razed sometime between 1811 and 1836 (Figure 4.3-3).

In addition, a corner of the back of another building, also possibly owned by Waldron, was located within the APE on the west side of Second Avenue between East 123rd and East 122nd Street (Figure 4.3-4a). This structure also fronted the south side of Old Haerlem Road and may have been moved out of the road bed and onto the adjacent block by 1851, probably in anticipation of the regulating and opening of Second Avenue (Commissioners 1811; Randel 1820; Dripps 1851).

Surface elevations are 14' at East 124th Street, 12.5' at East 123rd Street, and 10.8' at East 122nd Street (Sanborn 2001). Soil borings were available in the vicinity of the intersections of East 124th, East 123rd, and East 122nd Streets at Second Avenue. These borings show that fill and soil levels extend down to at least 50' below the surface before

bedrock is encountered (Borings 2-110, 2-111, 2-112. Raymond International, Inc. 1970). The water table was encountered at about 10' below grade.

Boring 2-111, taken on the west side of Second Avenue between East 124th and East 123rd Streets reported that beneath 10' of fill, 28' of coarse brown sand, gravel, and silt was found over 13.6' of medium fine brown sand and silt. The water table was encountered at 12' below grade (Ibid.). On the east side of Second Avenue eight feet of fill was reported over five feet of fine brown sand, silt and gravel, and 38.6' of fine to medium light brown, silt and clay. The water table was reported at about 18' below grade (Boring 2-112). Eight feet of fill was found over six feet of fine to medium to coarse brown sand, silt and coarse gravel, eight feet of fine brown silty sand and clay, and 34.6' of brown and gray silty sand and varved clay, in Boring 2-110, taken on the east side of Second Avenue at East 122nd Street. Therefore, potential wells associated with any of these structures could extend anywhere from 10' to 18' below grade, the depth of the water table, and possibly deeper. Shallower shaft features may also exist.

Although pre-road construction elevations are unavailable, early maps depict this area as level farmland. In all likelihood, little grading would have been required in this area to accommodate the creation of Second Avenue or cross streets. Any potentially sensitive historical features associated with these dwellings such as wells, privies, or cisterns were probably situated directly around the houses. The relatively shallow depth of mapped subsurface utilities (WPA 1937) suggests that if any deep shaft features were associated with these structures, they may have remained, at least in part, undisturbed. Therefore, since the footprint of these structures and their surrounding terrain which may have held shaft features fall within the APE, the Second Avenue roadbed between East 124th and East 123rd Streets is considered potentially sensitive for historic resources dating to at least the early 19th century.

The Second Avenue roadbed may be sensitive for historical period deposits associated with the J. Chesterman house, which was built in 1821 and was razed by 1883. The APE is also sensitive for the ca.1811 Waldron structures, one of which may have been relocated to the adjacent block between East 123rd and East 122nd Street by 1851 (Commissioners 1811; Randel 1820; Colton 1836; Dripps 1851). If the bedrock is in fact at least 50' deep in this area and undisturbed soil lies below the fill, then this APE must be considered archaeologically sensitive for late 18th and 19th century domestic shaft features.

2. East 116th to East 115th Streets:

Second J. Chesterman Property Structure

In 1851, it appeared that the eastern end of a building owned by J. Chesterman extended into the APE between East 116th and East 115th Streets, on the west side of Second Avenue (Figure 4.3-2b). A smaller structure was located behind the building, outside the APE and well within the adjacent block. Despite the fact that this structure stood in the APE in 1851, Second Avenue was reportedly opened here in 1836 (Manhattan Borough

Presidents Office, Street Openings:79). Cartographic sources suggest that the Chesterman Structure continued to stand in Second Avenue after it was opened in 1836.

Current surface elevations are 14.9' at the intersection of Second Avenue and East 116th Street and 13.3' at East 115th Street and have remained unchanged since 1902 (Bromley 1902; Sanborn 2001). Eight feet of fill was reported over 19.6' of fine to coarse brown sand, gravel, and clay, with bedrock located 27.6' below grade at East 116th Street, on the west side of Second Avenue (Raymond International, Inc. 1970: Boring 2-104). Another boring taken on the east side of Second Avenue between East 116th and East 115th Streets indicates that no fill was found over 10' of brick, boulders, sand, gravel, and silt, and 31.6' of sand, silt, and gravel layers. A depth of 41.6' bore no indication of bedrock (Ibid.: Boring 2-103). The water table was reached at 8' below grade at East 116th Street, on the west side of Second Avenue, and at 11' below grade at East 115th Street on the east side of Second Avenue, suggesting potential wells associated with the historic structure here may extend at least this deep, and possibly deeper.

Although pre-road construction elevations are unavailable, early maps depict this area as level farmland. In all likelihood, little grading would have been required in this area to accommodate the creation of cross streets. Any potentially sensitive historical features associated with the above dwelling such as a well, privy, or cistern were probably situated directly around the house. The relatively shallow depth of mapped subsurface utilities (WPA 1936) suggests that if any deep shaft features were associated with these structures, they may have remained, at least in part, undisturbed.

A section of subway tunnel was constructed in the early 1970's under Second Avenue, between East 120th and East 110th Streets. Plans of the existing tunnel show an extensive ventilation shaft extending out from the tunnel westward under most of the sidewalk on the west side of Second Avenue (DeLeuw, Cather & Co.: Drawing D-20914-C-6 1970). The approximate location of the J. Chesterman structure has almost entirely been disturbed by the vent shaft's construction. Therefore, the APE is no longer considered potentially sensitive for this resource.

3. East 112th to East 111th Streets:

George Bradish Structures

Historical maps and atlases indicate that Margaret McGown (Widow McGown whose tavern and home were situated in Central Park, and for whom McGown's Pass, where the Colonial Army retreated in September, 1776, was named) sold this tract to Edward Sanford sometime in the late-18th century. By 1811 one residential structure was depicted on the east side of Second Avenue between East 112th and East 111th Streets within the APE (Commissioners 1811). By 1820, two residential structures were observed between these two cross streets (Randel, Figure 4.3-4b). The first of these structures was shown at least half a block south of East 112th Street on an 1825 survey map when it was labeled as the "Brandish Home" (Spielmann & Brush 1881). The 1820 Randel Map also placed the fist dwelling on the east side of Second Avenue south of East 112th Street, partially within the road bed and partially within the designated city block.

The second structure was also part of the George Brandish tract and stood in the APE between East 112th and East 111th Streets, on the west side of Second Avenue (Randel 1820). By 1836, both these buildings were gone and the main Bradish homestead was indicated as closer to First Avenue, between East 111th and East 110th Streets, out of the APE (Colton 1836).

Like the above discussed Waldron property structures that fronted the Old Haerlem Road, the Bradish structures fronted a small road that once diagonally crossed Second Avenue from northwest to southeast between East 112th and East 111th Streets, originating from the Kings Bridge Road (Figure 4.3-4b). In addition, a rope walk (a long narrow structure where rope was made by twisting long fibers) is visible on the 1851 Dripps map, which extended west from Second Avenue along East 111th Street. However, it was not located within the APE.

Any potentially sensitive historical features associated with the dwellings discussed above, such as wells, privies, or cisterns, were probably situated directly around the houses.

Current surface elevations are 11.2' at East 112th Street and 10.6' at East 111th Street (Sanborn 2001). Theses elevations are unchanged since 1902 (Bromley). A boring taken on the east side of Second Avenue near East 112th Street reported two feet of fill over five feet of fine brown sand and silt. Beneath this was eight feet of fine to coarse brown sand, silt, and gravel, over 18' of fine to medium brown sand, silt, and gravel. These levels lay above five feet of decomposed limestone and fine brown sand and gravel. Bedrock was encountered at 38' below grade (Boring 2-99B, Raymond International, Inc. 1970).

A second boring taken on the east side of Second Avenue at East 111th Street indicates that 13.6' of fill laid over 15.4' of fine to medium brown sand, silt and gravel, 35' of fine brown/gray silty sand and varved clay, and five feet of fine to medium coarse brown sand, silt and gravel. Here bedrock was encountered at 69' below grade (Ibid.: Boring 2-99). A boring taken on the west side of Second Avenue between East 112th and East 111th Streets reported four feet of fill atop 14' of fine brown clayey sand, 11' of medium brown sand, gravel and clay, and 12.6' of varved clay-silt with sand, with no evidence of bedrock at 41.6' (Ibid.: Boring 2-99A). The water table was reached at 12' below grade at East 112th Street and 30.8' below grade at East 111th Street on the east side of Second Avenue, suggesting potential wells associated with the historic structure here may have extended at least this deep, and possibly deeper. The water table was encountered at 9' below grade in Boring 2-99A, taken on the west side of Second Avenue between East 112th and East 111th Streets, suggesting that wells may extend at least this deep.

Although pre-road construction elevations are unavailable, early maps depict this area as level farmland. In all likelihood, little grading would have been required in this area to accommodate the creation of cross streets. However, Second Avenue between East 111th and East 112th Streets was affected in the 1970s when a section of the Second Avenue Subway tunnel was built via cut-and-cover construction (personal communication, Christopher Taylor, SYSTRA 2002). A broad bank of ventilation shafts extends east

from the subway toward to the sidewalk along Second Avenue just north of the location of the main Bradish structure (DeLeuw Cather Co. 1972:Drawing 020914-C-2). The westernmost structure stood where the tunnel was constructed. Therefore, only the southeastern portion of the Second Avenue roadbed and adjacent sidewalk may be sensitive for historical period deposits associated with the Bradish structure, which was standing at least through 1820 (Commissioners 1807; Randel 1820). If indeed the bedrock is between 38' and 69' deep in this area and pockets of undisturbed soil may exist, then they must be considered potentially sensitive for early 19th century domestic features.

4. East 106th to East 105th Streets

Red House:

An early 19th century homestead or estate called the "Red House," which was actually two structures, was sited directly east of Second Avenue between East 106th Street and East 105th Street by 1811 and stood through at least 1851 (Bridges 1811; Colton 1836; Dripps 1851). In 1851 the structures were labeled as the Red House Hotel complex (Dripps 1851). The St. Georges Cricket Club maintained another structure and a large green, also east of Second Avenue, between these two crossroads and east of the Red House Hotel complex (Dripps 1851). Neither the Red House Hotel complex nor the Cricket Club fell within the path of the APE, as they were at least one-third of a block east of Second Avenue.

The only features associated with these structures which fell within the project corridor were an elaborate system of roads and drives which crossed Second Avenue (Colton 1836; Dripps 1851). These are not considered archaeologically visible due to their superficial nature. It is highly unlikely that other historical features associated with the Red House complex, such as wells, privies, or cisterns, were anywhere near the project corridor. As noted above, these types of features, necessary to utilize on a daily basis, would have been situated closer to the main buildings, out of the APE.

5. East 84th to East 83rd Streets

Historically this area was on the western boundary of Yorkville - a once rural village centered around East 84th Street and Third Avenue.

Hopper Property Structure

The east end of a building depicted on both the 1807-11 Commissioners map and the 1820 Randel map on the west side of Second Avenue, just south of its intersection with East 84th Street, extended into the APE (Figure 4.3-4c). The dwelling was situated at the southeastern base of a knoll, with another building at the top of the knoll immediately to its northwest, within the adjacent block and out of the APE. Both maps identify the house in the APE as the property of Hopper, and the Randel Map further indicates it belongs to "Yelles Hopper."

Though two buildings are visible in roughly the same locations on the 1851 Dripps map, the building formerly shown in the APE no longer extends into the roadbed, and both are positioned parallel to the avenue and street. It is likely that the former knoll was graded for the regulating and opening of Second Avenue and that these buildings were either later structures, or that the original buildings were moved out of the roadbed in anticipation of its opening (Figure 4.3-2c). The structures were clearly out of the APE on later maps (Dripps 1867).

In addition, the 1851 Dripps map shows the east end of a building extending into the APE at the northwest corner of East 84th Street and Second Avenue (Figure 4.3-2c). By 1867 this had also been removed (Dripps 1852; Dripps 1867).

Current surface elevations are 59.4' at East 84th Street and 56.2' at East 83rd Street. These elevations are exactly the same as elevations in 1902 (Bromley). Boring 2-68, taken between East 84th and East 83rd Streets on the east side of Second Avenue, contained five feet of fill directly over bedrock. Two soil boring logs were available for the area just south of East 85th Street on the west side of Second Avenue, and between East 83rd and East 82nd Streets, also on the west side of Second Avenue (Borings 2-69 and 2-67, Raymond International, Inc. 1970). Boring 2-69 reported only two feet of fill over bedrock and Boring 2-67 indicates that two feet of fill was found over 6.6' of medium coarse brown sand, clay, and gravel, where bedrock was encountered at 8.6' below grade.

Any potentially sensitive historical features associated with these dwellings such as wells, privies, or cisterns were probably situated directly around the houses. The relatively shallow depth of mapped subsurface utilities (WPA 1936) suggests that if any deep shaft features were associated with these structures, they may have remained, at least in part, undisturbed. However, the bedrock is extremely close to surface level in this area and little to no soils lie beneath fill, which is about only five feet at its deepest. Within this area of the APE many of the utility lines are buried within the bedrock and the installation of utility lines must have required drilling and blasting bedrock to accommodate them (Vollmer Associates 1997a: Drawing NS-04).

The subsurface conditions observed here suggests that potential historical resources in this area (e.g. wells, privies, and cisterns), which may have been associated with the Hopper house (which stood at least through 1820), or the structure formerly located on the north corner of intersection of East 84th Street and Second Avenue (which was standing in 1851), have probably been disturbed by the regulating and opening of Second Avenue (Commissioners 1807; Randel 1820; Dripps 1851).

This is the case for one of two reasons. First, if there were once natural soil levels over bedrock which could have accommodated subsurface shaft features, they have either been removed or so disturbed that they now appear as fill levels (as evidenced by the boring information presented above). Second, it is also possible that the shallow bedrock in this area actually prohibited the creation of these types of subsurface features, and thus they were sited elsewhere where there deep soil deposits permitted shafts. In either scenario, there is no potential to encounter historical deposits associated with these structures

within this APE. Therefore, there is no longer any sensitivity for any historical archaeological resources.

Block 1668

Cartographic History

Maerschalck 1754: This section of the APE lies north of the northern boundary of this map.

Montresor 1766: Same as Maerschalck 1754.

Ratzer 1766: Same as Maerschalck 1754.

Bridges 1803: This map only depicts Manhattan as far north as about East 16th Street. Second Avenue has not yet been laid out, but its approximate route appears to be farmland.

Commissioners 1811: Second Avenue and the present grid of proposed cross streets is shown superimposed over and around the block. However, the block is undeveloped.

Randel 1820: At this time the block is depicted as low-lying swamp or marsh, and is surrounded by wetlands. The eastern border of the block is inundated with water from the East River. A series of streams ran through the area and a small creek flows adjacent to the southwestern corner of the block, at the intersection of East 96th Street and Second Avenue.

Colton 1836: The APE is the same as the Randel 1820, except a stream or creek is depicted flowing from the East River in a southwesterly direction across the block

Dripps 1851: Same as Colton 1836, however, the stream flows south of the block.

Viele 1864: The predevelopment topography on this map shows the APE and surrounding area as marsh or wetlands

Dripps 1867: The APE is depicted as low-lying swamp or marsh area and is surrounded by wetlands.

Bromley 1879: The block is covered by a brick structure labeled as the "Second Avenue Railroad Depot" and is connected to the Second Avenue El by an assortment of tracks (Bromley 1879).

Robinson 1890-1893: The railroad depot covers the entire lot.

Sanborn 1896: The block is covered by buildings associated with the "Second Avenue Railroad Company" in 1896.

Sanborn 1911: The buildings on the block are labeled "Metropolitan Street Railway Company 1st and Second Division Carriage House in 1911.

Sanborn 1939: By 1939 the western third of the Block contains a small office building labeled "Second Avenue Railroad Corporation," while the rest of the building is used for "Auto Dead Storage," with an auto auction area covering the eastern quarter of the block.

Bromley 1943: The railroad depot is gone and the eastern half of the block is covered by the Machine and Metal Trades High School.

Sanborn 1951: The APE is unchanged from 1943.
Sanborn 2000: Current Sanborn maps show that a city park and playground was created over the western half of the block, which includes a fountain/wading pool and nearby comfort station near the East 96th Street and Second Avenue intersection.

Precontact Sensitivity

Prior to historical development Block 1668, which is situated between East 97th and East 96th Streets and First and Second Avenues, was depicted on maps as low-lying swamp or marsh. A series of streams ran through this area, which were surrounded by nothing but wetlands (Bridges 1811; Colton 1836; Dripps 1851; Dripps 1867).

The NYCLPC did not identify any potential precontact sites in this area, nor were any precontact sites reported nearby (New York City Landmarks Preservation Commission 1982). Early topographic maps show this area as being inundated or covered with marshland. While this area might have provided resources suitable for Native American exploitation, they prohibit the types of activities which are archaeologically visible, mainly extended habitation. Therefore, this APE is not considered potentially sensitive for precontact period resources.

Historical Sensitivity

As discussed above, Block 1668 was depicted on maps as low-lying swamp or marsh prior to historical development, and a series of streams ran through this area, which were surrounded by but wetlands. The environmental conditions precluded early historical development in the area. It was not until after 1867, well after Second Avenue was regulated and opened and the wetlands were filled, that this block experienced any development. The fill which was used to create this block was deposited sometime between 1867 and 1879 (Dripps 1867; Bromley 1879).

The late period of the fill, which post-dates 1867, does not indicate archaeological sensitivity. Furthermore, there were no references in any of the historical literature consulted suggesting that this area was filled with material from a single industrial, commercial, or residential source (Stokes 1929). Rather, the fill is most likely the collection of trash from an unknown source, together with materials excavated elsewhere. It is also possible that surrounding upland was leveled and graded to create the fill over this wet area. Therefore, the landfill in this APE lacks associative value and archaeological importance.

By 1879, Block 1668 (then Block 212) had been covered by a brick structure which functioned as the Second Avenue Railroad Depot and was connected to the Second Avenue El by an system of tracks (Bromley 1879). The depot was probably built in conjunction with the creation of the elevated railroad which was completed in 1879, and was used to service and store inactive locomotives. The structure covered the entire lot through at least 1939 (Robinson 1890-1893; Bromley 1902, 1927; Sanborn 1939). By

1943 the building had been removed, and the eastern half of the block was covered by the Machine and Metal Trades High School, which is still present.

Following the demolition of the Second Avenue Railroad Depot between 1939 and 1943, the western half of Block 1668 was left vacant for many years. Current Sanborn maps show that a city park and playground was created over the western half of the block, which includes a fountain/wading pool and nearby comfort station near the East 96th Street and Second Avenue intersection (Figure 4.3-1a). The creation of the park and related facilities, including the underground piping and drainage necessary to service them, has affected part of this APE.

Cartographic and documentary research concluded that the only potential resource which was present on this block was the Second Avenue Railroad Depot which stood between ca.1879 and ca.1940. The structure was removed by 1943. As part of the Route 9A Archaeological Study, which was completed in the early 1990s for the west side of Manhattan, the site of a former railroad car depot was identified near West 42nd Street as potentially archaeologically sensitive. An intensive study of the research potential of this resource type concluded that certain archaeological deposits from railroad complexes can provide information about changes in round house architecture, and changes in railroad technology, craftsmanship, and locomotive maintenance operations, to name a few (Louis Berger & Associates 1992:19). The archaeological visibility at railroad complexes potentially encompasses architectural features, machines, refuse deposits, and other such features. However, the archaeological evidence associated with structures such as car depots, whose primary purpose was to store and service the el cars, would most likely only possess the footprints of buildings and tracks (Ibid.:20). Therefore, they were judged to lack the potential to address meaningful research issues.

The nature of the structure at East 96th Street was such that it probably lacks archaeological visibility and potential importance. When facilities such as these were dismantled, machinery and mechanisms were removed for sale, recycling, or disposal. Once this building was emptied it would have been demolished, with any architectural refuse most likely left on site and buried. Therefore, any remains of this structure are likely architectural in nature, and do not have the potential to address any meaningful research issues. Pertinent research issues would be better addressed through the documentary record.

Documented disturbance to the former site of this structure includes the installation of a fountain/wading pool and the construction of a comfort station. Landscaping for the park itself would have also caused a degree of disturbance, the depths of which are unknown. Much of the APE has remained undisturbed. However, the archaeological visibility and potential significance of this resource type has been determined to be low, and, therefore, the APE is not sensitive for historical archaeological resources.

Block 1646

Cartographic History

Maerschalck 1754: This APE lies north of the northern boundary of this map.

Montresor 1766: Same as Maerschalck 1754.

Ratzer 1766: Same as Maerschalck 1754.

Bridges 1803: This map only depicts Manhattan as far north as about East 16th Street. Second Avenue has not yet been laid out, but its location is depicted as farmland.

Commissioners'1811: Second Avenue and the present grid of proposed cross streets is shown superimposed on and around the block. However, the block is undeveloped and a tributary of a stream flows south to north through the western portion.

Randel 1820: Most of the block is depicted as low-lying swamp or marsh, and is surrounded by wetlands on its north, east, and most of its south sides. A series of streams also ran through the area. One of these streams opens into a large swamp that extends north to south through the western portion of the block. Hills or bluffs overlook this water course at the western border of the block at Third Avenue. The map indicates that the property may be owned by Sampson Bensen at this time.

Colton 1836: The APE is unchanged from the Randel 1820, except the water course is depicted as only extending into the western half of the block, from the north.

Dripps 1851: Same as Randel 1820, however, the bluffs are not visible on the western border of the block.

Viele 1864: The predevelopment topography on this map shows the block and surrounding area as marsh or wetlands.

Dripps 1867: No development is shown within the APE. A stream crosses the block to the west of the shaft site.

Bromley 1879: Block 1646 is numbered (300) and lots are also numbered. Lots within the APE at 25 through 28 are shaded along Second Avenue. The rear yards are open. Lot 29 is shaded facing East 97th Street. The rear yard is empty. None of the other lots within the APE are developed.

Robinson 1885: Lots 25 through 38 are all depicted with buildings. Lots 25 through 28 are brick structures facing Second Avenue. They each have open rear yards. Lot 28½ is located across part of the former back yards of the buildings facing Second Avenue. It has a brick structure fronting East 97th Street. Lots 29 through 38 have masonry structures facing East 97th Street and open back yards. The Second Avenue Railroad Depot is across the street and the el still runs down Second Avenue.

Perris 1893: Lots 25 through 28 on Second Avenue each have four story brick structures with stores on the first floor. The building on Lot 28 (at the corner of Second Avenue and East 97th Street) is longer than

was depicted on the Robinson 1885 map. Now only a small alley runs behind the building to East 97th Street.
Lots 25-27 each have open rear yards.
Lots 28 1/2 through 38 on East 97th Street are unchanged from 1885, but are further described as brick four story dwellings. The buildings on Lot 28½ and Lot 29 have stores on the first floor.

Sanborn 1896: Fifteen lots, each with a four-story building, are visible within the APE in 1896. All the lots have vacant back yards.

Sanborn 1911: By 1911, a bakery abuts the south side of the 228 East 97th Street in the northwest corner of the yard. All of the buildings within the APE have basements and many are dwellings containing stores.

Sanborn 1939: In 1939, 220, 222, and 224 East 97th Street and 1875, 1877, and 1879 (a.k.a. 238 E. 97th St.) Second Avenue are vacant. The building at 218 East 97th Street is now a two-story auto shop with basement. The building located at 1879 (a.k.a. 238 E. 97th St.) Second Avenue is now a two story cement and brick building.

Sanborn 1951: By 1951, 226 East 97th Street is vacant. A lumber company is now visible at 234-238 East 97th Street and 1875-1879 Second Avenue. The building located at 1873 Second Avenue is now a tin shop.

Sanborn 1976: Buildings 216 through 228 East 97th Street are vacant by 1976.

Sanborn 2001: The lots within the APE remain fairly unchanged throughout the 20th century. An Islamic Center abuts the western border of the APE on current Sanborn maps. Only the lumber company, a two-story store fronting Second Avenue on Lot 28, two four-story buildings fronting East 97th Street on Lots 30 and 31, and a four-story store on Lot 25 fronting Second Avenue are now situated within the APE.

Precontact Sensitivity

Prior to historical development, most of Block 1646, which is situated between East 97th and East 96th Streets and Second and Third Avenues, was depicted on maps as low-lying swamp or marsh (Bridges 1811; Colton 1836; Dripps 1851; Viele 1864). Though the block was surrounded by wetlands on its north, east, and most of its south sides, hills and bluffs were located along the western border of the block at Third Avenue, overlooking a large water course that ran in a north-south direction through block 1646 (Randel 1820; Colton 1836).

The NYCLPC did not identify any potential precontact sites in this area, nor were any precontact sites reported nearby (New York City Landmarks Preservation Commission 1982). Early topographic maps show this area as being inundated or covered with marshland. However, the bluffs and upland area situated along the western border of the block may have been a strategic vantage point and may have also been an attractive habitation area. The large water course and marsh area below would also have provided abundant vegetation, in addition to wildlife and aquatic resources.

Soil borings taken along Second Avenue at East 102nd to East 96th Street reported levels of decomposed vegetation and organic materials and shells at depths ranging from 13' to 24' below grade (Borings 2-82 to 2-90, Raymond International, Inc. 1970). In addition, a soil boring taken on the east side of Second Avenue, just south of East 95th Street reported the presence of peat at from 26' to 29' below grade (Boring 2-82).

Site location models indicate that precontact habitation may have occurred in proximity to wetlands or marsh, but that these inundated areas may have predominantly been utilized for resource procurement. The presence of shell in all but two of the borings in this formerly marsh area (East 102nd to East 96th Streets) is suggestive of the precontact availability of shell fish. It is plausible that somewhere nearby a shell midden was left by former populations.

As discussed above, the elevated land west of proposed Shaft Site C, about a block outside the APE, would have probably been better suited for habitation. However, recent archaeological research in the New York Harbor area has concluded that there is the possibility for intact archeological contexts to exist beneath tidal marsh within this region (Thieme 2000:27). Therefore, based on the soil boring logs, this APE is considered potentially sensitive for precontact resources between approximately 13' to 29' below grade. The soil borings also indicate that these sensitive areas range in depth from two feet to as much as 14' beneath the current water table, suggesting that these resources may be inundated, but this does not negate their potential sensitivity

Historical Sensitivity

As discussed above, Block 1646 was depicted on maps as low-lying swamp or marsh prior to historical development, and was surrounded by wetlands, with the exception of the elevated area along the western border of the block. In addition, a large stream ran through the block. These environmental conditions precluded early historical development in the area. It was not until after 1867, well after Second Avenue was regulated and opened and the wetlands were filled, that this block experienced any development. The fill which was used to create this block was deposited sometime between 1867 and 1879 (Dripps 1867; Bromley 1879).

The late period of the fill, which post-dates 1867, does not indicate archaeological sensitivity. Furthermore, there were no references in any of the historical literature consulted suggesting that this area was filled with material from a single industrial, commercial, or residential source (Stokes 1929). Rather, the fill is most likely the collection of trash from an unknown source, together with materials excavated elsewhere. It is also possible that surrounding upland was leveled and graded to create the fill over this wet area. Therefore, the landfill in this APE lacks associative value and archaeological importance.

By 1879 some development had occurred on Block 1446 within the APE. Five lots had structures on them with open rear yards. The entire shaft site was developed by 1885, covered by four story brick or masonry structures with open rear yards. Two of the structures contained stores on the first floor. By 1896, the portion of Block 1646 within

the APE was covered with 15 lots with buildings. All had vacant rear yard areas. A bakery was opened in the rear yard area of Lot 32 on East 97th Street by 1911. Lots 34-36 on East 97th Street were vacant by 1939. Sometime after 1939, a lumber storage facility opened on the eastern side of the block within the APE, covering five of the lots (234 and 236 East 97th Street, and 1879 [a.k.a. 238 E. 97th St.], 1877, and 1875 Second Avenue). A two-story office building was also now located within the lumber company property on Lot 28 at the corner of East 97th Street and Second Avenue. In addition, Lot 33 on East 97th Street was now vacant.

By 1976, the building and bakery on Lot 32 had been removed, and Lots 37 and 38 on East 97th Street were also vacant. Currently, only the lumber company and four additional buildings remain standing within the APE. The buildings fronting East 97th Street on Lots 30 and 31 are four story dwellings with rear yard space and a four-story store is now on Lot 25 on Second Avenue. Lastly, a two-story store remains standing on Lot 28 at the corner of East 97th Street and Second Avenue (Figure 4.3-1a).

All of the development on Block 1646 post-dated its ca.1867 to 1879 filling in the late 19th century. By this date sewer and water lines had probably already been installed in Second Avenue. Water lines were extended throughout the city in the 1840s through 1870s, and in 1866 contracts were made to sewer this northern district of Manhattan (Goldman 1988:115). There is probably little, if no, potential for historic period shaft features to exist within the APE, and if they were present prior to the availability of sewer and water lines, they would represent only a minimal period of use. Therefore, the APE lacks historical archaeological potential.

Block 1440

Cartographic History

Maerschalck 1754: This APE lies north of the northern boundary of this map.

Montresor 1766: Same as Maerschalck 1754.

Ratzer 1766: Same as Maerschalck 1754.

Bridges 1803: This map only depicts Manhattan as far north as about East 16th Street. Second Avenue has not yet been laid out, but where it will lie is shown as farmland.

Commissioners'1811: Second Avenue and the present grid of proposed cross streets is shown superimposed on and around the block. However, the block is undeveloped.

Colton 1836: The block, situated on fairly elevated land is undeveloped at this time. A small stream runs through the northeast corner of the block. In addition, a long road or drive diagonally crosses the block west to east, at East 66th Street. The drive originates at Third Avenue, and ends at the East River shoreline at a private residence.

Dripps 1851: A structure is located at the northwest corner of the block near the Second Avenue and East 66th Street intersection, within the APE. The small unlabeled structure appears to lie partly on the block, and partly within the East 66th Street roadbed. Three additional

structures are visible within the block. However, they are all outside the APE.

Viele 1864: The predevelopment topography on this map shows the APE and surrounding land as somewhat elevated and hilly, with water courses running within the eastern half and the along the eastern border of the block.

Perris 1857-62: Five masonry two story buildings with shops were located along Second Avenue on the northwest corner of Block 1440 (former lots 49, 50, 50½, 51, 52) within the APE. Each had an open rear yard. No development is shown on the south side of the block. Lots 49½ and 49¼ on East 66th Street had framed two story buildings that were set back from the road leaving a narrow open area along the street. Each lot had an open rear lot.

Dripps 1867: This map shows shaded development along Second Avenue on what were then lots 49, 50, 50½, 51, and 52. Lots 49½ and 49¼ are shown as open on East 66th Street. Lot 4½ on East 65th Street is shown as developed, with and open yard in the APE. Farm lines on the map indicate that the area once belonged to the heirs of Peter Van Zandt.

Bromley 1879: The northeast corner of the block within the APE is still the only area developed. Lots 49, 50, 50½, 51, and 52 are still shown with buildings on Second Avenue with open rear yards. Lots 49½ and 49¼ are shown with buildings set back from East 66th Street. The rear yards of these lots are open. Lot 4½ on East 65th Street is shown as undeveloped.

Robinson 1885: All of the lots along Second Avenue are shown with brick buildings with open back yards except for Lot 49, which has a brick building and rear frame addition filling the lot. Lots 49½ and 49¼ are still shown containing buildings (frame) set back from East 66th Street, leaving an open area between the building and the street. The rear yards of these lots are open. Lot 4½ on East 65th Street is depicted as having a brick building and the rear yard is undeveloped.

Bromley 1916: This map shows the same buildings on Second Avenue with Lots 49, 50, 50½, 51, and 52 having two story structures and Lots 1-4 having five story buildings. Lots 49½ and 49¼ are still the same and are identified as two story structures. Lot 4½ on East 65th Street is depicted as a five story structure.

Bromley 1925: The APE is unchanged from Bromley 1916.

Bromley 1949: The APE is unchanged from Bromley 1916.

Hyde 1950: The APE is unchanged from Bromley 1916.

Bromley 1955: The map shows the newly configured Lots 49 and 51 in the APE. Lot 49 includes former Lots 49, 50, and 50½. Lot 51 includes former Lots 49¼, 49½, 51, part of 52, and the rear sections of Lots 3 and 4 (on Second Avenue), and the rear half of Lot 4½ (on East 65th Street). Lot 49 (formerly Lots 49 and 50) has a building with a basement. The Beekman Theater covers all of Lot 51.

Bromley 2001: The APE is unchanged from Bromley 1955, except it indicates that the Beekman Theater is a two story building.

Sanborn 2001: The block within the APE is covered by two structures. Lot 49, located at the corner of Second Avenue and East 66th Street, is a one story building with basement, and Lot 51 is the Beekman Theater, a two story structure with basement.

Precontact Sensitivity

Prior to historical development, most of Block 1440, which is situated between East 66th and East 65th Streets and Second and First Avenues, was depicted on maps as a well-drained upland area that gradually sloped towards the east, dropping off more sharply adjacent to a tributary of a stream that ran along its eastern border and through the northeastern corner of the block (Bridges 1811; Colton 1836; Viele 1874). A small stream also crossed Block 1439, between East 64th and East 63rd Streets, ending just south of Block 1440 between Second and First Avenues, in the vicinity of East 65th Street (Colton 1836; Viele 1874).

The NYCLPC has flagged the areas surrounding the stream that runs through Block 1439, between East 64th and East 63rd Streets, for potential precontact sensitivity. This potentially sensitive area extends north into the southeastern corner of Block 1440 (NYCLPC 1982). Though the portion of the block within the APE is north and west of the area identified as potentially sensitive, it is situated on elevated land in proximity to a fresh water source. This would have provided both a good vantage point and would also have been an attractive area for habitation. The abundance of aquatic resources, in addition to the availability of wildlife and vegetation, would have made this area even more attractive for resource procurement.

Although this area was identified as potentially sensitive, soil boring logs suggest that any potentially sensitive strata have been disturbed. Soil borings reported that bedrock was encountered at 7' below grade at East 65th Street, where it was questionable if any natural soils existed between the fill and bedrock (Boring 2-45, Raymond International, Inc. 1970). In addition, eight feet of fill was encountered directly over bedrock at East 66th Street (Ibid., Boring 2-46). This suggests that most of the archaeologically sensitive area observed on historic maps has either been leveled with shallow layers of fill added above it, or that the precontact living surface has been completely disturbed. Therefore, the portion of Block 1440 that falls within this section of the APE is not considered potentially sensitive for precontact resources.

Historical Sensitivity

As discussed above, prior to historical development most of Block 1440, which is situated between East 66th and East 65th Streets and Second and First Avenues, was depicted on maps as a well-drained upland area that gradually sloped towards the east, dropping off more sharply, adjacent to a tributary of a stream that ran along its eastern border and through the northeastern corner of the block (Bridges 1811; Colton 1836;

Viele 1874). Though a small road or drive traversed the northern portion of the block from west to east, the block remained undeveloped at least through 1836 (Colton 1836).

By 1851, a structure was located in the APE at northwest corner of the block near the Second Avenue and East 66th Street intersection. The structure actually straddled the edge of Block 1440 and the East 66th Street roadbed. Three additional structures, all outside the APE, existed on Block 1440.

By 1857 seven two story buildings stood in the APE. Two had shops and all had open rear yards. In addition, a narrow open area was located along East 66th Street, in front of two of the buildings. By 1885, all the lots along Second Avenue within the APE were brick buildings with open back yards, except for one lot which was covered by framed addition. The lots along East 66th Street retained their open rear yard areas and two of the lots fronting East 66th Street still had an open area in front of them (Sanborn 1896; Figure 4.3-5b). A combination of two and five story buildings existed on the block within the APE by 1916. While the APE remained relatively unchanged for the first quarter of the 20th century, by 1955, the lots were reconfigured and only two buildings, a one story structure with basement and the Beekman Theater, were built. Current Sanborn maps indicate that the block has remained unchanged and that the Beekman Theater is a two story building (Figure 4.3-1b).

There is the potential for historical period shaft deposits from features such as wells, privies, or cisterns were vacant yards lay on former Lots 4½, 49¼, 49½, 50½, 51, 52, and Lots 1 through 4. While the basement beneath the building on modern Lot 49, undoubtedly effected at least ten feet below grade, the theater on Lot 50 may have sealed in potential historic shaft deposits.

As discussed in the Precontact Sensitivity section above, a soil boring taken at East 66th Street reported that bedrock was encountered at eight feet below grade. Further, it was reported that "no water [was reached] after completion" (Boring 2-46, Raymond International Inc.). This may have made it difficult to create subsurface features such as wells or cisterns in the northern portion of the block within the APE. However, a soil boring taken at East 65th Street reported that the water table was reached at 17' below grade and bedrock was encountered at 20' below grade (Ibid., Boring 2-45). It may be possible that archaeological shaft deposits may be at least as deep as 17' below grade toward the southern portion of the block within the APE where the Beekman Theater now stands.

4.3.7.2 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 ~~21~~ 19

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 SAPO
4064 X		1- A061.01.1271 X	was that NYAC did a
7248 X		~~2- A061.01.0014 D03~~	survey in the 1970's
		3- A061.01.0623 X D023	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 @ SHPO		A061.01.01286 X	
		A061.01.0541 X	
		A061.01.00542 X	
		A061.01.09531 X	

ATIONAL REGISTER E. GIBLE and LISTED ___X___ Eligible ___ ___ Listed ___ ___X___ Building Inventory

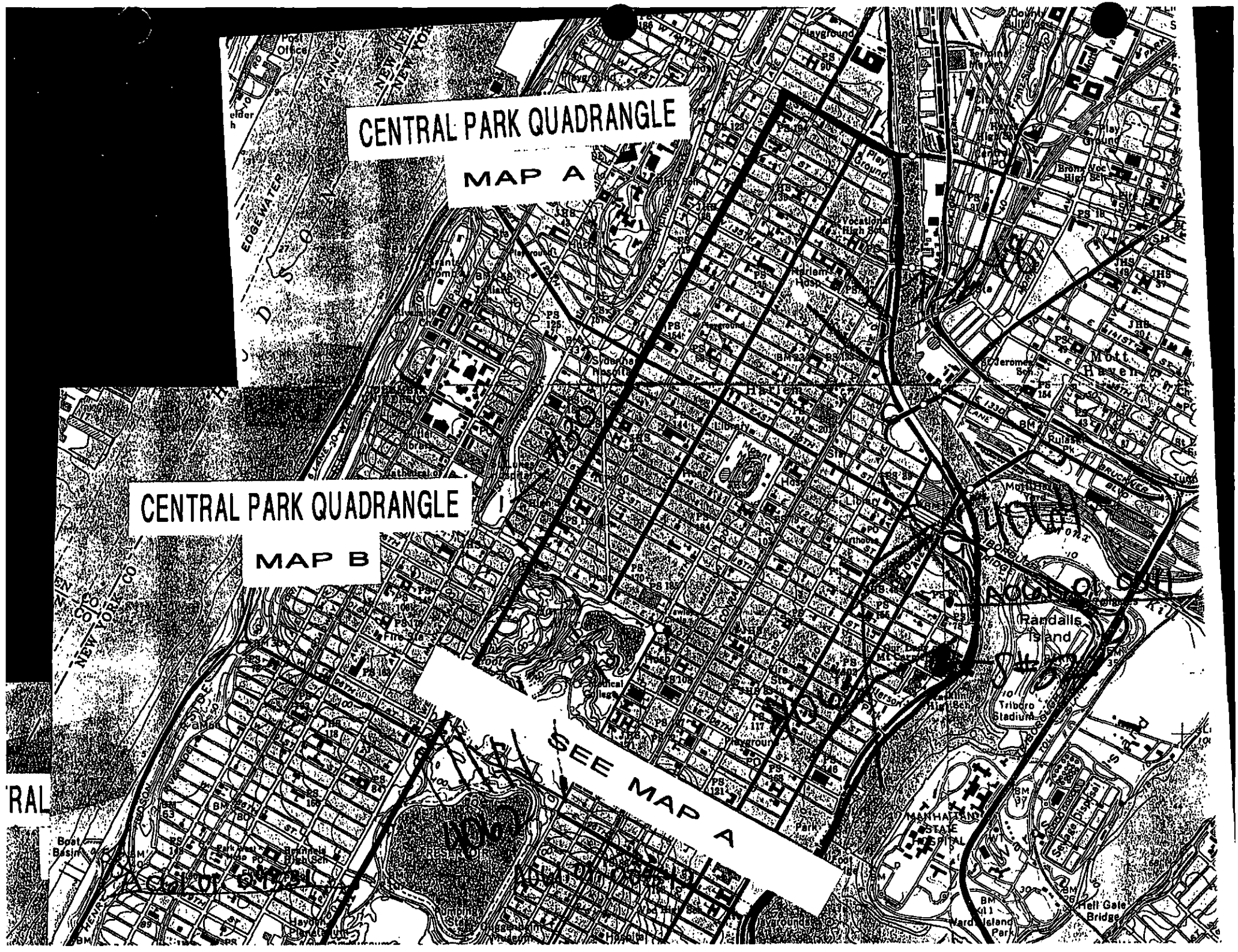
ilding Inventory #	NR Status	Form Copied	Property Description	Roads Checked
06101.000604	NRL	✓	South Street Seaport Historic District 209 Water Street	

EVIOUS SURVEYS <17 previous surveys w/in Radius>

8 Westside Highway Program – 1983
William O. Hersey – 1963 Castle Clinton at the Battery
Broad Street Financial Center Greenhouse January 1985
X
64th Pearl Street (17th C. Landfill) Arnold Pickman & Nan Rothschild May 1981
Stone Street Historic District 9/17/81 Nye Landmarks Pres. Comm. Tracker
9 Barclays Bank Site – 100 Water St. Berger – 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block Kardon & Larrabee Aug 1971

5 209 Water St. – Schuyler – ? Date
East River Roads – New York Harbor Collection Kardon & Larrabee October 1977
10 Sheridan Square – 1983 – Rutgers University
Lower Eastside Service Center – Louis Berger Jan '98
27 750 Sixth Ave. HPI – February 1998
Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1989 / December 1989
32 East River Plaza HPI Sept. 1998
Stone Street Historic District NYC Landmark Pres. Comm. February 1998

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


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A
Randalls Island
Triboro Stadium
Harlem
Mount Morris Park
Manhattanville College
Riverside Park
Boat Basin
Grant's Tomb
Post Office
Playground
Harlem Hosp
Library
Mount Morris Park
Mount Hall Yard
Manhattan State Hospital
Hell Gate Bridge
Ward Island Park
Sewage Disposal
Planetarium
Fire Sta
Park
Pool
Tennis Courts
Ball Fields
Bridge
Tunnel
Ferry
Subway
Elevated
Bus Line
Trolley Line
Railroad
Tower
Stadium
Hospital
Church
Cemetery
Golf Course
Boundary
Trail
Lighthouse
Monument
Ruins
Windmill
Dam
Canal
Lock
Pier
Wharf
Jetty
Breakwater
Seawall
Rock
Reef
Shoal
Wreck
Buoy
Beacon
Light
Fog Signal
Radio Tower
Radio Station
Television Station
Microwave Tower
Water Tower
Oil Tank
Gas Tank
Smokestack
Factory
Mine
Quarry
Gravel Pit
Sand Pit
Clay Pit
Landfill
Dump
Airport
Heliport
Runway
Taxiway
Apron
Hangar
Control Tower
Terminal
Parking Lot
Garage
Service Station
Rest Area
Campground
Picnic Area
Golf Course
Tennis Court
Swimming Pool
Ice Rink
Skating Rink
Ski Area
Ski Jump
Toboggan Run
Chair Lift
Tow
Trail
Bridle Path
Foot Path
Ski Trail
Snowmobile Trail
Cross-Country Ski Trail
Snowshoe Trail
Dog Sled Trail
Horse Trail
Bicycle Trail
Motorcycle Trail
Four-Wheel Drive Trail
ATV Trail
Off-Road Vehicle Trail
Hiking Trail
Backpacking Trail
Mountain Climbing Trail
Rock Climbing Trail
Ice Climbing Trail
Canoeing Trail
Kayaking Trail
Rafting Trail
Fishing Trail
Hunting Trail
Trapping Trail
Wildlife Viewing Trail
Bird Watching Trail
Nature Trail
Interpretive Trail
Historic Trail
Scenic Trail
Recreational Trail
Multi-Use Trail
Multi-Use Recreational Trail
Multi-Use Scenic Trail
Multi-Use Historic Trail
Multi-Use Nature Trail
Multi-Use Interpretive Trail
Multi-Use Wildlife Viewing Trail
Multi-Use Bird Watching Trail
Multi-Use Fishing Trail
Multi-Use Hunting Trail
Multi-Use Trapping Trail
Multi-Use Canoeing Trail
Multi-Use Kayaking Trail
Multi-Use Rafting Trail
Multi-Use Mountain Climbing Trail
Multi-Use Rock Climbing Trail
Multi-Use Ice Climbing Trail
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Multi-Use Hunting Trail
Multi-Use Trapping Trail
Multi-Use Canoeing Trail
Multi-Use Kayaking Trail
Multi-Use Rafting Trail
Multi-Use Mountain Climbing Trail
Multi-Use Rock Climbing Trail
Multi-Use Ice Climbing Trail
Multi-Use Backpacking Trail


SEE MAP C
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DEPTH CURVES
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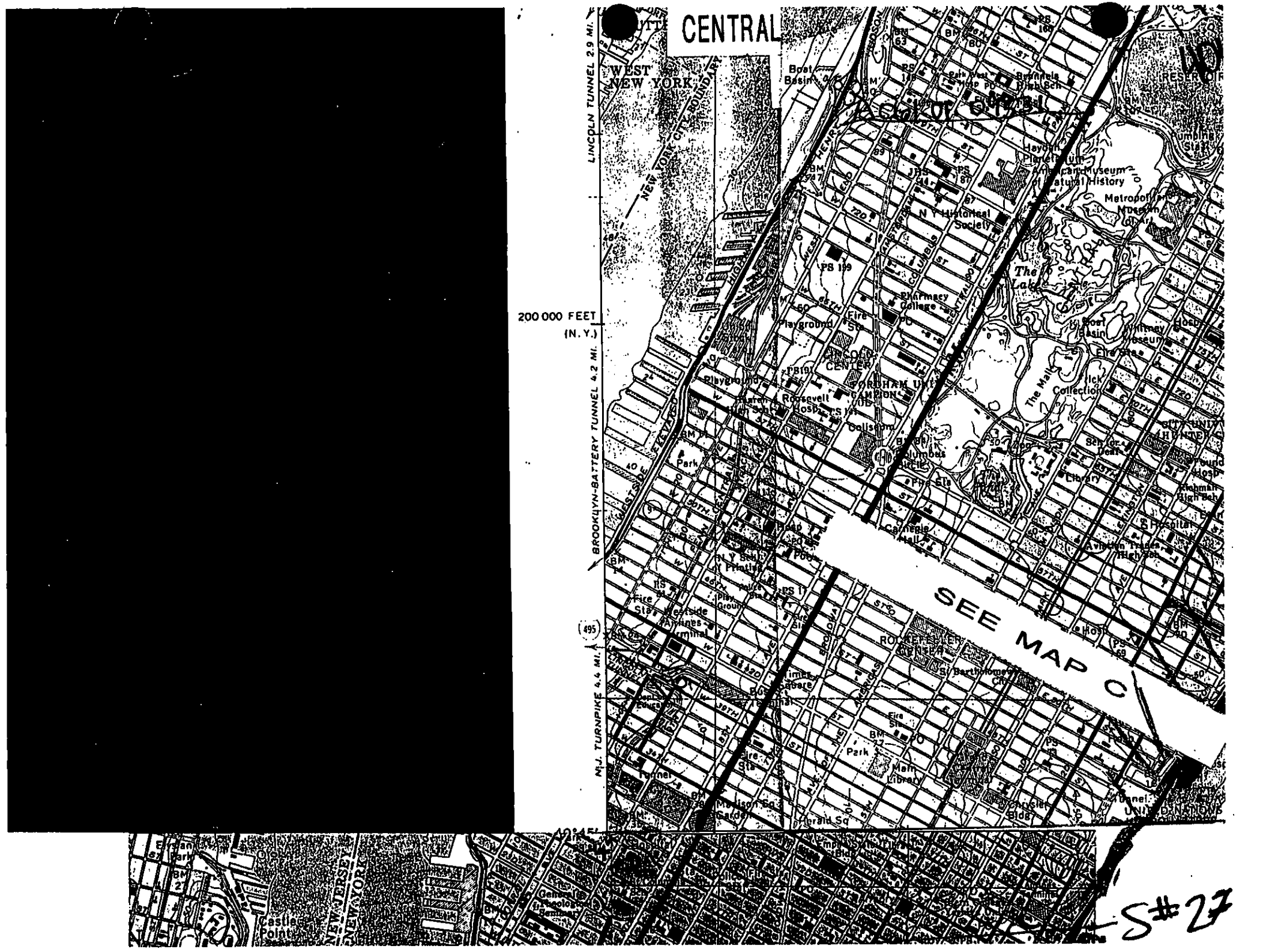
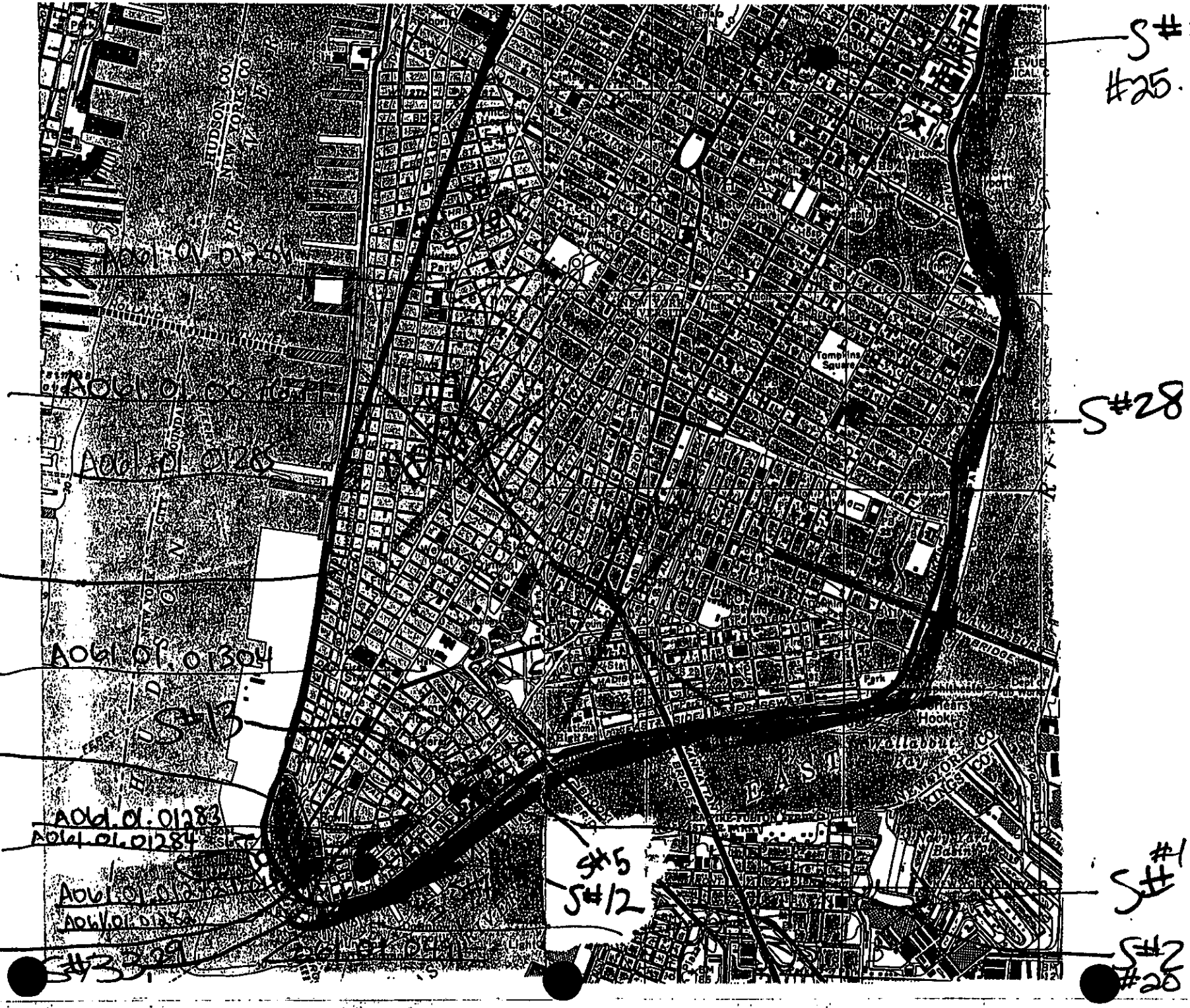
OLDER DESCRIBING


CENTRAL
WEST NEW YORK
NEW YORK CITY BOUNDARY
LINCOLN TUNNEL 2.9 MI.
BROOKLYN-BATTERY TUNNEL 4.2 MI.
N.J. TURNPIKE 4.4 MI.
200 000 FEET
(N.Y.)
Boat Basin
Hayden Planetarium
American Museum of Natural History
Metropolitan Museum of Art
N Y Historical Society
PS 199
Pharmacy College
Playground
Fire Sta
LINCOLN CENTER
FORDHAM UNIV CAMPION
Roosevelt Hosp
Coliseum
Columbus Circle
Pire Sta
Carnegie Hall
The Lake
Boat Basin
Whitney Museum
Frick Collection
The Mall
Library
Hospital
Aviation Trades High Sch
Park
Westside Airlines Terminal
Play Ground
Times Square
Main Library
Chrysler Bldg
Herald Sq
Madison Sq Garden
Tunnel
SEE MAP C
Castle Point
NEW JERSEY
NEW YORK
S#27


S#
#25.
S#28
S#8
A061.01.01304
S#13
Area of S#4
(Castle Clinton)
A061.01.01283
A061.01.01284
S#5
S#12
S#1
#15
S#2
#20
Tompkins Square
Park
Wallabout Bay
Navy Yard Basin
HUDSON CO
NEW YORK CO
KINGS CO
EAST

ARCHEOLOGICAL SITE INVENTORY FORM

DIVISION FOR HISTORIC PRESERVATION
NEW YORK STATE PARKS AND RECREATION
ALBANY, NEW YORK
518 474-0479

FOR OFFICE USE ONLY

UNIQUE SITE NO. A061-01-0542
QUAD. _____
ST[illegible]
N

Prehistoric Sites

REPORTED BY: Susan Kardas

YOUR ADDRESS: _____

ORGANIZATION (if any): NYA

DATE: 6/1/77

* * * * * * * * * * * * * * * * * * *

1. SITE NAME: Rechewanis / Konac
2. COUNTY: New York TOWN/CITY: N
3. LOCATION: Harlem Kill to 91st St [illegible] to Hellgate Bay on East River
4. PRESENT OWNER: _____
5. OWNER'S ADDRESS: _____
6. DESCRIPTION, CONDITION, EVIDENCE OF SITE:

☐ STANDING RUINS ☐ CELLAR HOLE WITH WALLS

☐ SURFACE TRACES VISIBLE ☐ WALLS WITHOUT CELLAR HOLE

☐ UNDER CULTIVATION ☐ EROSION ☐ UNDERWATER

☐ NO VISIBLE EVIDENCE ☐ OTHER _____

7. COLLECTION OF MATERIAL FROM SITE:

☐ SURFACE HUNTING BY WHOM _____ DATE _____

☐ TESTING BY WHOM _____ DATE _____

☐ EXCAVATION BY WHOM _____ DATE _____

☐ NONE

PRESENT REPOSITORY OF MATERIALS: _____

_____

8. PREHISTORIC CULTURAL AFFILIATION OR DATE: Historic Aboriginal
Occupied until 1669

9. HISTORICAL DOCUMENTATION OF SITE:

Bolton 1922 : 221

10. POSSIBILITY OF SITE DESTRUCTION OR DISTURBANCE:

11. REMARKS:

12. MAP LOCATION

7 ½ MINUTE SERIES QUAD. NAME: Central Park

15 MINUTE SERIES QUAD. NAME: Harlem (SW/4)

U.S.G.S. COORDINATES: 18T E. 88500 N15350

D.O.T. COORDINATES: (if known) _____

ATTACH SKETCH, TRACING OR COPY OF MAP

SOURCE OF MAP:

13. PHOTOGRAPHS (optional)

(ATTACH)

ARCHEOLOGICAL SITE INVENTORY FORM

DIVISION FOR HISTORIC PRESERVATION
NEW YORK STATE PARKS AND RECREATION
ALBANY, NEW YORK
518 474-0479

FOR OFFICE USE ONLY
UNIQUE SITE NO. A061-01-0542
QUAD. _____
SERIES _____
NEG. NO. _____

REPORTED BY: _____

YOUR ADDRESS: _____ TELEPHONE: _____

ORGANIZATION (if any): _____

DATE: _____

* *

1. SITE NAME: Renhewanis/Konaande Kongh

2. COUNTY: New York TOWN/CITY: New York VILLAGE: _____

3. LOCATION: Harlem Kill to 91st St. as far west as 5th Ave, to Hallgate Bay on East River

4. PRESENT OWNER: _____

5. OWNER'S ADDRESS: _____

6. DESCRIPTION, CONDITION, EVIDENCE OF SITE:

☐ STANDING RUINS ☐ CELLAR HOLE WITH WALLS

☐ SURFACE TRACES VISIBLE ☐ WALLS WITHOUT CELLAR HOLE

☐ UNDER CULTIVATION ☐ EROSION ☐ UNDERWATER

☐ NO VISIBLE EVIDENCE ☐ OTHER _____

7. COLLECTION OF MATERIAL FROM SITE:

☐ SURFACE HUNTING BY WHOM _____ DATE _____

☐ TESTING BY WHOM _____ DATE _____

☐ EXCAVATION BY WHOM _____ DATE _____

☐ NONE

PRESENT REPOSITORY OF MATERIALS: _____

8. PREHISTORIC CULTURAL AFFILIATION OR DATE: Historic Aboriginal
Occupied until 1669

9. HISTORICAL DOCUMENTATION OF SITE:

Bolton, R.P. 1922. "Indian Paths of the Great Metropolis" Indian Notes and Monographs, Mi[illegible]
Heye Foundation. p.221

10. POSSIBILITY OF SITE DESTRUCTION OR DISTURBANCE:

11. REMARKS:

12. MAP LOCATION

7 ½ MINUTE SERIES QUAD. NAME: Central Park

15 MINUTE SERIES QUAD. NAME: Harlem (SW/4)

U.S.G.S. COORDINATES: 18 + E98,300 N15350

D.O.T. COORDINATES: (if known) _____

ATTACH SKETCH, TRACING OR COPY OF MAP

SOURCE OF MAP:

13. PHOTOGRAPHS *(optional)*

(ATTACH)

INSTRUCTIONS: Write on hard surface with 2H Pencil. Fill in or circle where appropriate. Keep top two copies (white and yellow) and send third copy (pink) to the NYAC Central Office. Coding space is provided on the right margin. Take pad apart at top first.

NEW YORK ARCHAEOLOGICAL COUNCIL — SITE SURVEY FORM

Page

NYAC SITE NO: Location Classification: Unrestricted Restricted

SITE NAME

Official | Institution

NYSAA

Other: RECHEWANIS / KONAANDE KONAH | Collector

PERIOD

Paleo. | Archaic: E M L | Transitional | Woodland: E M L | (Historic)

CULTURE(S)

OCCUPIED BY RECHEWAC; CHIEF OF THE RECKAGAWAWANC THIS PEOPLE UNTIL 1669 (VILLAGE OF KONAANDE KONAH)

SITE TYPE

Stray Find	Pictograph	Kill Site	Cemetery	Camp	Commercial/Factory
Cave	Quarry	Shell Midden	Ossuary	Cabin/House	Government
Rockshelter	Workshop	Mound	Family Plot	(Village)	Military

OTHER:

LOCATION

State: NEW YORK | Township

County: NEW YORK COUNTY | Lot

Town | Range

MAP

U.S.G.S. 7½ Quad Name	No.	Quarter	Coordinates
CENTRAL PARK	17	NW (SW) NE SE	18T E88500 N15350

PROPERTY

	Owner	Tenant	Previous Owner/Tenant
Name:			
Address:	HARLEM KILL TO 91ST ST. AS FAR WEST AS HELLGATE BAY ON EAST RIVER		FIFTH AVE, TO
Phone:	( )	( )	( )

SITE INVESTIGATION

	Surface Collection	Testing	Excavation
Who:			
Project			
Dates			

COLLECTIONS

Who:

Cat. Nos.

PHOTOS

Who

B & W

Color

Slides

I-R

REFERENCES

Pub: BOLTON 1922 :221

Unpub:

Original Surveyor

ARCHEOLOGICAL SITE INVENTORY FORM

DIVISION FOR HISTORIC PRESERVATION
NEW YORK STATE PARKS AND RECREATION
ALBANY, NEW YORK
518 474-0479

FOR OFFICE USE ONLY
UNIQUE SITE NO. A061-01-0541
QUAD.
SERIES
NEG. NO.

REPORTED BY: Susan Kardas

YOUR ADDRESS: TELEPHONE:

ORGANIZATION (if any): NYAC

DATE: 6/1/77

* *

1. SITE NAME: Conykeekst
2. COUNTY: New York TOWN/CITY: NYC VILLAGE:
3. LOCATION: 121st St, on the line of Pleasant Ave. (Ave A)
4. PRESENT OWNER:
5. OWNER'S ADDRESS:
6. DESCRIPTION, CONDITION, EVIDENCE OF SITE:

☐ STANDING RUINS ☐ CELLAR HOLE WITH WALLS
☐ SURFACE TRACES VISIBLE ☐ WALLS WITHOUT CELLAR HOLE
☐ UNDER CULTIVATION ☐ EROSION ☐ UNDERWATER
☐ NO VISIBLE EVIDENCE ☒ OTHER Shell midden

7. COLLECTION OF MATERIAL FROM SITE:

☐ SURFACE HUNTING BY WHOM DATE
☐ TESTING BY WHOM DATE
☒ EXCAVATION BY WHOM James Riker DATE 1855
☐ NONE

PRESENT REPOSITORY OF MATERIALS: Unknown

8. PREHISTORIC CULTURAL AFFILIATION OR DATE: Unknown

9. HISTORICAL DOCUMENTATION OF SITE:
Bolton 1922:235
Finch 1909:65

10. POSSIBILITY OF SITE DESTRUCTION OR DISTURBANCE:

11. REMARKS:

12. MAP LOCATION

7 ½ MINUTE SERIES QUAD. NAME: Central Park

15 MINUTE SERIES QUAD. NAME: Harlem (SW/4)

U.S.G.S. COORDINATES: 18T E9050 N16750

D.O.T. COORDINATES: (if known) _____

ATTACH SKETCH, TRACING OR COPY OF MAP

SOURCE OF MAP:

13. PHOTOGRAPHS (optional)

(ATTACH)

copies (white and yellow) and send third copy (pink) to the NYAC Central Office. Coding space is provided on the right margin. Take pad apart at top first.

NEW YORK ARCHAEOLOGICAL COUNCIL — SITE SURVEY FORM

Page

NYAC SITE NO:

Location Classification: Unrestricted / Restricted

SITE NAME

Official:

Other: CONYKEEKST

Institution: NYSAA

Collector:

PERIOD / CULTURE(S)

Paleo. | Archaic: E M L | Transitional | Woodland: E M L | Historic

Unknown Prehistoric

SITE TYPE

Stray Find	Pictograph	Kill Site	Cemetery	Camp	Commercial/Factory
Cave	Quarry	Shell Midden	Ossuary	Cabin/House	Government
Rockshelter	Workshop	Mound	Family Plot	Village	Military

OTHER:

LOCATION

State: NEW YORK

County: NEW YORK County

Town:

Township:

Lot:

Range:

MAP

U.S.G.S. 7½ Quad Name	No.	Quarter	Coordinates
CENTRAL PARK	13	NW SW NE (SE)	18T E9050 N16750

PROPERTY

	Owner	Tenant	Previous Owner/Tenant
Name:			
Address:	121st on the Line	on Pleasant Ave.	(Ave A)
Phone:	( )	( )	( )

SITE INVESTIGATION

	Surface Collection	Testing	Excavation
Who:	James Riker		
Project	CELLAR EXCAVATION		SHELL HEAP, and deposit of PROJECTILE Points
Dates	1855		

COLLECTIONS

Who:

Cat. Nos.: unknown

PHOTOS

Who

B & W

Color

Slides

I-R

REFERENCES

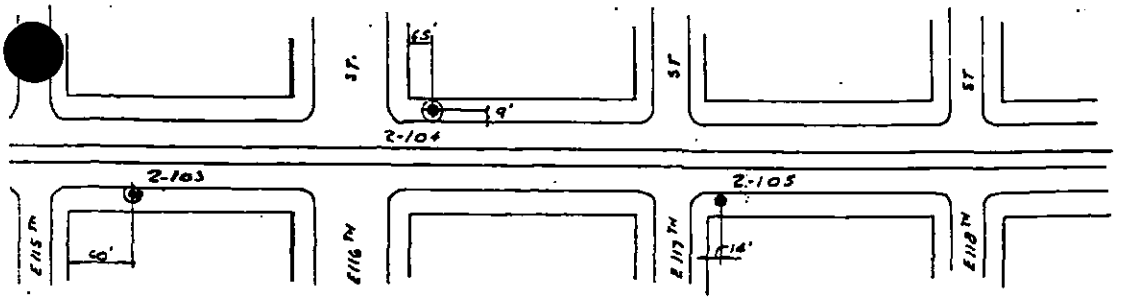
Pub: Bolton 1922: 235 (#98)

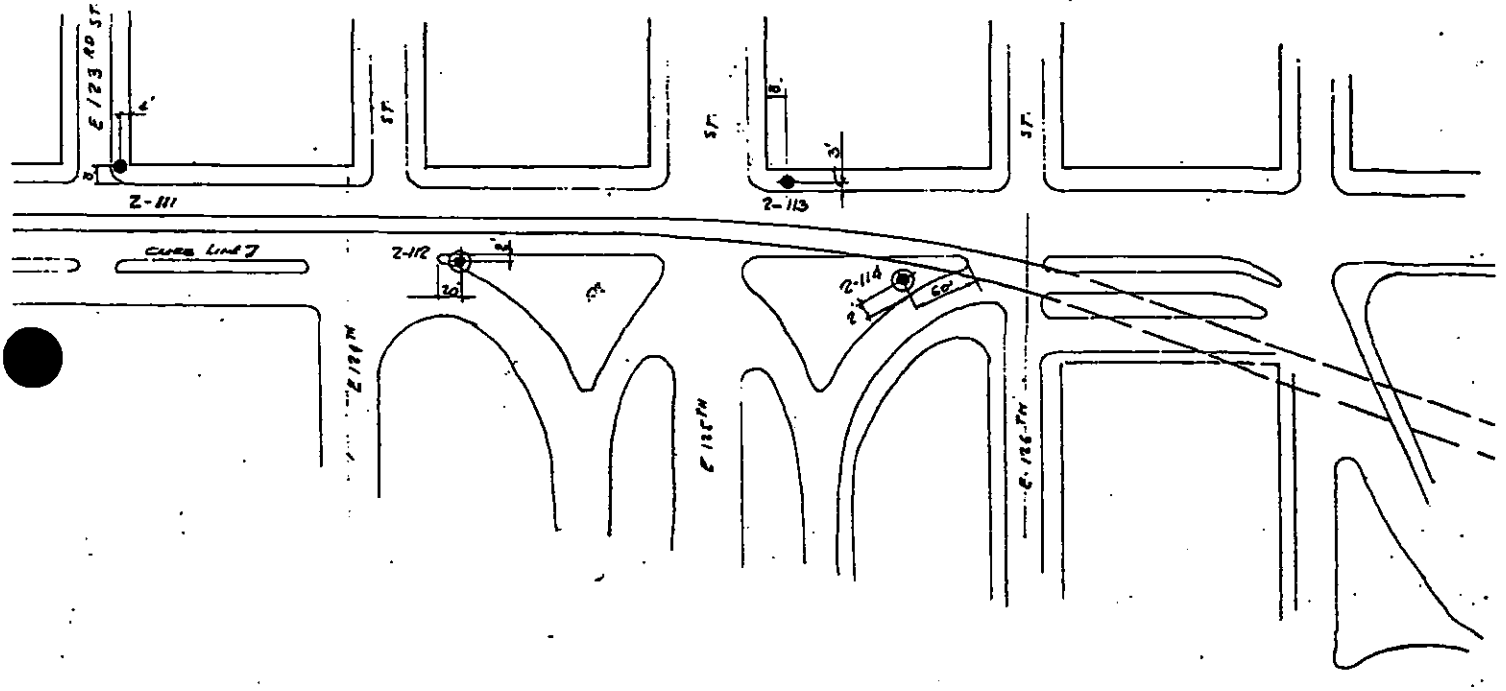
Unpub: FINCH 1909: 65

Original Reporter:

Date:

4.3.7.3 Soil Boring Logs





READ OF
2-10.

This information is made available to the bidder so that he may form his own judgement thereon and without any guarantee on the part of the City or the Authority as to their completeness or correctness. It is presented in good faith, but is not intended as a substitute for personal investigations, interpretations or judgment of the bidder.

RAYMOND INTERNATIONAL

TEST BORING REPO

NEW YORK CITY TRANSIT SYST.

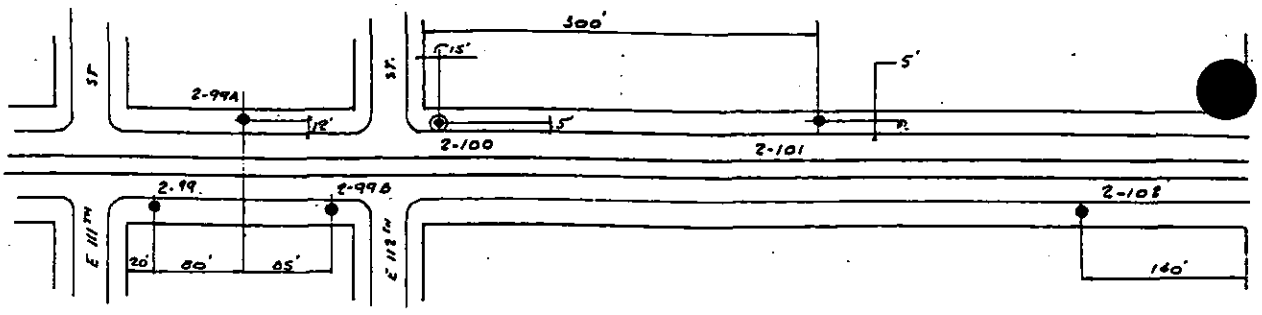
SECOND AVE. FROM EAST 34
STREET TO EAST 125TH STREE

BORING LOCATION PLAN
ROUTE 132-A.

DRAWN BY ... DATE 2-5-70
CHECKED BY ... SCALE 1"=80'

CONTRACT A&D.

JOB NO. 15433



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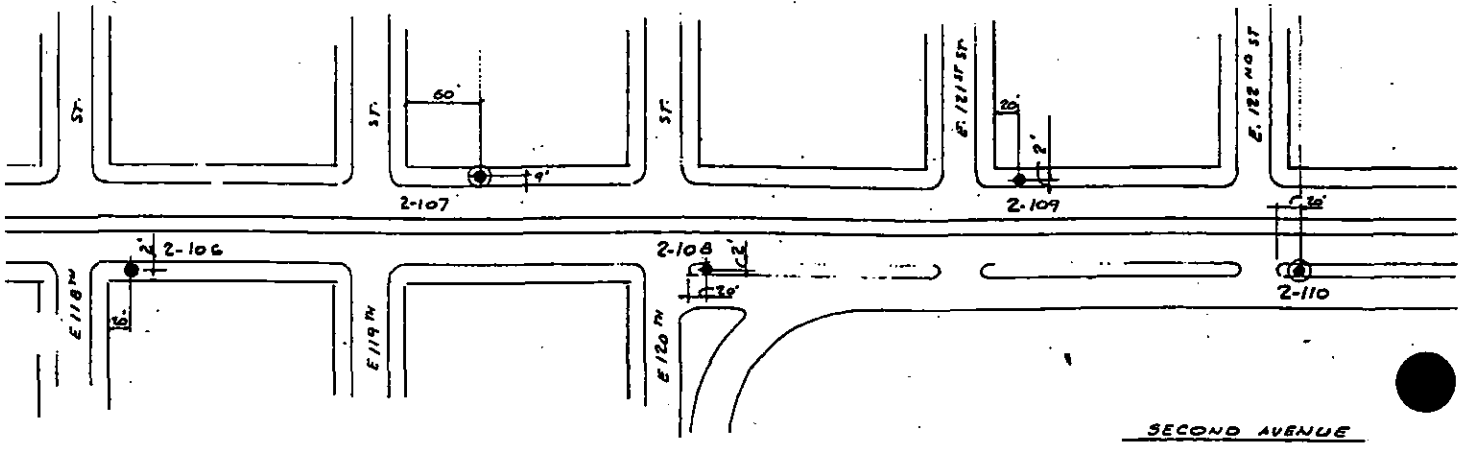
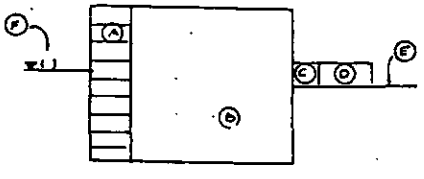


SECOND AVENUE

LEGEND:



A- NUMBER OF BLOWS OF A 300# HAMMER FALLING 18" REQUIRED TO DRIVE 2½'d CASING EACH 12"

B- STRATA DESCRIPTION.

C- SAMPLE NO

D- NUMBER OF BLOWS OF A 140# HAMMER FALLING 30" REQUIRED TO DRIVE 2'ϕ SPLIT SPOON EACH 6"

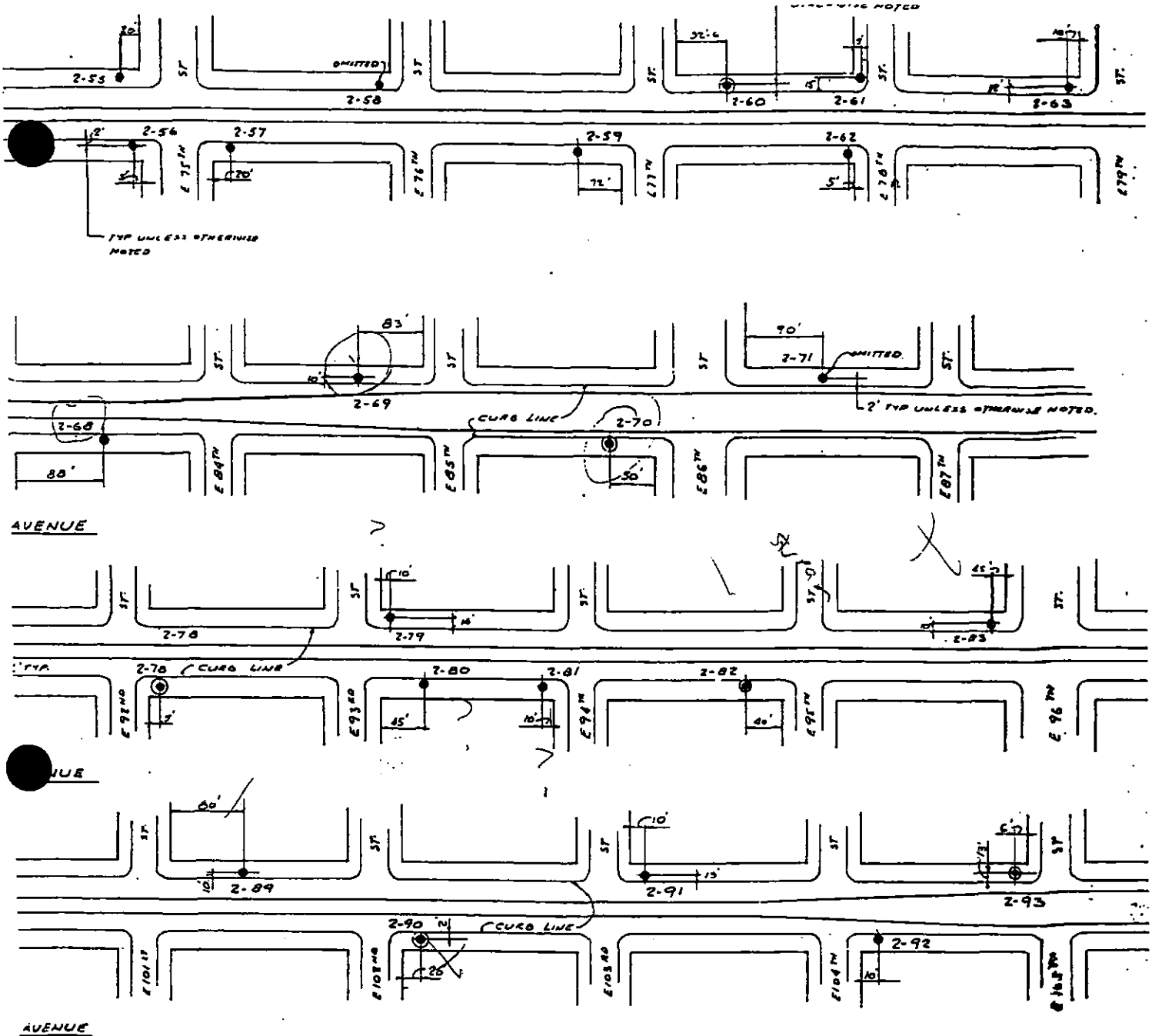
E- DEPTH AT END OF SAMPLE DRIVE

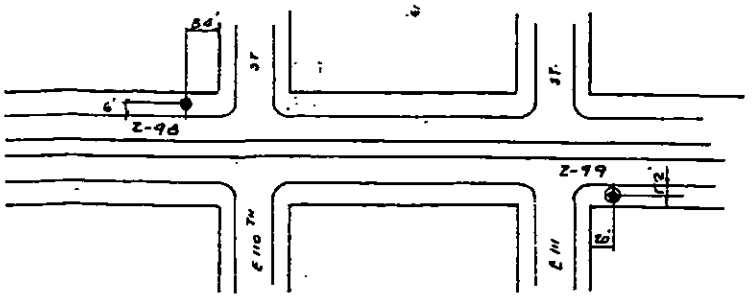
F- WATER LEVEL ( ) HOURS AFTER COMPLETION.

GENERAL NOTES:

1. ALL ELEVATIONS SHALL BE REFERRED TO TRANSIT AUTHORITY DATUM WHERE ELEVATION 100.00 IS 2.675 FT. ABOVE MEAN SEA LEVEL AT SANDY HOOK, U.S. COAST AND GEODETIC SURVEY DATUM.
2. LOCATION OF BORINGS SHOWN THUS. ✛
   LOCATION OF BORINGS WITH OBSERVATION HOLES SHOWN THUS
3. NO STRAINERS WERE INSTALLED FOR FOLLOWING BORINGS INSTALLED AS SHOWN ON PLOT PLAN: 2-60; 2-64; 2-70; 2-90; 2-103

111th - 125th





RAYMOND ... PILE DIVISION

... that this report is a ... obtained from ...

J. E. Bush
J. E. BUSH
Vice-President

FOR LEGEND & GEN. NOTES SEE DWG. 15433-3-3

DATE	NO.	DESCRIPTION
		REVISIONS

RAYMOND INTERNATIONAL

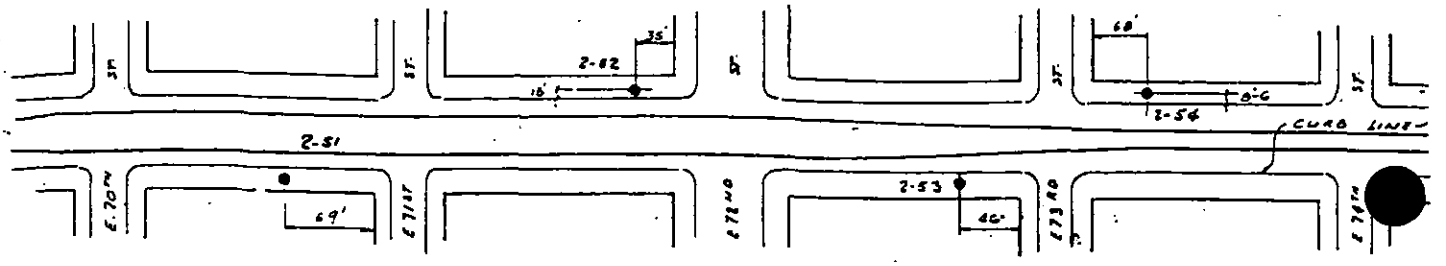
TEST BORING REPO

NEW YORK CITY TRANSIT SYS
SECOND AVE. FROM EAST
STREET TO EAST 126TH STREE
BORING LOCATION PLAN
ROUTE 132-A

DRAWN BY
CHECKED BY
DATE 2-5-70
SCALE 1"=80'

CONTRACT AAD

OO. E-CEO-20(2)



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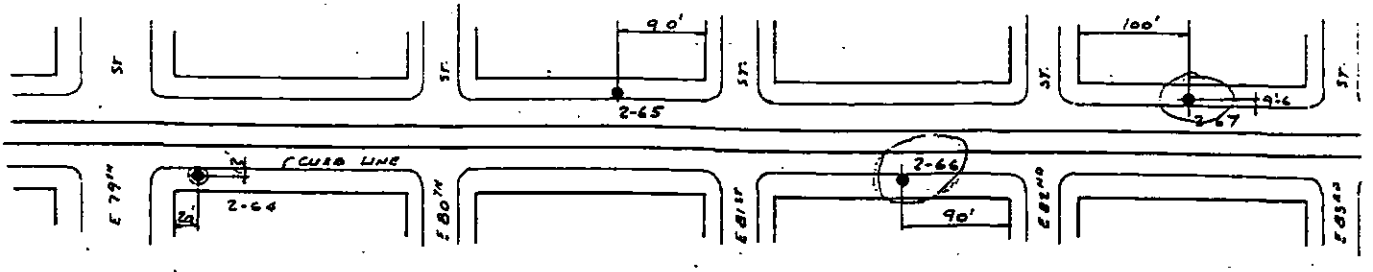

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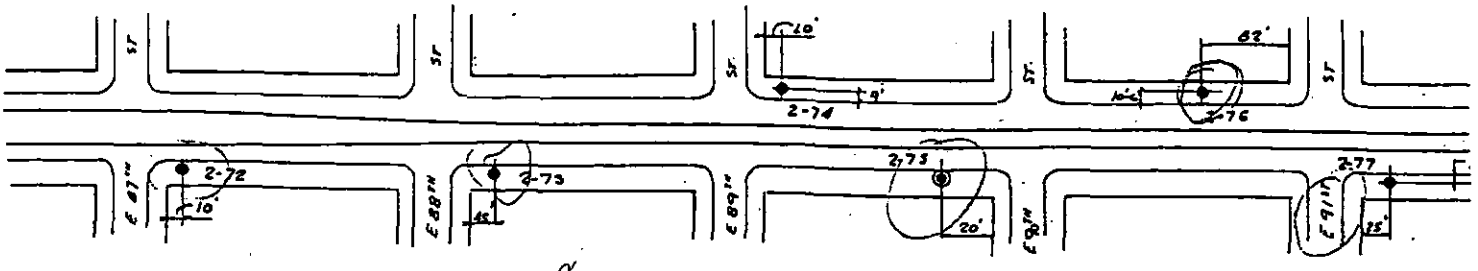

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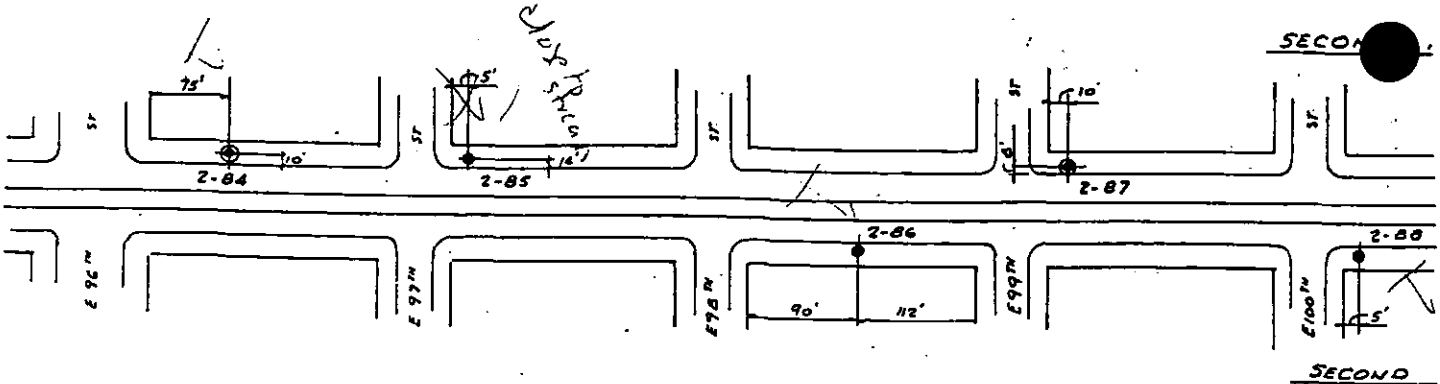

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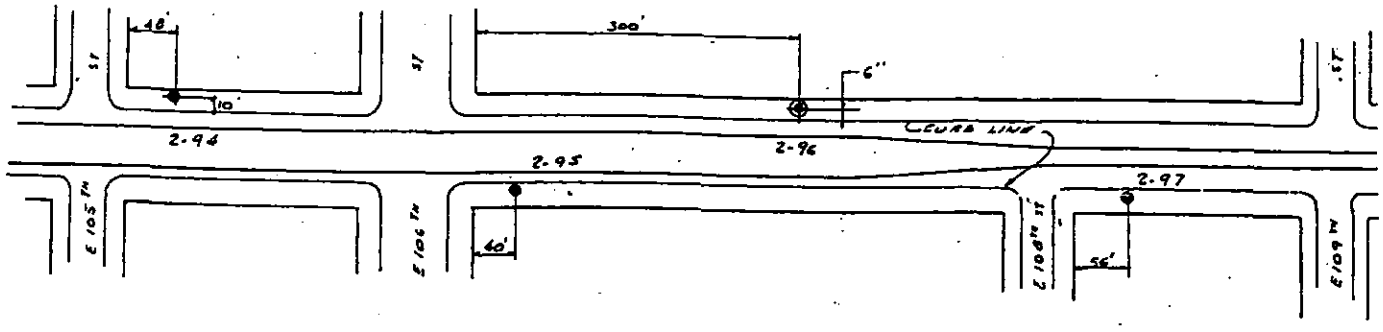

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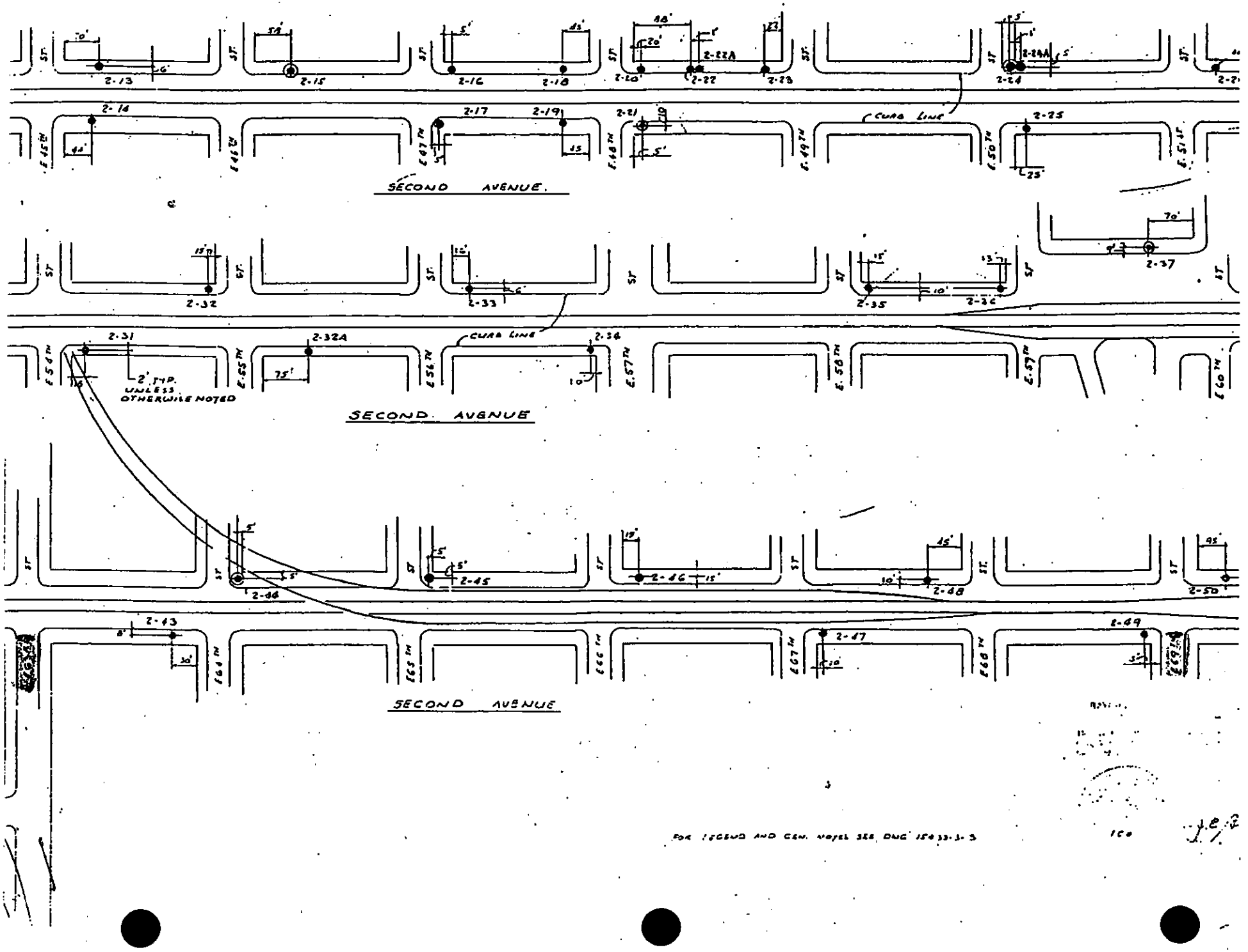
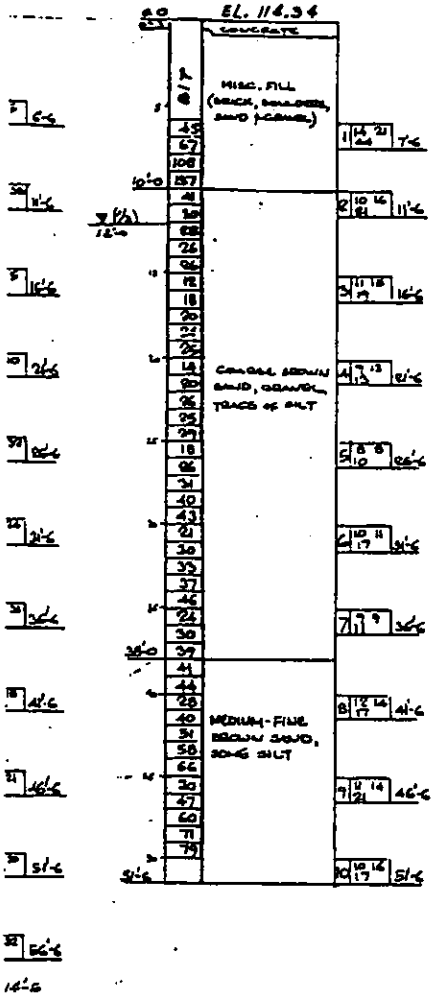

SECOND AVENUE.
SECOND AVENUE
SECOND AVENUE
CURB LINE
2' TYP. UNLESS OTHERWISE NOTED
FOR LEGEND AND GEN. NOTES SEE DWG 154-33-3-5

2-111



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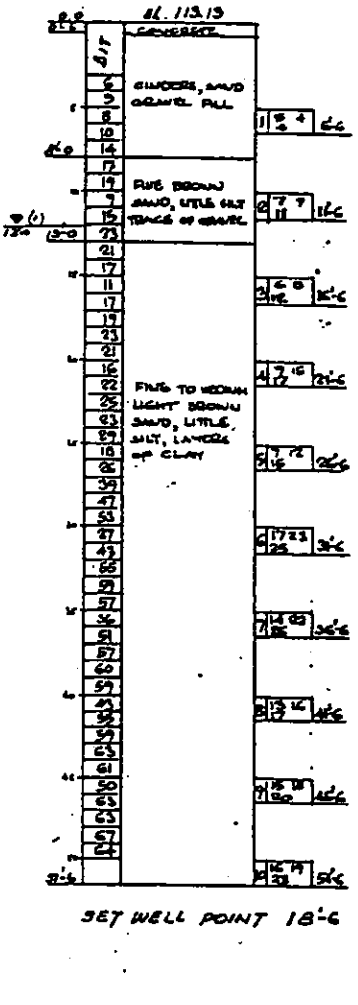
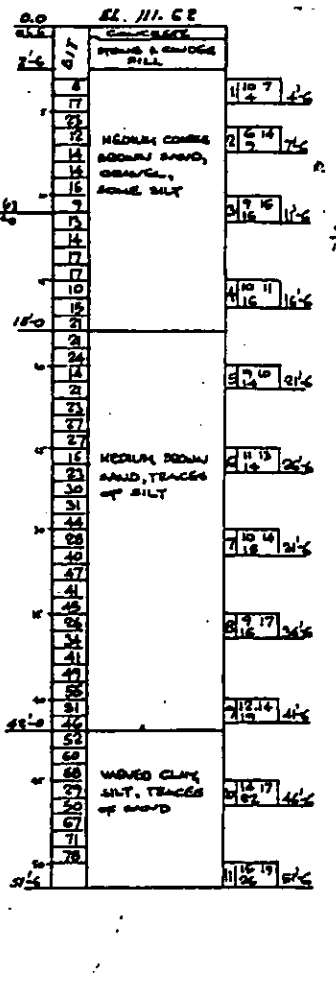


SET WELL POINT 18'-6

2-113



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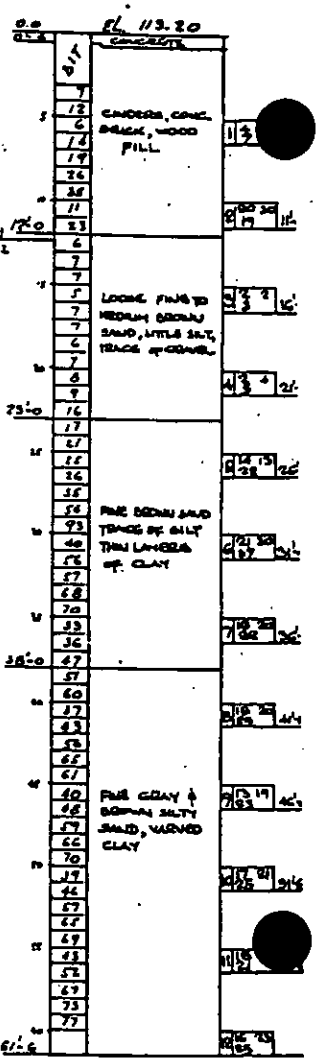


SET WELL POINT 18'-3

WATER READING BORING NO		
DATE	TIME	WATER LEVEL
10-8-69	7 A.M.	8'-6
	8 "	8'-6
	9 "	8'-6
	10 "	8'-7
	11 A.M.	8'-7
	12 NOON	8'-6
	1 P.M.	8'-6
	2 "	8'-6
	3 "	8'-5
	4 "	8'-5
	5 "	8'-5
	6 "	8'-6
10-9-69	7 A.M.	8'-6
10-10-69	7 A.M.	8'-7
	8 "	8'-7
	9 "	8'-7
	10 "	8'-6
	11 A.M.	8'-6
	12 NOON	8'-7
	1 P.M.	8'-7
	2 "	8'-7
	3 "	8'-7
	4 "	8'-6
	5 "	8'-6
	6 "	8'-6
10-11-69	7 A.M.	8'-6

FOR LEGEND & GEN. NOTES SEE DWG. 15433-3

RAYMOND CONCRETE PILE DIVISION
Raymond International, Inc.

This is to certify that this report is a compilation of information obtained from the field boring logs.

FRANK A. PELLEY, JR. VICE PRESIDENT

RAYMOND INTERNATIONAL

TEST BORING RE

NEW YORK CITY TRAN

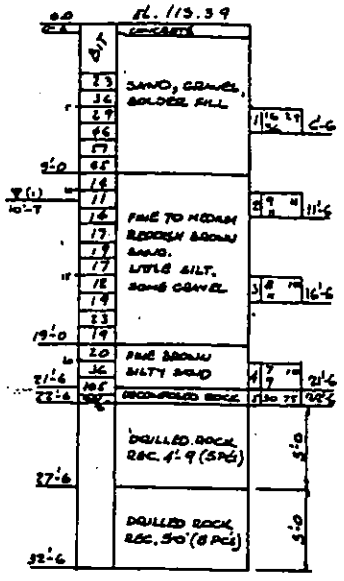
BOROUGH OF MAN

2ND AVE. FROM 34T

TO EAST 126TH

ROUTE

2-106



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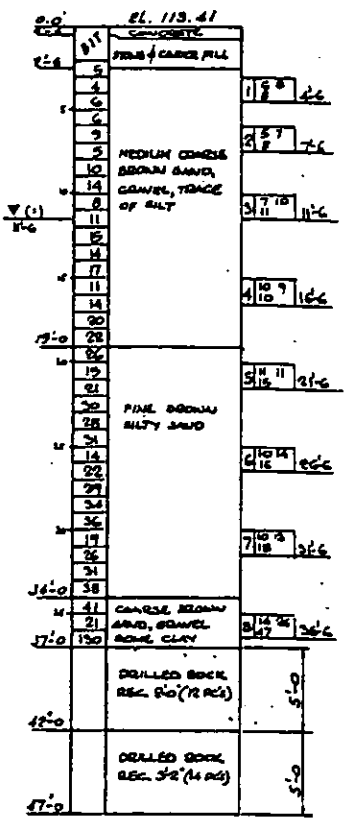

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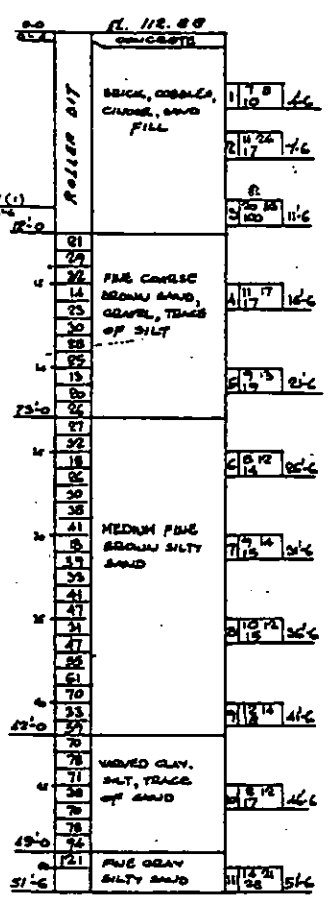

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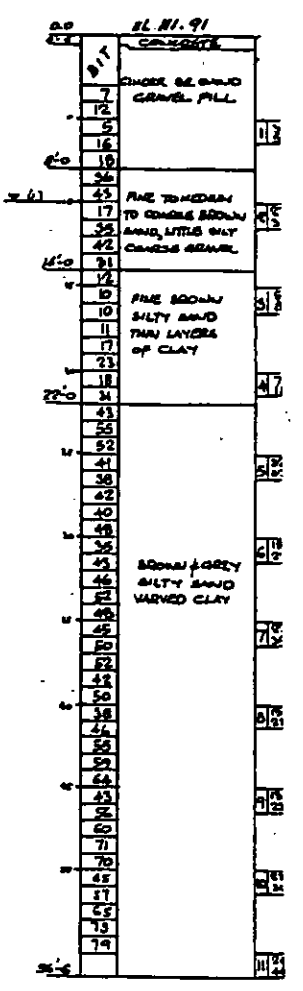
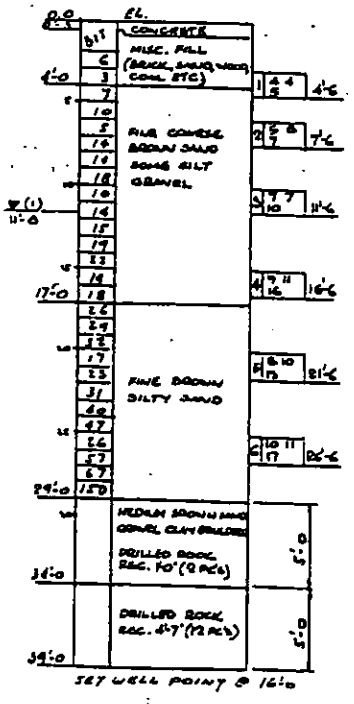


SET WELL POINT @

2-107



SET WELL POINT @ 16'-0

WATER READING BORING B-107

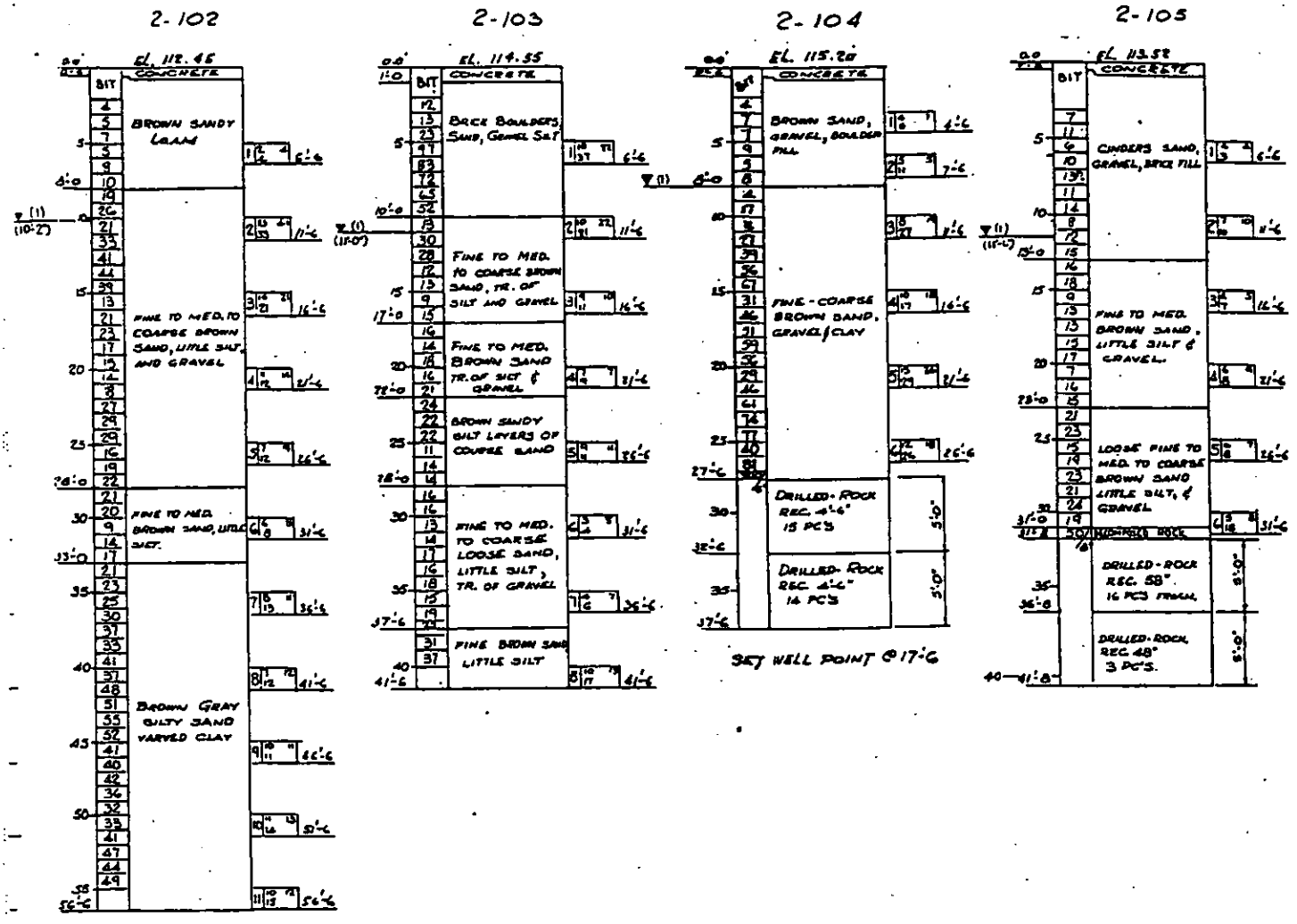
DATE	TIME	WATER LEVEL
10-8-69	7 A.M.	12'-0
	8 "	12'-0
	9 "	12'-0
	10 "	12'-2
	11 A.M.	12'-2
	12 NOON	12'-2
	1 P.M.	12'-0
	2 "	12'-0
	3 "	12'-1
	4 "	12'-0
	5 "	12'-0
	6 "	12'-0
10-9-69	7 P.M.	12'-0
10-10-69	7 A.M.	12'-1
	8 "	12'-1
	9 "	12'-0
	10 "	12'-0
	8 A.M.	12'-0
	12 NOON	12'-0
	1 P.M.	12'-0
	2 "	12'-1
	3 "	12'-0
	4 "	12'-0
	5 "	12'-0
	6 "	12'-0
10-11-69	7 P.M.	12'-0

WATER READING BORING B-108

DATE	TIME	WATER LEVEL
10-8-69	7 A.M.	14'-10
	8 "	15'-0
	9 "	14'-9
	10 "	14'-9
	11 A.M.	14'-9
	12 NOON	14'-9
	1 P.M.	14'-9
	2 "	14'-9
	3 "	14'-9
	4 "	14'-9
	5 "	14'-10
	6 "	14'-10
10-9-69	7 P.M.	14'-9
10-10-69	7 A.M.	14'-9
	8 "	14'-10
	9 "	14'-10
	10 "	14'-10
	8 A.M.	14'-10
	12 NOON	14'-10
	1 P.M.	14'-9
	2 "	14'-9
	3 "	14'-9
	4 "	14'-9
	5 "	14'-9
	6 "	14'-9
10-11-69	7 P.M.	14'-9

WATER READING BORING B-110

DATE	TIME	WATER LEVEL
10-8-69	7 A.M.	12'-8
	8 "	12'-8
	9 "	12'-9
	10 "	12'-9
	11 A.M.	12'-9
	12 NOON	12'-8
	1 P.M.	12'-9
	2 "	12'-8
	3 "	12'-9
	4 "	12'-9
	5 "	12'-9
10-9-69	7 P.M.	12'-9
10-10-69	7 A.M.	12'-9
	8 "	12'-9
	9 "	12'-8
	10 "	12'-8
	11 A.M.	12'-8
	12 NOON	12'-8
	1 P.M.	12'-8
	2 "	12'-9
	3 "	12'-9
	4 "	12'-9
	5 "	12'-9
	6 "	12'-9
10-11-69	7 P.M.	12'-9



FOR LEGEND & GEN. NOTES SEE DWG. 15433-3-3.

RAYMOND CONCRETE PILE DIVISION

This is to certify that this report is a compilation of information obtained from the field boring logs.

STATE OF NEW YORK
RAYMOND INTERNATIONAL INC.
100
PROFESSIONAL ENGINEER

DATE	NO.	DESCRIPTION	BY

REVISIONS

RAYMOND INTERNATIONAL INC.

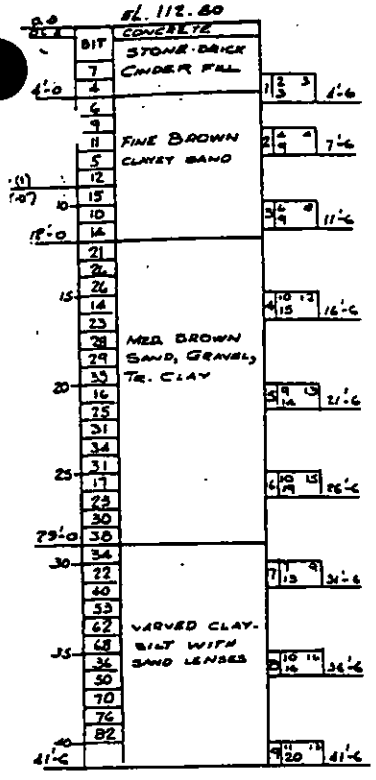
TEST BORING REPORT

NEW YORK CITY TRANSIT SYSTEM
BOROUGH OF MANHATTAN
2ND AVE. FROM 34TH ST.
TO EAST 126TH ST.
ROUTE 132-A.

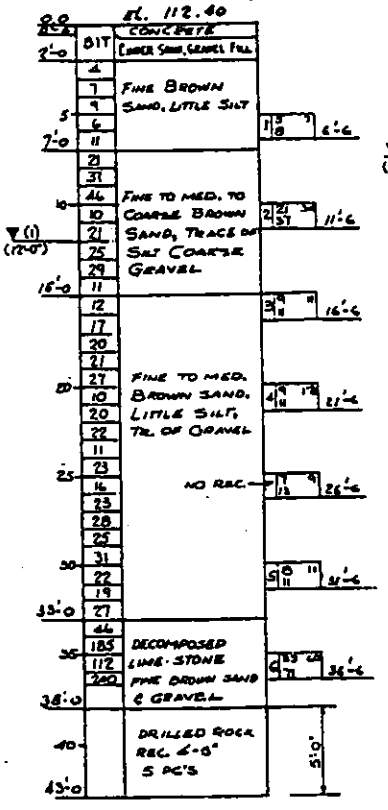
DRAWN BY
CHECKED BY
DATE 7-5-70
SCALE 1/8" = 1'-0"

CONTRACT AAD

2-99A



2-99B



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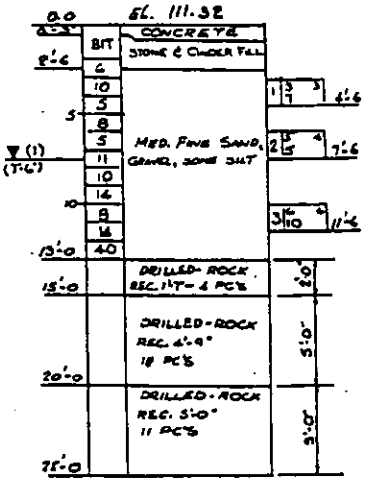

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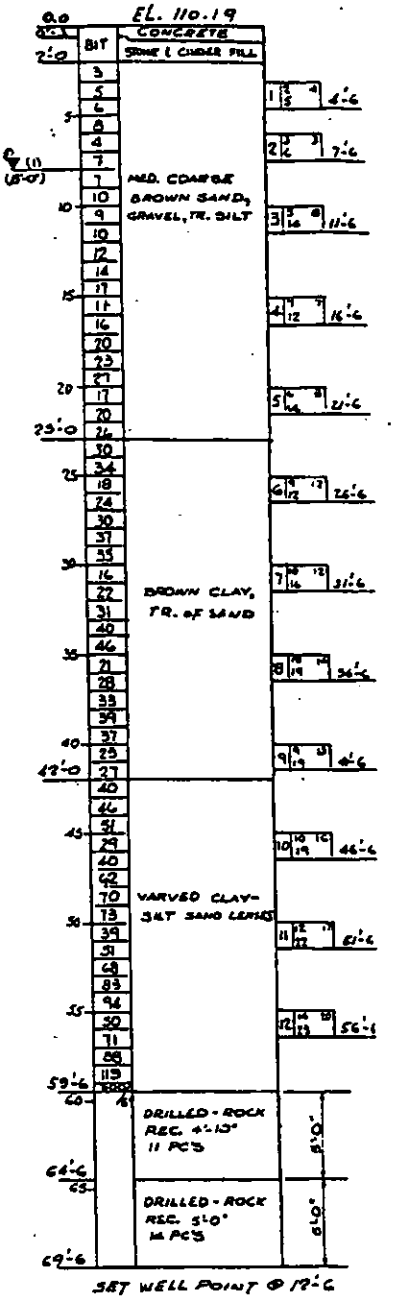


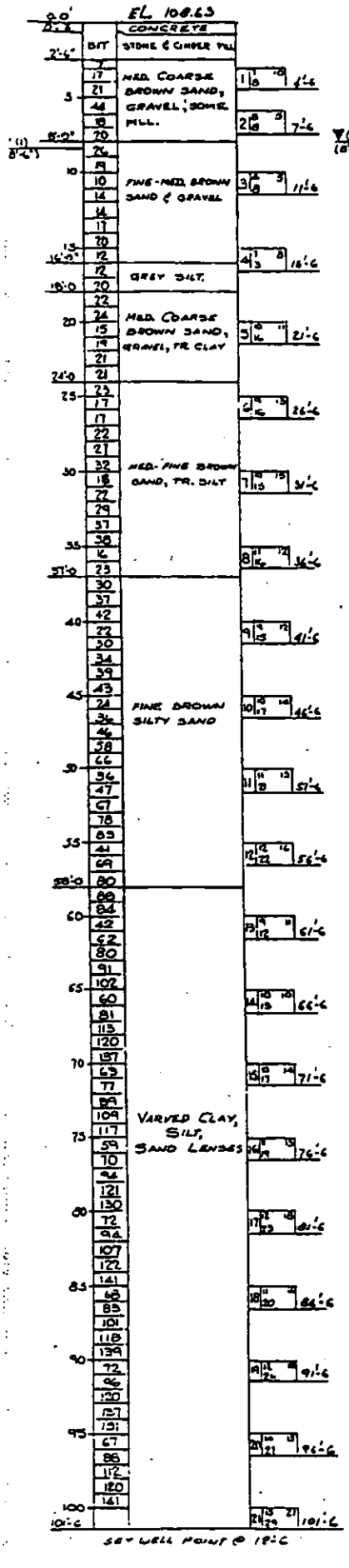
WATER READING BORING B-101

DATE	TIME	WATER LEVEL
10-8-69	7 A.M.	9'-0
	8 "	9'-1
	9 "	9'-1
	10 "	9'-1
	11 A.M.	9'-0
	12 NOON	9'-0
	1 P.M.	9'-0
	2 "	9'-0
	3 "	9'-0
	4 "	9'-0
	5 "	9'-0
	6 "	9'-0
10-8-69	7 P.M.	9'-1
10-12-69	7 A.M.	9'-0
	8 "	9'-1
	9 "	9'-1
	10 "	9'-0
	11 A.M.	9'-0
	12 NOON	9'-0
	1 P.M.	9'-0
	2 "	9'-0
	3 "	9'-0
	4 "	9'-0
	5 "	9'-0
	6 "	9'-0
10-12-69	7 P.M.	9'-0

WATER READING BORING B-102

DATE	TIME	WATER LEVEL
10-8-69	7 A.M.	9'-1
	8 "	9'-1
	9 "	9'-2
	10 "	9'-1
	11 A.M.	9'-0
	12 NOON	9'-0
	1 P.M.	9'-0
	2 "	9'-0
	3 "	9'-0
	4 "	9'-0
	5 "	9'-0
	6 "	9'-0
10-8-69	7 P.M.	9'-1
10-12-69	7 A.M.	9'-0
	8 "	9'-1
	9 "	9'-1
	10 "	9'-1
	11 A.M.	9'-0
	12 NOON	9'-0
	1 P.M.	9'-0
	2 "	9'-0
	3 "	9'-0
	4 "	9'-0
	5 "	9'-0
	6 "	9'-0
10-12-69	7 P.M.	9'-0

2-96



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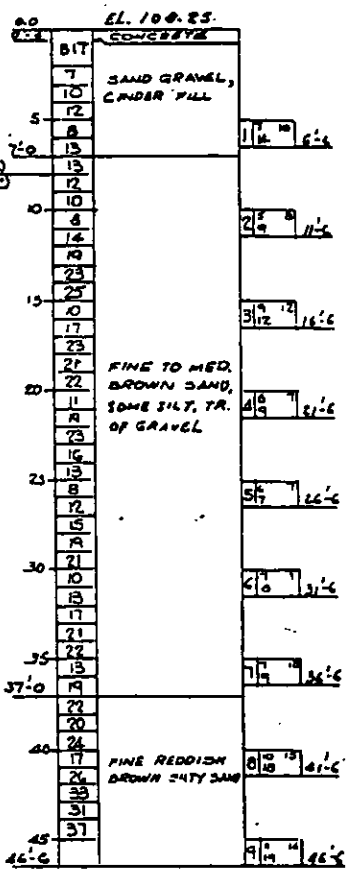

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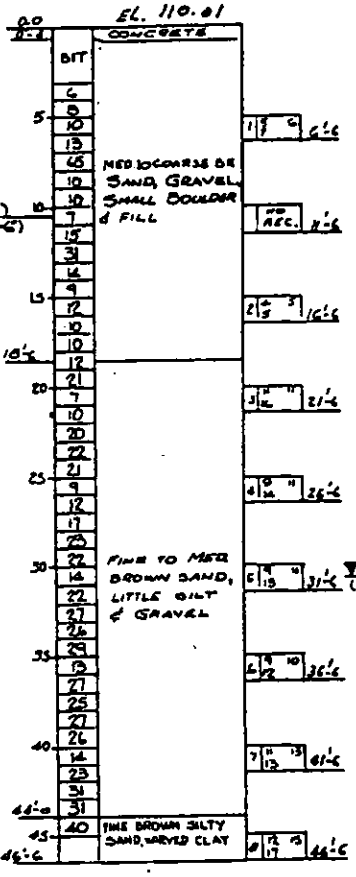

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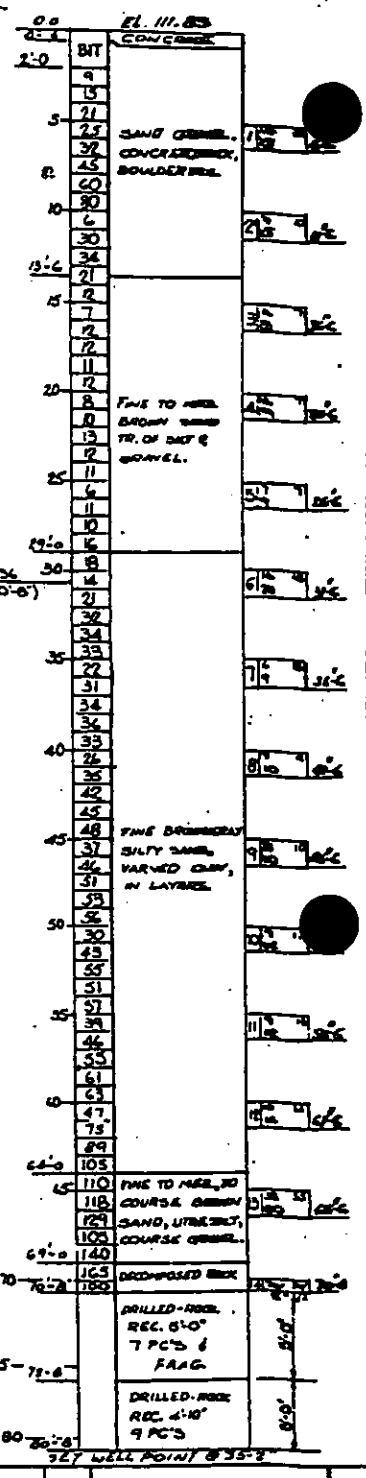

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RAYMOND CONCRETE PILE DIVISION

This is to certify that the report is a compilation of information obtained from the twin boring logs

FRANK E. FULLER JR. VICE PRESIDENT

RAYMOND INTERNATIONAL INC.

TEST BORING REPORT

NEW YORK CITY TRANSIT

BOROUGH OF MANHATTAN

2ND AVE. FROM 34TH ST.

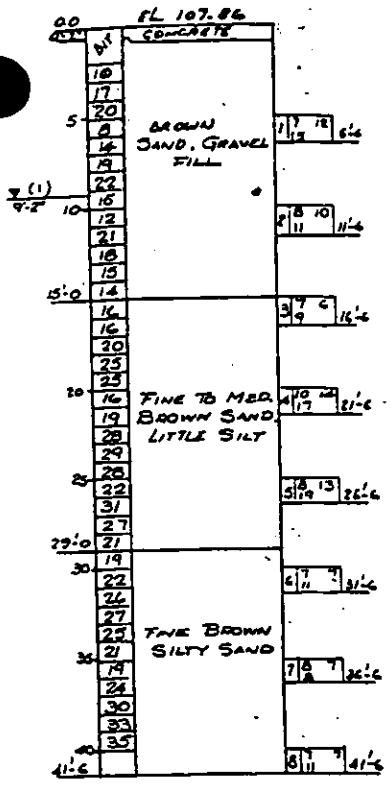
TO EAST 126TH ST.

ROUTE 132A

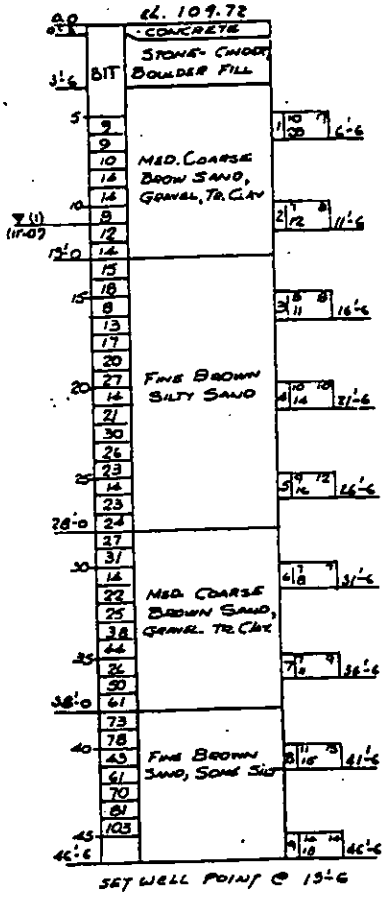
CONTRACT NO.

00-F-GEO-20 (d)

2-92

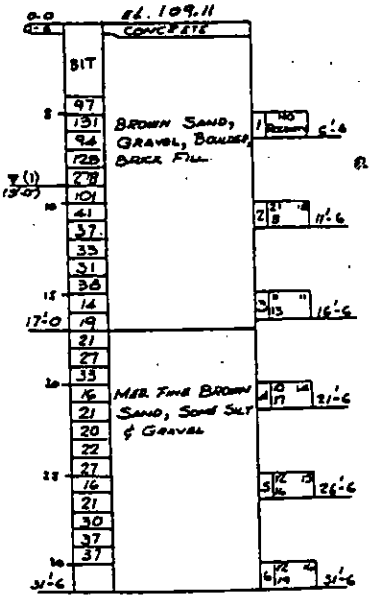


2-93

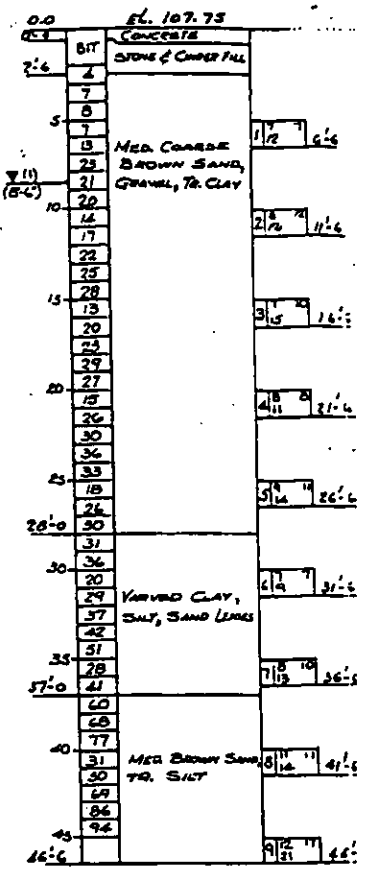


SET WELL POINT @ 15'-6

2-94



2-95



WATER READING BORING 2-92

DATE	TIME	WATER LEVEL
10-8-69	6 A.M.	9'-9
	7 "	9'-6
	8 "	9'-6
	9 "	9'-7
	10 "	9'-6
	11 A.M.	9'-6
	12 NOON	9'-6
	1 P.M.	9'-6
	2 "	9'-6
	3 "	9'-7
	4 "	9'-7
	5 "	9'-6
10-8-69	6 P.M.	9'-6
10-12-69	6 A.M.	9'-6
	7 "	9'-6
	8 "	9'-6
	9 "	9'-6
	10 "	9'-7
	11 A.M.	9'-6
	12 NOON	9'-6
	1 P.M.	9'-6
	2 "	9'-6
	3 "	9'-6
	4 "	9'-6
	5 "	9'-6
10-12-69	6 P.M.	9'-6

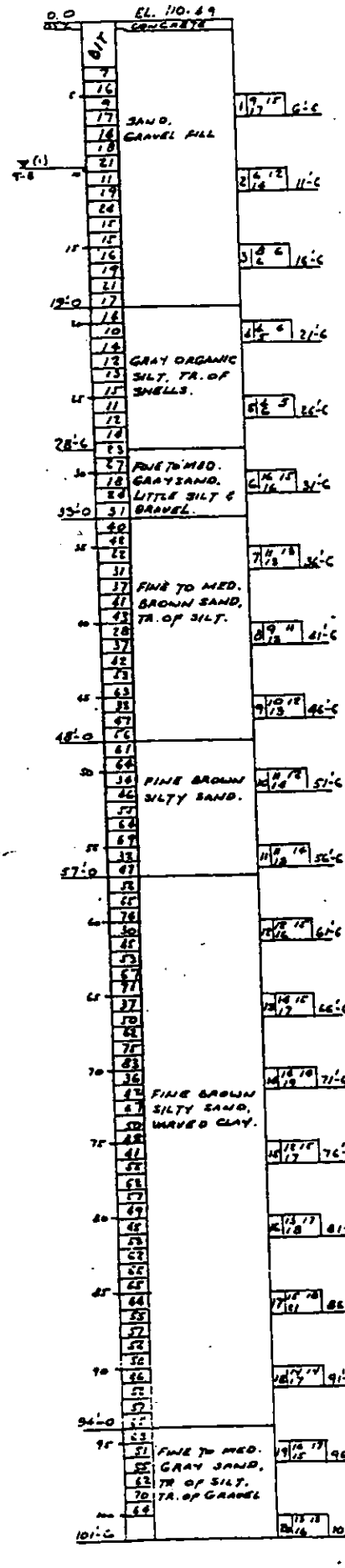
WATER READING BORING 2-93

DATE	TIME	WATER LEVEL
10-8-69	6 A.M.	30'-0
	7 "	30'-0
	8 "	30'-0
	9 "	30'-0
	10 "	30'-0
	11 A.M.	30'-0
	12 NOON	30'-0
	1 P.M.	30'-0
	2 "	30'-0
	3 "	30'-0
	4 "	30'-0
	5 "	30'-0
10-8-69	6 P.M.	30'-0
10-12-69	6 A.M.	30'-0
	7 "	30'-0
	8 "	30'-0
	9 "	30'-0
	10 "	30'-0
	11 A.M.	30'-0
	12 NOON	30'-0
	1 P.M.	30'-0
	2 "	30'-0
	3 "	30'-0
	4 "	30'-0
	5 "	30'-0
10-12-69	6 P.M.	30'-0

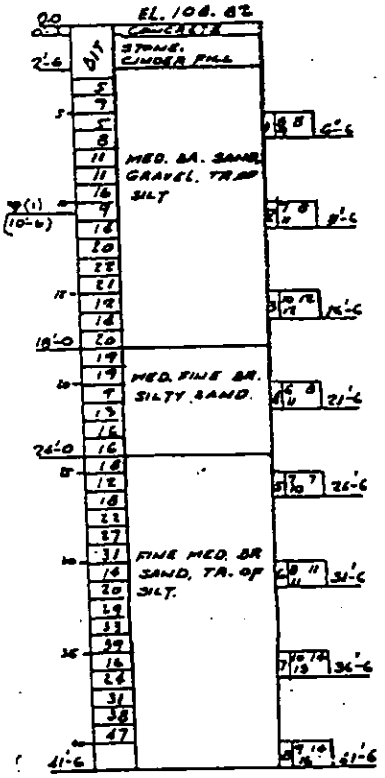
WATER READING BORING 2-93

DATE	TIME	WATER LEVEL
10-8-69	6 A.M.	12'-0
	7 "	12'-0
	8 "	12'-0
	9 "	12'-0
	10 "	12'-0
	11 A.M.	12'-0
	12 NOON	12'-1
	1 P.M.	12'-1
	2 "	12'-1
	3 "	12'-0
	4 "	12'-0
	5 "	12'-0
10-8-69	6 A.M.	12'-0
10-12-69	6 A.M.	12'-0
	7 "	12'-0
	8 "	12'-0
	9 "	12'-0
	10 "	12'-0
	11 A.M.	12'-1
	12 NOON	12'-1
	1 A.M.	12'-1
	2 "	12'-1
	3 "	12'-0
	4 "	12'-0
	5 "	12'-0
10-12-69	6 P.M.	12'-0

2-90



2-91



WATER READING BORING 2-86		
DATE	TIME	WATER LEVEL
10-7-69	7 A.M.	13'-9
	8 "	13'-8
	9 "	13'-9
	10 "	13'-9
	11 A.M.	13'-9
	12 NOON	13'-9
	1 P.M.	13'-10
	2 "	13'-9
	3 "	13'-10
	4 "	13'-9
	5 "	13'-9
	6 "	13'-9
10-7-69	7 P.M.	13'-9
10-8-69	7 A.M.	13'-9
	8 "	13'-9
	9 "	13'-8
	10 "	13'-8
	11 A.M.	13'-9
	12 NOON	13'-9
	1 P.M.	13'-9
	2 "	13'-8
	3 "	13'-9
	4 "	13'-9
	5 "	13'-9½
	6 "	13'-9
10-11-69	7 P.M.	13'-9

WATER READING BORING 2-87		
DATE	TIME	WATER LEVEL
10-8-69	6 A.M.	12'-3
	7 "	12'-3
	8 "	12'-3
	9 "	12'-3
	10 "	12'-3
	11 A.M.	12'-2
	12 NOON	12'-3
	1 P.M.	12'-2
	2 "	12'-3
	3 "	12'-3
	4 "	12'-3
	5 "	12'-3
10-8-69	6 P.M.	12'-3
10-12-69	6 A.M.	12'-2
	7 "	12'-3
	8 "	12'-3
	9 "	12'-3
	10 "	12'-3
	11 A.M.	12'-3
	12 NOON	12'-3
	1 P.M.	12'-2
	2 "	12'-3
	3 "	12'-3
	4 "	12'-2
	5 "	12'-2
10-12-69	6 P.M.	12'-3

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RAYMOND CONCRETE PILE DIVISION
RAYMOND INTERNATIONAL INC.

... to ... this report is a compilation of information obtained from the field boring logs.

STATE OF NEW YORK · RAYMOND INTERNATIONAL INC. · LICENSED PROFESSIONAL ENGINEER · IEC

FRANK H. FULLER, ASST. VICE PRESIDENT

DATE	NO.	DESCRIPTION

REVISIONS

RAYMOND INTERNATIONAL I

TEST BORING REPOR

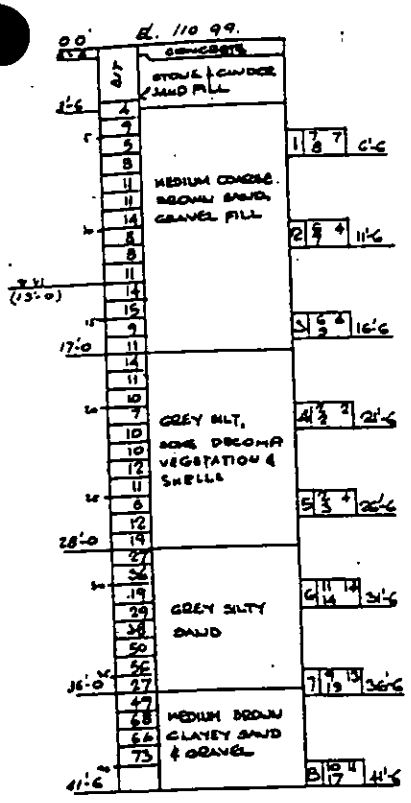
NEW YORK CITY TRANSI[illegible]YST.
BOROUGH OF MAN[illegible]AN
2ND AVE. FROM 34TH STREE
TO EAST 126 ST STREET
ROUTE 132 A

DRAWN BY
CHECKED BY
DATE 2-5-70
SCALE 1/8" = 1'-0"

CONTRACT AAD

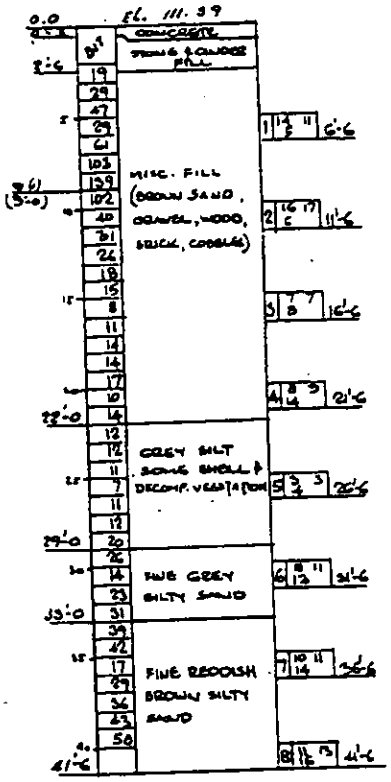
OD-F-GEO-20(13)

2-84

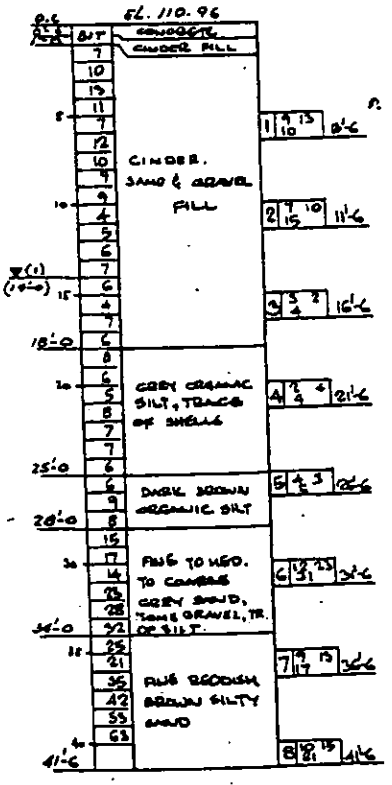


SET WELL POINT @ 22'-6

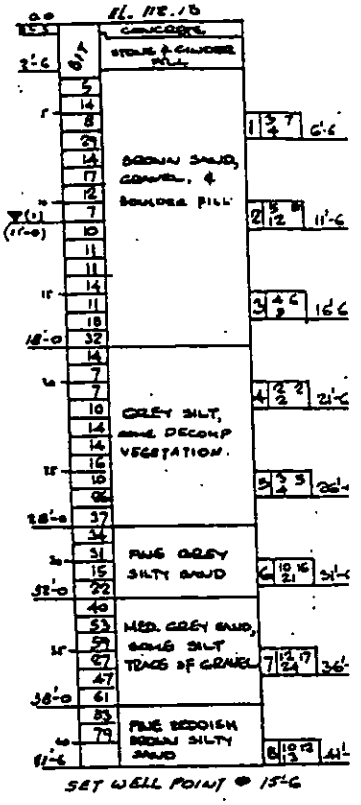
2-85



2-86

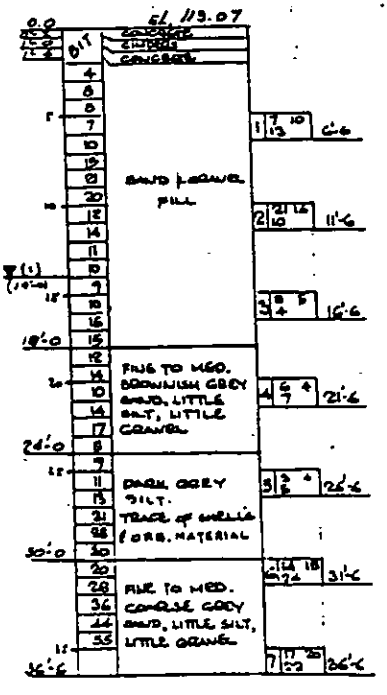


2-87



SET WELL POINT @ 15'-6

2-88



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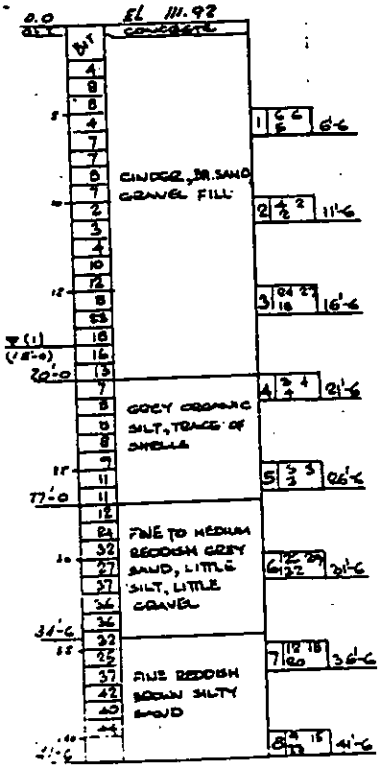
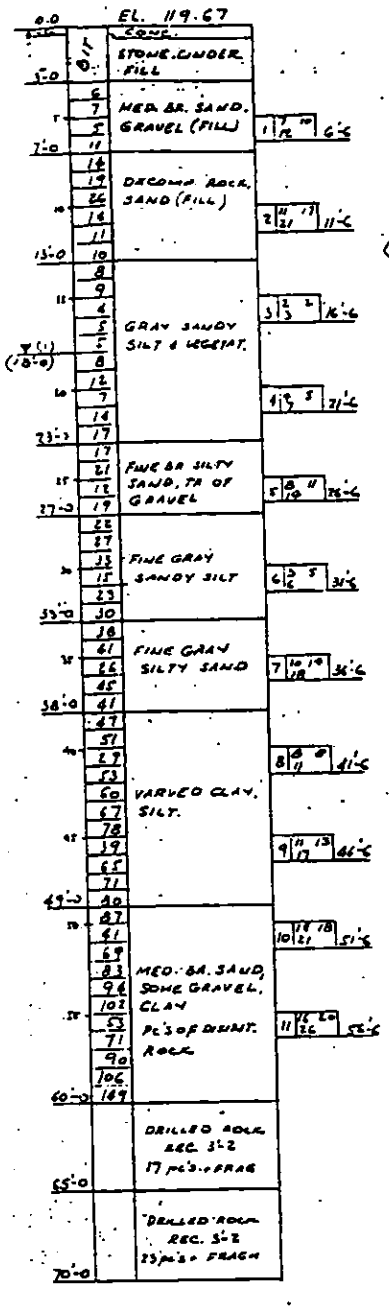


B-79



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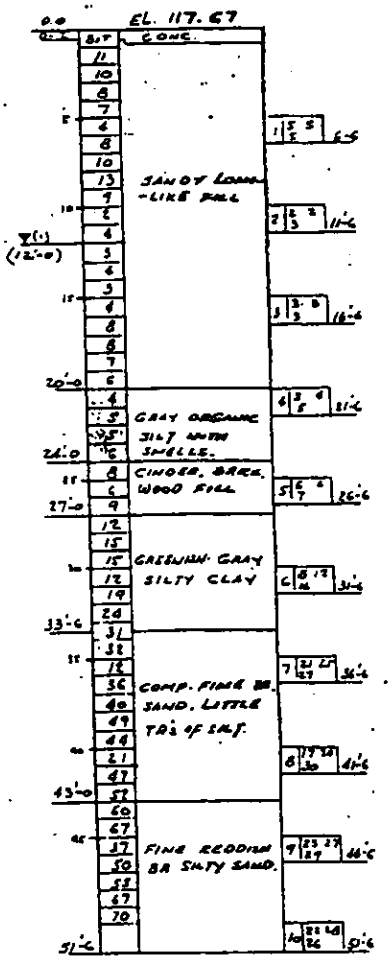
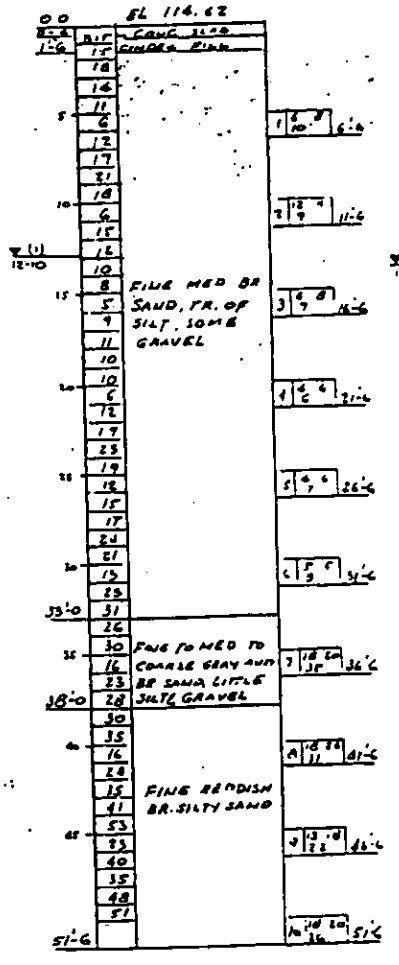


B-81



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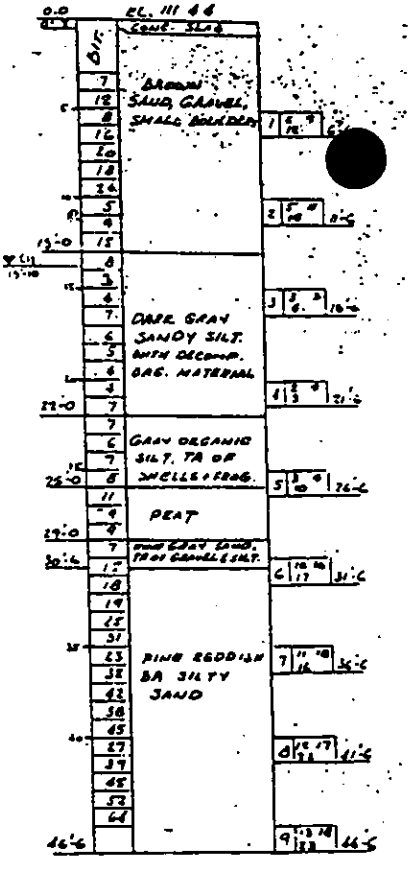
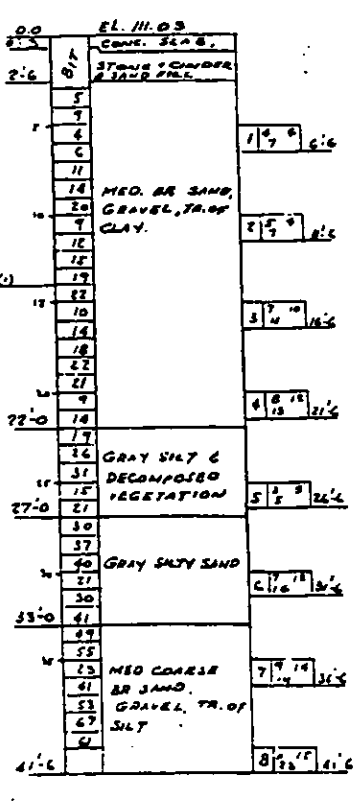


SET WELL POINT @ 24'

WATER READINGS - BORING B-79

DATE	TIME	WATER LEVEL	DATE	TIME	WATER LEVEL
10-7-69	7 A.M.	18'-2	10-8-69	7 A.M.	18'-1
"	8 "	18'-2	"	8 "	18'-1
"	9 "	18'-1	"	9 "	18'-2
"	10 "	18'-2	"	10 "	18'-2
"	11 A.M.	18'-2	"	11 A.M.	18'-2
"	12 NOON	18'-2	"	12 NOON	18'-2
"	1 P.M.	18'-2	"	1 P.M.	18'-2
"	2 "	18'-2	"	2 "	18'-2
"	3 "	18'-2	"	3 "	18'-2
"	4 "	18'-2	"	4 "	18'-2
"	5 "	18'-1	"	5 "	18'-2
10-7-69	6 P.M.	18'-1	10-8-69	6 P.M.	18'-2

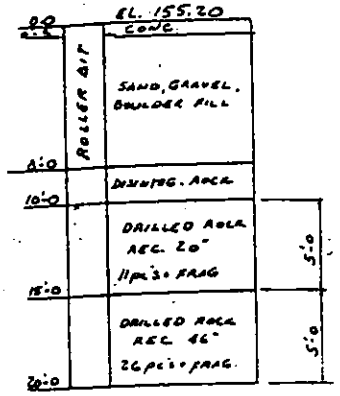
B-83



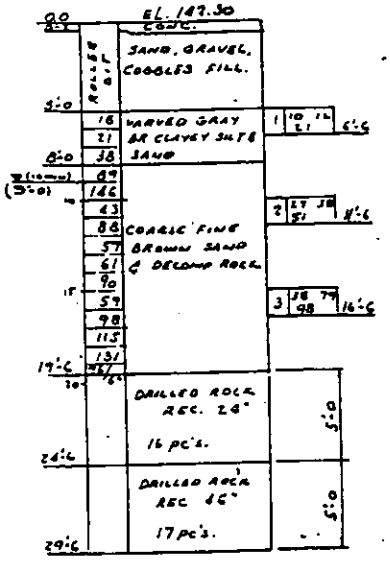
WATER READINGS - BORING B-82

WATER LEVEL
16'-6
16'-5
16'-6
16'-6
16'-6

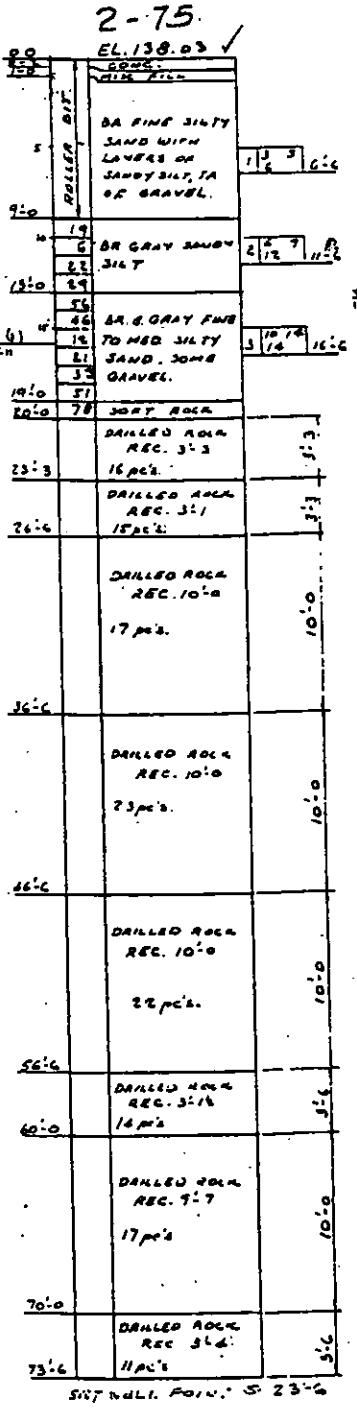
2-72 ✓



2-74



2-75



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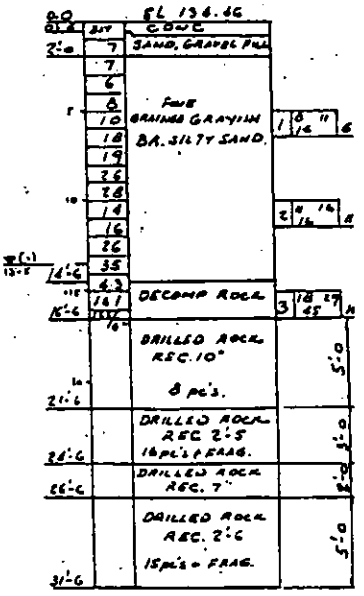
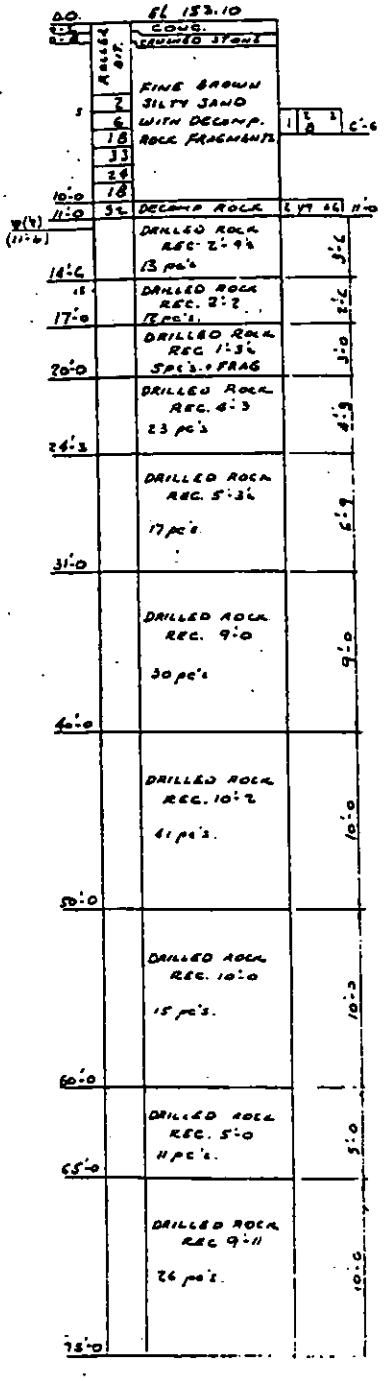
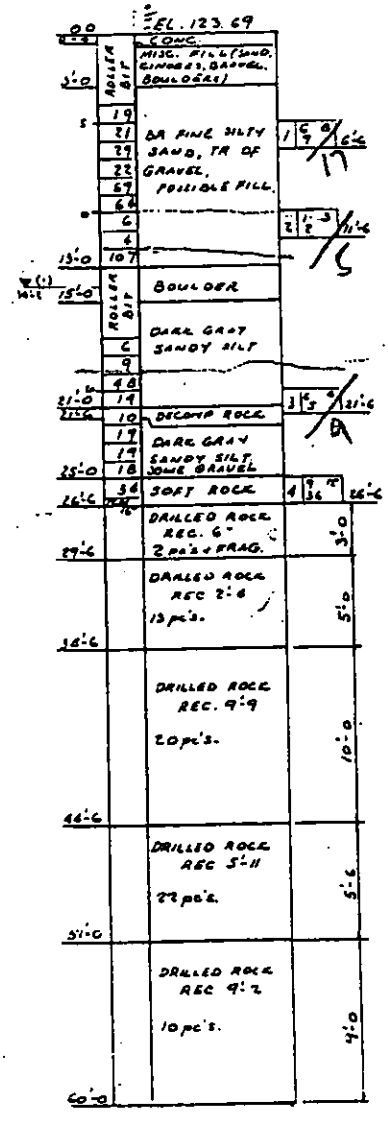


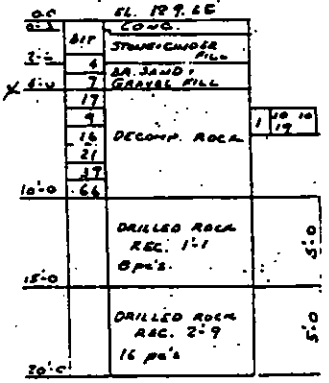
2-73



2-78 ✓



2-77 ✓



NO WATER

WATER READING - BORING 2-75		
DATE	TIME	WATER LEVEL
10-7-69	6 A.M.	15'-10
"	7 "	16'-10
"	8 "	17'-0
"	9 "	17'-0
"	10 "	17'-1
"	11 "	17'-0
"	12 NOON	17'-0
"	1 P.M.	17'-1
"	2 "	17'-0
"	3 "	17'-0
"	4 "	17'-0
"	5 "	17'-0
10-7-69	6 "	17'-0
10-11-69	6 A.M	17'-0
	7 "	17'-0
	8 "	17'-0
	9 "	17'-0
	10 "	17'-0
	11 "	17'-0
	12 NOON	17'-0
	1 P.M.	17'-0
	2 "	17'-0
	3 "	17'-0
	4 "	17'-0
	5 "	17'-0
10-11-69	6 "	17'-0

WATER READ	
DATE	TIME
10-7-69	6 A.
"	7 "
"	8 "
"	9 "
"	10 "
"	11 "
"	12 N
"	1 P
"	2 "
"	3 "
"	4 "
"	5 "
10-7-69	6 "
10-11-69	6 A.
"	7 "
"	8 "
"	9 "
"	10 "
"	11 "
"	12 N
"	1 "
"	2 "
"	3 "
"	4 "
"	5 "
10-11-69	6 "

2-68

EL. 158.46

Depth	Description	Rec.
0.0	CONC.	
0.3	SAND, GRAVEL COBBLES FILL	
5'-8	DISINTEGR. ROCK	
6'-0	DRILLED ROCK REC. 19" 17 pc's	5'-0
13'-0	DRILLED ROCK REC. 45" 26 pc's	5'-0
18'-0	DRILLED ROCK REC. 30" 19 pc's	5'-0
23'-0	DRILLED ROCK REC. 30" 24 pc's	5'-0
28'-0	DRILLED ROCK REC. 42" 25 pc's	5'-0
33'-0	DRILLED ROCK REC. 31" 25 pc's	5'-0
38'-0	DRILLED ROCK REC. 57" 17 pc's	5'-0
43'-0	DRILLED ROCK REC. 52" 19 pc's	5'-0
48'-0	DRILLED ROCK REC. 60" 17 pc's	5'-0
53'-0	DRILLED ROCK REC. 58" 11 pc's	5'-0
58'-0	DRILLED ROCK REC. 45" 31 pc's	5'-0
63'-0	DRILLED ROCK REC. 49" 22 pc's	5'-0
68'-0	DRILLED ROCK REC. 45" 23 pc's	5'-0
73'-0	DRILLED ROCK REC. 55" 19 pc's	5'-0
78'-0	DRILLED ROCK REC. 39" 14 pc's	4'-0
82'-0		

ROLLER BIT

2-69

EL. 162.50

Depth	Description	Rec.
0.0	CONC.	
0.3	MISC. FILL	
2'-0	DECOMP ROCK	1 31 56 6'-0
7'-0	DRILLED ROCK REC. 2'-11 10 pc's.	3'-0
10'-0	DRILLED ROCK REC. 10'-1 28 pc's.	10'-0
20'-0	DRILLED ROCK REC. 10'-0 26 pc's.	10'-0
30'-0	DRILLED ROCK REC. 10'-0 21 pc's.	10'-0
40'-0	DRILLED ROCK REC. 5'-0 18 pc's.	5'-0
45'-0	DRILLED ROCK REC. 4'-11 10 pc's.	5'-0
50'-0	DRILLED ROCK REC. 10'-2 27 pc's	10'-0
60'-0	DRILLED ROCK REC. 10'-0 26 pc's	10'-0
70'-0	DRILLED ROCK REC. 10'-0 21 pc's.	10'-0
80'-0	DRILLED ROCK REC. 6'-10 15 pc's.	7'-0
87'-0		

ROLLER BIT

2-70

EL. 160.47

Depth	Description	Rec.
0.0	CONC.	
0.3	STONE-CINDER FILL	
2'-0	FINE BROWN SANDY SILT.	1 7 7 6'-6
7'-0	MED BR CLAYEY SAND.	2 9 17 11'-6
11'-0	DECOMP ROCK	
11'-7	DRILLED ROCK REC. 11" 7 pc's + FRAG	5'-0
16'-7	DRILLED ROCK REC. 1'-11 9 pc's + FRAG.	5'-0
21'-7	DRILLED ROCK REC. 1'-6" 14 pc's + FRAG.	5'-0
26'-7	DRILLED ROCK REC. 3'-9 17 pc's + FRAG.	5'-0
31'-7	DRILLED ROCK REC. 3'-8 14 pc's + FRAG	5'-0
36'-7	DRILLED ROCK REC. 4'-7 14 pc's.	5'-0
41'-7	DRILLED ROCK REC. 2'-10 9 pc's + FRAG	3'-0
44'-7	DRILLED ROCK REC. 1'-6 8 pc's + FRAG.	2'-5
47'-0	DRILLED ROCK REC. 1'-1 12 pc's + FRAG.	2'-0
49'-0	DRILLED ROCK REC. 1'-6 8 pc's.	5'-0
54'-0	DRILLED ROCK REC. 4'-5 20 pc's + FRAG	5'-0
59'-0	DRILLED ROCK REC. 4'-10 29 pc's + FRAG	5'-0
64'-0	DRILLED ROCK REC. 2'-5 16 pc's + FRAG.	5'-0
69'-0	DRILLED ROCK REC. 4'-11 25 pc's	5'-0
74'-0	DRILLED ROCK REC. 2'-5 13 pc's.	4'-0
78'-0	DRILLED ROCK REC. 0'-10 7 pc's	2'-0
80'-0	DRILLED ROCK REC. 4'-9 23 pc's.	5'-0
85'-0	DRILLED ROCK REC. 2'-0 9 pc's.	2'-0
87'-0		

ROLLER BIT

CANCELED

CONSTRUCTION SITE OF NEW ST ROCK OBSERVED FROM STREET TO 10' BELOW STREET SURFACE.

FOR LEGEND & GEN NOTES SEE DWG. 15433-3-3

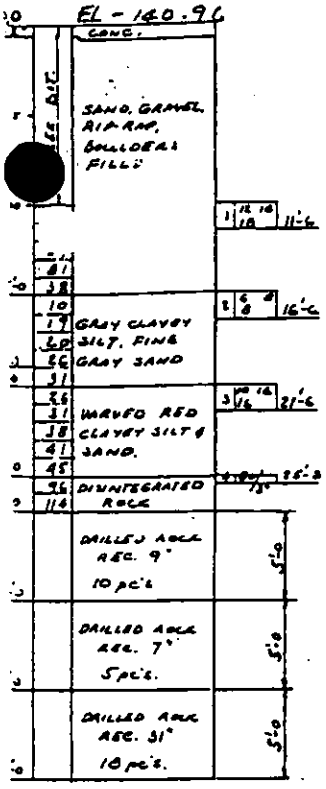
FOR OFFICE REPORT
132-A 22

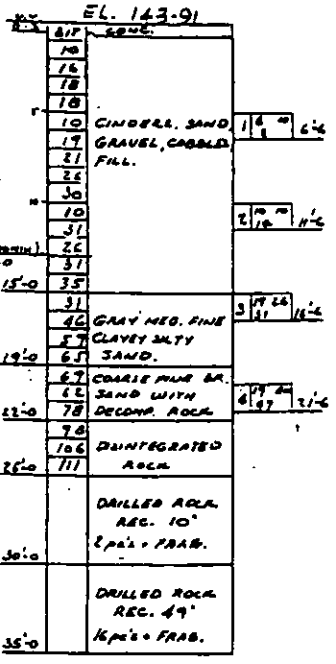
RAYMOND INTERNAT

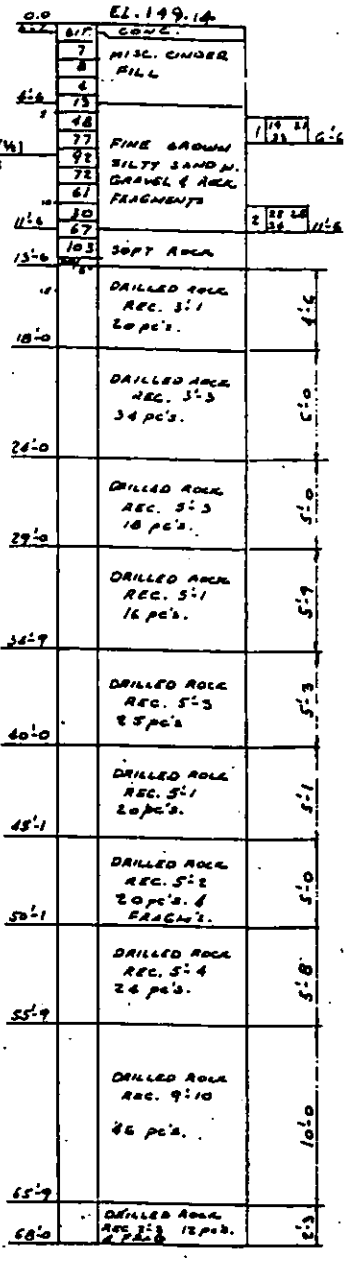
TEST BORING

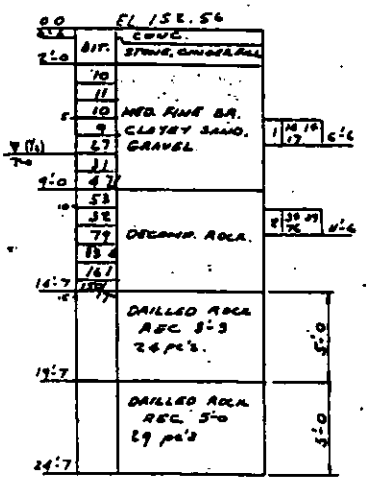
NEW YORK CITY ... US
BOROUGH ... MAN
2ND AVE. FROM ...
TO EAST 126TH
ROUTE 13

CONTRACT AND.

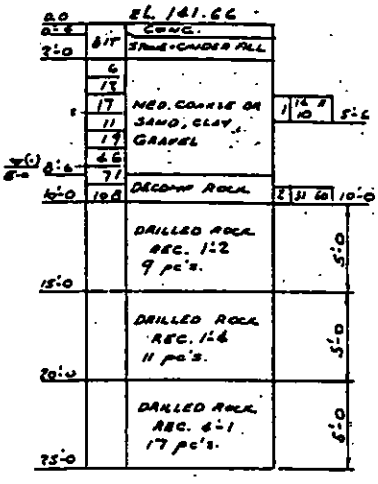




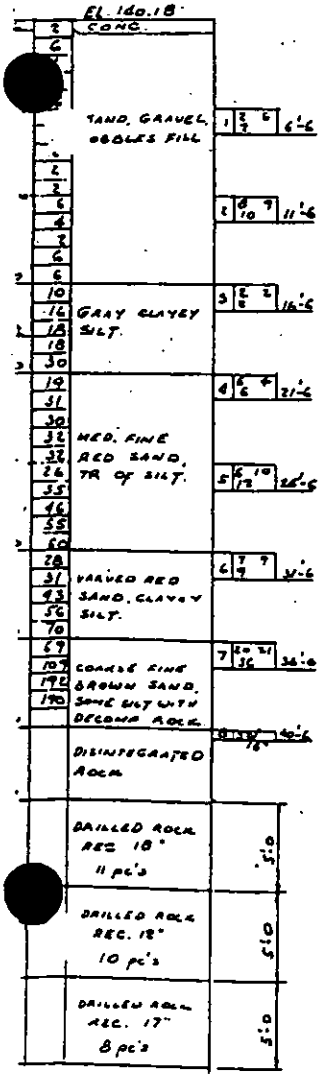




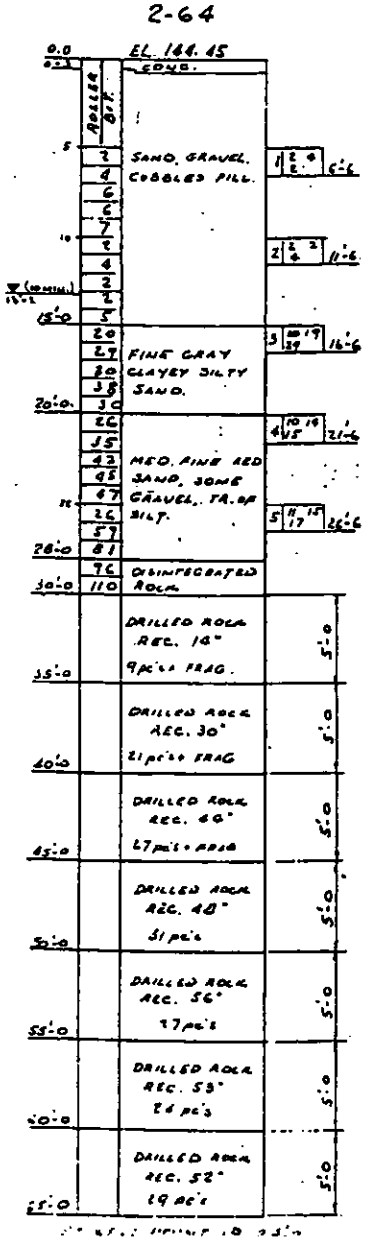
2-67 ✓



2-62

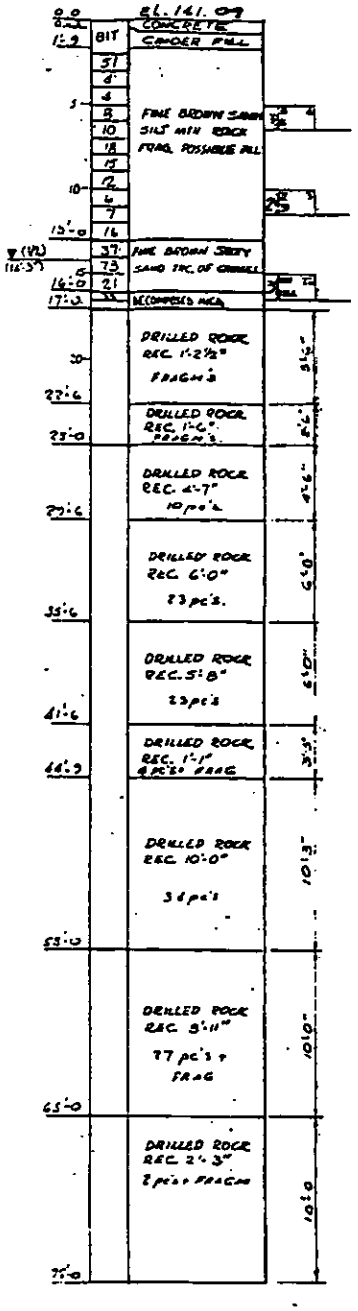


2-64

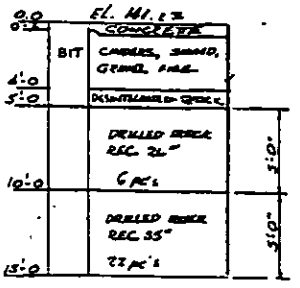


WATER READING - BORING 2-64		
DATE	TIME	WATER LEVEL
10-6-69	6 A.M.	18'-6
	7 "	18'-9
	8 "	18'-9
	9 "	18'-9
	10 "	18'-9
	11 A.M.	18'-8
	12 NOON	18'-8
	1 P.M.	18'-8
	2 "	18'-8
	3 "	18'-8
	4 "	18'-8
	5 "	18'-8
10-8-69	6 P.M.	18'-8
10-18-69	6 A.M.	18'-10
	7 "	18'-10
	8 "	18'-9
	9 "	18'-8
	10 "	18'-8
	11 A.M.	18'-8
	12 NOON	18'-8
	1 P.M.	18'-7
	2 "	18'-7
	3 "	18'-8
	4 "	18'-8
	5 "	18'-8
10-18-69	6 P.M.	18'-9

2-55

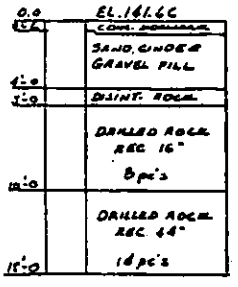


2-56



NO WATER

2-57



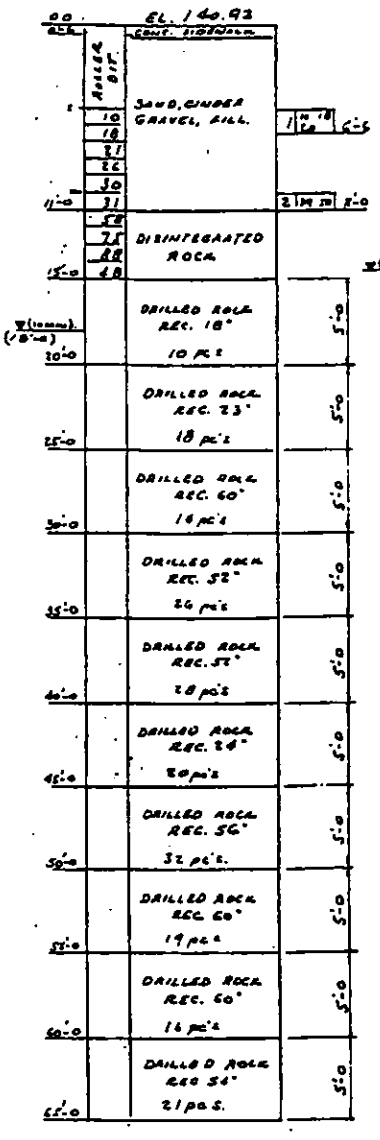
NO WATER AFTER COMPLETION

2-58

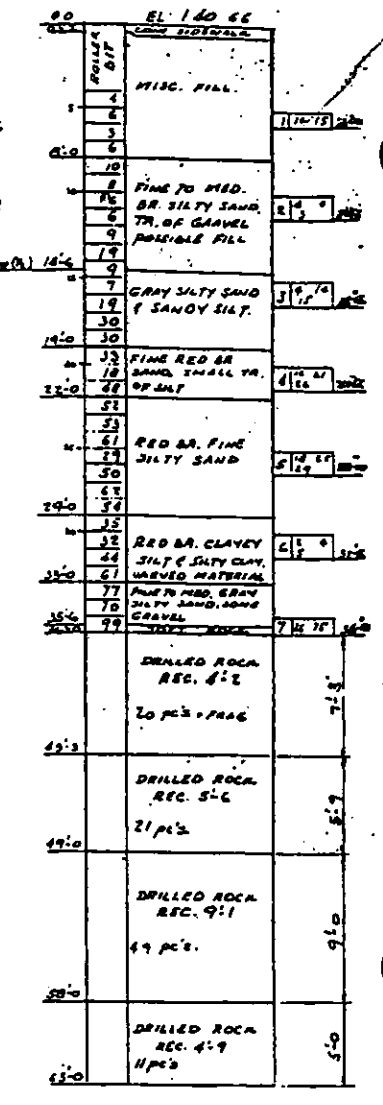
CANCELED

TELEPHONE DUCT BANK ADJTH VAULT. NO CLEARANCE

2-59



2-60



FOR LEGEND & GEN NOTES: SEE DWG 5933-3-3

RAYMOND INTERNATIONAL I

TEST BORING REPO

NEW YORK CITY TRANSIT SYST

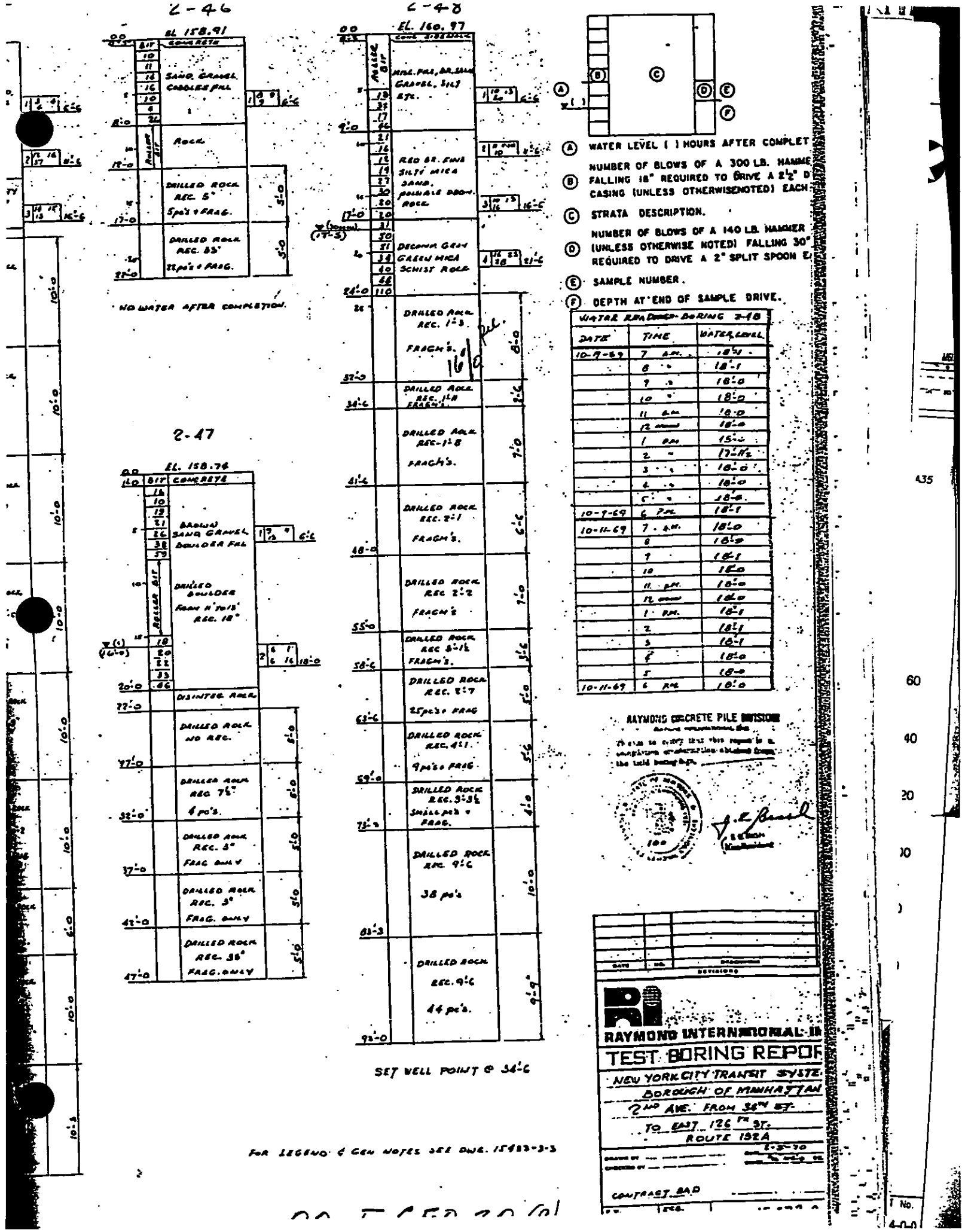
BOROUGH OF MANHATTA

2ND AVE. FROM 34TH ST-

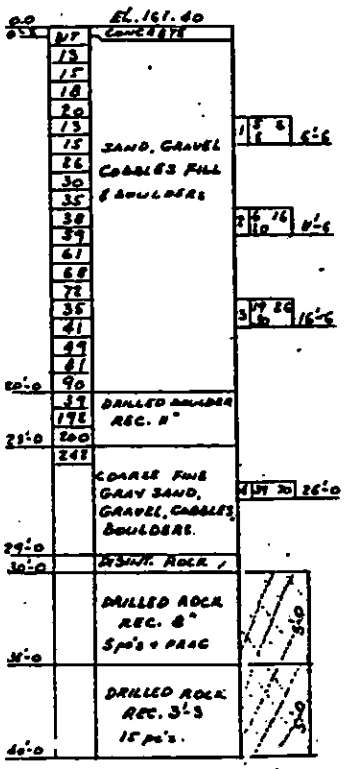
TO EAST 126TH S

ROUTE 132A

CONTRACT 440

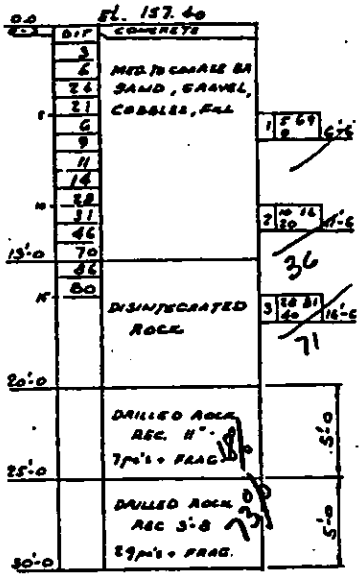

2-46
EL 158.91
CONCRETE
SAND, GRAVEL, COBBLES FILL
ROCK
DRILLED ROCK REC. 5"
5 pc's + FRAG.
DRILLED ROCK REC. 83"
22 pc's + FRAG.
NO WATER AFTER COMPLETION.
2-47
EL. 158.76
CONCRETE
BROWN SAND, GRAVEL, BOULDER FILL
DRILLED BOULDER FROM 11'0" TO 13'0" REC. 18"
DISINTEG. ROCK
DRILLED ROCK NO REC.
DRILLED ROCK REC. 7½"
4 pc's.
DRILLED ROCK REC. 3"
FRAG. ONLY
DRILLED ROCK REC. 3"
FRAG. ONLY
DRILLED ROCK REC. 38"
FRAG. ONLY
2-48
EL. 160.97
CONCRETE
MISC. FILL, BR. SILTY GRAVEL, SILT ETC.
RED BR. FINE SILTY MICA SAND, POSSIBLE DECOM. ROCK
DECOMP. GRAY GREEN MICA SCHIST ROCK
DRILLED ROCK REC. 1'-3"
FRAG's.
DRILLED ROCK REC. 1'-8"
FRAG's.
DRILLED ROCK REC. 2'-1"
FRAG's.
DRILLED ROCK REC. 2'-2"
FRAG's
DRILLED ROCK REC. 8'-1½"
FRAG's.
DRILLED ROCK REC. 8'-7"
25 pc's + FRAG
DRILLED ROCK REC. 4'-1"
9 pc's + FRAG
DRILLED ROCK REC. 3'-3½"
SMALL pc's + FRAG.
DRILLED ROCK REC. 9'-6"
38 pc's
DRILLED ROCK REC. 9'-6"
44 pc's.
SET WELL POINT @ 34'-6
FOR LEGEND & GEN NOTES SEE DWG. 15483-3-3
(A) WATER LEVEL ( ) HOURS AFTER COMPLET
(B) NUMBER OF BLOWS OF A 300 LB. HAMME FALLING 18" REQUIRED TO DRIVE A 2½" D CASING (UNLESS OTHERWISE NOTED) EACH
(C) STRATA DESCRIPTION.
(D) NUMBER OF BLOWS OF A 140 LB. HAMMER (UNLESS OTHERWISE NOTED) FALLING 30" REQUIRED TO DRIVE A 2" SPLIT SPOON E
(E) SAMPLE NUMBER.
(F) DEPTH AT END OF SAMPLE DRIVE.
WATER READINGS - BORING 2-48
DATE | TIME | WATER LEVEL
10-9-69 | 7 A.M. | 18'4
" | 8 " | 18'-1
" | 9 " | 18'-0
" | 10 " | 18'-0
" | 11 A.M. | 18'-0
" | 12 noon | 18'-0
" | 1 P.M. | 15'-0
" | 2 " | 17'-11½
" | 3 " | 18'-0
" | 4 " | 18'-0
" | 5 " | 18'-8
10-9-69 | 6 P.M. | 18'-1
10-11-69 | 7 A.M. | 18'-0
" | 8 " | 18'-2
" | 9 " | 18'-1
" | 10 " | 18'-0
" | 11 A.M. | 18'-0
" | 12 noon | 18'-0
" | 1 P.M. | 18'-1
" | 2 " | 18'-1
" | 3 " | 18'-1
" | 4 " | 18'-0
" | 5 " | 18'-0
10-11-69 | 6 P.M. | 18'-0
RAYMOND CONCRETE PILE DIVISION
RAYMOND INTERNATIONAL INC.
TEST BORING REPORT
NEW YORK CITY TRANSIT SYSTEM
BOROUGH OF MANHATTAN
2ND AVE. FROM 36TH ST.
TO EAST 126TH ST.
ROUTE 152A
CONTRACT 8AD

2-42



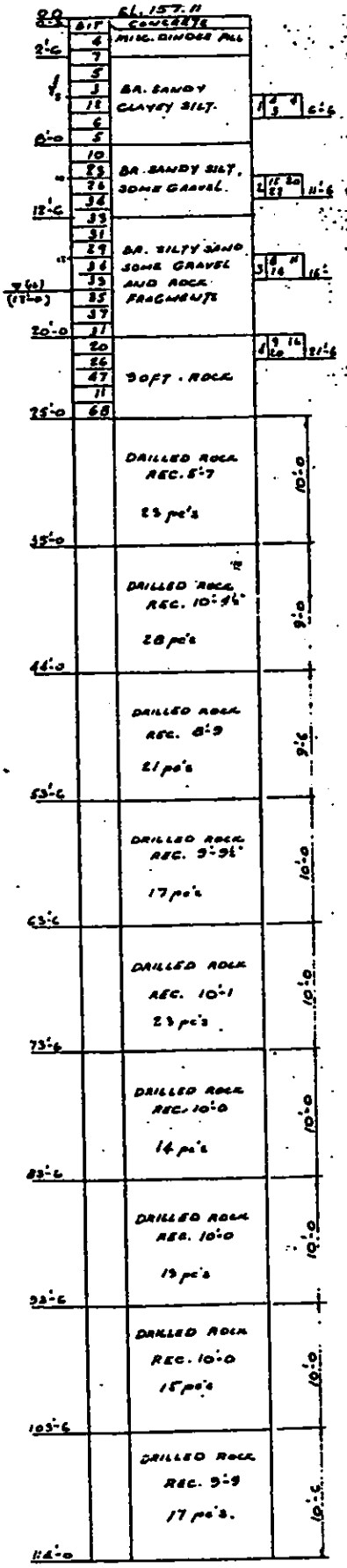
NO WATER

2-43



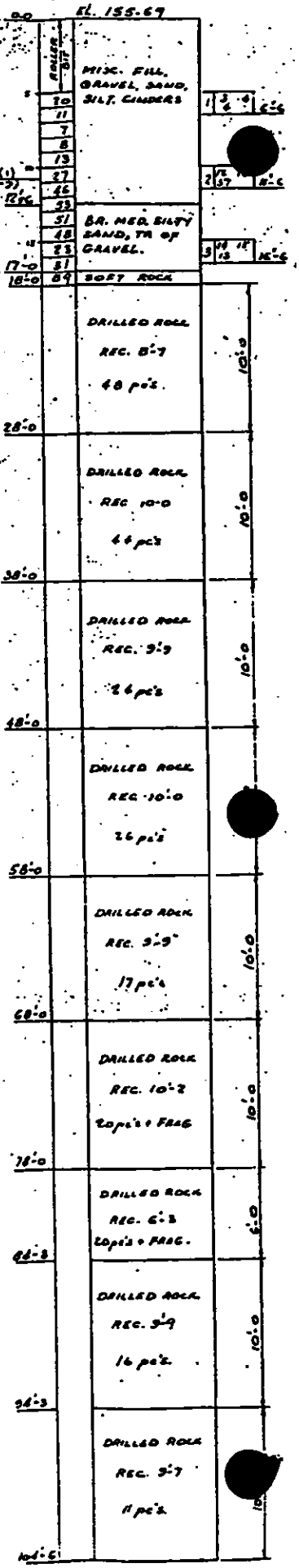
NO WATER AFTER COMPLETION.

2-44



SET WELL POINT @ 28'-6

2-45



WATER READINGS - BORING 2-44

DATE	TIME	WATER LEVEL
10-9-69	7 A.M.	17'-0
	8 "	17'-0
	9 "	17'-0
	10 "	17'-0½"
	11 A.M.	17'-1
	12 NOON	17'-1
	1 P.M.	17'-0
	2 "	17'-0
	3 "	17'-0
	4 "	17'-0
	5 "	17'-1
10-9-69	6 P.M.	17'-0
10-11-69	7 A.M.	17'-1
	8 "	17'-1½"
	9 "	17'-1
	10 "	17'-0
	11 A.M.	17'-0
	12 NOON	17'-0
	1 P.M.	17'-0
	2 "	17'-0
	3 "	17'-0
	4 "	17'-0
	5 "	17'-0
10-11-69	6 P.M.	17'-0

4.4 EAST 63RD STREET TO EAST 6TH STREET

4.4.1 Study Area Description

The APE for this section includes the Second Avenue roadbed, from building line to building line, from the south boundary of East 63rd Street to the south boundary of East 6th Street (Photographs 4.4-1 through 4.4-72). Most of the construction in this section would be in bedrock with a TBM. However, potential effects could result from cut-and-cover construction for proposed subway stations, pedestrian access ways, and ventilation shafts, the precise locations of which are currently unknown. One of the shaft sites evaluated, Shaft Site A, is also located within this APE on Block 1437 east of Second Avenue between East 62nd and East 63rd Streets.

4.4.2 Existing Conditions

4.4.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

There are two possible Native American resources reported by Grumet between East 63rd and East 6th Streets. One is the Wickquasgeck Road, a trail which ran from the northern to the southern tip of Manhattan. This trail was well traveled, connecting settlements at the southern part of the island with those in the north (Grumet 1981:68). According to Grumet's map, the trail was west of the project site except for a protrusion at approximately East 57th Street, where it appeared to run near the west side of Second Avenue. Arthur C. Parker also reported traces of occupation nearby, 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 there was a knoll on the west side of Second Avenue between 57th and 53rd Streets that might have offered distinct advantages to the precontact peoples (Randel 1820). Grumet shows a stream originating at Fifth Avenue and crossing the trail at about East 50th Street and Second Avenue.

The other potential precontact site is shown by Grumet at approximately East 10th Street. It consists of a second Native American trail crossing from planting fields located west of the APE near the Hudson River to a habitation site that Grumet calls "Schepmoes." Again the location is questionable; Schepmoes was not an Indian word, but was rather the name of a prominent Dutch settler who had extensive land holdings in Lower Manhattan. Beauchamp identified the "Kil of Schepmoes," a name mentioned in a 1639 deed, as a stream running from the East 50s to Kips Bay at about East 35th Street (Grumet 1981:51). This sounds very similar to the geography mentioned in the previous paragraph, and they may well be one and the same site.

Archaeological Potential

Precontact archaeological sensitivity is determined, in part, by the topography of the project site before European settlement. Viele's "water map" is frequently used as a reference for early topography, as it shows such features as knolls, streams, meadows, marshes, shoreline, etc. (Viele 1865, 1874). His map suggests that numerous locations

within the project site would have had characteristics attractive to Native Americans (Appendix 4.4.7.1).

Precontact period archaeological potential also depends on subsurface conditions within these areas. Typically, precontact resources are found within several feet of the precontact living surface, except in alluvial areas. Therefore, there may be archaeologically sensitive areas where the precontact surface now lies buried beneath levels of fill, protected from modern disturbance. However, in some locations fill extends from the surface down to bedrock. These locations, which include Shaft Site A, have no precontact potential since there are no buried soil levels. From north to south, subsurface conditions in these archaeologically sensitive sections of the project site were assessed and the following areas were determined to have potentially retained precontact sensitivity:

1. East 62nd to East 59th Street. East 62nd Street between about 14' to 19' below grade;
   East 61st Street between approximately five to 10' below grade; East 60th Street between approximately 15' to 20' below grade; East 59th Street between 0 to 5' below grade.
2. East 42nd Street from two to six feet below grade on the west side of Second Avenue;
3. East 23rd Street to East 19th Street. East 23rd Street to a depth of between 4' to 10' feet below grade; East 22nd Street between 5' to 10' below grade; East 21st to 20th Streets, at a depth of between about 19' to 25' below grade; East 19th Street to between about 9' to 14' below grade.
4. East 16th to East 15th Street at a depth of about 9' to 14' below grade; and,
5. East 9th to East 6th Streets at a depth of about 7' to 15' below grade.

The above listed locations of precontact potential are approximate, as they reflect the locations that were determined to have potential precontact sensitivity, and where soil borings were taken and logs were available for review. Subsurface depths of fill can vary dramatically within a small geographic area, and undoubtedly vary considerably throughout the areas designated as potentially sensitive. Since definitive subsurface conditions are unknown for areas outside of the immediate vicinity of the borings, the areas listed above must be regarded as generalized rather than absolute.

The types of precontact resources that could potentially lie in the vicinity of the five areas listed above vary from precontact living areas to hunting and collecting sites. Middens were also frequently deposited near the shoreline and along wetland areas, especially in regions where shellfish was abundant. Therefore, this section of the APE could be potentially sensitive for a variety of precontact-period resource types. While rock ridges were initially identified as potentially sensitive since they may have provided protected living areas, the soil borings suggest that these areas were leveled in conjunction with the implementation of the road system presented on the 1811 Commissioners Plan.

4.4.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

Previously inventoried historic sites in the area include NYS Site A061.01.009530, where an archaeological investigation of the Bernard M. Baruch College Site B was undertaken on the block between East 24th and 25th Streets, and Third and Lexington Avenues, about one block west of the APE (Yamin et al 1997). Excavations undertaken at Site B, where a row of historic backyards was documented, found a subsurface drainage network with piping and slate-capped brick drains, as well as cobbled surfaces dating to the 19th century (Ibid.).

Archaeological Potential

Documentary research concluded that sections of the Second Avenue APE were found to be potentially sensitive only for the resource categories of *Residential* and *Churches,* but that Shaft Site A no longer has any archaeological potential (Chapter 3; Appendix 4.4.7.1). Historically, the original Dutch city, taken over by the English in 1664, was on the southernmost tip of Manhattan Island. To the north was a vast undeveloped countryside, until scattered farms and then estates began to be established, some as early as the mid seventeenth century. The roads as we know them today did not exist, and much of the transportation was via the East River.

The first major road in the area was the Eastern Post Road, ordered made in 1669, was finished in 1672. It forked off the Bloomingdale Road at 23rd Street and Fifth Avenue and ran a meandering course through Manhattan's East Side to the Harlem Bridge, much the same route as the old Indian trail (Stokes 1918:998). This road, which crossed the Second Avenue APE in several places, together with the East River, formed the main transportation arteries and were the focal points for early development. Thus, a number of buildings which formerly fronted the Eastern Post Road had been constructed in what became the middle of Second Avenue when the city's streets were plotted on the Commissioners Map (Commissioners Map 1807-1811; Randel 1820). Although Second Avenue was plotted on these maps, the stretch below East 30th Street was not opened until 1815, and the section between East 30th and East 63rd Streets was not in use until September of 1839 (WPA 1937:Project No. 609).

The early settlers were inclined to build their homes on the same parcels that the Native Americans had found attractive before them. Archaeologist Ernest Wiegand has identified Late and Transitional Archaic sites under two 18th century dwellings, one in Greenwich, Connecticut, and the other in Norwalk, Connecticut (Wiegand, personal communication: December 13, 2001). The same principle holds true for the Second Avenue project site between East 63rd to East 6th Streets. Areas of potential historical archaeological sensitivity along Second Avenue between the present building foundations flanking either side of its route are listed below, and in some cases coincide with the locations of potential precontact resources (listed above).

One of the most sensitive historical archaeological resource types associated with the historic dwellings and outbuildings which once stood within the APE are potential wells. These were typically originally excavated as deep as the water table, but their exact locations cannot be determined from the study of historic documents. Because of their potential depths, their deeper levels would have probably escaped disturbance from the installation of utilities and from later street grading and paving. Other shaft features, such as privies and cisterns, are also potentially sensitive where historic structures were noted, but these tended to be originally excavated to shallower depths than wells. However, in Lower Manhattan, privy vaults investigated by archaeologists have been found to extend to 13' below the grade elevation at the time they were originally constructed (Geismar 1986:43).

1. East 61st to East 59th Streets: Thorne Property Structures

Four structures were sited on this elevated land in proximity to the Eastern Post Road in this area (Figure 4.4-1). Here, a parcel belonged to Tredwell [&or E.] Thorne, and the largest building on that parcel extended into what is now Second Avenue, south of East 60th Street (Randel 1820:I, 31). Smaller structures were present on the west side of what is now Second Avenue a few yards south of East 61st Street and at the southern edge of East 60th Street. A fourth building was between these two, partially extending into the block on the east side of Second Avenue, a few yards north of East 60th Street.

Soil borings taken on the west side of Second Avenue between East 59th and 61st Streets reported that the water table was encountered between six and 19' below grade (Ibid.). On the east side of Second Avenue it was reported at about seven feet below grade (Boring 2-38, Raymond International Inc. 1970). Therefore, potential wells associated with any of these structures could extend anywhere from six to 19' below grade, and possibly deeper.

The relatively shallow depth of mapped subsurface utilities (WPA 1936) suggests that if any deep shaft features were associated with these structures, they may have remained, at least in part, undisturbed. Therefore, since the footprint of these structures and their surrounding terrain which may have held shaft features fall within the APE, the Second Avenue roadbed between East 61st and East 59th Streets is considered potentially sensitive for historic resources dating to at least the early 19th century. From north to south, potential shaft features could be found from the surface down to a depth of the water table which lies about 18.6' below grade near East 61st Street, and from the surface down to a depth of about 19' below grade (the deeper of the two water table readings from two boring logs) on the west side of Second Avenue between East 61st and East 60th Streets. Foundations at these locations could potentially lie between the surface and the lowest depth of fill, which is about 5.6' deep on the east side of Second Avenue near East 61st Street, and about 13' to 15' deep on the west side of Second Avenue between East 61st and East 60th Streets.

2. East 45th Street to East 44th Street: Turtle Bay Farm Structure

Cartographic evidence shows a building within the APE, on the west side of what is now Second Avenue, halfway down the block toward East 44th Street, partially overlapping

into what is now Block 1318. It was one of several buildings on a large tract known as Turtle Bay Farm, which had many owners before Francis Bayard Winthrop's heirs in 1820 (Randel 1820:I 23; Figure 4.4-2). The building within the APE may have been a secondary dwelling or outbuilding.

Soil borings show the surface elevation at 59.8' at the intersection of Second Avenue and East 44th Street, with bedrock approximately 18" below grade at 58.1' (SYSTRA et al 2001:14). Two borings taken between East 44th and 45th Streets in 1970 show ten feet of fill below grade over bedrock on the west side of Second Avenue, and five feet of fill over bedrock on the east side of Second Avenue (Borings 2-11, 2-12, Raymond International Inc. 1970). Ground water was struck at a depth of 14' and 16' respectively, suggesting potential wells associated with the historic structure here may extend at least this deep, and possibly deeper.

Subsurface conditions recorded in 1936 give the same surface elevation and document some subsurface disturbance. Telephone ducts as well as electric ducts and 12" water pipes with a soil cover of four feet were buried beneath the sidewalks in this location (WPA 1936:Project No. 609). A 12" sewer had been installed in the middle of Second Avenue in 1868, the stanchions for the el ran along its east side, and there were other ducts under the east sidewalk. The site of the Turtle Bay Farm structure and any potentially associated shaft features may have been left undisturbed, at least in part, despite the installation of these and other unrecorded subsurface utilities. Therefore, Second Avenue between East 45th and East 44th Streets is considered sensitive for these potential historical resources.

3. East 39th to East 38th Streets: Kips Bay Farm Structure

A large structure owned by Cornelius Kipp stood on the east side of Second Avenue, partially extending into what is now Block 944, and partially into East 38th Street, with more than half of it in what is now Second Avenue (Sackersdorf 1815-1868; Randel 1820:I,23; Figure 4.4-3). The building is not shown on the Colton map of 1836 as it had probably been razed by that time, since both Second Avenue and East 38th Street between First and Second Avenues were opened shortly thereafter in 1839.

In 1936 surface elevation at the corner of Second Avenue and East 38th Street, the location of the Cornelius Kipp structure, was (and still is) 25.7', 19.8' above bedrock which was reported at an elevation of 5.9'. Stanchions for the el were located along the sides of Second Avenue, and a 5' x 4' sewer line ran just above bedrock, probably at the center of Second Avenue (SYSTRA et al 2001). Other utilities included electric and telephone ducts in the roadbed adjacent to the sidewalk, as well as gas and water lines less than 24" in thickness. A larger water line ran along East 38th Street. Second Avenue was paved with granite over concrete in 1919 (WPA1936:Project No. 609).

Wells or other shaft features associated with the Cornelius Kipp house, as well as a section of the foundation of the house itself, may lie within the Second Avenue APE between East 39th and East 38th Streets. Given that the precise locations of historic shaft features are not ascertainable through documentary research, this entire area must be considered sensitive for such resources. The water table is reportedly located at about 12'

below grade, suggesting that if a well associated with the house lies within the APE, it would be at least this deep, and maybe deeper.

4. East 36th to East 35th Streets: Kips Bay Farm

A structure, possibly a dwelling, stood on the east side of what is now Second Avenue, just a few feet south of East 36th Street (Commissioners Map 1807-11). The property belonged to John Van Tuyl at least through 1820 and was part of the original Kips Bay Farm (Randel 1820 vol. I:19; Figure 4.4-4). The house had probably been demolished by 1850, as Second Avenue was opened in 1839 (Perris 1850).

The site of the Van Tuyl house was traversed by the same utilities as are the above described sites, that is: a 12" water pipe with four feet cover, a 12" gas line with 4'4" cover, and 8" and 4" gas pipes with 2'6" and 3' of cover respectively. In addition, there was a postal cable (WPA 1936: Project No. 609). The five foot sewer line was probably just west of the footprint of the house.

The surface elevation at East 36th Street is 18.4', with bedrock at -0.7. Soil borings noted the water table at about six feet below grade at East 35th Street, and 18' below grade at East 36th Street. Therefore, the Second Avenue roadbed between East 36th and 35th Streets is considered potentially sensitive for the foundation of the structure and any related outbuildings or associated shaft features, which may extend at least 18' below grade.

5. East 31st to East 29th Streets: Kips Bay Farm Structures

There were two pre-1820 structures on lots on the east side of Second Avenue between East 31st and East 29th Streets (Randel 1820:I,19; Figure 4.4-5). The more northerly structure extended south into what is now East 30th Street. The bulk of this building extended past the building line into the block itself, and its foundations were almost certainly destroyed by construction of the three-story Kips Bay Plaza building, with basement, that now stands over it's former location (Sanborn 2001). The footprint of the southerly structure fell entirely in what eventually became the Second Avenue roadbed, about 50' north of what is now East 29th Street (Randel 1820). Both were held by William Vail.

The existing surface elevations for these two blocks are: 27.3' at East 31st Street, 31.8' at East 30th Street, and 33' at East 29th Street. The distance from grade to bedrock is, respectively, 11.8', 15.2' and 15.3', although there is a peak and a valley shown on subsurface profiles that are not reflected in these figures (SYSTRA et al 2001). A 4' x 3' sewer ran through bedrock between East 31st and East 30th Streets and just above it elsewhere. If the sewer is located in the center of Second Avenue, as is shown on WPA maps for adjacent blocks, it is not likely to have affected the locations of these historic structures, which are on the east side of the street. It can be assumed that there are gas and water pipes, electric and telephone ducts, and a postal cable in the roadbed outside the curb on the east side of Second Avenue, as well as stanchions for the elevated train, since they exist at East 25th Street (WPA 1936:Project No. 609).

The soil borings suggest that since fill exists below grade and above the bedrock, potential historic period resources could be within the fill levels. If wells associated with these structures were present, they would have been at least 18' deep below grade, the lowest reported depth of the water table, and possibly deeper. The tops of potential shaft features would probably be found below the bottom depths of fill. Therefore, the Second Avenue streetbed between East 31st and East 29th Streets is considered potentially sensitive for the southernmost structure (Vail), as well as any associated (but unmapped) outbuildings and shaft features.

6. East 14th to East 13th Streets: Petersfield Farm Structure

A building was situated parallel to Second Avenue in 1820, on the west side of the avenue, midway down the block, with a larger structure outside of the APE (Randel 1820:I,11; Figure 4.4-6). The property was part of a large holding owned by Peter G. Stuyvesant and was called "Petersfield." The principle residence was located between East 15th and East 16th Streets east of First Avenue and dates back to before 1765. It was demolished between 1829 and 1832 (Stokes 1918:952). The property was originally the country estate of Peter G. Stuyvesant's grandfather, Peter Stuyvesant, the Dutch Governor. His mansion was located at East 10th Street, just west of Second Avenue, and burned in 1778 (Willensky and White 1988:167).

The surface elevation at the corner of Second Avenue and East 14th Street is 27.5', or 40.5' above bedrock which is located at -13', and the ground is relatively level (SYSTRA et al 2001). The BMT Subway line runs under 14th Street but far enough north of the site of the former building not to have affected its location. A sewer line runs at approximately 11' below the surface in the center of Second Avenue east of the former structure. The usual water and gas lines, both under 24" wide, and an electrical duct ran about five feet out from the curb (WPA 1939:117). A sewer line is shown in the center of the Second Avenue roadbed, approximately 14' below grade, and between it and the west curb are an electrical duct and a gas line under 24" in diameter. Fill extends about 3'6" below grade, bedrock is at about 36' below grade, and the water table is located at about 15' below grade (Boring M53, Raymond International ca.1970s).

Although no structures were shown directly within the APE, there is the possibility that shaft features associated with the Stuyvesant property fell within what is now Second Avenue. Therefore, the APE is considered potentially sensitive for resources associated with the Stuyvesant structure between East 14th and East 13th Streets, south of the 14th Street subway tunnel. If wells were associated with these structures, they may have extended at least 15' below grade, the depth of the water table, and possibly deeper.

7. East 11th to East 10th Streets: St. Marks-in-the-Bowery Church Property Structures

There were two structures in the Second Avenue roadbed between E. 11th and 10th streets in 1807-1811, one on the east side just south of East 11th Street and partially east of the building line, and the other on the west side about 30' south of East 11th Street, also projecting beyond the building line into what is now Second Avenue (Commissioner's Map 1807-1811; Figure 4.4-7). They were apparently associated with St. Marks-in-the-

Bowery Church, which is located on the same block but west of the APE. The pre-1811 street grid was at a 45 degree angle from that of today, with the church and outbuildings oriented toward Stuyvesant Street. St. Marks-in-the-Bowery Church, constructed in 1799 at what is now Second Avenue and East 10th Street still stands, having been restored between 1978 and 1984 (Willensky and White 1988:166-167). It is the site of Peter Stuyvesant's estate chapel and graveyard but is outside the boundary of the project site by about a block. The church's cobbled courtyard, however, may have served as some protection to the remains of the more westerly building mentioned above.

The 4' x 4' sewer runs down the center of Second Avenue at an elevation of approximately 15' below grade and avoids the location of both pre-1811 structures (SYSTRA et al:2001). Fill extends about five feet below grade, bedrock is at about 15' below grade, and the water table is located at about 11' below grade (Boring M49, Raymond International ca.1970s). Most of the utility lines (e.g. electricity, telephone, postal cable, water and gas) were on the east side of the street, beginning at the curb and extending into about a quarter of the roadbed. On the west side of Second Avenue were a 20" gas line covered with four feet of soil, an electrical duct, and a 12" water pipe under 4' 8" of soil (WPA 1937: Project 609).

The depth of fill and the water table in this area suggest that Second Avenue between East 11th and 10th Streets could be potentially sensitive for the footprint of the two pre-1811 structures. If shaft features were associated with either structure, wells could extend as deep as 11' below grade, the depth of the water table, and possibly deeper. Privies and/or cisterns could extend to a similar depth.

4.4.3 Summary of Archaeological Potential

Although most of the proposed construction for this section of the APE would be completed with a TBM through bedrock, which is anticipated to be below the depth of potential resources, there may be excavations in areas extending from the surface down to the proposed tunnel, but the precise locations of these effect areas are unknown. Should they fall within the following approximate areas, they have the potential to affect precontact resources (Figures 4.4-8a through 4.4-8i):

East 62nd to East 59th Street. East 62nd Street between about 14' to 19' below grade; East 61st Street between approximately five to 10' below grade; East 60th Street between approximately 15' to 20' below grade; East 59th Street between 0 to 5' below grade;
East 42nd Street from two to six feet below grade on the west side of Second Avenue;
East 23rd Street to East 19th Street. East 23rd Street to a depth of between 4' to 10' feet below grade; East 22nd Street between 5' to 10' below grade; East 21st to 20th Streets, at a depth of between about 19' to 25' below grade; East 19th Street at a depth of between about 9' to 14' below grade;
East 16th to East 15th Street at a depth of about 9' to 14' below grade; and,
East 9th to East 6th Streets at a depth of about 7' to 15' below grade.

Similarly, if excavations extend below the surface in the following areas, they may have the potential to affect historical resources (Figures 4.4-8a through 4.4-8i):

East 61st to East 59th Streets (early 19th century Thorne Property) from the surface down to a depth of at least 19' below grade;
East 45th Street to East 44th Street: early 19th century Turtle Bay Farm from the surface down to a depth of at least 14'-16' below grade;
East 39th to East 38th Streets: early 19th century Kips Bay Farm from the surface down to a depth of at least 12' below grade;
East 36th to East 35th Streets: early 19th century Kips Bay Farm from the surface down to a depth of between 10' and 18' below grade and possibly deeper;
East 31st to East 29th Street: early 19th century Kips Bay Farm between 10 and at least 18' below grade;
East 14th to East 13th Streets: early 19th century Petersfield Farm to a depth of at least 15' below grade; and,
East 11th to East 10th Streets: early 19th century St. Marks Church Property to a depth of at least 5' to 15' below grade.

The horizontal and vertical extent of all potential resources that may be affected is considered to be approximate. The actual depths of potential resources could only be ascertained through Phase 1B field investigations.

4.4.4 Proposed Project Effects

Potential precontact resources may exist between East 62nd and East 61st Streets between approximately 14 and 19 feet below grade; between East 61st and East 60th Streets from five to 10 feet below grade; between East 60th to East 59th Streets from 15 to 20 feet below grade; and at East 59th Street from the surface down to about five feet below grade. In addition, the two blocks between East 61st and East 59th Streets are potentially sensitive for early 19th century residential features related to the Thorne property. Construction of a deep tunnel using a TBM through bedrock will have no effect on potential resources (SYSTRA Drawing CT-12, March 1, 2002). The construction of a vent shaft in an unknown location between East 62nd and East 59th Streets has the potential to affect these resources within this section of the APE.

On Second Avenue between East 45th and East 44th Streets, there is the potential for historic features related to the early 19th century Turtle Bay Farm from the surface down to approximately 16 feet below grade. Proposed cut and cover excavations from the surface down to 70 to 85 feet below grade would affect these potential historic resources.

At East 42nd Street, potential precontact resources may lie buried from two to six feet grade. Proposed cut and cover construction from the surface down to 70 to 85 feet below grade would affect this potential resource.

Historic resources related to the early 19th century Kips Bay Farm may lie between East 39th and East 38th Streets from the surface down to approximately 12 feet below grade. Deep tunnel excavations using a TBM through bedrock will have no effect on potential

resources. However, the construction of a vent shaft in an unknown location may affect potential resources.

On Second Avenue between East 36th and East 35th Streets, potential early 19th century resources related to the Kips Bay Farm may lie between 10 and 18 feet below grade. The cut and cover construction of a proposed subway station from the surface down to about 55 feet below grade would affect any potential resources.

On Second Avenue between East 31st and East 29th Streets, potential early 19th century resources related to the Kips Bay Farm may lie between 10 and 18 feet below grade. The construction of a deep tunnel using a TBM through bedrock will have no effect on potential resources, but the proposed installation of a vent shaft in an unknown location could affect potential resources.

On Second Avenue between East 23rd and East 22nd Streets precontact resources could potentially lay between approximately four and 10 feet below grade; between East 21st and East 20th Streets, they could lie between 19 and 25 feet below grade; and, at East 19th Street, they could lie between nine and 14 feet below grade. The deep tunnel excavations, using a TBM through bedrock, will have no effect on these potential resources, but the proposed installation of a vent shaft in an unknown location could potentially affect these resources.

The proposed cut and cover construction of a station between East 15th and East 11th Street, which would extend from the surface down to 75 feet below grade, could affect potential early 19th century residential features associated with Petersfield Farm, which may lie between East 14th and East 13th Streets from the surface down to about 15 feet below grade.

On Second Avenue between East 11th and East 10th Streets there is the potential for early 19th century resources related to the use of the property by St. Marks Church. Historic resources are anticipated to lie between zero and 15 feet below grade. Just to the south, the APE has the potential to possess precontact resources between East 9th and East 6th Streets from seven to 15 feet below grade. Deep tunneling through bedrock will have no effect on potential resources, but the installation of a vent shaft in an unknown location could potentially affect both these precontact and historic resources.

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.

4.4.5 Recommendations

There is a possibility that this section of the APE was utilized at some time during the precontact and contact periods. Although the likelihood that resources would have survived the 19th and 20th century development of this part 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.

While the probability of finding intact, significant precontact or contact period resources eligible for inclusion on the National Register of Historic Places is moderate to minimal, the limited potential should be corroborated by subsurface testing in areas that were designated as potentially sensitive which would be affected. There is also a moderate potential to encounter intact, potentially significant historical period remains beneath the roadbed and sidewalks that line the APE where historical structures and yards were noted. Again, a subsurface testing plan will be warranted to test these potentially sensitive areas when the locations of effects are known.

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] However, conclusions may not change significantly, given that most of the borings referenced in this section of the APE were taken in the 1970s, a fairly modern date. Following the review of soil borings, some sites 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 prepared in consultation with SHPO. It is expected that the additional documentary research will aid in the formulation of a specific subsurface testing plan.

Where subsurface testing is indicated, its goal would be to establish the presence or absence of cultural resources, their horizontal and vertical extent, site integrity, and, their 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.

[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.

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 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.

4.4.6 Figures and Photographs

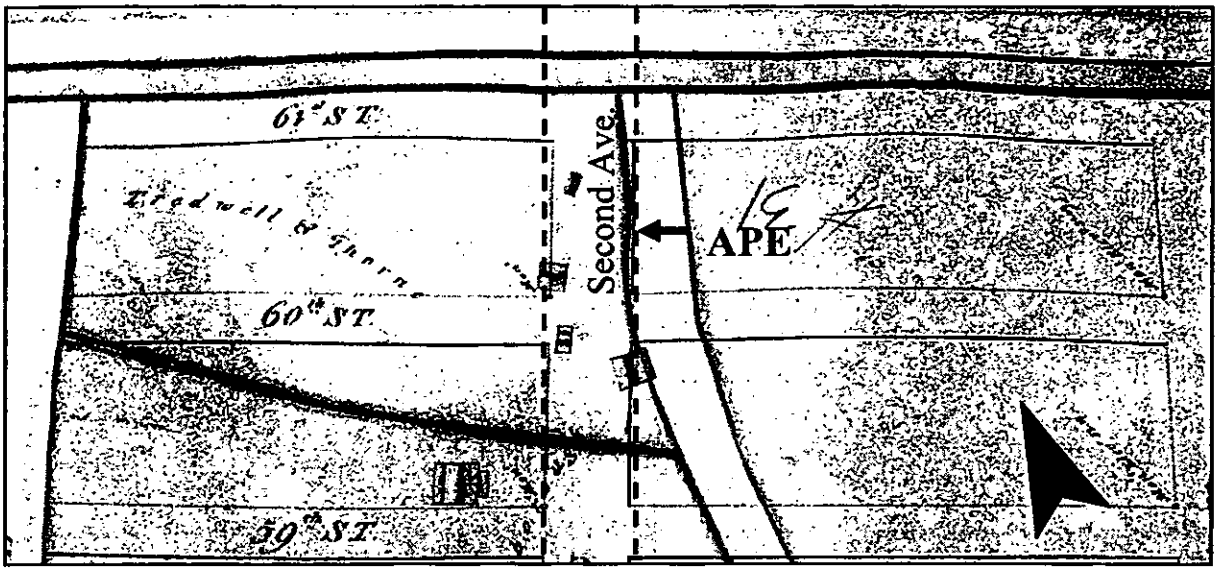


FIGURE 4.4-1

Farm Maps. Randel 1820.
Second Avenue, East 61st Street to East 59th Street.

Approximate Scale: 3/8 inch = 100 feet

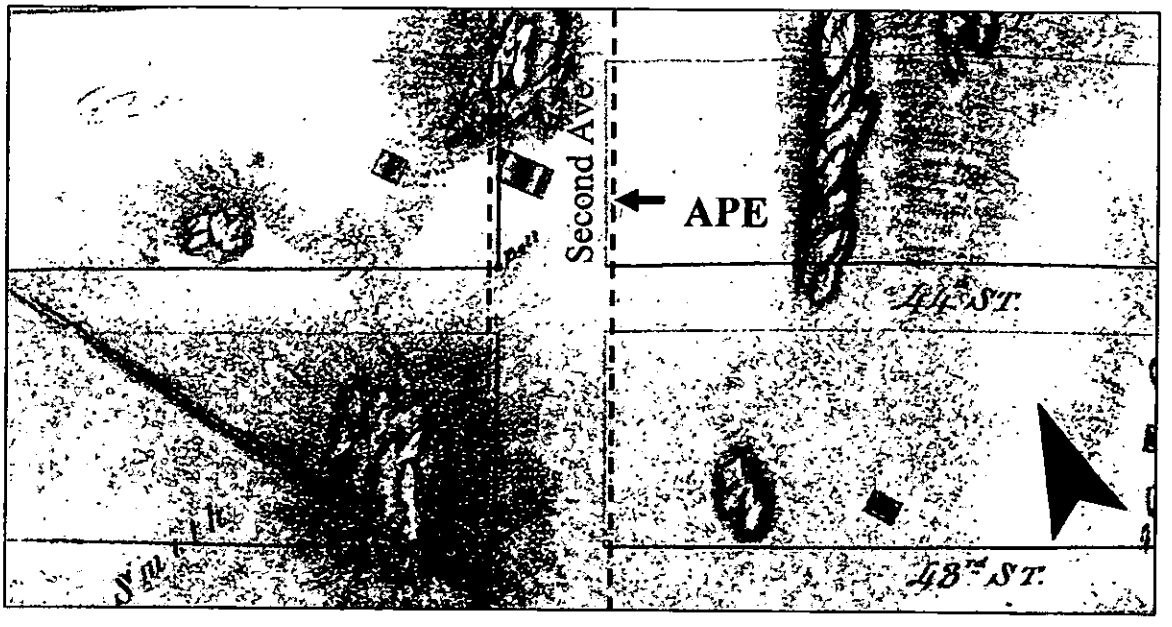


FIGURE 4.4-2

Farm Maps. Randel 1820.
Second Avenue, East 45th Street to East 43rd Street.

Approximate Scale: 5/8 inch = 100 feet

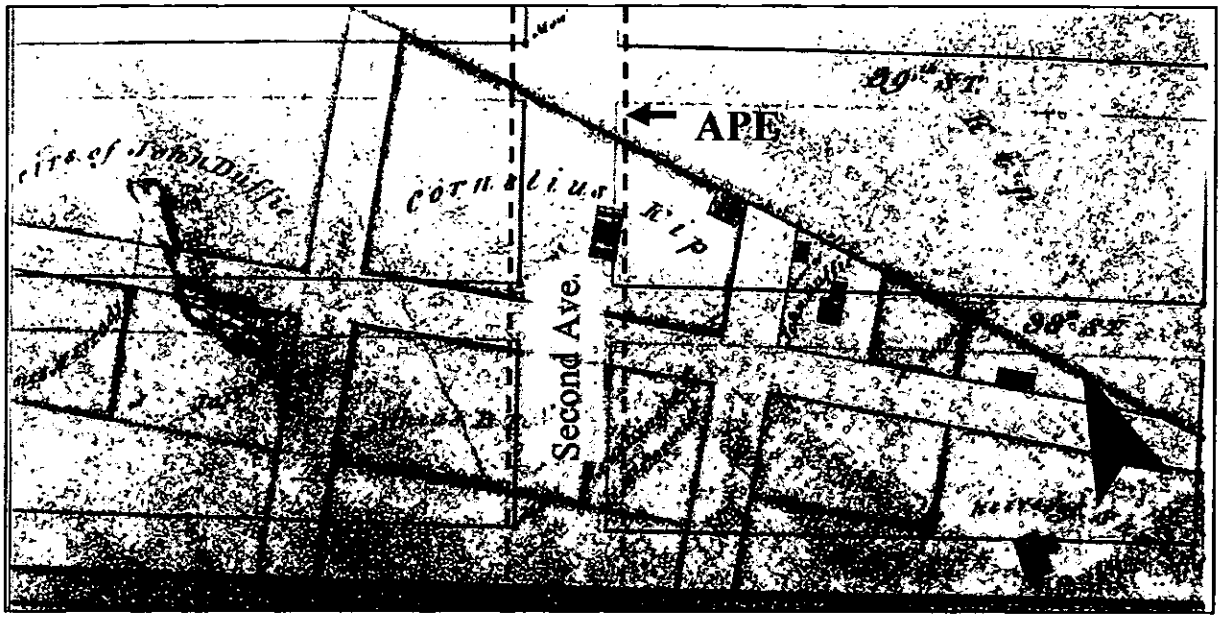


FIGURE 4.4-3

Farm Maps. Randel 1820.
Second Avenue, East 39th Street to East 37th Street.

Approximate Scale: 1/2 inch = 100 feet

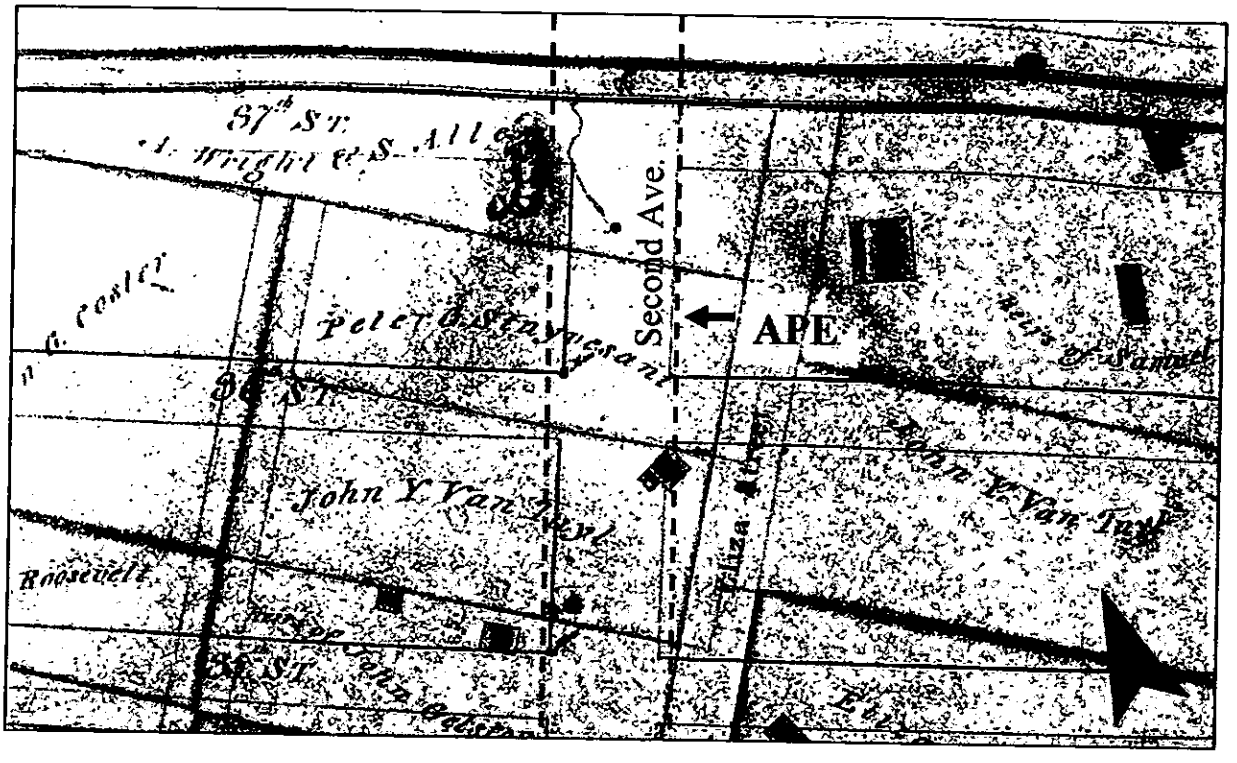


FIGURE 4.4-4

Farm Maps. Randel 1820.
Second Avenue, East 37th Street to East 35th Street.

Approximate Scale: ½ inch = 100 feet

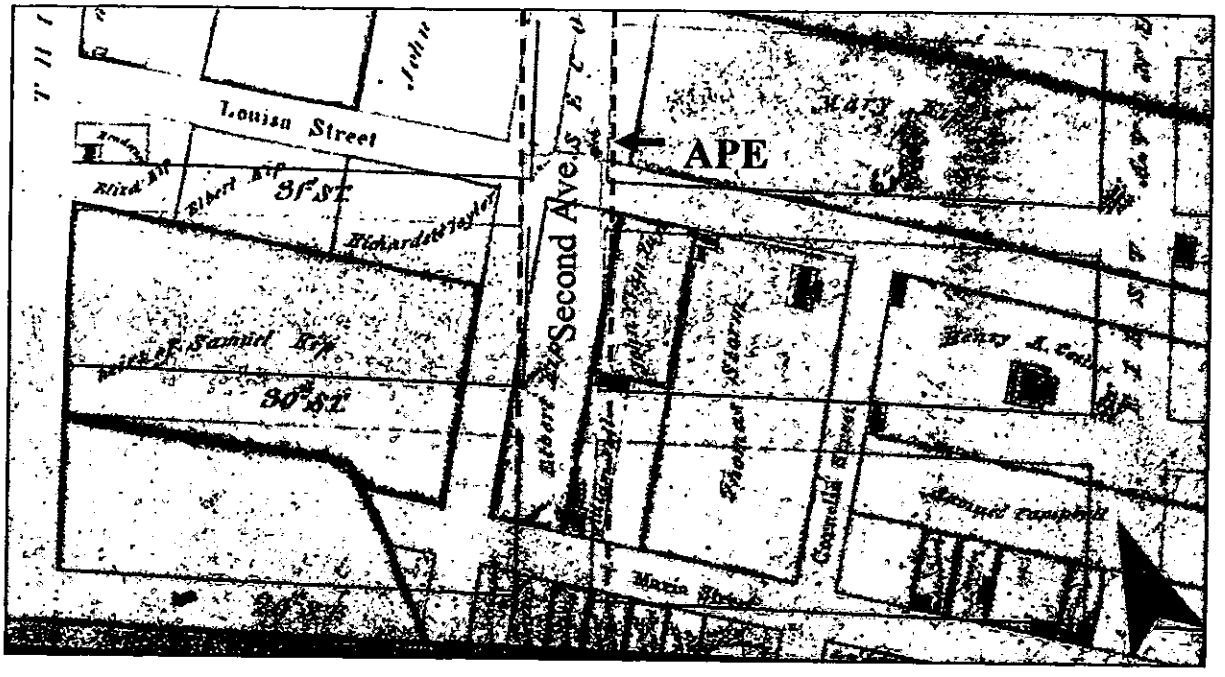


FIGURE 4.4-5

Farm Maps. Randel 1820.
Second Avenue, East 31st Street to East 29th Street.

Approximate Scale: 3/8 inch = 100 feet

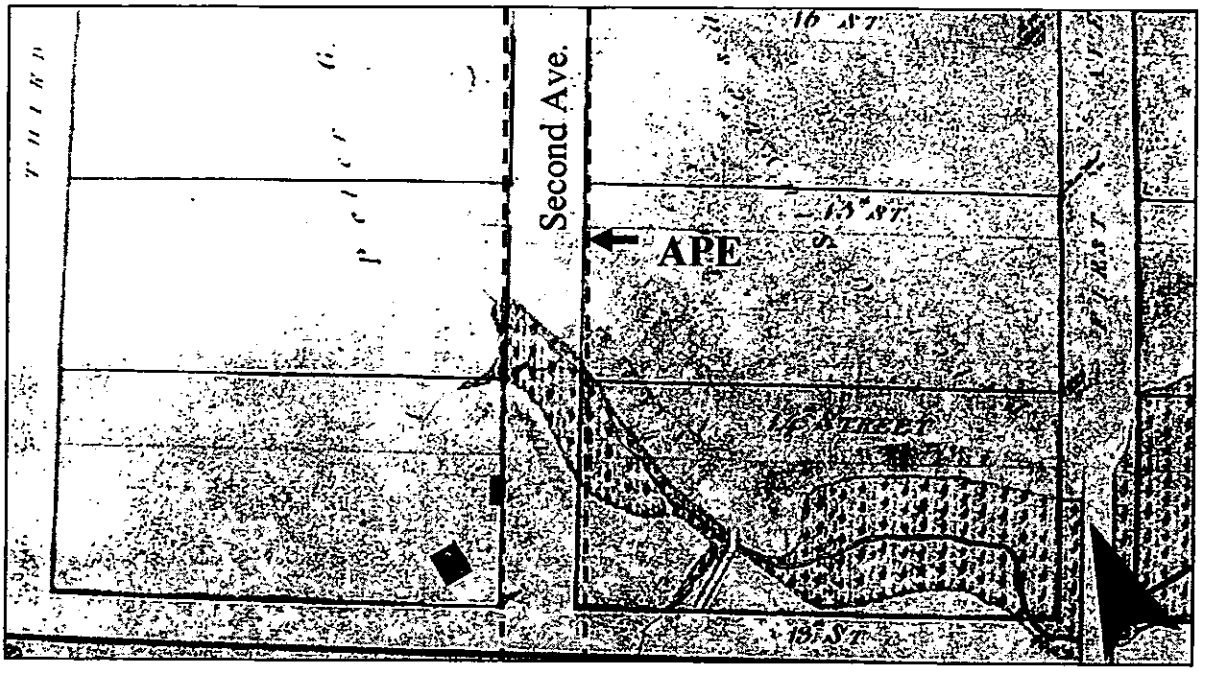


FIGURE 4.4-6

Farm Maps. Randel 1820.
Second Avenue, East 16th Street to East 13th Street.

Approximate Scale: 3/8 inch = 100 feet

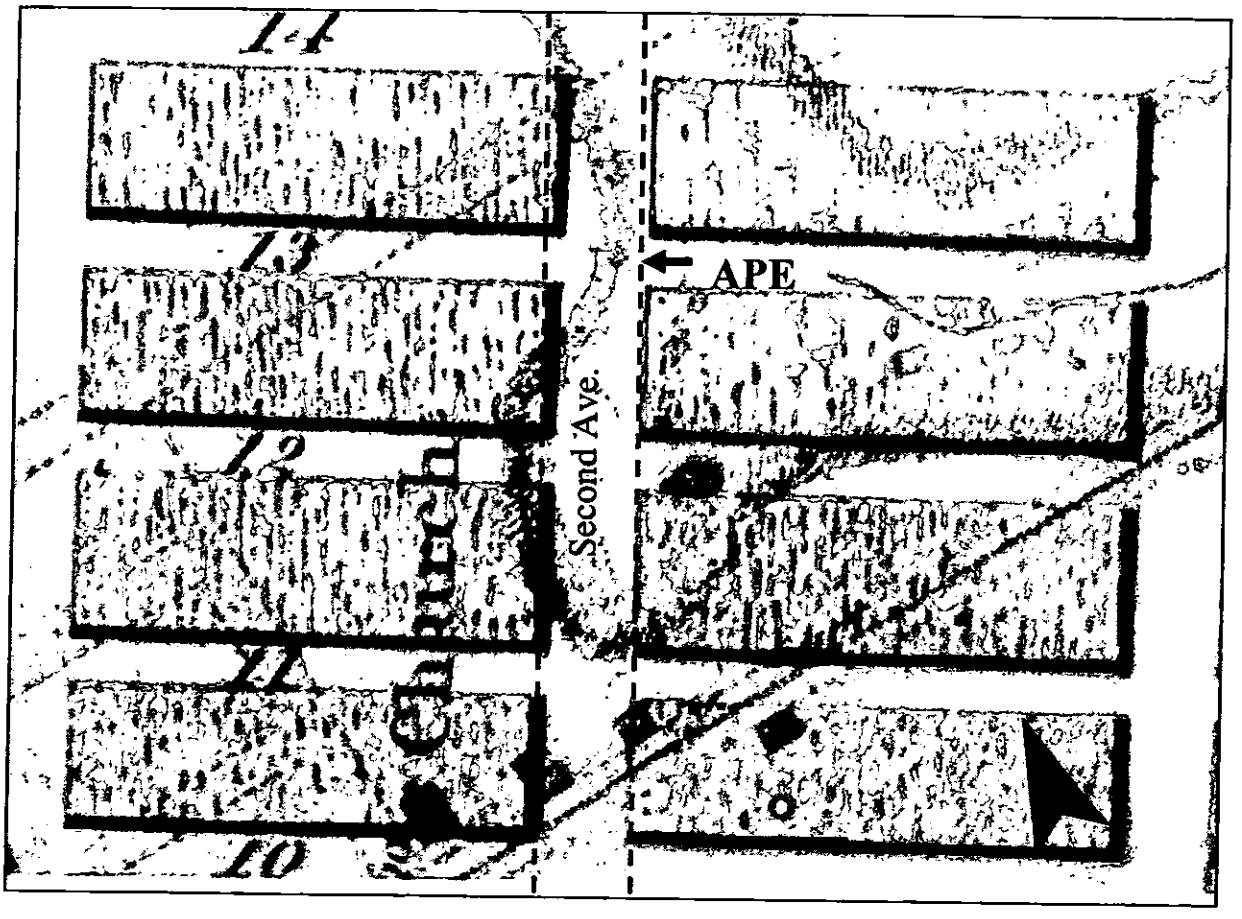
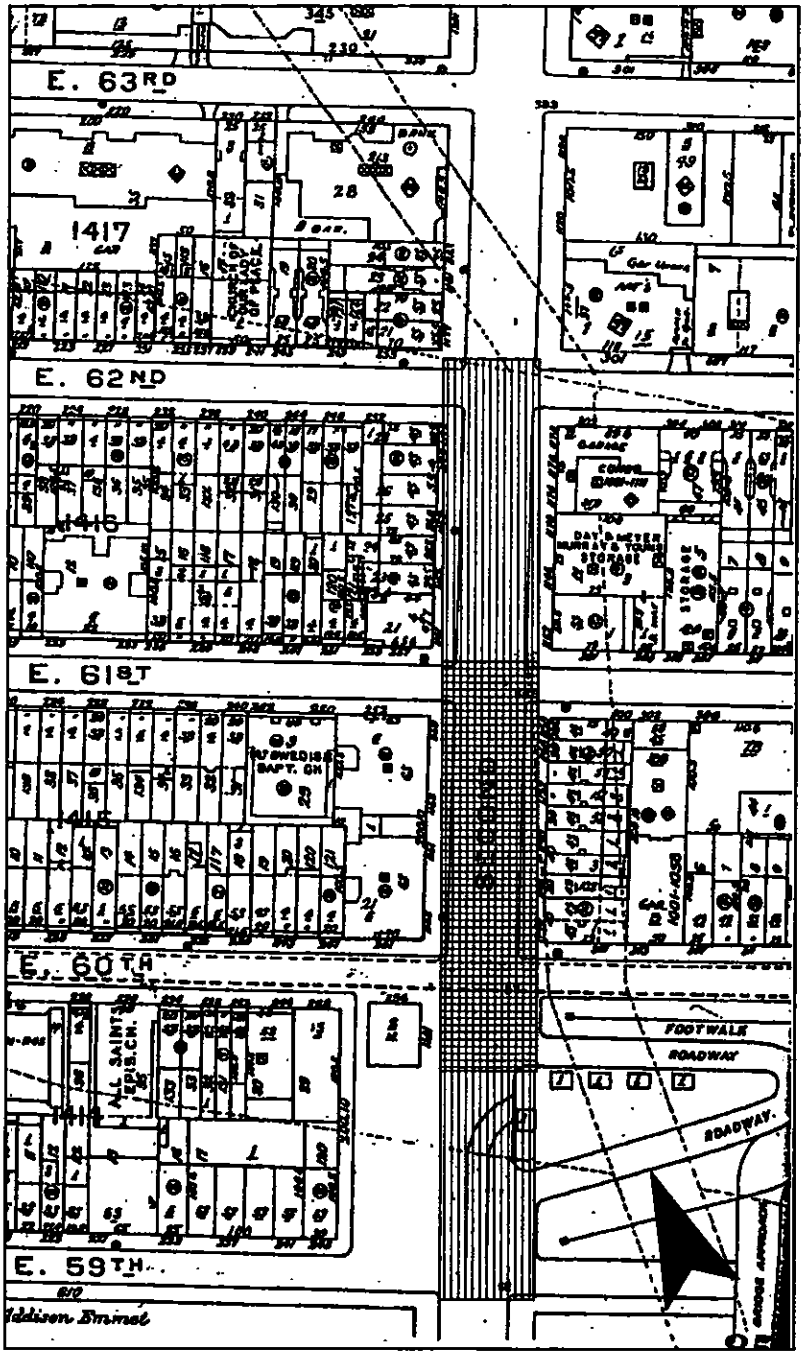


FIGURE 4.4-7

Map of the city of New York and Island of Manhattan as laid out by the Commissioners. Bridges 1807-1811.
Second Avenue, East 14th Street to East 10th Street.

Approximate Scale: ½ inch = 100 feet



Legend:

- Historical Sensitivity
- Precontact Sensitivity
- Historical and Precontact Sensitivity

FIGURE 4.4-8a

Area of Potential Archaeological Sensitivity.
Second Avenue, East 62nd Street to East 59th Street.
Sanborn 2001.

Approximate Scale: 5/8 inch = 100 feet

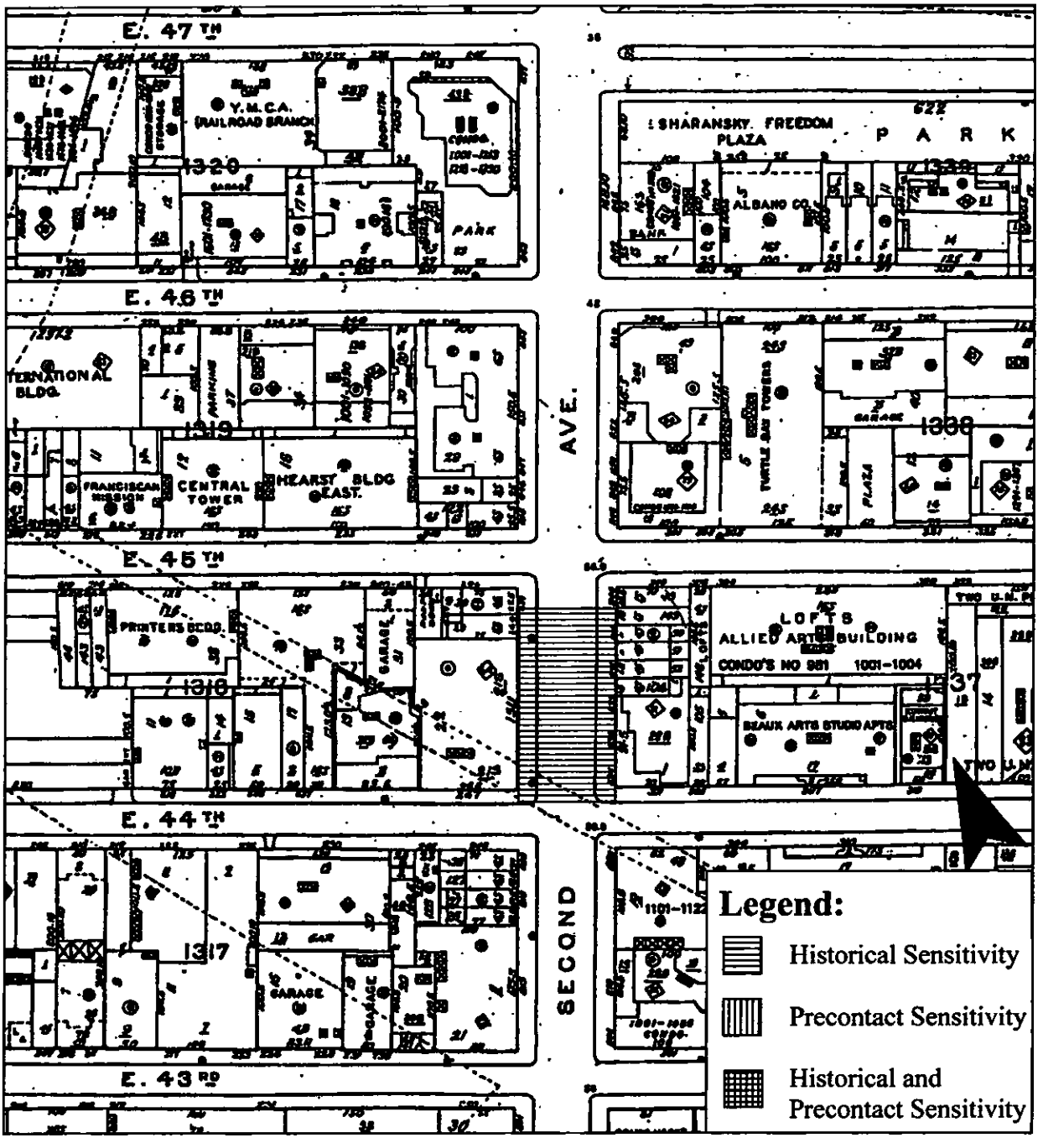


FIGURE 4.4-8b

Area of Potential Archaeological Sensitivity.
Second Avenue, East 45th Street to East 44th Street.
Sanborn 2001.

Approximate Scale: 5/8 inch = 100 feet

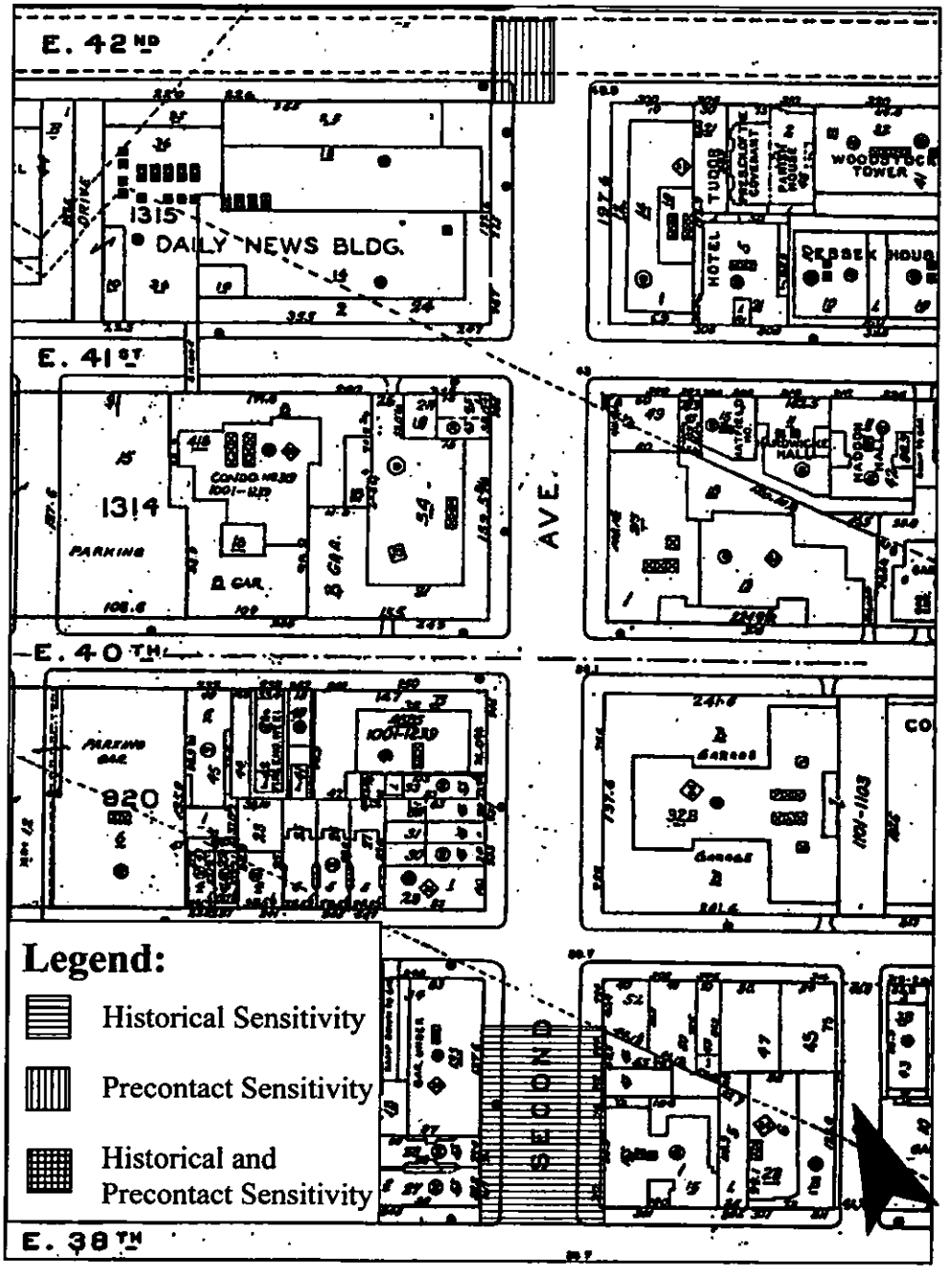
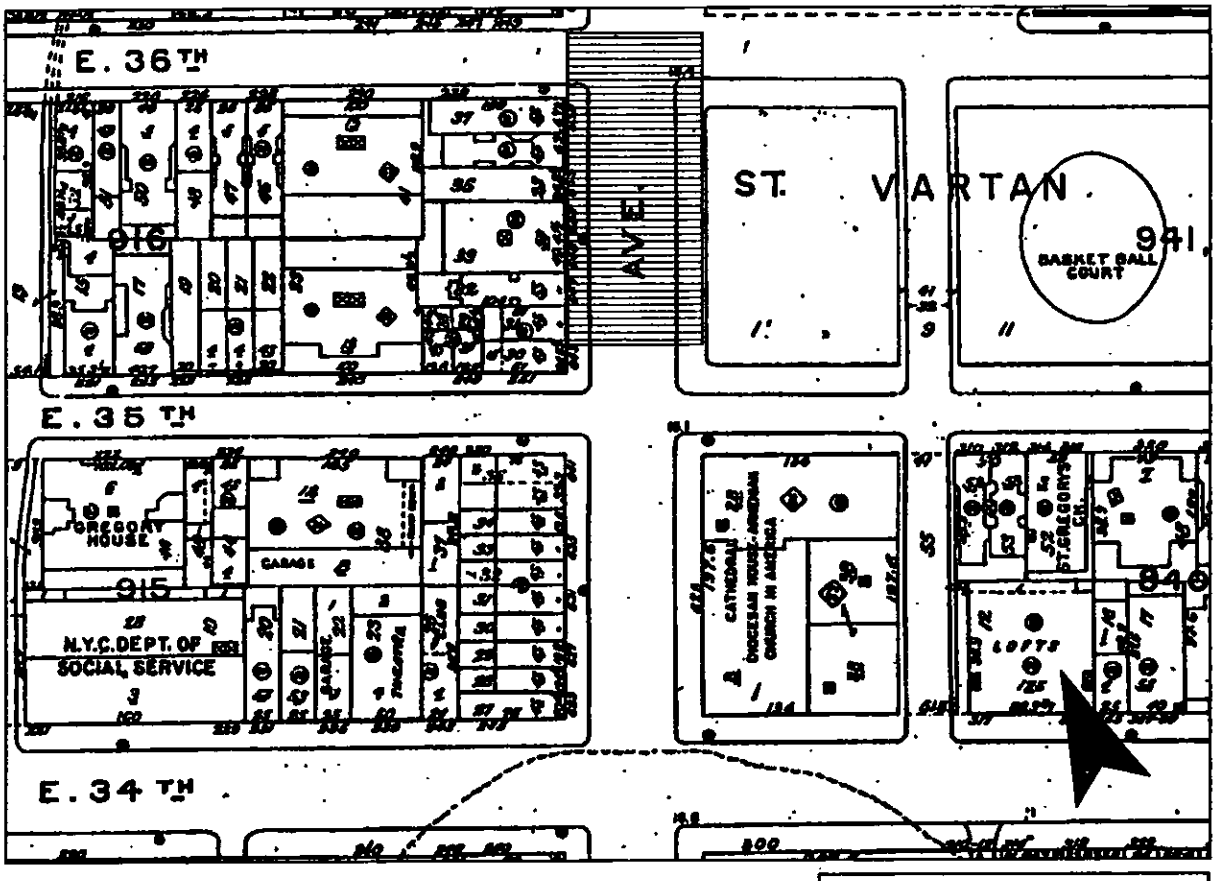


FIGURE 4.4-8c

Area of Potential Archaeological Sensitivity.
Second Avenue, East 42nd Street and East 39th to East 38th Streets.
Sanborn 2001.

Approximate Scale: 5/8 inch = 100 feet



Legend:

- Historical Sensitivity
- Precontact Sensitivity
- Historical and Precontact Sensitivity

FIGURE 4.4-8d

Area of Potential Archaeological Sensitivity.
Second Avenue, East 36th Street to East 35th Street.
Sanborn 2001.

Approximate Scale: 3/4 inch = 100 feet

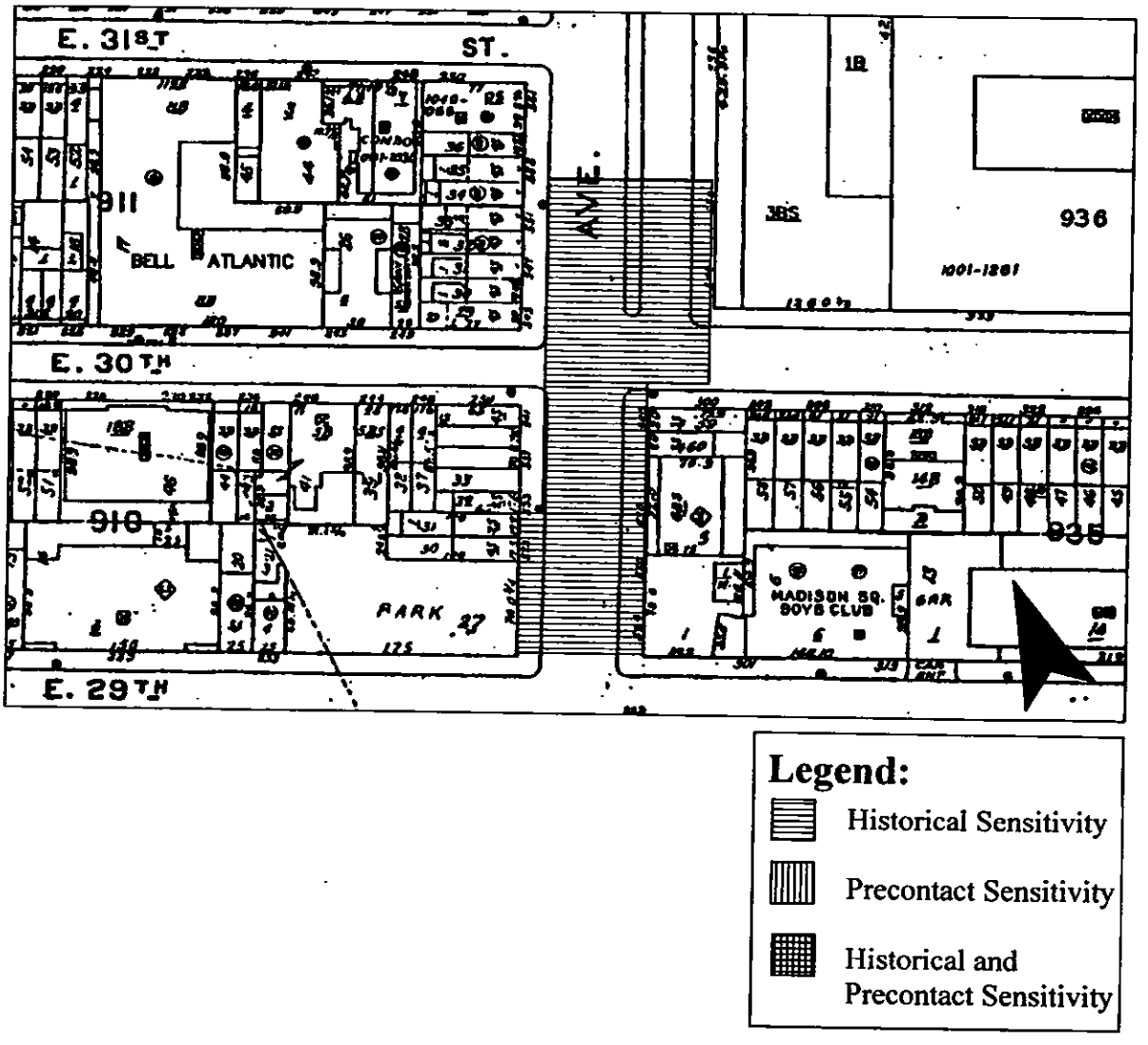


FIGURE 4.4-8e

Area of Potential Archaeological Sensitivity.
Second Avenue, East 31st Street to East 29th Street.
Sanborn 2001.

Approximate Scale: 3/4 inch = 100 feet

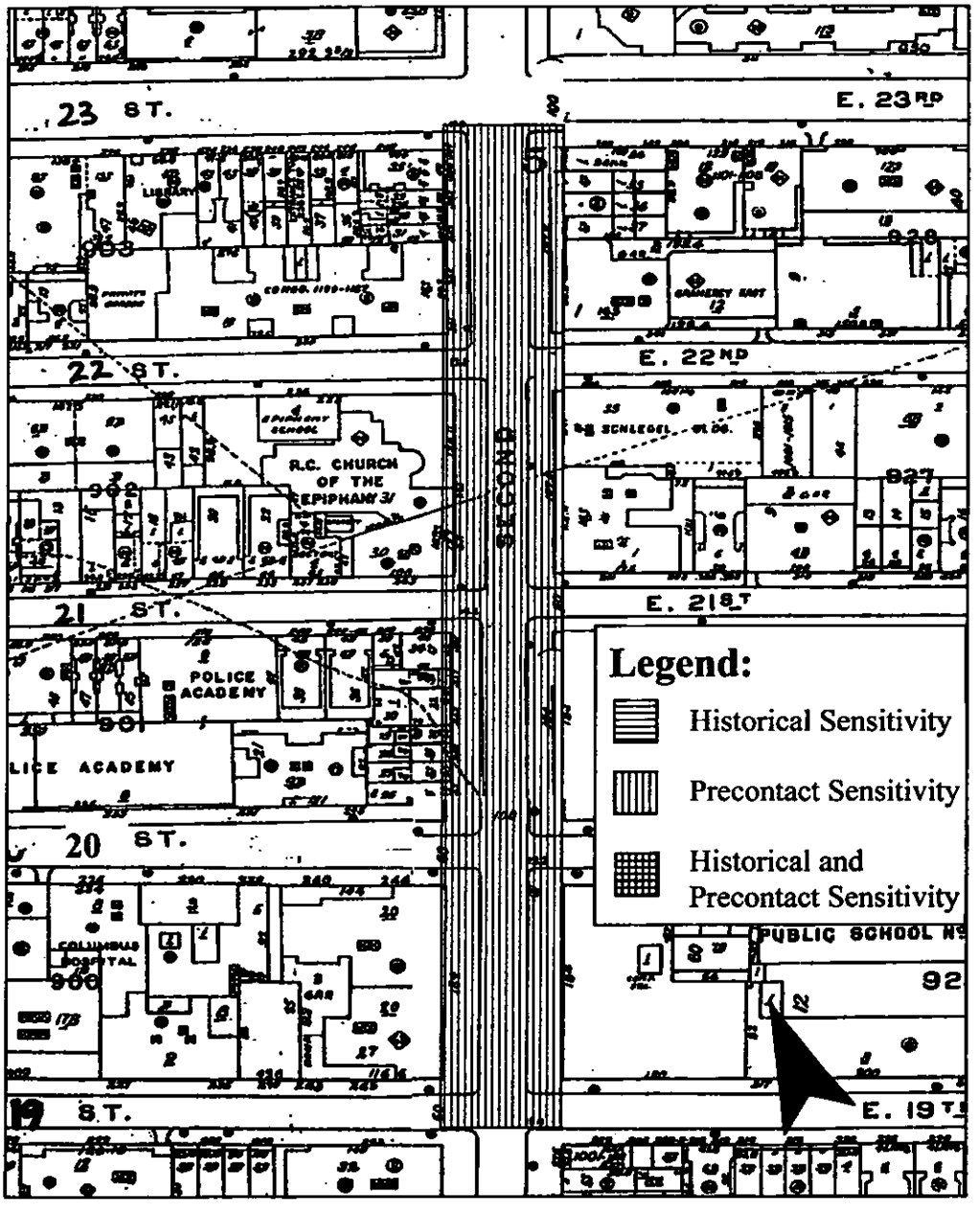
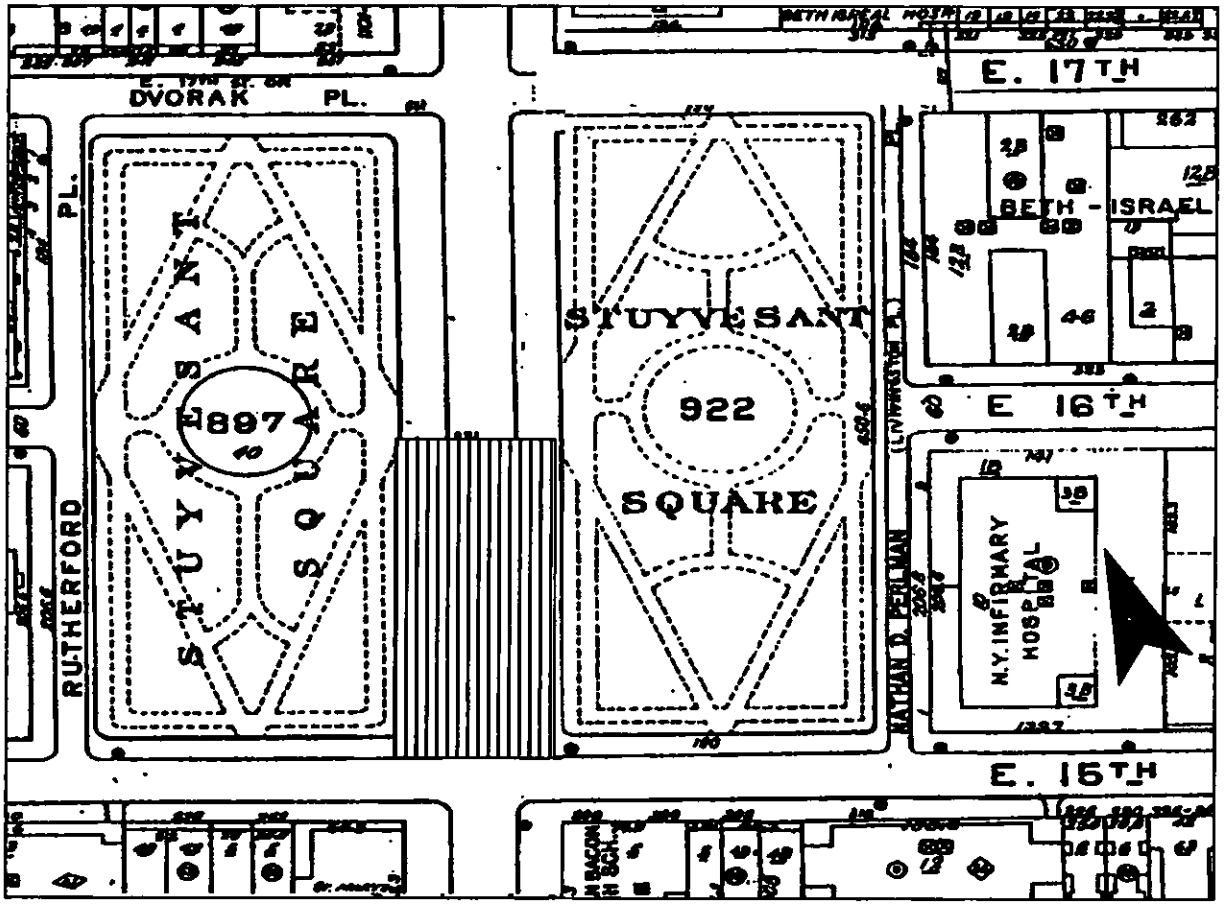


FIGURE 4.4-8f

Area of Potential Archaeological Sensitivity.
Second Avenue, East 23rd to East 19th Streets.
Sanborn 2001.

Approximate Scale: 5/8 inch = 100 feet



Legend:

- Historical Sensitivity
- Precontact Sensitivity
- Historical and Precontact Sensitivity

FIGURE 4.4-8g

Area of Potential Archaeological Sensitivity.
Second Avenue, East 16th Street to East 15th Street.
Sanborn 2001.

Approximate Scale: 7/8 inch = 100 feet

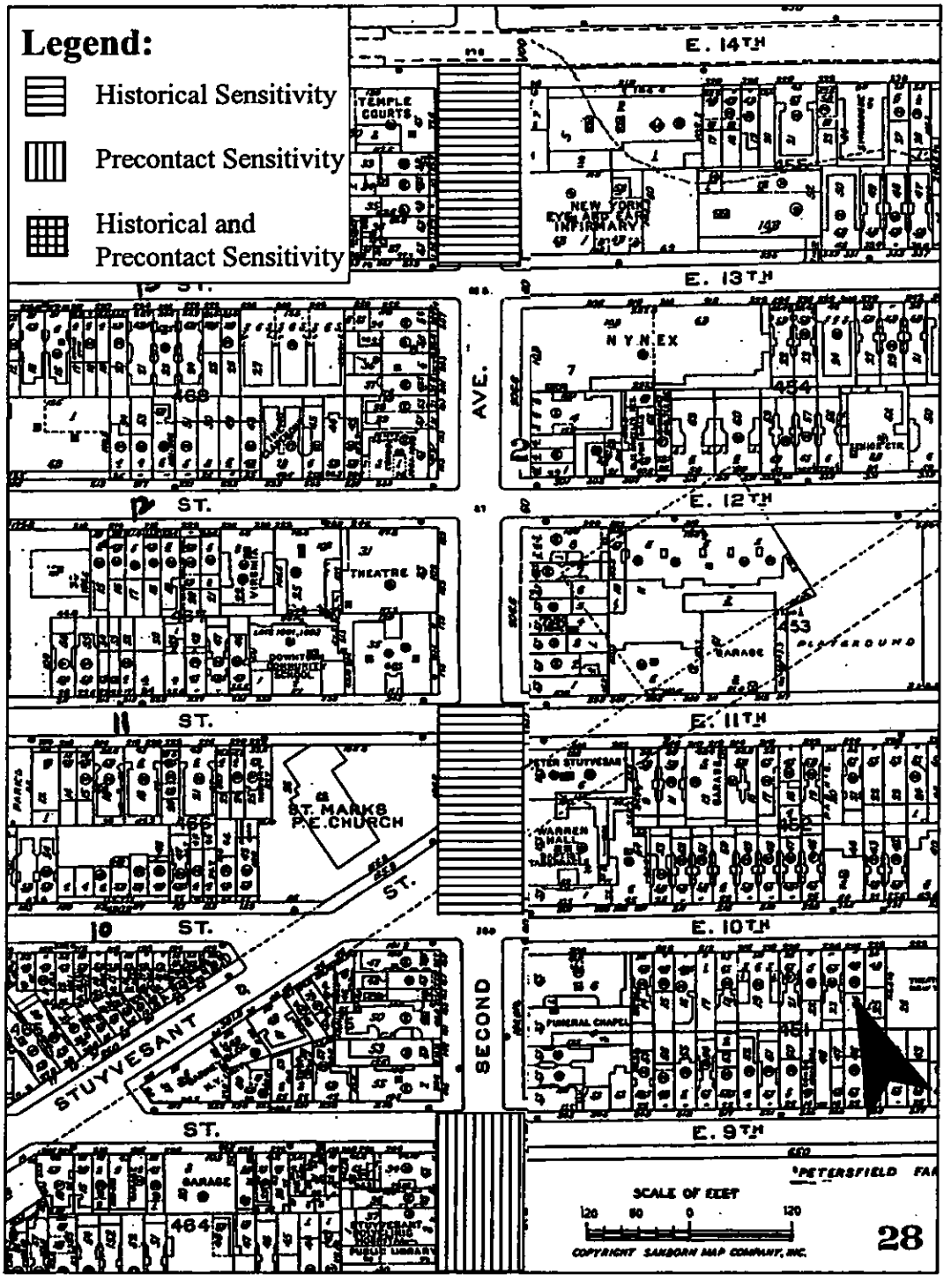


FIGURE 4.4-8h

Area of Potential Archaeological Sensitivity.
Second Avenue, Areas between East 14th Street and East 8th Street.
Sanborn 2001.

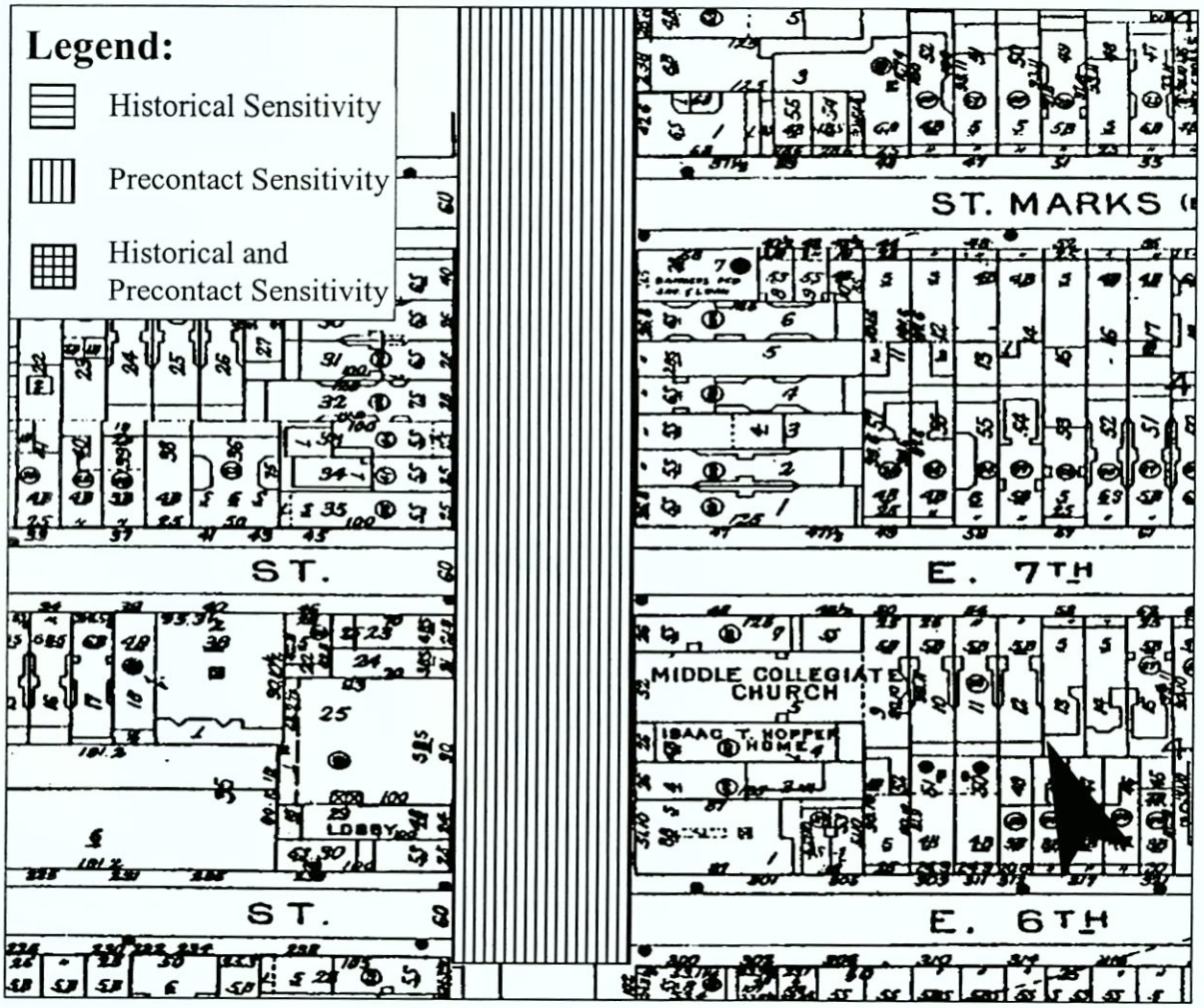


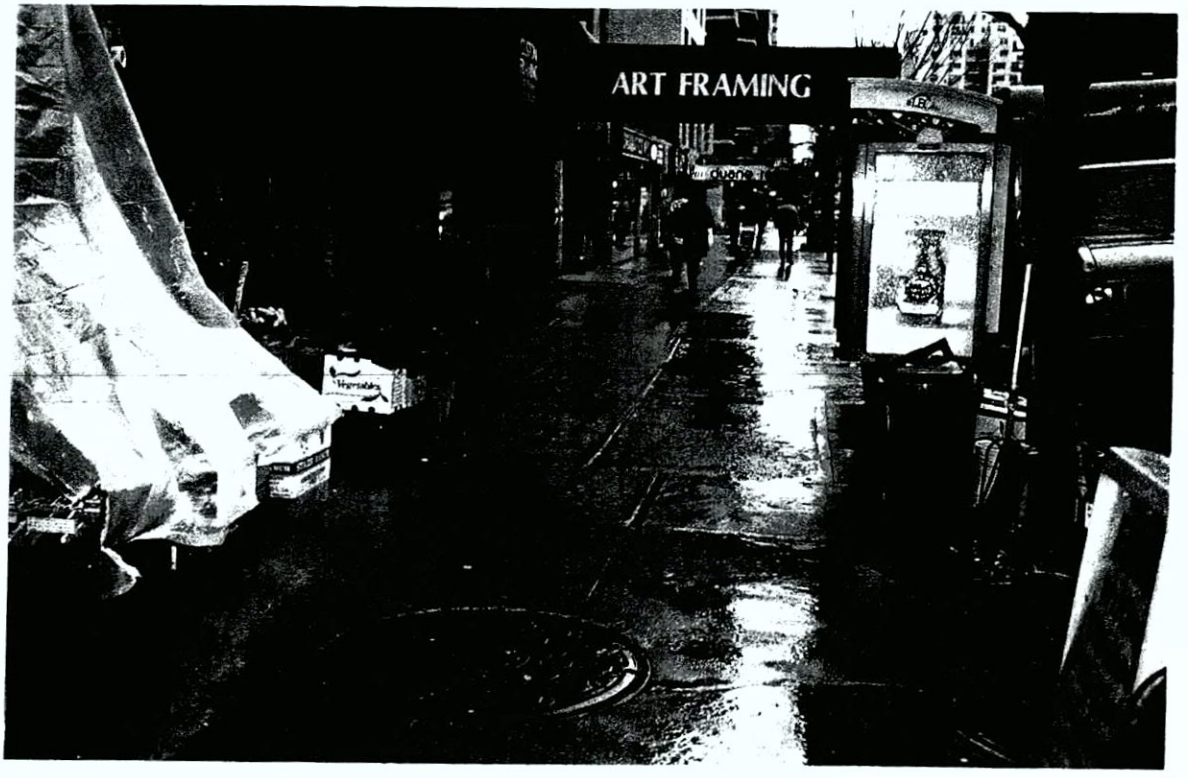
FIGURE 4.4-8i

Area of Potential Archaeological Sensitivity.
Second Avenue, Saint Marks Place (East 8th Street) to East 6th Street.
Sanborn 2001.

Approximate Scale: 7/8 inch = 100 feet



Photograph 4.4-1: Facing southwest on Second Avenue toward East 63rd Street on the east side of Second Avenue.



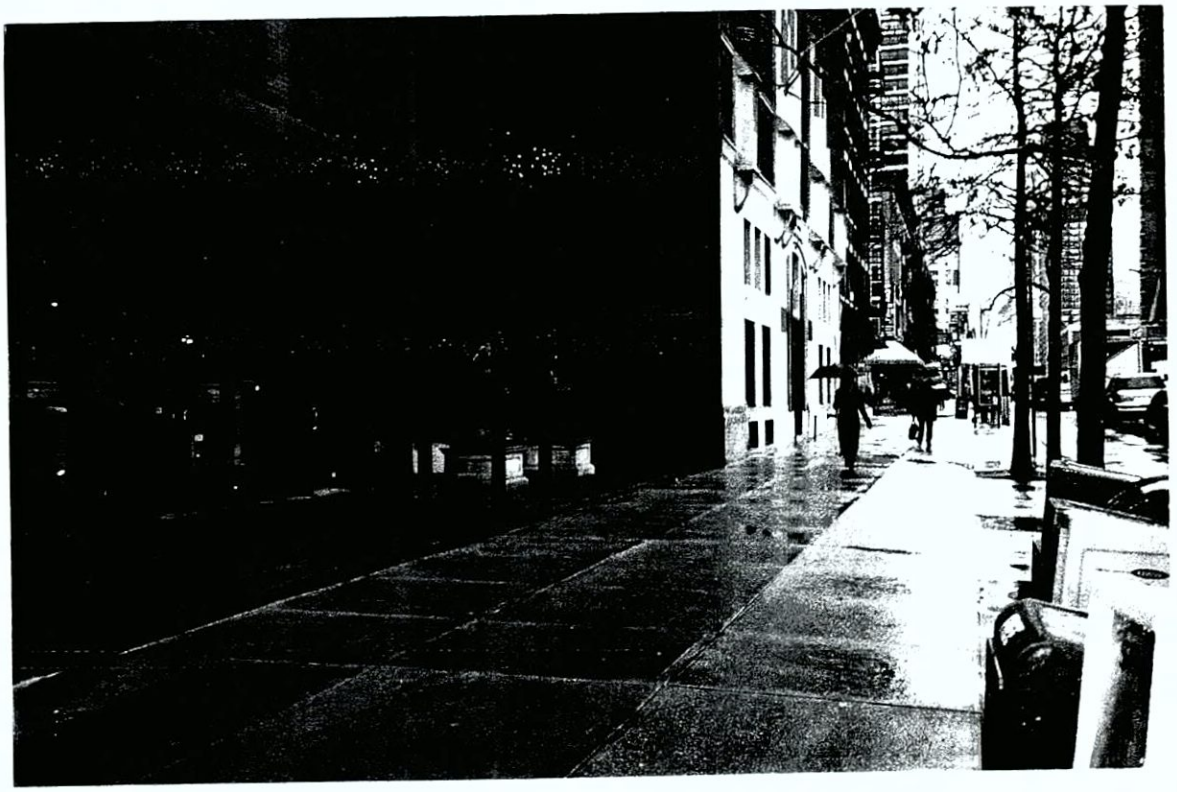
Photograph 4.4-2: Facing north on Second Avenue toward East 63rd Street from the west side of Second Avenue.



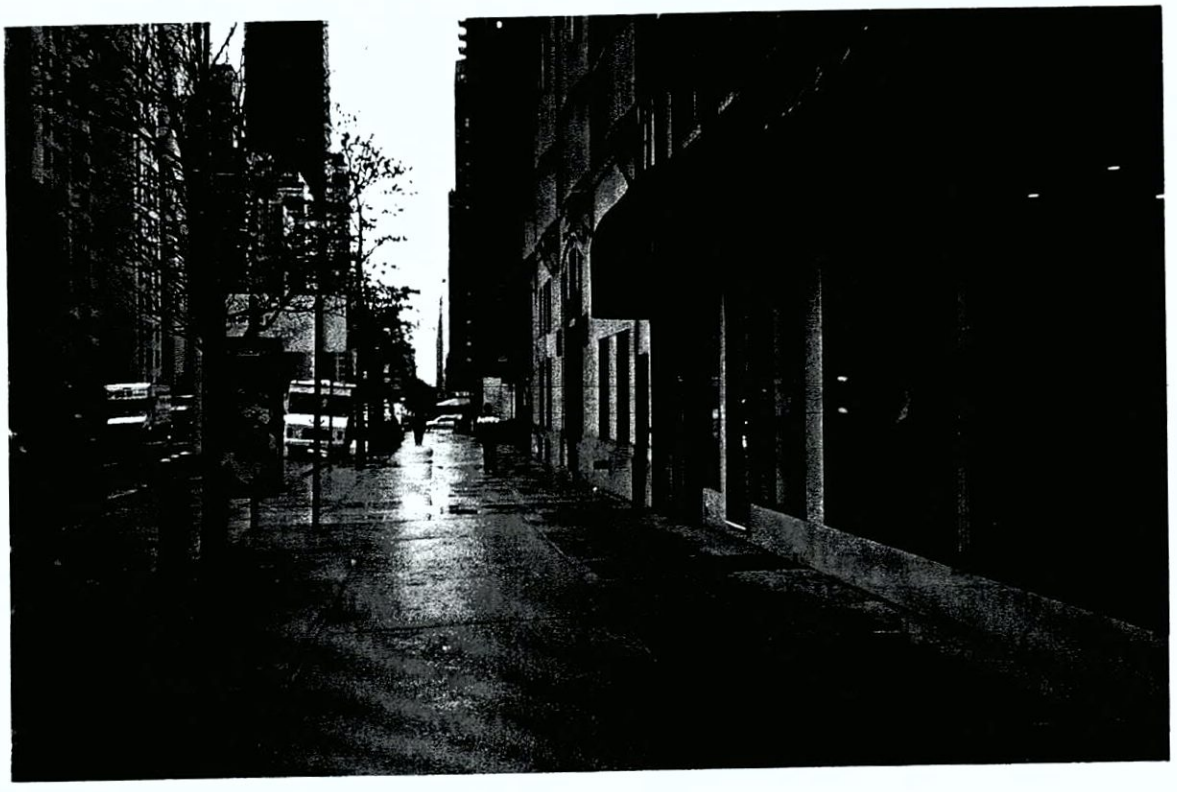
Photograph 4.4-3: Facing south on Second Avenue between 63rd and 62nd Streets, taken from the east side of Second Avenue.



Photograph 4.4-4: Facing north on Second Avenue between 63rd and 62nd Streets, taken from the east side of Second Avenue.



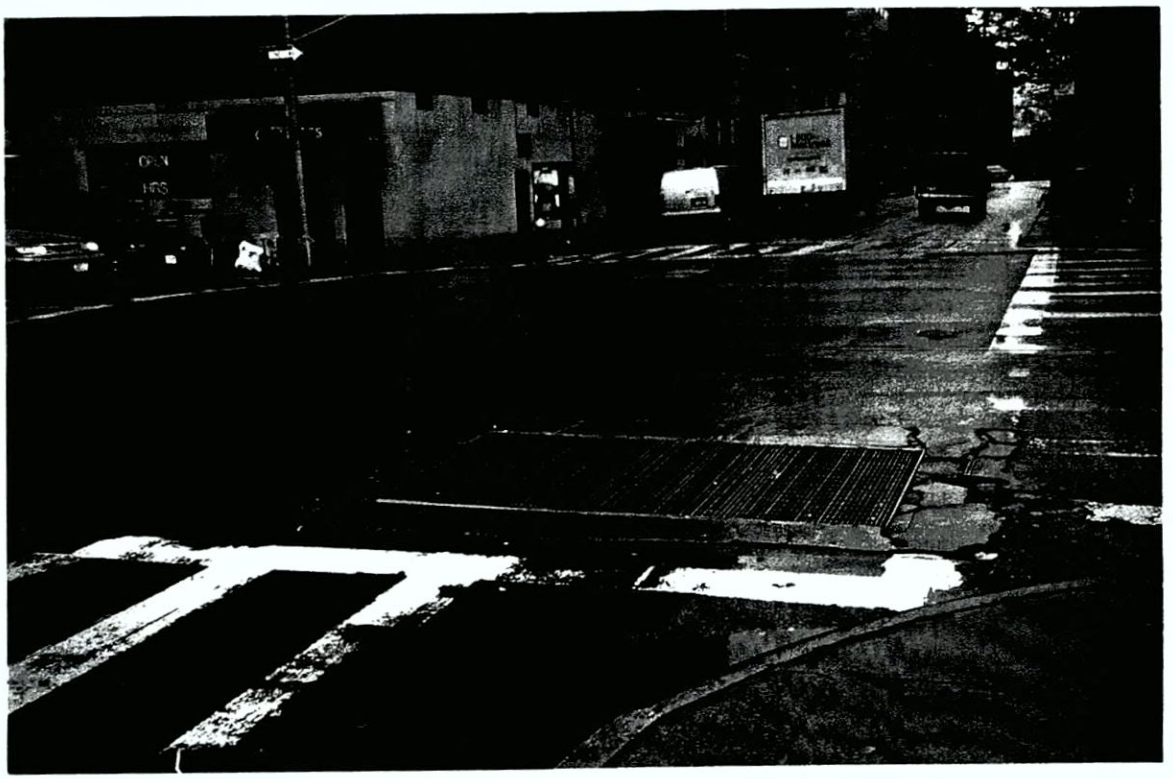
Photograph 4.4-5: Facing south on Second Avenue between 62rd and 61nd Streets, taken from the east side of Second Avenue.



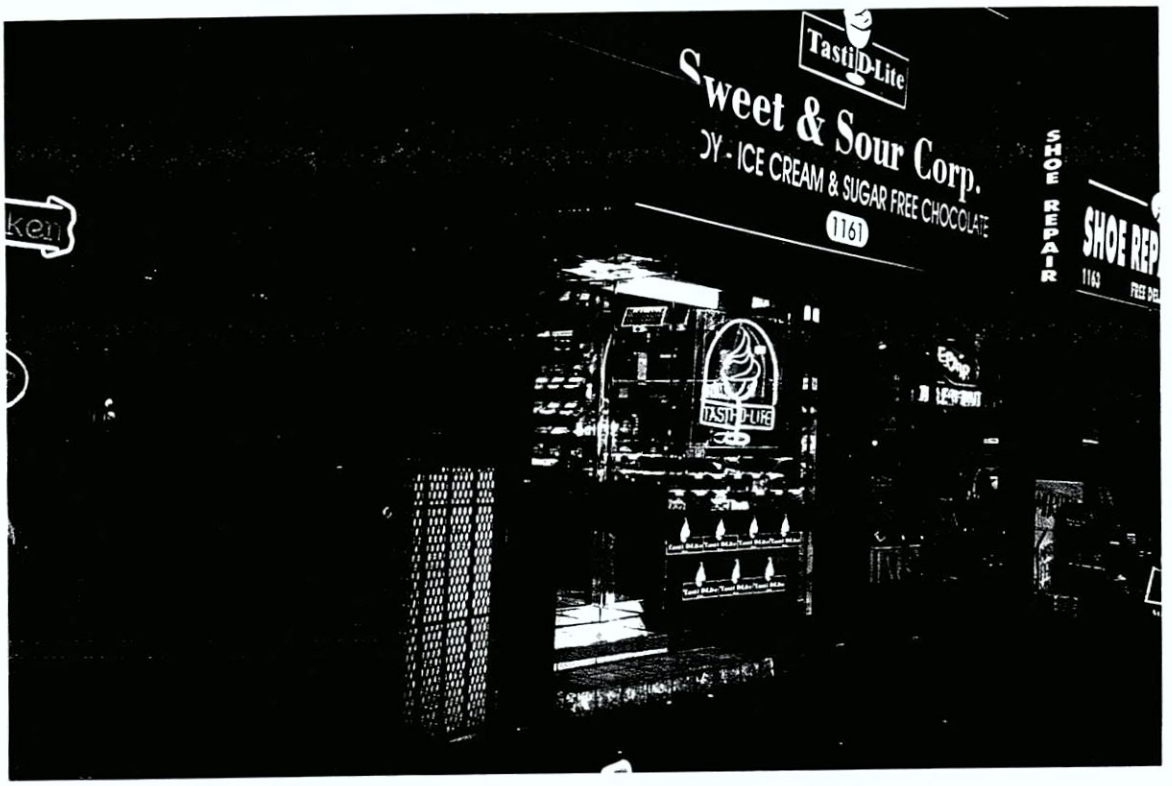
Photograph 4.4-6: Facing north on Second Avenue and 61st Street from the east side of Second Avenue.



Photograph 4.4-7: Facing north on Second Avenue and 61st Street toward 62nd Street from the west side of Second Avenue.



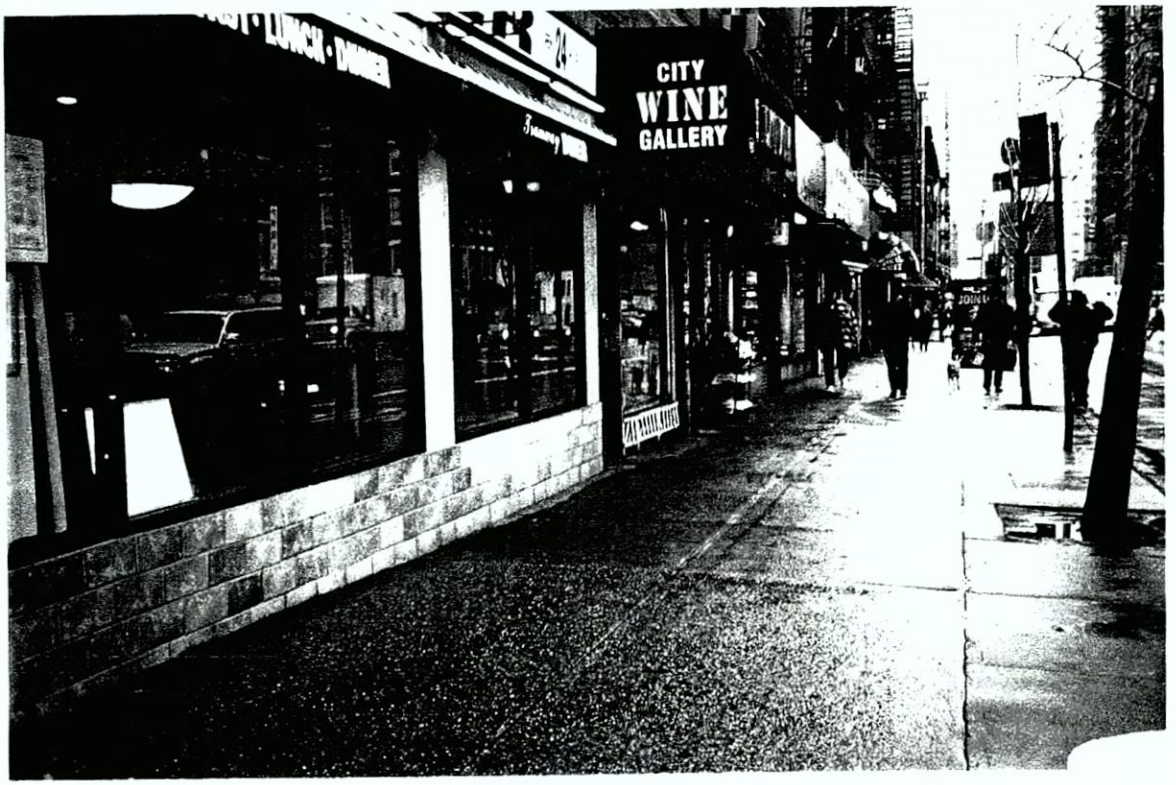
Photograph 4.4-8: Facing east on Second Avenue toward 62nd Street from the west side of Second Avenue.



Photograph 4.4-9: Facing west on Second Avenue between 62nd and 61st Streets from the west side of Second Avenue. Note store front with stairs.



Photograph 4.4-10: Facing south from Second Avenue and 61st Street toward 60th Street from the west side of Second Avenue



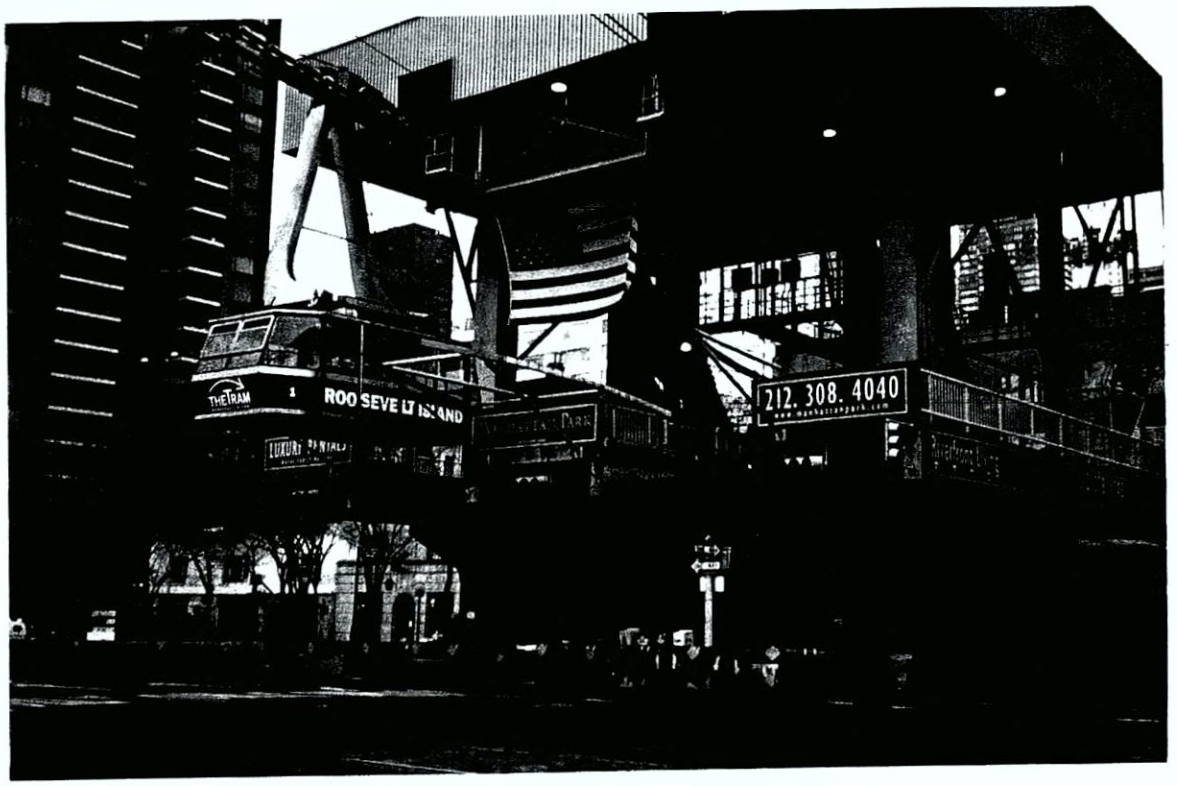
Photograph 4.4-11: Facing north on Second Avenue and 60th Street from the west side of Second Avenue.



Photograph 4.4-12: Facing south from Second Avenue and 61st Street from the east side of Second Avenue.



Photograph 4.4-13: Facing north on Second Avenue and 60th Street from the east side of Second Avenue.



Photograph 4.4-14: Facing southwest from Second Avenue and 60th Street from the east side of Second Avenue.



Photograph 4.4-15: Facing southeast from west corner of Second Avenue and 60th Street toward the East 59th Street Bridge.



Photograph 4.4-16: Facing south from the corner of Second Avenue and 59th Street on the west side of Second Avenue.



Photograph 4.4-17: Facing south from the corner of Second Avenue and 57th Street on the east side of Second Avenue.



Photograph 4.4-18: Facing north from the corner of Second Avenue and 58th Street on the east side of Second Avenue.



Photograph 4.4-19: Facing north on Second Avenue and 57th Street on the east side of Second Avenue.



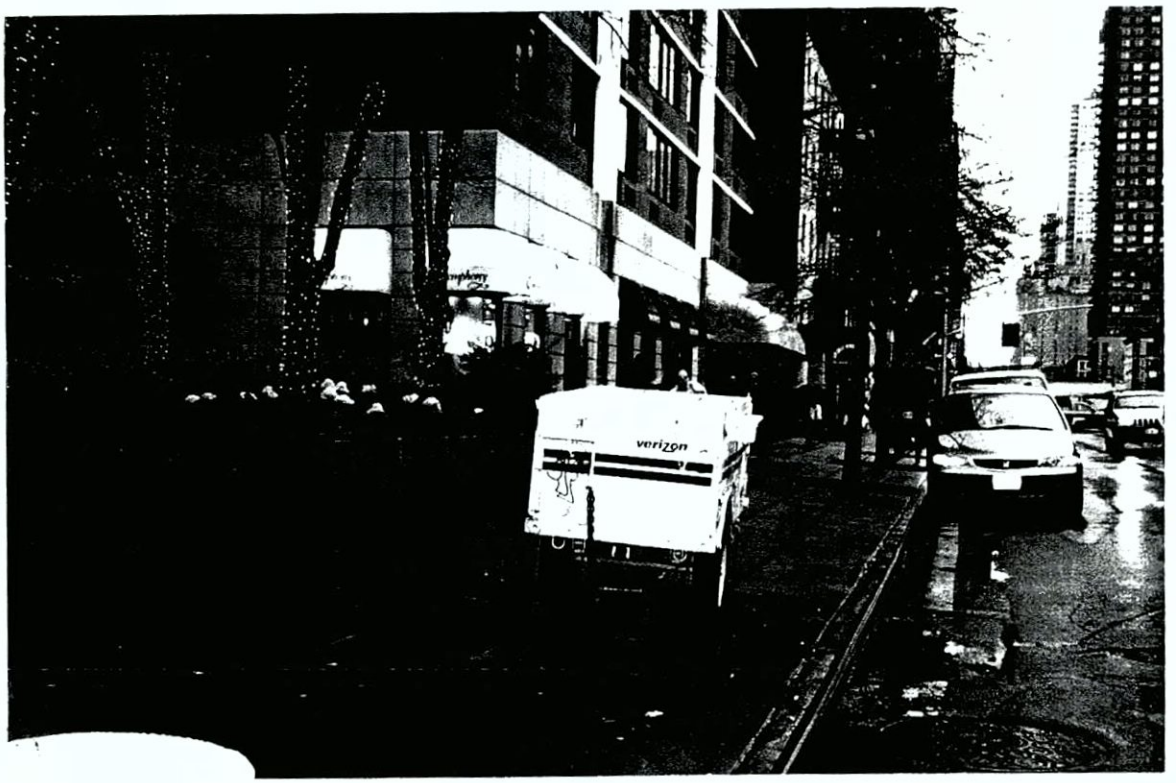
Photograph 4.4-20: Facing south on Second Avenue and 58th Street on the west side of Second Avenue.



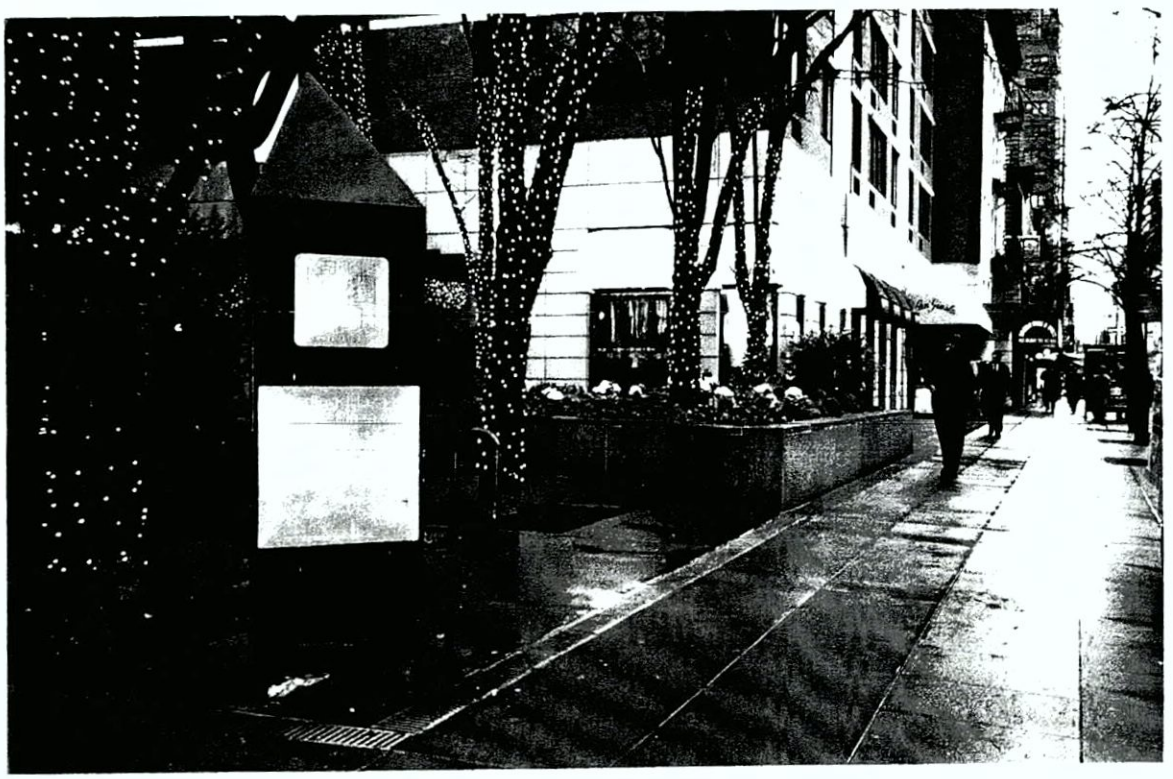
Photograph 4.4-21: Facing north on Second Avenue and 57th Street on the west side of Second Avenue.



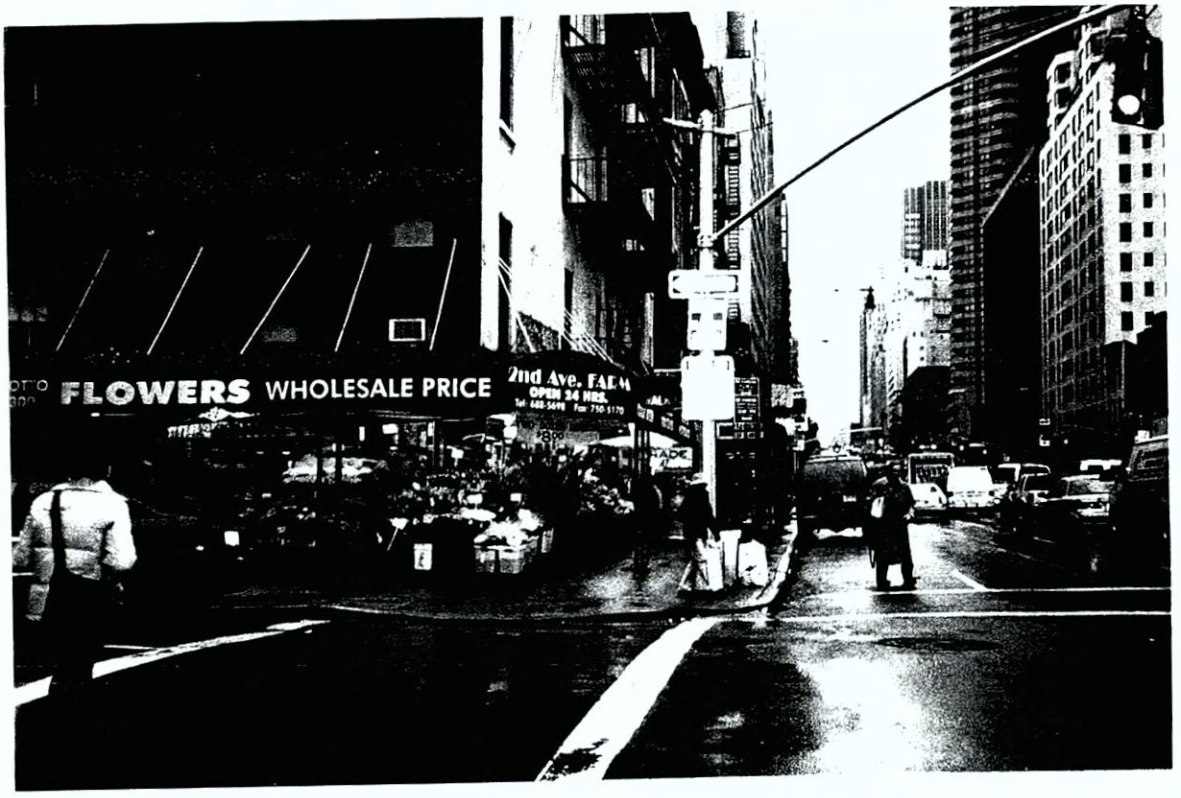
Photograph 4.4-22: Facing south on Second Avenue and 50th Street on the west side of Second Avenue.



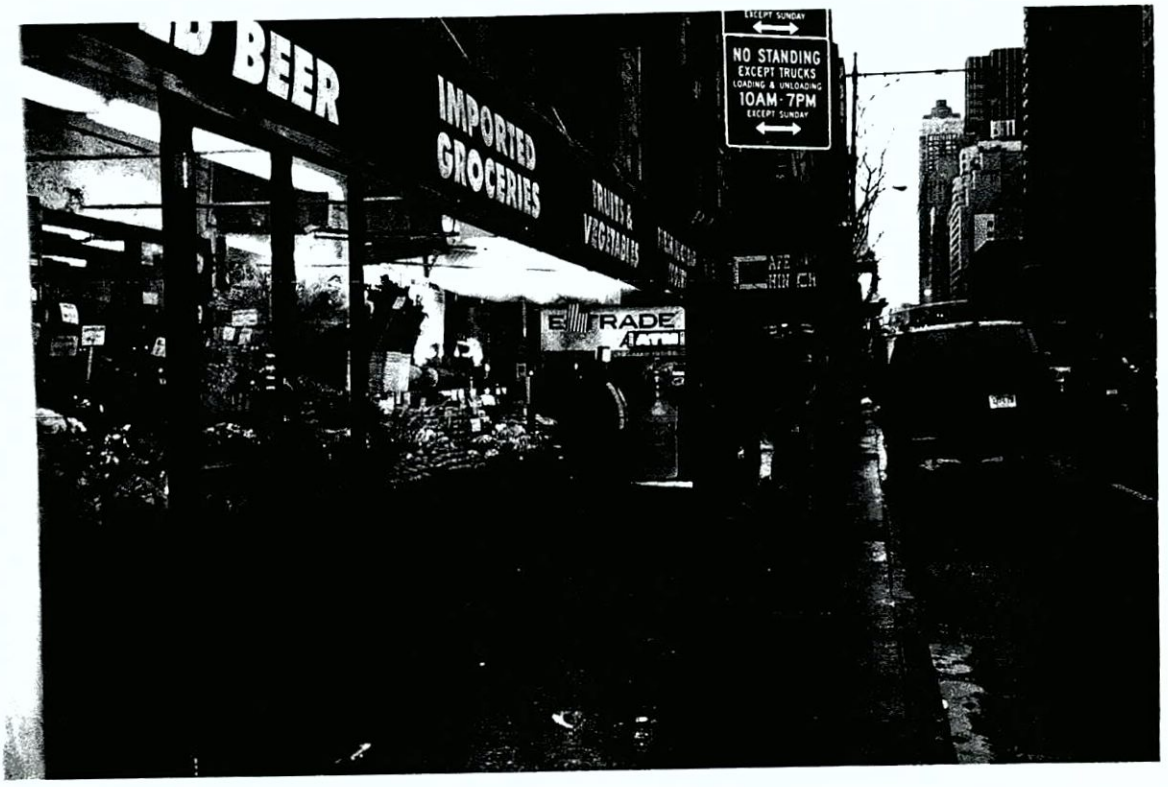
Photograph 4.4-23: Facing north on Second Avenue and 49th Street on the west side of Second Avenue.



Photograph 4.4-24: Facing north on Second Avenue and 49th Street on the west side of Second Avenue. Note storm drains.



Photograph 4.4-25: Facing south on Second Avenue from East 50th Street on the east side of Second Avenue.



Photograph 4.4-26: Facing south on the corner of Second Avenue and 50th Street from the east side of Second Avenue.



Photograph 4.4-27: Facing north from the corner of Second Avenue and East 49th Street on the east side of Second Avenue.



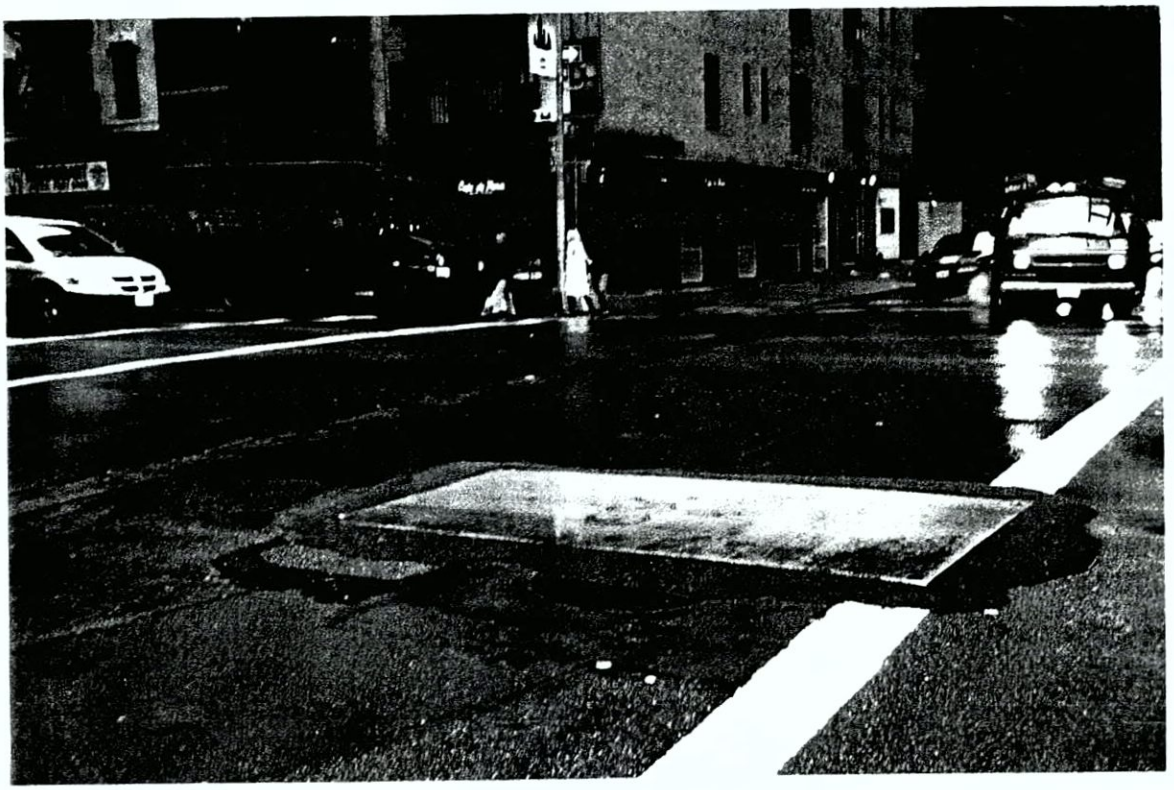
Photograph 4.4-28: Facing north on the corner of Second Avenue and 49th Street from the east side of Second Avenue.



Photograph 4.4-29: Facing south from the corner of Second Avenue and East 49th Street on the east side of Second Avenue.



Photograph 4.4-30: Facing south on the corner of Second Avenue and 49th Street from the east side of Second Avenue.



Photograph 4.4-31: Facing east toward corner of Second Avenue and East 49th Street on the west side of Second Avenue. Note storm drain and large metal plate.



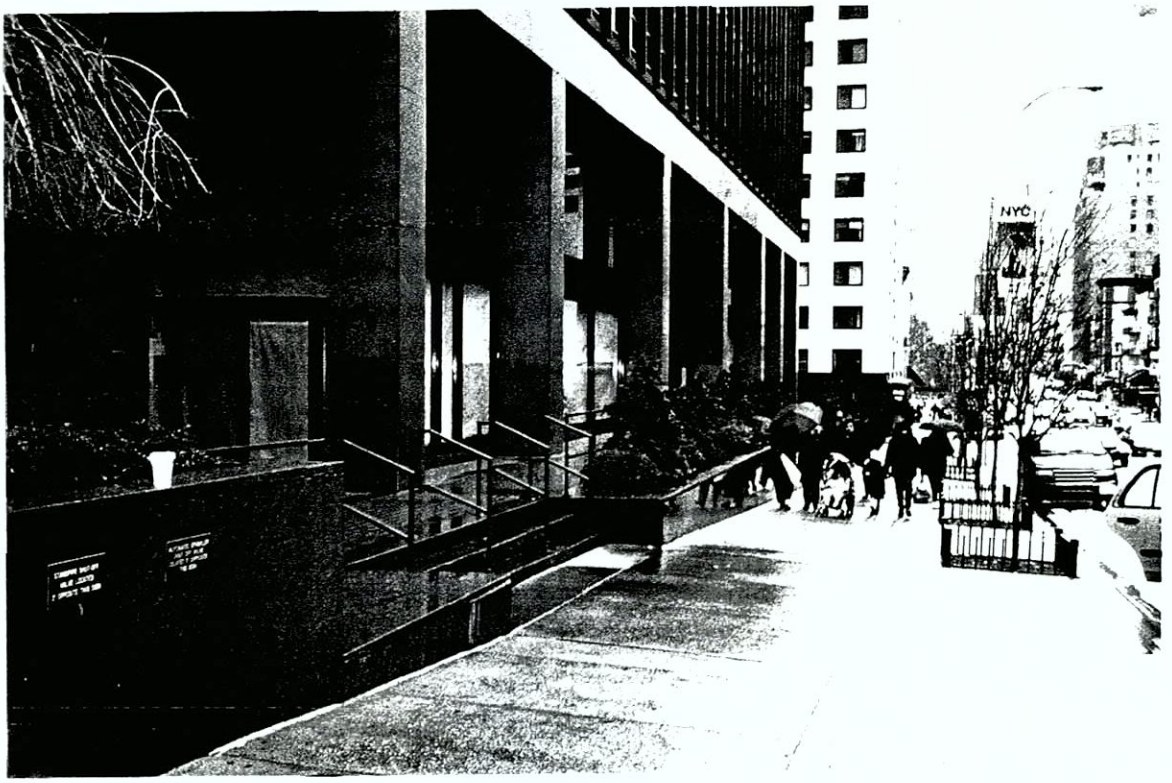
Photograph 4.4-32: Facing north toward corner of Second Avenue and 49th Street from the west side of Second Avenue.



Photograph 4.4-33: Facing south toward corner of Second Avenue and East 48th Street on the west side of Second Avenue. Note office building with sub-levels.



Photograph 4.4-34: Facing southeast toward the corner of Second Avenue and 48th Street from the west side of Second Avenue.



Photograph 4.4-35: Facing north from corner of Second Avenue and East 47th Street on the west side of Second Avenue. Note office building with sub-levels.



Photograph 4.4-36: Facing south from the corner of Second Avenue and 48th Street from the east side of Second Avenue.



Photograph 4.4-37: Facing north from Hammarskjold Plaza.



Photograph 4.4-38: Facing south from the corner of Second Avenue and 45th Street from the east side of Second Avenue.



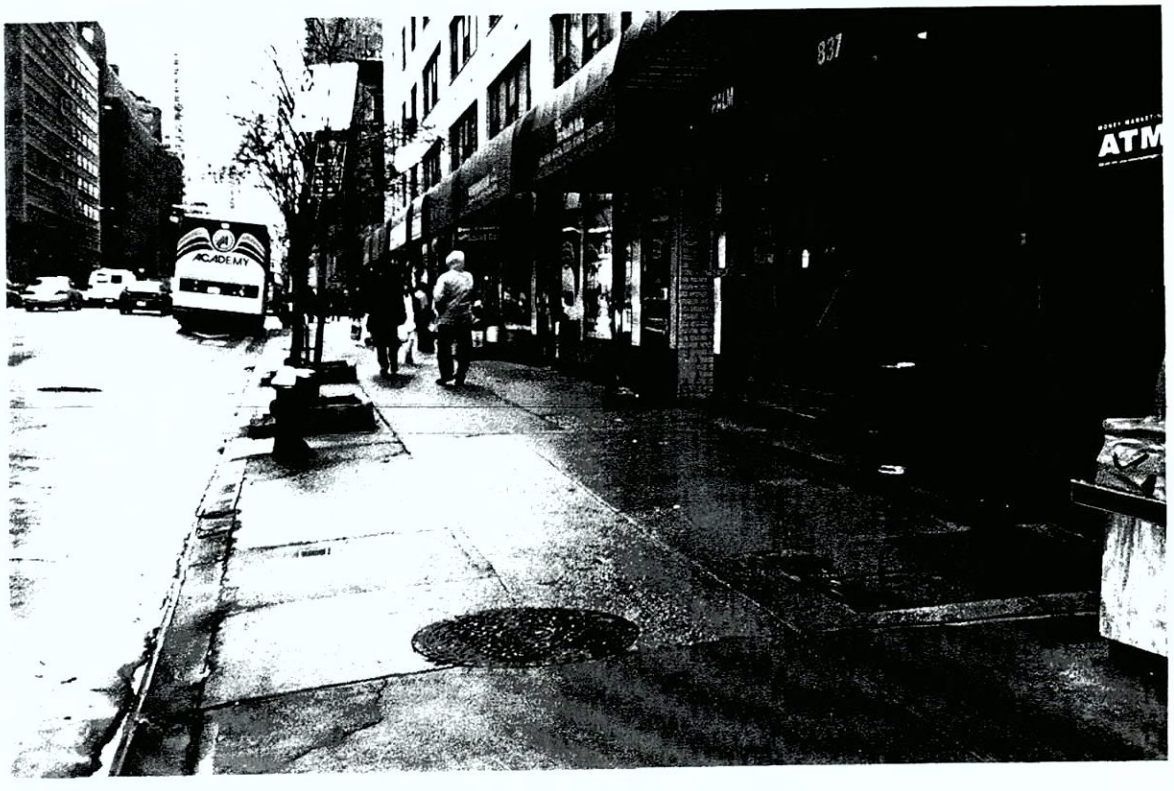
Photograph 4.4-39: Facing north from Kudivat Abiola corner on the east side of Second Avenue. Note trees planted in sidewalk.



Photograph 4.4-40: Facing northwest from the corner of Second Avenue and 44th Street toward mid-block from the east side of Second Avenue.



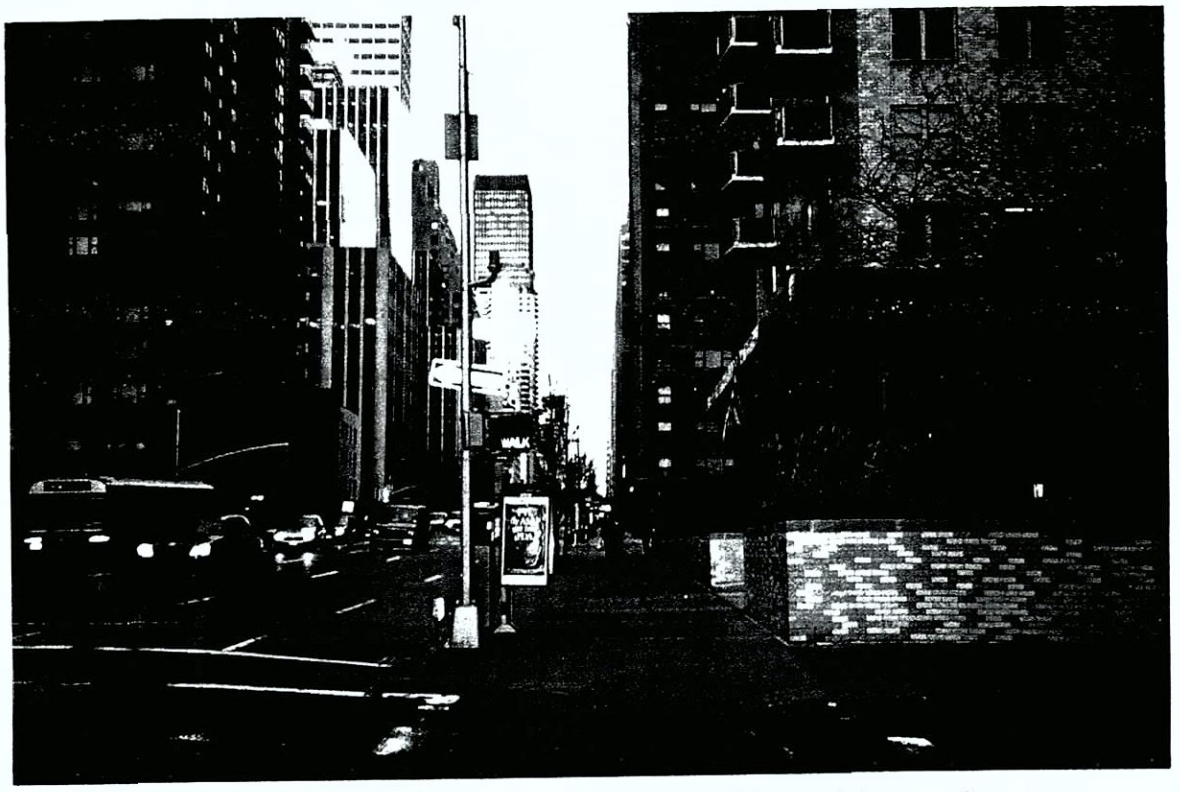
Photograph 4.4-41: Facing south from corner of Second Avenue and 45th Street on the west side of Second Avenue.



Photograph 4.4-42: Facing southwest from the corner of Second Avenue and 45th Street from the west side of Second Avenue.



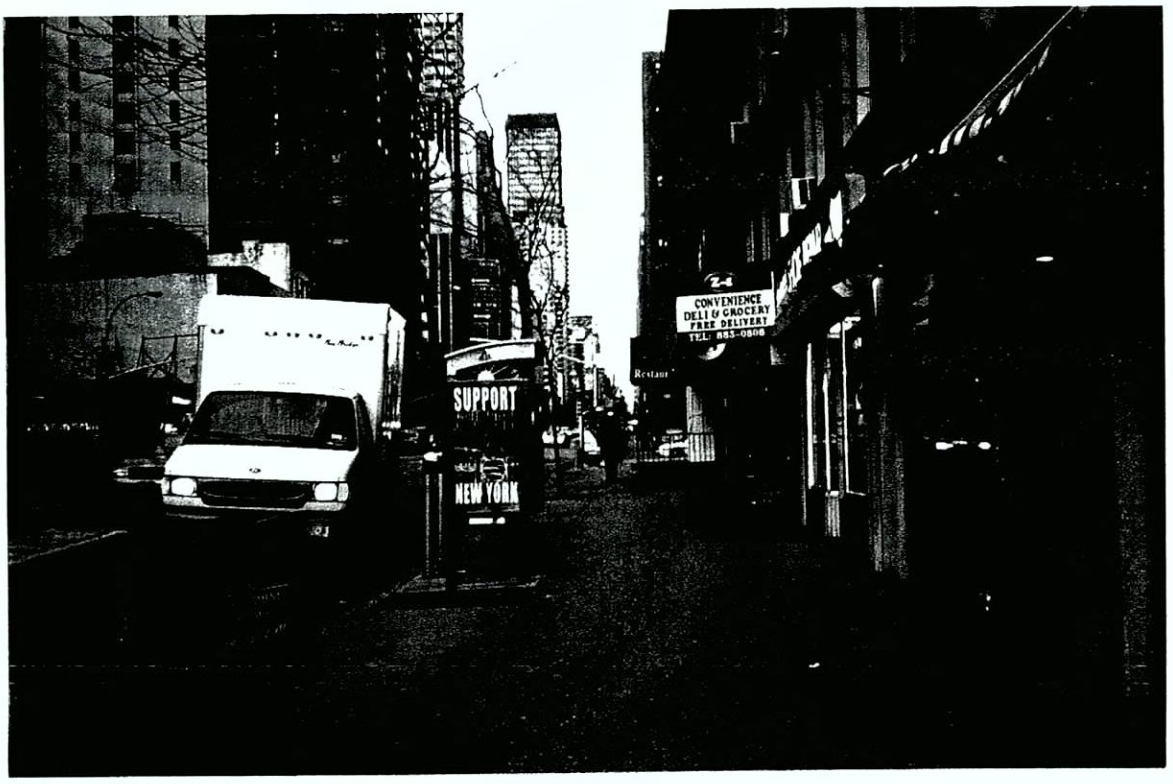
Photograph 4.4-43: Facing southwest from corner of Second Avenue and 45th Street on the east side of Second Avenue.



Photograph 4.4-44: View to the north on the east side of Second Avenue from the corner of East 39th and Second Avenue.



Photograph 4.4-45: View to the north on the east side of Second Avenue from the Corner of East 38th Street and Second Avenue.



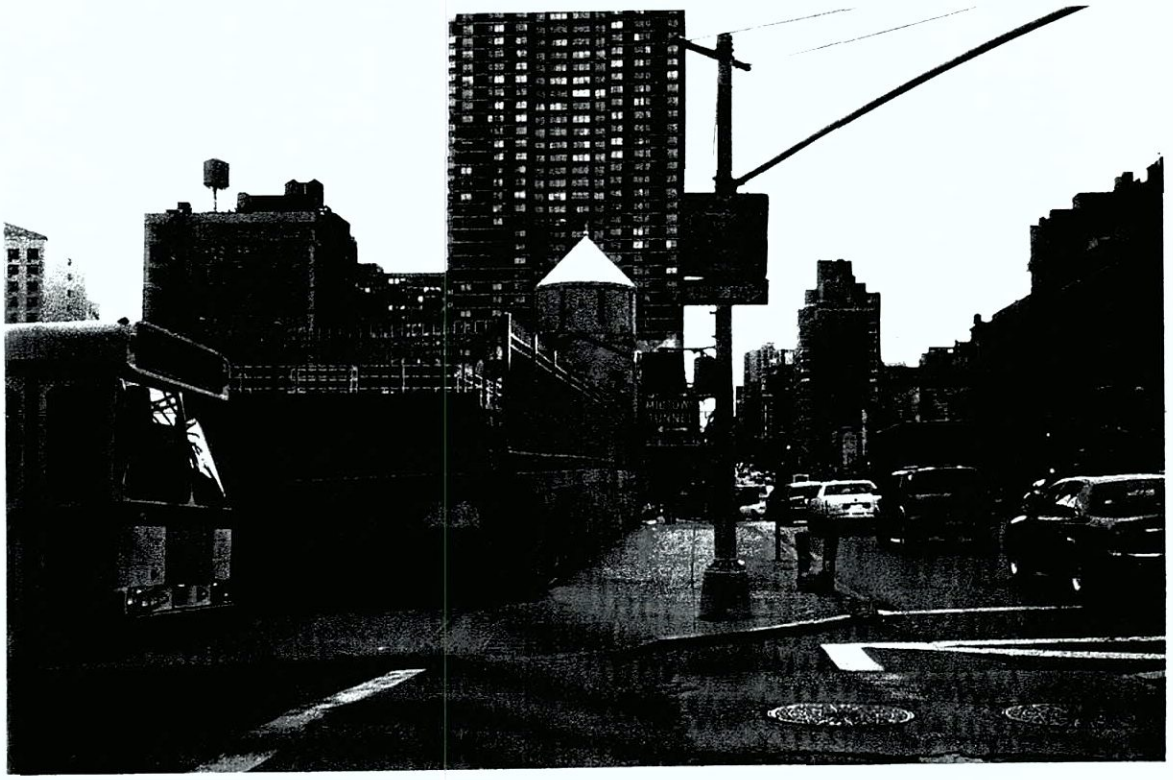
Photograph 4.4-46: View to the north on the east side of Second Avenue from the corner of East 38th and Second Avenue.



Photograph 4.4-47: View to the north on the west side of Second Avenue from the Corner of East 38th Street and Second Avenue.



Photograph 4.4-48: View to the northeast on the east side of Second Avenue from the corner of East 37th and Second Avenue.



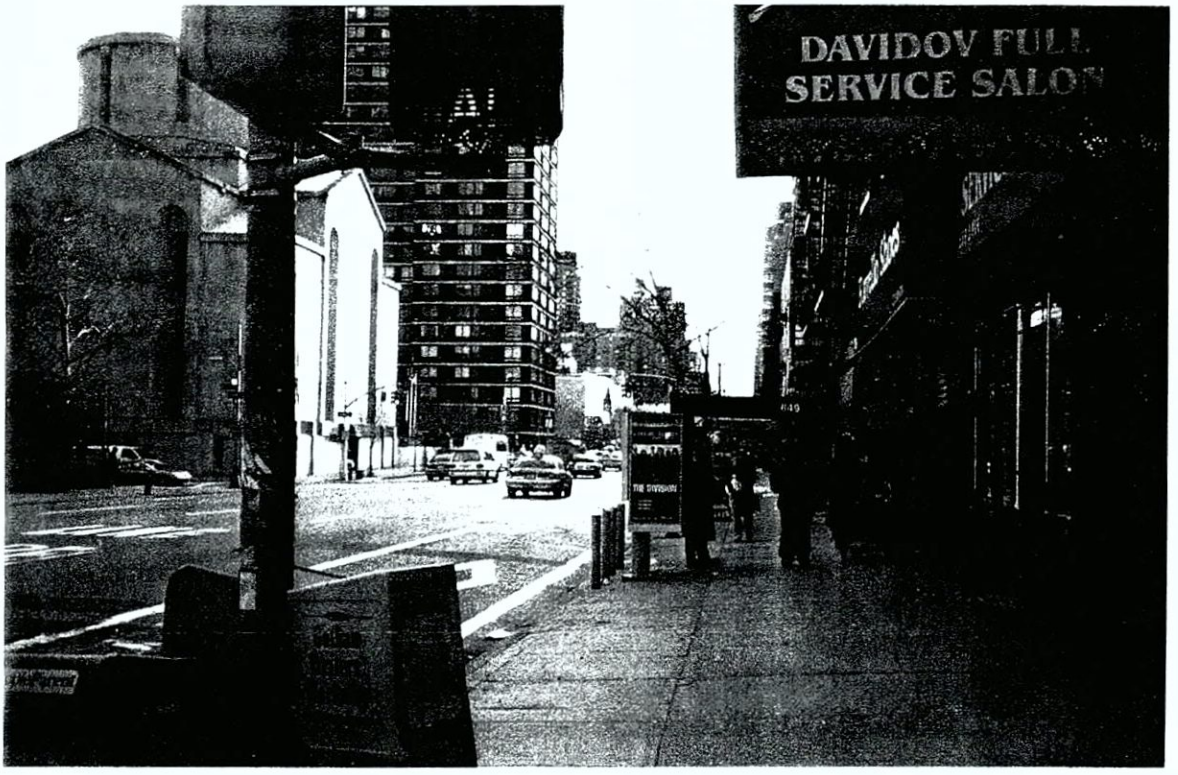
Photograph 4.4-49: View to the southwest on the east side of Second Avenue from the corner of East 37th Street and Second Avenue. Note:Queens-Midtown Tunnel.



Photograph 4.4-50: View to the northeast on the east side of Second Avenue from the corner of East 36th and Second Avenue.



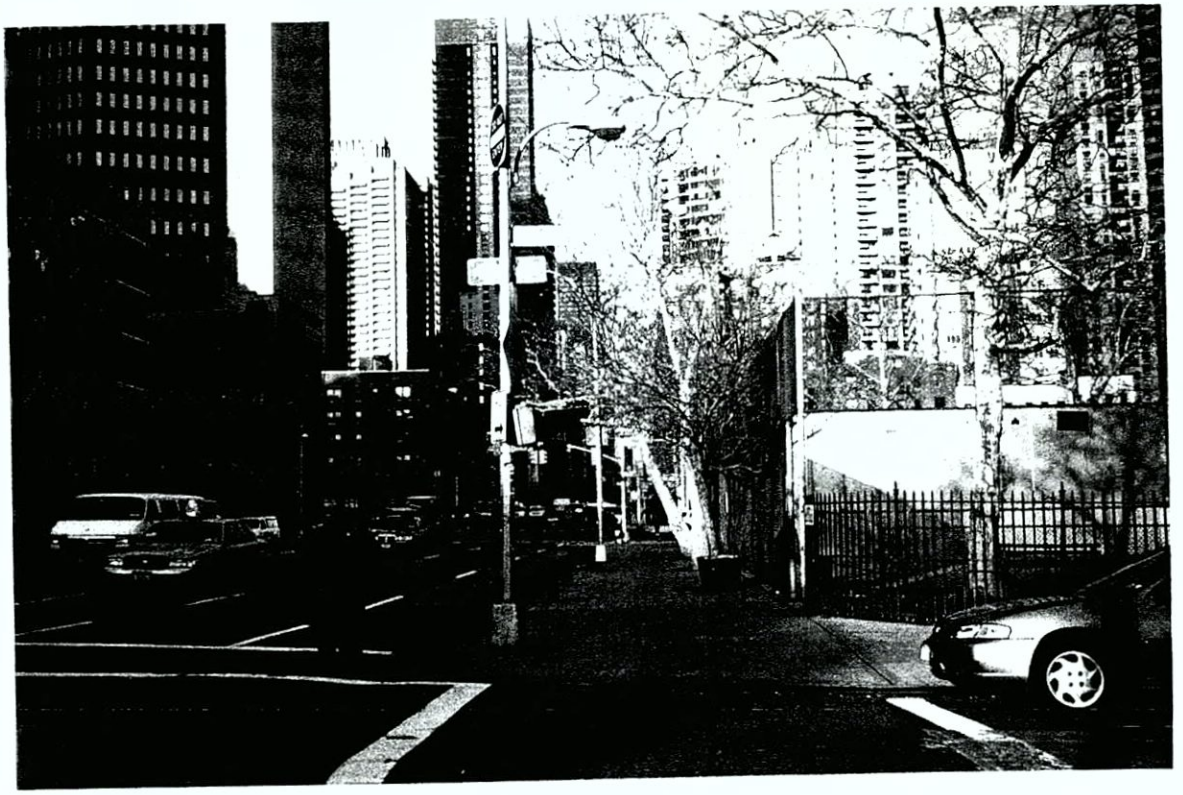
Photograph 4.4-51: View to the north on the west side of Second Avenue from the corner of East 36th Street and Second Avenue.



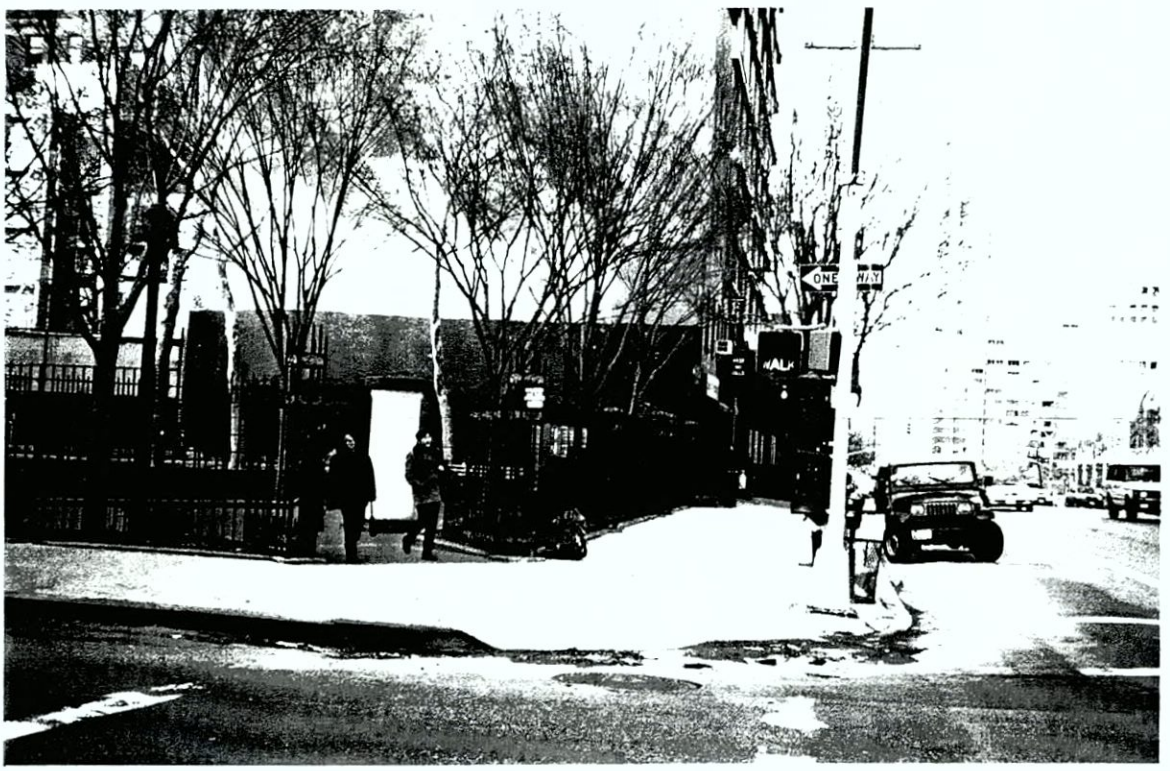
Photograph 4.4-52: View to the south on the west side of Second Avenue from the corner of East 36th and Second Avenue.



Photograph 4.4-53: View to the northeast on the east side of Second Avenue from the corner of East 36th Street and Second Avenue.



Photograph 4.4-54: View to the north on the east side of Second Avenue from the corner of East 35th and Second Avenue. Note: St. Vartan Park on right.



Photograph 4.4-55: View to the north on the west side of Second Avenue from the corner of East 29th Street and Second Avenue. Note: Vincent Albano Playground on corner.



Photograph 4.4-56: View to the southwest on the east side of Second Avenue from the corner of East 23th and Second Avenue.



Photograph 4.4-57: View to the northeast on the west side of Second Avenue from the corner of East 22th Street and Second Avenue.



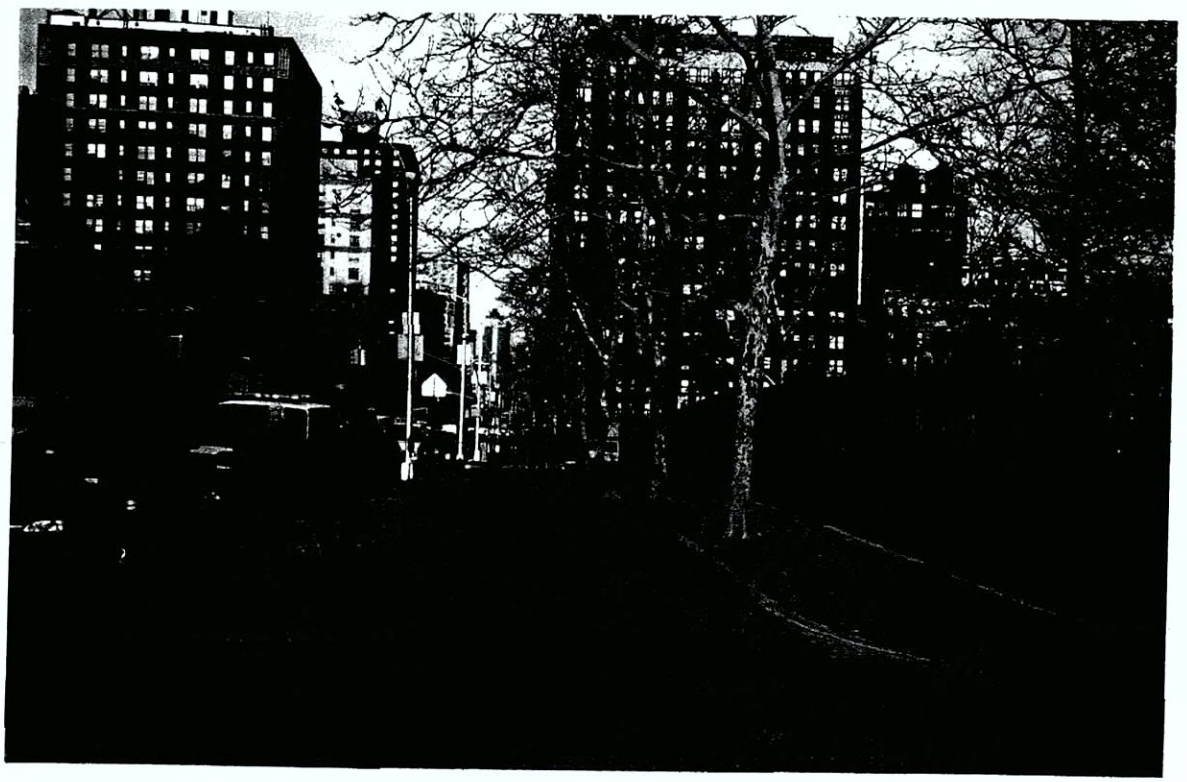
Photograph 4.4-58: View to the northeast on the east side of Second Avenue from the corner of East 21th and Second Avenue.



Photograph 4.4-59: View to the north on the west side of Second Avenue from the corner of East 20th Street and Second Avenue. Note: Peter's Field Playground.



Photograph 4.4-60: View to the south on the west side of Second Avenue from the corner of East 20th and Second Avenue.



Photograph 4.4-61: View to the north on the east side of Second Avenue from the corner of East 19th Street and Second Avenue. Note: Garden on right.



Photograph 4.4-62: View to the southwest on the east side of Second Avenue from the corner of East 17th and Second Avenue. Note: Stuyvesant Square East Park on left.



Photograph 4.4-63: View to the north on the east side of Second Avenue from the corner of East 15th Street and Second Avenue. Note: Stuyvesant Square East Park.



Photograph 4.4-64: View to the northeast on the west side of Second Avenue from the corner of East 14th and Second Avenue.



Photograph 4.4-65: View to the southwest on the east side of Second Avenue from the corner of East 14th Street and Second Avenue.



Photograph 4.4-66: View to the northeast from west side of Second Avenue from the corner of East 13th and Second Avenue.



Photograph 4.4-67: View to the northeast on the east side of Second Avenue from the corner of East 12th Street and Second Avenue.



Photograph 4.4-68: View to the north from the corner of East 12th and Second Avenue. Note: Pavement with cut stone.



Photograph 4.4-69: View to the north on the west side of Second Avenue from the corner of East 11th Street and Second Avenue.



Photograph 4.4-70: View to the north on the west side of Second Avenue from the corner of East 10th and Second Avenue. Note: Church with cemetery.



Photograph 4.4-71: View to the cemetery from the corner of East 10th Street and the west side of Second Avenue. .



Photograph 4.4-72: View to the north from the east side of Second Avenue from the corner of East 9th and Second Avenue.

4.4.7 Appendices

4.4.7.1 Documentary Assessment of APE

Cartographic History

For this discussion, modern block numbers for blocks which are adjacent to the APE, but not within it, are referenced to assist the reader with orientation. Shaft Site A on Block 1437 between East 63rd and East 62nd Streets, east of Second Avenue, is included in the following discussion.

Maerschalck 1754: This APE lies north of the northern boundary of this map.

Montresor 1766: Same as Maerschalck 1754.

Ratzer 1766: Only the southern most section of this APE is shown on this map, and it appears to run across agricultural land east of the Road to Boston (Bowry [sic] Lane).

Bridges 1803: This map only depicts Manhattan as far north as about East 16th Street. Second Avenue has not yet been laid out, but its route appears to run over farmland.

Commissioners 1811: Second Avenue and the present grid of proposed cross streets are shown superimposed on the streets in existence in 1811, with the widely scattered buildings aligned along the old streets, sometimes in the Second Avenue roadbed and sidewalks. Topography (streams, marshes, hills, etc.) is depicted. Shaft Site A is vacant.

A structure, possibly a dwelling, stood on the east side of what is now Second Avenue, just a few feet south of East 36th Street. The property belonged to John Y. Van Tuyl.

Two structures are shown in the Second Avenue roadbed, one on the east side just south of East 11th Street and partially east of the building line, and the other on the west side a third of the way down the block and also projecting beyond the building line. They were apparently associated with St. Marks Church (now St. Marks-in-the-Bowery Church), which is located in the same block but west of the project site. The street grid of that time was at a 45-degree angle from that of today, with the church and outbuildings oriented toward Stuyvesant Street.

Sackersdorf 1815: Old streets are shown, but with the new street grid superimposed. Farm lines are depicted, but with increasing subdivision, and there is a little illustration of a large structure owned by Cornelius Kipp on the east side of Second Avenue, partially on adjacent Block 944, and partially in East 38th Street, with more than half of it in what is now Second Avenue. It shows a 2-story building with four windows across on both floors and two on the side, but no apparent doors or chimneys. It is clearly not a barn, but may have been a warehouse or factory.

Randel 1820:

The street grid and topography are similar to the Commissioner's Map which Randel also drew, but included are the old farm lines and the Eastern Post Road. There is a large marsh between East 21st and East 17th Streets, and a smaller one at East 14th Street. Buildings shown in the Second Avenue roadbed are as follows:

A cluster of four buildings, the largest of which abuts the Eastern Post Road extended past the building line of Block 1434, on the east side of what is now Second Avenue south of East 60th Street. Smaller structures were on the west side of the present Second Avenue a few yards south of East 61st Street and at the southern edge of East 60th Street. A fourth building was between these two, partially into the block on the east side of Second Avenue, a few yards north of East 60th Street. The property is labeled Tredwell [&or E.] Thorne

Cartographic evidence shows a building within the project site, on the west side of what is now Second Avenue, halfway down the block toward East 44th Street, partially overlapping into what is now Block 1318. The property is labeled Francis B. Winthrop's heirs.

A large structure is shown on the east side of Second Avenue, partially in what is now Block 944, and partially in East 38th Street, with more than half of it in what is now Second Avenue. The property is labeled Cornelius Kipp.

A structure, possibly a dwelling, stood on the east side of what is now Second Avenue, just a few feet south of East 36th Street. The property is labeled John Y. Van Tuyl. The streets at that time were at a slight angle to the present streets and were named after members of the Kip family; this house fronted on Eliza Street.

There were two structures on smaller lots on the east side of Second Avenue between East 31st and East 29th Streets. The more northerly, extending south into what is now East 30th Street. The bulk of this building extended past the building line into the block itself. The more southerly building was entirely in the future Second Avenue roadbed, about 50' north of what is now East 29th Street, which at the time ran almost parallel to the existing Maria Street. Both were owned by William Vail.

A building was situated parallel to Second Avenue in 1820, on the west side midway down the block, with a larger structure outside of the project site. The property was part of a large holding owned by Peter G. Stuyvesant.

No structures are shown within Shaft Site A.

Colton 1836:

The city has spread north to East 10th Street at St. Marks Church, with scattered farms up to East 63rd Street. This is also a topographical map and shows wooded areas. Shaft Site A is vacant and slopes downward to the southwest.

Dripps 1851: This map extends only as far north as East 50th Street, three blocks north of Turtle Bay.
The density of buildings is sparse along Second Avenue and to the east, until East 28h Street, where there are several buildings per block as the road goes south, and some blocks are divided into lots.

Dripps 1852: This is a companion map to the above, depicting the northern part of the island.
A few of the buildings that were aligned with the old streets are still in evidence, with names attached, and the land is rural. Shaft Site A is vacant.

Dripps 1867: A railway runs along Second Avenue, and there are row houses alternating with manufacturing facilities.

Viele 1865: The predevelopment topography is shown on this map. Where Second Avenue now runs between East 63rd and 6th Streets varies considerably. Water courses cross the APE in the vicinity of East 52nd to East 48th Street, East 37th Street, East 34th Street, East 20th Street and East 14th Street. Knolls are depicted at East 60th Street, between East 47th and 43rd Streets, and near East 17th Street where a sharp ridge rises.

Bromley 1879: The Second Avenue APE is vacant, and Shaft Site A is shown with shading indicating it was developed.

Sanborn 1897-2001: The Second Avenue APE is depicted as roadbed, devoid of any structures. Second Avenue is completely lined with apartment buildings, row houses and an occasional shop, garage, etc. from East 63rd to East 46th Streets. At this point there are corporate buildings mixed with apartments down to the plaza at the Queens Midtown Tunnel at East 37th and East 36th Streets. Then there are predominately row houses and apartments to East 20th Street, where an occasional school, church or hospital is found among the row houses. Although Shaft Site A experienced development, all of it clearly post-dated the availability of sewer and water lines.

Precontact Sensitivity

There are two possible Native American resources reported by Grumet between East 63rd and East 6th Streets. One is the Wickquasgeck Road, a trail which ran from the northern to the southern tip of Manhattan. This trail was well traveled, connecting settlements at the southern part of the island with those in the north (Grumet 1981:68). According to Grumet's map, the trail was west of the project site except for a deviation at approximately East 57th Street, where it appeared to run near the west side of Second Avenue. Arthur C. Parker also reported traces of occupation nearby, in the area of East 59th Street near First and Second Avenues (New York State Museum Site #4061). The location of sites noted by Parker are not precise, but there was a knoll on the west side of Second Avenue between East 57th and 53rd Streets that might have appealed to the precontact peoples (Randel 1820). Grumet

shows a stream originating at Fifth Avenue and crossing the trail at about East 50th Street and Second Avenue.

The other potential precontact site is shown by Grumet at approximately East 10th Street. It consists of a second Native American trail crossing from planting fields located west of the APE near the Hudson River to a habitation site that Grumet calls "Schepmoes." Again the location is questionable; Schepmoes was not an Indian word, but was rather the name of a prominent Dutch settler who had extensive land holdings in Lower Manhattan. Beauchamp identified the "Kil of Schepmoes," a name mentioned in a 1639 deed, as a stream running from the East 50s to Kips Bay at about East 35th Street (Grumet 1981:51). This sounds very similar to the geography mentioned in the previous paragraph, and they may well be one and the same site.

Some of the environmental factors which contribute to potential precontact sensitivity include the predevelopment topography, distance to water, drainage conditions, soils, and resource availability, to name a few. A model for precontact sensitivity, completed in 1997 for the previous MESA study, highlighted several areas flanking Second Avenue as potentially sensitive for this resource type. The criteria used to predict sensitivity for the earlier study included soil types, precontact topography, and proximity to water and/or established precontact trails, as well as an earlier NYCLPC prepared predictive model of precontact site locations (1982). Using these criteria, potentially sensitive areas were identified roughly between East 63rd and East 56th Streets, between East 49th and East 46th Streets, between East 40th and East 31st Streets, between East 22nd and East 18th Streets, and finally between East 17th and East 12th Streets (Kearns et al 1998).

Additional cartographic and documentary studies for this report determined that the following areas within the APE are moderately sensitive for precontact period resources:

1. Well-drained land along Second Avenue between East 63rd and East 59th Streets, approximately 1000 yards from the East River, between two streams (includes Shaft Site A);
2. A rock outcrop running along Second Avenue between East 47th ands East 43rd Streets, near a stream (DeVoors Mill Stream) that crossed Second Avenue at East 48th and emptied into Turtle Bay at East 47th St. (Randel 1820:I, 27; Stokes 1918:998);
3. East 42nd to East 39th Streets, a well drained area north of a stream crossing Second Avenue at East 37th Street, emptying into the East River less than a block away;
4. East 23rd to East 19th Streets, an elevated area north of a stream and marshland, very near the East River;
5. The Stuyvesant Square area, between East 17th and East 15th Street, which is a well-drained location between two streams surrounded by marsh, with the distance of only a block to the original East River shoreline; and,
6. East 11th to East 6th Streets, a well drained area west of an extensive marshland, south of a stream crossing Second Avenue at East 14th Street.

Precontact period archaeological potential also depends on subsurface conditions within these areas. Typically, precontact resources are found within several feet of the precontact living surface, except in alluvial areas. Therefore, there may be archaeologically sensitive areas where the precontact surface now lies buried beneath levels of fill and protected from modern disturbance. From north to south, subsurface conditions in these archaeologically sensitive areas are reported as follows (Raymond International Inc.1970):

1. East 63rd to East 59th Street:
   At East 63rd Street there was 20' of fill lying directly over bedrock (Boring 2-42).
   At East 62nd Street there was 14' of fill over sand, over bedrock at 40' (Boring 2-41).
   At East 61st Street there was five feet of fill over levels of sandy silt, over bedrock at 36' below grade (Boring 2-40).
   Between East 61st and East 60th Streets there was five feet of fill over granitic boulder, over silty sand and gravel to bedrock at 27' on the west side of Second Avenue (Boring 2-39), and there was fill reported to 13' below grade with bedrock at 34' on the east side of Second Avenue (Boring 2-38).
   At East 60th Street fill was reported to about 15.5' below grade, over sand, and rock at 20' below grade (Boring 2-37).
   At East 59th Street only levels of coarse brown sand, gravel, and boulders are reported from the pavement down to the bedrock at 18' below grade (Boring 2-36).

Where fill lies over bedrock at East 63rd Street, there is probably no precontact sensitivity since the precontact surface may have been disturbed. This includes both the Second Avenue roadbed and the location of Shaft Site A on Block 1437 directly east of Second Avenue between East 62nd and East 63rd Streets. However, for the rest of this section of the APE south of East 63rd Street, precontact resources could conceivably be located beneath the fill which ranges from 14 feet below grade at East 62nd Street to zero feet below grade at East 59th Street where there was no reported fill. If the soils beneath the fill above the bedrock represent natural deposits, these areas could be potentially sensitive for precontact resources. Anticipated depths of resources here would be for several feet (five to be conservative) below the depth of fill, which at its maximum is 15' deep. Therefore, at East 62nd Street resources could lie between about 14' to 19' below grade. At East 61st Street they could be found between approximately five to 10' below grade. At East 60th Street potential precontact resources could be found between approximately 15' to 20' below grade, and at East 59th Street they may be located between 0 to 5' below grade.

2. East 47th to East 43rd Street:
   At East 47th Street fill extended from the surface to 11'6" below grade, where bedrock was encountered (Boring 2-17).
   Between East 47th and East 46th Streets, fill was found from the surface down to 5'6" below grade, where bedrock was found (Boring 2-15).

Between East 46th and East 45th Streets, fill was found to 1'6" below grade on the west side of Second Avenue, and to five feet below grade on the east side of Second Avenue. In both borings, fill was located directly above bedrock (Borings 2-13, 2-14).
Between East 45th and East 44th Street, fill ranged from ten feet below grade on the west side of Second Avenue, to five feet below grade on the east side. Again, fill was reportedly right above the shallow bedrock (Borings 2-11, 2-12).
Between East 44th and 43rd Streets fill was only three feet below grade, and also rested on bedrock (Boring 2-10).

All of the borings in this section of the APE indicate that levels of fill lie directly over bedrock. This strongly suggests that the archaeologically sensitive ridge observed on historic maps has either been leveled with shallow layers of fill added above it, or that the precontact living surface has been completely disturbed. Therefore, this section of the APE is not considered potentially sensitive for precontact resources.

3. East 42nd to East 39th Streets
At East 42nd Street, fill was reported to two feet below grade, whereas bedrock was reported at six feet below grade (Boring 2-9).
Between East 42nd and 41st Streets, fill was found to eight feet below grade, where bedrock was encountered (Boring 2-8).
Between East 41st and East 40th Streets, fill was found to five feet below grade, and bedrock was found directly beneath it (Boring 2-7).
Between East 40th and East 39th Streets, fill was present from grade down to 15', where bedrock was encountered (Boring 2-6).

The borings taken from this section of the APE suggest that there is only a minimal possibility of encountering precontact resources at East 42nd Street where there was four feet of potentially natural soil between the bedrock and the fill (Boring 2-9). Here, precontact resources could potentially exist between two to six feet below grade. The remainder of this section of the APE has fill from the surface down to bedrock. Like the area between East 47th and East 43rd Streets, the area south of 42nd Street is no longer considered potentially archaeologically sensitive for precontact resources.

4. East 23rd to East 19th Streets
Between East 23rd and East 22nd Streets, fill was found at 4'5" below grade, whereas bedrock was encountered at 9'6" below grade (Boring M64).
At East 22nd Street, fill was found to five feet below grade while bedrock was at 19' below grade (Boring M63).
At East 21st Street, fill was only four feet deep while bedrock was 24' deep (Boring M62).
Between East 21st and East 20th Streets, fill was reportedly 19' deep while bedrock was 44' deep (Boring M61).

Between East 20th and East 19th Streets, fill was reportedly 9' deep, while the bedrock was buried at 49' deep (Boring M60).

Soil borings from this section of the APE suggest that there is the possibility of encountering precontact resources that may have been protected from subsequent disturbance by fill levels which range from four to 19' in depth, with bedrock found far below the depth of fill. Potentially sensitive levels may exist within several feet (five to be conservative) of the bottom of the fill, if in fact the reported levels of sand and silt represent the precontact living surface. Therefore, precontact sensitivity could conceivably extend from 4.5 to about ten feet below the surface near East 23rd Street to about 5 to 10' below grade at East 22nd Street, to about 19 to 25' below grade between East 21st and East 20th Streets, and between nine feet and 15' from East 20th to East 19th Streets.

5. East 17th and East 15th Streets
   At East 17th Street, a boring reports that fill extends 8' below grade, with the bedrock also at 8' below grade (Boring M57).
   At East 15th Street, fill extended to nine feet below grade, while bedrock was much deeper at 29' below grade (Boring M55).

The two borings available for review for this section of the APE show little, if no, precontact potential at East 17th Street since the fill lies over bedrock. In contrast, at East 15th Street there are 20' of sand and silt levels between the fill and bedrock. Therefore, there may be precontact potential extending to about 14' below grade, where reportedly natural deposits lie beneath the nine feet of fill present between East 16th and East 15th Streets, since these levels may have been protected from historic disturbance. While the subsurface conditions at East 16th Street are unknown, they are conservatively assumed to be similar to those at East 15th Street.

6. East 11th to East 6th Streets
   At East 11th Street no fill was reported, but bedrock was encountered at 18' below grade (Boring M49).
   At East 10th Street fill extended from the surface down to bedrock at 19' below grade (Boring M48).
   At East 9th Street fill was found to a depth of ten feet while bedrock was located more than 55' below grade (Boring M47).
   At East 8th Street fill extended to eight feet deep while bedrock was found at 20' (or 21') below grade (Boring M46).
   At East 7th Street fill extended to seven feet below grade while bedrock was found at 39' below grade (Boring M45).
   A boring taken between East 7th and 6th Streets (Boring M41) was unavailable for review.

The borings taken from Second Avenue between East 11th and East 6th Streets show that fill and bedrock depths vary considerably. At East 11th Street, no fill was reported below grade,

suggesting that if precontact period resources exist within the natural soil matrix, they would have been more susceptible to modern and historic disturbances. At East 10th Street, 19' of fill lies directly over bedrock suggesting that any precontact levels may have been eradicated. From East 9th to East 7th Streets, borings show fill levels ranging from 10 to 7' feet below grade with potentially natural soil levels beneath them. Unfortunately, no boring log was available to assess potential sensitivity at East 6th Street, so it is assumed to have similar conditions to East 7th Street. Therefore, the East 9th to East 6th portion of the APE is most likely to have retained precontact potential below the fill, and these potentially sensitive levels may extend from a depth of seven feet to about 15' below grade.

Historical Sensitivity

The documentary study found that Shaft Site A was not developed until after sewer and water lines were run on Second Avenue. Therefore, it has no potential for historic shaft features. The Second Avenue APE between East 63rd and 6th Streets is potentially sensitive for the following resources:

1. East 61st to East 59th Streets: Thorne Property Structures

The Eastern Post Road crossed Second Avenue at the lower half of the block between East 63rd and East 62nd Streets, giving overland access to the site. The fifth milestone for the old road was located outside the APE, just west of Second Avenue and south of East 63rd Street (Stokes 1918:Landmark Map). According to the Randel map, the southwest corner of each block had, in 1820, been marked with a monument showing the planned location of the cross streets at Second Avenue, and these markers continued for the length of the project site, but it is doubtful that they are still in place (Randel 1820). East 60th Street and Second Avenue currently has the highest surface elevation for the entire stretch between East 63rd and East 6th Streets.

Four structures once stood on this elevated area in proximity to the Eastern Post Road (Figure 4.4-1). Here, a parcel belonged to Tredwell [&or E.] Thorne, and the largest building, possibly a dwelling since it abutted the Post Road, extended past the building line (into present Block 1434) on the east side of what is now Second Avenue south of East 60th Street (Randel 1820:I, 31). Smaller structures were present on the west side of what is now Second Avenue a few yards south of East 61st Street and at the southern edge of East 60th Street. A fourth building was between these two, partially extending into the block on the east side of Second Avenue, a few yards north of East 60th Street.

Construction for the Queensboro Bridge, completed in 1909, probably had a considerable effect on the area between East 60th and East 59th Streets, where there is a large plaza and access and egress roads, but the depth of construction effects was probably not enough to disturb well shafts, which can be fairly deep. A 4' x 2'8" sewer line runs just over the bedrock, approximately 15' below the surface, at a bottom elevation of 53.58' at East 60th Street, descending with the ground level to 43.10' at about East 58th Street. The sewer ran

down the center of Second Avenue on 1937 WPA maps and can be assumed to do the same here. If this is the case, it probably had little effect on the structures that were at the sides of Second Avenue. Subway lines run along East 60th Street and under the East River to Queens, but they were drilled through bedrock and would not have affected archaeological resources (SYSTRA et al 2001).

Surface elevations, unchanged since 1937, are 64.5' at East 61st Street, 67' at East 60th Street, and 62' at East 59th Street. Borings taken just north of the structures, made through the east sidewalk of Second Avenue between East 62nd and East 61st Streets, show (going north to south) surface elevations of 62.8', 62' and 62' (Borings 5-35, 5-36 and 5-37 Raymond International 1974). Bedrock elevation at the same location was, respectively 40.4', less than 44.1', and 21', leaving only a little over 20' between ground level and bedrock (WPA 1937:Project No. 609; SYSTRA et al 2001:Grade Elevations vs. Bedrock Elevations Table).

Soil borings taken on the west side of Second Avenue between East 61st and 60th Streets reported 5.6'of fill over granitic boulder, with the water table encountered at 18.6' below grade and bedrock found at 27.6' below grade (Boring 2-39, Raymond International Inc. 1970). Directly east of this another boring reported 13' of brown fine to course silty sand with gravel and cinders, with levels of sandy gravel with some silt to bedrock at 34' below grade. Water was encountered at 7.3' below grade (Boring 2-38). To the south of this between East 60th and East 59th Streets, a boring taken from the west side of the street found 13' of sandy rock and boulders over two feet of fill, over gravel and rock. Bedrock was encountered at 20' below grade, with the water table just above this at 19' below grade (Boring 2-37).

The boring logs suggest that there is the potential for resources from the four structures to still exist within the APE. However, construction of the Queensboro Bridge may have caused some disturbance to the footprint of the building located on the east side of Second Avenue at East 60th Street. The three structures to the north between East 60th and East 61st Streets appear to fall outside of the area disturbed by this action. Therefore this section of the APE is potentially sensitive for the footprint of the three structures between East 60th and East 61st Streets, and for deeper shaft features which may have been associated with each of the four structures. From north to south, potential shaft features could be found from the surface down to a depth of the water table which lies about 18.6' below grade near East 61st Street, and from the surface down to a depth of about 19' below grade (the deeper of the two water table readings from two boring logs) on the west side of Second Avenue between East 61st and East 60th Streets. Foundations at these locations could potentially lie between the surface and the lowest depth of fill, which is about 5.6' deep on the east side of Second Avenue near East 61st Street, and about 13' to 15' deep on the west side of Second Avenue between East 61st and East 60th Streets.

2. East 45th Street to East 44th Street: Turtle Bay Farm Structure

Cartographic evidence shows a building within the APE, on the west side of what is now

Second Avenue, halfway down the block toward East 44th Street, partially overlapping into what is now Block 1318. It was one of several buildings on a large tract known as Turtle Bay Farm, which had many owners before Francis Bayard Winthrop's heirs in 1820 (Randel 1820:I 23; Figure 4.4-2). Winthrop was a prominent New Yorker, both a bank director and a poet (WPA 1939:209). His main dwelling and the largest structure on the estate, "Mount Prospect Mansion" was located near the river, in what is now First Avenue at East 41st Street (Stokes 1922:176). The building may have been a secondary dwelling or outbuilding. A lane, one of several parallel streets, ran from the Eastern Post Road, a block to the west, to the East River.

The area was a scene of action during the Revolutionary War, because there was a British military storehouse at the foot of what is now East 45th Street, east of the APE. In 1773, in a midnight raid, the storehouse was stormed by the "Liberty Boys" (WPA 1939:208). The large farms and estates, some dating from the days of the Dutch in the 17th century, were broken up by the 1880s, and were replaced with rows of brownstones. Second Avenue hosted an elevated train, and Turtle Bay; so-called because of its shape, was filled in. Today, a 21-story building with a basement stands fronting Second Avenue over the section of Block 1318 where the historic structure once extended (Sanborn 2001).

The 59.8' surface elevation at the intersection of Second Avenue and East 44th Street is the second highest in the stretch from East 63rd to East 6th Streets, with bedrock approximately 18" below it, at 58.1'. This surface elevation corresponds with soil boring data collected in 1970 at a point in the sidewalk 50' north of East 44th Street, approximately 20' south of the pre-1820 building. However, the boring indicates six inches of sidewalk concrete, then fill consisting of sand, gravel, wood, steel and boulders to a depth of six feet, followed by a mix of concrete, rock and more fill to a depth of ten feet. After drilling through five feet of rock, concrete seams and reinforced steel were encountered to a total depth of 25' before striking bedrock again (Boring 2-11, Raymond International Inc. 1970). The steel beneath the rock is explained on a map of engineering options prepared for the proposed Second Avenue Subway; a note on this plan indicates there is a 4' x 2'8" sewer running approximately five feet below bedrock (SYSTRA et al. 2001). In 1937 WPA plans for adjacent blocks show the sewer in the middle of Second Avenue, which raises a question: Did the boring through the sidewalk hit the sewer (presumably no longer in use), or was the concrete and steel associated with some other construction?

Conditions recorded in 1936 give the same surface elevation and partially explain the subsurface disturbance. Beneath this sidewalk were buried telephone ducts as well as electric ducts and 12" water pipes with soil cover of four feet (WPA 1936:Project No. 609). A 12" sewer had been installed in the middle of Second Avenue in 1868, the stanchions for the el ran along its east side, and there were other ducts under the east sidewalk. Still, none of this explains the difference in bedrock depth between the borings (at least six feet of fill) and the Appendix Table AB-2 (approximately 18" between grade level and bedrock), unless the sewer construction was cut (through bedrock) and cover, which it probably was.

A second boring taken from the east side of Second Avenue found fill to ten feet below grade, with the water table at 16' (Boring 2-12, Raymond International Inc. 1970). Ground water was struck at a depth of 14' on the east side of Second Avenue (Ibid.:Boring 2-11), suggesting potential wells associated with the historic structure here may extend at least 14' to 16' deep, and possibly deeper.

Utility maps and the borings logs suggest that the location of the Turtle Bay Farm Structure has probably been disturbed, at least in part, by the installation of a large sewer pipe which was probably installed via cut-and-cover construction. Outside of the location of this pipe, the APE may be sensitive for the remainder of the structure's foundation within the fill (zero to 10' below grade), and for potential shaft features which may extend from the surface down to as deep as the water table, which was encountered at about 16' below grade.

3. East 39th to East 38th Streets: Kips Bay Farm Structure

A large structure owned by Cornelius Kipp stood on the east side of Second Avenue, partially extending into what is now Block 944, and partially into East 38th Street, with more than half of it in what is now Second Avenue (Sackersdorf 1815-1868; Randel 1820:I,23; Figure 4.4-3). The use of this structure is not clear because the Sackersdorf map, which is known to be flawed, shows a drawing of a two-story building with four windows across on both floors and two on the side, but no apparent doors or chimneys. It is clearly not a barn, but may have been a warehouse or factory of some sort. In contrast, the illustration of Samuel Kipp's mansion has two chimneys and a front door and is obviously a dwelling (Sackersdorf 1815-1868). The building is not shown on the Colton map of 1836. It was probably razed by then since both Second Avenue and East 38th Street between First and Second Avenues were opened shortly thereafter in 1839.

Before any of these streets were in existence, the structure fronted on Queen Street, with a stream running just south of it into Kips Bay (Stokes 1918:Landmarks Map). On September 15, 1776, British men-of-war anchored in Kips Bay and launched an attack that drove the dispirited Revolutionary army north towards Harlem Heights, where George Washington rallied the troops and led them to finally win the battle (WPA 1939:208).

The Kip family owned a large tract of land encompassing Second Avenue, between East 41st and East 29th Streets, a section known to this day as Kips Bay. It remained in the family, undivided, for 150 years. The first Kip to build there was Jacob Hendrickson Kip, who is reported to have constructed his mansion overlooking Kips Bay in 1655. This house was destroyed by fire in 1696 but was rebuilt. According to Rikers *History of Harlem,* the mansion stood on the south side of East 35th Street, about 100 feet east of Second Avenue, and was probably demolished in late 1851, when East 35th Street was opened (Stokes 1922:112).

The site of the Cornelius Kip building near the APE was still in the family in 1890, when it belonged to the heirs of Samuel Kip and was called "Quarry Hill" (Robinson 1890). At that

time their property consisted of a coal yard with a dock on the East River, and by the 1930s, the area had become a slum.

In 1936 the surface elevation at the corner of Second Avenue and East 38th Street, the location of the Cornelius Kipp structure, was (and still is) 25.7', 19.8' above bedrock which laid at an elevation of 5.9' (SYSTRA et al 2001). A soil boring log taken on the east side of Second Avenue reports nine feet of fill below grade, with the water table located at about 12' below grade. In contrast to other reports, the fill is situated directly above bedrock, which was encountered at nine feet below grade (Boring 2-5, Raymond International Inc. 1970).

Stanchions for the el were located along the sides of Second Avenue, and a 5' x 4' sewer line ran just above bedrock, probably at the center of Second Avenue (WPA 1936:Project No. 609). Other utilities included electric and telephone ducts in the roadbed adjacent to the sidewalk, as well as gas and water lines less than 24" in thickness. A larger water line ran along East 38th Street, and Second Avenue was paved with granite over concrete in 1919 (WPA1936:Project No. 609). Block 944 now has a 16-story building where the eastern part of Cornelius Kipp's building once stood.

The APE here is potentially sensitive for the foundation and shaft features which may be associated with the Kipp structure. However, the conflicting subsurface conditions reports make it difficult to assess the potential depth of resources. One account places bedrock at 19.8' below grade, another places it directly beneath fill at nine feet below grade. Therefore, a conservative estimate would assume that the western half of the foundation of the structure could potentially lie within the fill, from the grade down to nine feet below the surface. Any associated shaft features, such as wells and privies, may extend from the surface down to the bedrock, if it is in fact at nine feet below grade, or the depth of the water table, which was encountered at 12' below grade, if bedrock is deeper.

4. East 36th to East 35th Streets: Kips Bay Farm Structure

A structure, possibly a dwelling, stood on the east side of what is now Second Avenue, just a few feet south of East 36th Street (Commissioners Map 1807-11). The property belonged to John Y. Van Tuyl at least through 1820 and was part of the original Kips Bay Farm (Randel 1820 vol. I:19; Figure 4.4-4). The streets at that time ran at a slight angle to the present streets and were named after members of the Kip family; this house fronted on Eliza Street. It was gone by 1850, probably demolished when Second Avenue went through in 1839 (Perris 1850).

The house stood partially on Block 941, which was acquired by the City of New York in 1903 and named Saint Gabriel's Park. Construction and improvements were completed by 1905 (Stokes 1918:971). It is still a park, although it is now named after St. Vartan (Sanborn 2001). St. Gabriel's Church, between East 36th and East 37th Streets, was razed in 1939 to make way for the entrance to the Queens Midtown Tunnel. At that time, an underground roadway was planned to connect the Midtown Tunnel with the Lincoln Tunnel across town

(WPA 1939:209). The site of the Van Tuyl house was crossed by the same utilities as described above for other sites, those are: a 12" water pipe with four feet cover, a 12" gas line with 4'4" cover, and 8" and 4" gas pipes with 2'6" and 3' feet cover respectively. In addition, there was a postal cable (WPA 1936: Project No. 609). The five foot sewer line was probably just west of the footprint of the house.

The surface elevation at East 36th Street is 18.4', with bedrock at -0.7. A boring taken from the west side of Second Avenue at East 35th Street encountered fill from the surface down to 13' below grade, with water encountered at 6' below grade. Bedrock was not reached until 19' below grade (Boring 2-2, Raymond International Inc. 1970). A boring taken from the east side of Second Avenue at East 36th Street, encountered fill from the surface down to ten feet below grade, underlain by brown clayey silt and sand. While water was encountered at 18' below grade, the boring was abandoned before bedrock was encountered (Boring 2-3, Raymond International Inc. 1970).

This section of the APE is potentially sensitive for remains of the Van Tuyl house foundation within the fill, which extends from the surface down to 10' below grade. In addition, potential shaft features, such as wells and privies, could extend from the surface down to the depth of the water table, which was encountered at 18' below grade.

5. East 31st to East 29th Streets: Kips Bay Farm Structures

There were two more pre-1820 structures on smaller lots on the east side of Second Avenue between East 31st and East 29th Streets (Randel 1820:I,19; Figure 4.4-5). The more northerly structure extended south into what is now East 30th Street. The bulk of this building extended past the building line into the block itself, and its foundations were almost certainly destroyed by construction of the three-story Kips Bay Housing building, with basement, that now stands over its former location (Sanborn 2001). The footprint of the second structure fell entirely in what eventually became the Second Avenue roadbed, about 50' north of what is now East 29th Street, which at the time ran almost parallel to the existing Maria Street, named for another Kip daughter (Randel 1820). Both buildings were owned by William Vail. Second Avenue was opened from this point south in 1815.

A 4' x 3' sewer ran through bedrock between E 31st and East 30th Streets. If the sewer is located in the center of Second Avenue, as is shown on WPA maps for adjacent blocks, it is not likely to have affected the locations of these historic structures, which are on the east side of the street. It can be assumed that there are gas and water pipes, electric and telephone ducts, and a postal cable in the roadbed outside the curb on the east side of Second Avenue, as well as stanchions for the elevated train, since they exist at East 25th Street (WPA 1936, Project No. 609).

The existing surface elevations for these two blocks are: 27.3' at East 31st Street, 31.8' at East 30th Street, and 33' at East 29th Street. Soil borings taken between East 29th and East 31st Streets noted the following: on the west side of Second Avenue, Boring M73A found 12' of

fill below grade over bedrock, with the water table at 13' below grade (Raymond International Inc. 1970). Boring M74 encountered 3' of fill over bedrock, with the water table located at about 18' below grade (Ibid.). On the east side of Second Avenue, Boring M75 reported 5' of fill over bedrock, with the water table encountered at 12' below grade (Ibid.).

The footprint of the northern most Vail structure was probably completely affected by 20th century construction, since most of the structure extended east into the city block. However, there is the possibility that unmapped shaft features were located in proximity to this structure within the APE. Therefore, near the intersection of Second Avenue and East 30th Street, there is the potential for shaft features which may extend from the surface down to the depth of bedrock, which was encountered at about 12' below grade. The footprint of the southernmost structure fell directly within the Second Avenue roadbed. Its location may be sensitive for remnants of this foundation and potential shaft features within the fill, which extends from the surface down to approximately five feet below grade where bedrock was encountered.

6. East 14th to East13th Streets: Petersfield Farm Structure

A building was situated parallel to Second Avenue in 1820, on its west side midway down the block, with a second larger structure outside of the APE (Randel 1820:I,11; Figure 4.4-6). The property was part of a large holding owned by Peter G. Stuyvesant and was called "Petersfield." The principle residence was located between East 15th and East 16th Streets east of First Avenue and dates back to before 1765. It was demolished between 1829 and 1832 (Stokes 1918:952). The property was originally the country estate of Peter G. Stuyvesant's grandfather, Peter Stuyvesant, the Dutch Governor. His mansion was located at East 10th Street, just west of Second Avenue, and burned in 1778 (Willensky and White 1988:167).

This section of Second Avenue was officially opened in 1815 (WPA 1939:117). Marshland surrounding a stream lay just to the north of the two structures, crossing Second Avenue at East 14th Street with a lane and bridge. To the north, straddling Second Avenue between East 15th and East 17th Streets, is Stuyvesant Square. This land was donated to the city by Peter G. Stuyvesant, was developed as a park in 1836, reconstructed in 1936, and is now part of the Stuyvesant Square Historic District (Willensky and White 1988:195).

The surface elevation at the corner of Second Avenue and East 14th Street was 27.5', or 40.5' above bedrock at -13', and the ground was relatively level. The BMT Subway line runs under 14th Street but far enough north of the building not to have affected its site, and the sewer line at approximately 11' below the surface in the center of Second Avenue was to the east of the structure. The usual water and gas lines, both under 24" wide, and an electrical duct ran about five feet out from the curb (WPA 1939:117). Fill extends about 3'6" below grade, bedrock is at about 36' below grade, and the water table is located at about 15' below grade (Boring M53, Raymond International ca.1970s).

Two two-story buildings, with shops on the ground floor and probably apartments above, are currently standing where the northern half of the pre-1820 structure once was (Sanborn 2001). The location of the southern half of the old building is now covered by a larger two-story structure. No basements are indicated for any of these structures, but there are the usual assortment of underground utilities noted in the APE. A sewer line is shown in the center of the Second Avenue roadbed, approximately 14' below grade, and between it and the west curb are an electrical duct and a gas line under 24" in diameter. Although Second Avenue was legally opened in 1815, the WPA map shows the shoreline, as of 1819, in the center of the block, which means that this 1820 structure would have been under water (WPA 1937:Project No. 609). However, in contrast, the more accurate Randel map shows a stream and marshland only at the northeast corner of the block near East 14th Street (Randel 1920).

Although neither of these structures footprints fall within the APE, there is the potential for associated shaft features to lie within the Second Avenue roadbed in proximity to either building. Therefore, this APE is potentially sensitive for historic shaft features associated with either of these buildings between East 14th and East 13th Streets. If wells were associated with these structures, they may have extended from the surface down to at least 15' below grade, the depth of the water table, and possibly deeper.

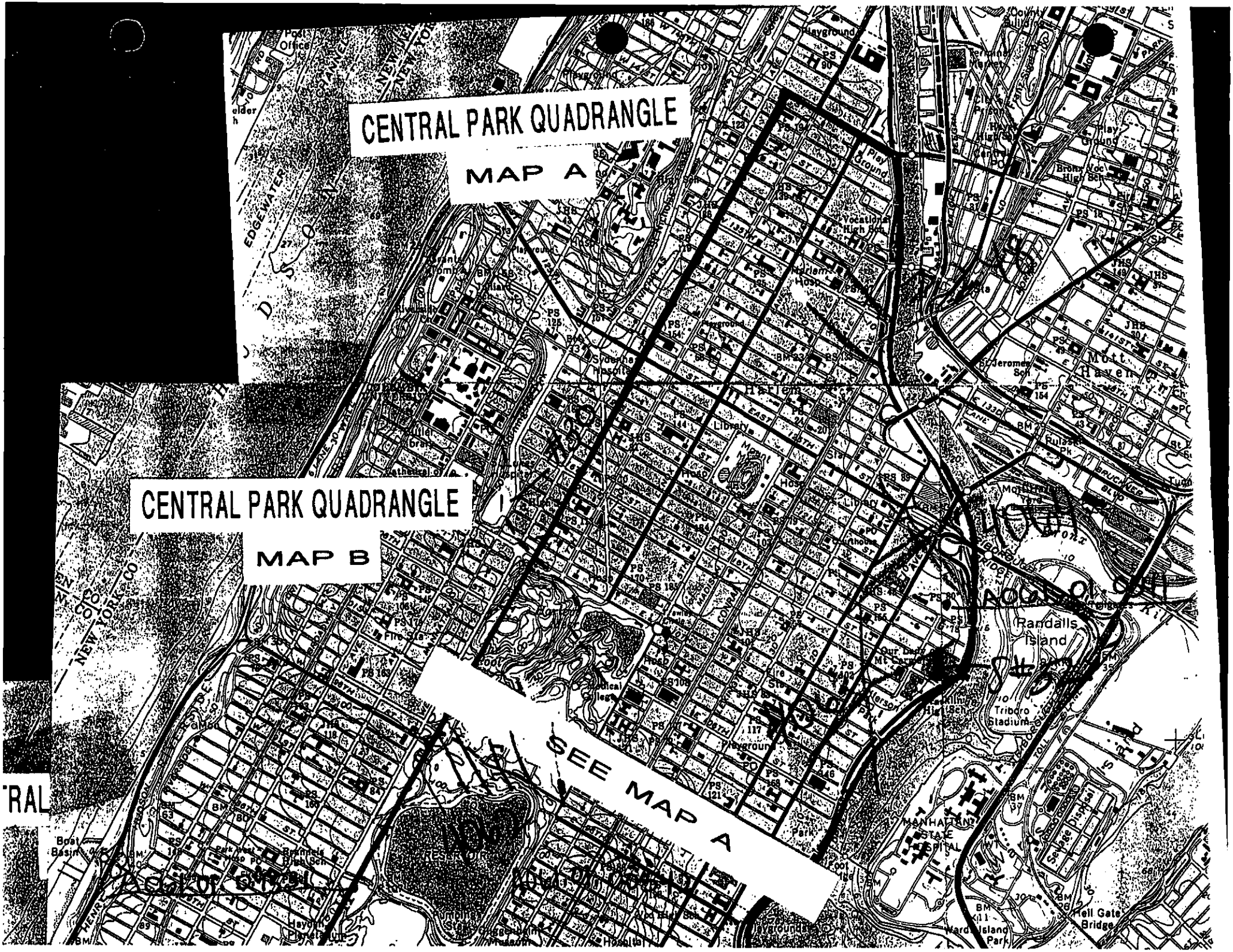
7. East 11th to East 10th Streets: St. Marks Church Property Structures

There were two structures in the Second Avenue roadbed between East 11th and East 10th Streets in 1807-1811, one on the east side just south of East 11th Street and partially east of the building line, and the other on the west side a third of the way down the block and also projecting beyond the building line (Commissioners' Map 1807-1811; Figure 4.4-7). They were apparently associated with St. Marks-in-the-Bowery Church, which is located in the same block but west of the project site. The pre-1811 street grid was at a 45 degree angle from that of today, with the church and outbuildings oriented toward Stuyvesant Street. St. Marks-in-the-Bowery Church, constructed in 1799 at what is now Second Avenue and East 10th Street still stands, having been restored between 1978 and 1984 (Willensky and White 1988:166-167). It is the site of Peter Stuyvesant's estate chapel and graveyard but is outside the boundary of the project site by about a block. Its cobbled courtyard, however, would have served as some protection to the remains of the more westerly building mentioned above.

The 4' x 4' sewer runs down the center of Second Avenue about 15' below grade and avoids the location of both pre-1811 structures (SYSTRA et al:2001). Most of the utility lines (e.g. electricity, telephone, postal cable, water and gas) were on the east side of the street, beginning at the curb and covering about a quarter of the roadbed. On the west side of Second Avenue were a 20" gas line covered with four feet of soil, an electrical duct, and a 12" water pipe under 4' 8" of soil (WPA 1937:Project 609). Fill extends about 5' below grade, bedrock is at about 15' below grade, and the water table is located at about 11' below grade (Boring M49, Raymond International ca.1970s).

This section of the APE is potentially sensitive for the footprints of both structures associated with St. Marks-in-the-Bowery Church, although their functions are unknown. It may be that at least one structure served as a rectory, or that both were private residences. In either scenario, their early dates indicate that both would have had associated wells and privies. Therefore the APE is potentially sensitive for their footprints within the fill from the surface down to the depth of about five feet below grade, and for any associated shaft features which could have extended from the surface down to the depth of bedrock, which is found at 15' below grade.

4.4.7.2 Site File Search Results, NYCLPC, NYSOPRHP and NYSM


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A
Randalls Island
Mott Haven
Harlem
Library
Tribor Stadium
Hell Gate Bridge
Ward Island Park
Sewage Disposal
Boat Basin
Hayden Planetarium
Sydenham Hospital
Vocational High Sch
Bronx Voc High Sch
Play Ground
Playground
Post Office
EDGEWATER
NEW YORK CO
TRAL


SEE MAP C
Long Island City
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DEPTH CURVES
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FOR SALE BY
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CENTRAL
WEST NEW YORK
NEW YORK CITY BOUNDARY
LINCOLN TUNNEL 2.9 MI.
BROOKLYN-BATTERY TUNNEL 4.2 MI.
N.J. TURNPIKE 4.4 MI.
200 000 FEET (N. Y.)
SEE MAP C
Boat Basin
Playground
Fire Sta
Park
Pharmacy College
N Y Historical Society
The Lake
The Mall
Carnegie Hall
Columbus Circle
Lincoln Center
Fordham Univ
Roosevelt Hospital
Coliseum
Pier
Library
Hospital
Tunnel
Castle Point
NEWARK
NEW JERSEY
Madison Sq
Herald Sq
Chrysler Bldg
Main Library
Pennsylvania Station
Greeley Square
Macy's
Times Square
Port Authority Terminal
Westside Interstate Terminal
Museum of Natural History
Metropolitan Museum of Art
Rockefeller Center
St Bartholomew's
Brooklyn Tubes
Holland Tunnel
Lincoln Tunnel
Hudson River
Exchange Place
Jersey City
Bayonne
Elizabeth
Elizabeth Port Authority Terminal
Newark Airport
Newark Bay
Port Newark
Port Elizabeth
Bayonne Bridge
Goethals Bridge
Outerbridge Crossing
Staten Island
Arthur Kill
Kill Van Kull
Newark Bay
Hudson River
Upper New York Bay
Lower New York Bay
Governors Island
Ellis Island
Liberty Island
Statue of Liberty
Brooklyn
Manhattan
Bronx
Queens
Staten Island
Jersey City
Hoboken
Weehawken
Union City
North Bergen
Secaucus
Kearny
Harrison
East Newark
Bayonne
Elizabeth
Newark
Linden
Rahway
Carteret
Perth Amboy
Woodbridge
Sayreville
South Amboy
Old Bridge
Edison
Metuchen
Middlesex
Piscataway
New Brunswick
Highland Park
South River
Milltown
East Brunswick
Sayreville
Old Bridge
Matawan
Aberdeen
Keyport
Union Beach
Hazlet
Middletown
Holmdel
Atlantic Highlands
Red Bank
Shrewsbury
Long Branch
Asbury Park
Ocean Grove
Neptune
Belmar
Spring Lake
Sea Girt
Manasquan
Point Pleasant
Bay Head
Mantoloking
Brick
Lakewood
Toms River
Seaside Park
Seaside Heights
Island Beach State Park
Barnegat Inlet
Barnegat Light
Long Beport
Tuckerton
Little Egg Harbor
Great Bay
Mullica River
Absecon
Atlantic City
Ventnor City
Margate City
Longport
Somers Point
Ocean City
Sea Isle City
Avalon
Stone Harbor
Wildwood
North Wildwood
Cape May
Cape May Point
Delaware Bay
Cape May Canal
Cape May Harbor
Cape May Inlet
Cape May Lighthouse
Cape May Point State Park
Cape May Point Lighthouse
Cape May Point Beach
Cape May Point Pier
Cape May Point Boardwalk
Cape May Point Marina
Cape May Point Yacht Club
Cape May Point Golf Course
Cape May Point Tennis Courts
Cape May Point Basketball Courts
Cape May Point Baseball Fields
Cape May Point Soccer Fields
Cape May Point Playground
Cape May Point Park
Cape May Point Beach
Cape May Point Pier
Cape May Point Boardwalk
Cape May Point Marina
Cape May Point Yacht Club
Cape May Point Golf Course
Cape May Point Tennis Courts
Cape May Point Basketball Courts
Cape May Point Baseball Fields
Cape May Point Soccer Fields
Cape May Point Playground
Cape May Point Park

MAPS #27


S#
#25
S#28
S#8
A061.01.01304
S#13
Area of S#4
(Castle Clinton)
A061.01.01283
A061.01.01284
S#5
S#12
S#1
#15
S#2
#20
Tompkins Square
Park
Wallabout Bay
Navy Yard Basin
HUDSON CO
NEW YORK CO
KINGS CO
EAST

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	
4059 X	* Missing	A061.01.0491 —	#30 = British Line
4060 X		A061.01.01282 X	#31
4061 X		A061.01.01272 X 0014	
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
4065 X		~~2 - A061.01.0044 003~~	survey in the 1970's
		3 - A061.01.0623 X 0023	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 NY	6 - A061.01.00604 X	NYAC = New York
		A061.01.01304 X	Archeological Council.
		A061.01.01285 X	
* Missing	* 526 Broom St. Historic Site	A061.01.07671 —	
		A061.01.09530 X	
* According to Cynthia Blakemore @ SHPO		A061.01.01286 X	
		A061.01.01541 X	
		A061.01.00542 X	
		A061.01.09531 X	

ATIONAL REGISTER ELIGIBLE and LISTED ___ Eligible ___ Listed ___ Building Inventory

uilding 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
William D. Hersey – 1963 Castle Clinton at the Battery
Broad Street Financial Center Greenhouse January 1985
X
64th Pearl Street (17th Landfill) Arnold Pickman & Nan Rothschild May 1981
Stone Street Historic District 1977, 8/1 NYC Landmarks Pres. Comm. Tracker
9 Barclays Bank Site – 100 Water St. Berger – 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block Kardan & Larrabee – Aug 1991

209 Water St. – Schuyler – ? Date
East River Road – New York Harbor Collection Kardan & Larrabee October 1977
10 Sheridan Square – 1983 – Rutgers University
Lower Eastside Service Center – Louis Berger – Jan '98
750 Sixth Ave. HPI – February 1998
Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1989 / December 1989
East River Plaza HPI Sept. 1998
Stone Street Historic District NYC Landmark Pres. Comm. February 1998

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

An Equal Opportunity/Affirmative Action Agency
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NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

For Office Use Only--Site Identifier A0-61-01.009530

Project Identifier _____

Your Name Rebecca Yamin Date Oct. 23, 1997

Address John Milner Associates, Inc. Phone (215) 561-7637

Zip Phila, PA 19107

Organization (if any) John Milner Associates

1. Site Identifier(s) City
2. County New York One of following: City _____ Township _____ Incorporated Village _____ Unincorporated Village or Hamlet _____
3. Present Owner Bernard M. Baruch College
   Address 17 Lexington Ave New York, NY
   Zip 10010
4. Site Description (check all appropriate categories):
   Structure/site
   Superstructure: complete__ partial__ collapsed__ not evident__
   Foundation: above__ below✓ (ground level) not evident__
   __Structural subdivisions apparent __Only surface traces visible
   ✓Buried traces detected
   List construction materials (be as specific as possible): brick drains + cobbled floor / 19th c. horse stables
   Grounds
   __Under cultivation __Sustaining erosion __Woodland __Upland
   __Never cultivated __Previously cultivated __Floodplain __Pasture
   Soil Drainage: excellent__ good__ fair__ poor__.
   Slope: flat__ gentle__ moderate__ steep__
   Distance to nearest water from structure (approx.) _____
   Elevation: _____
5. Site Investigation (append additional sheets, if necessary):
   Surface--date(s) _____ A college building now stands at the site.
   __Site Map (Submit with form*)
   __Collection
   Subsurface--date(s) _____
   Testing: shovel__ coring__ other _____ unit size _____
   no. of units _____ (Submit plan of units with form*)
   Excavation: unit size variable no. of units 12 backhoe trenches
   (Submit plan of units with form*)
   * Submission should be 8½"x11", if feasible
   Investigator Rebecca Yamin, Robert Fitts, Claudia Milne
   Manuscript or published report(s) (reference fully):

A Stage II Archeological Investigation of the Bernard M. Baruch College Site B (89PR0746) Manhattan, New York County by Rebecca Yamin, Robert Fitts, and Claudia Milne. John Milner Associates, prepared for Edwards and Kelcey Engineers, Inc. 1997.

Page 2

6. Site inventory:
   a. date constructed or occupation period 19th c.
   b. previous owners, if known
   c. modifications, if known

   (append additional sheets, if necessary)

7. Site documentation (append additional sheets, if necessary):
   a. Historic map references
      1) Name Atlas, Block 880 Date 1859 Source Perris
         Present location of original, if known NY Public, 42nd St
      2) Name _____ Date _____ Source _____
         Present location of original, if known _____
   b. Representation in existing photography
      1) Photo date _____ Where located _____
      2) Photo date _____ Where located _____
   c. Primary and secondary source documentation (reference fully):

   d. Persons with memory of site:
      1) Name _____ Address _____
      2) Name _____ Address _____

8. List of material remains other than those used in constructi (as specific as possible in identifying object and material):
   component parts (drainage) of horse stables

   If prehistoric materials are evident, check here and fill out prehistoric site form. __

9. Map References: Map or maps showing exact location and extent o site must accompany this form and must be ident by source and date. Keep this submission to 8½ if feasible.

   USGS 7½ Minute Series Quad. Name Brooklyn, NY (1967, photorev. 1979

   For Office Use Only--UTM Coordinates _____

10. Photography (optional for environmental impact survey):
    Please submit a 5"x7" black and white print(s) showing the curre state of the site. Provide a label for the print(s) on a separat sheet

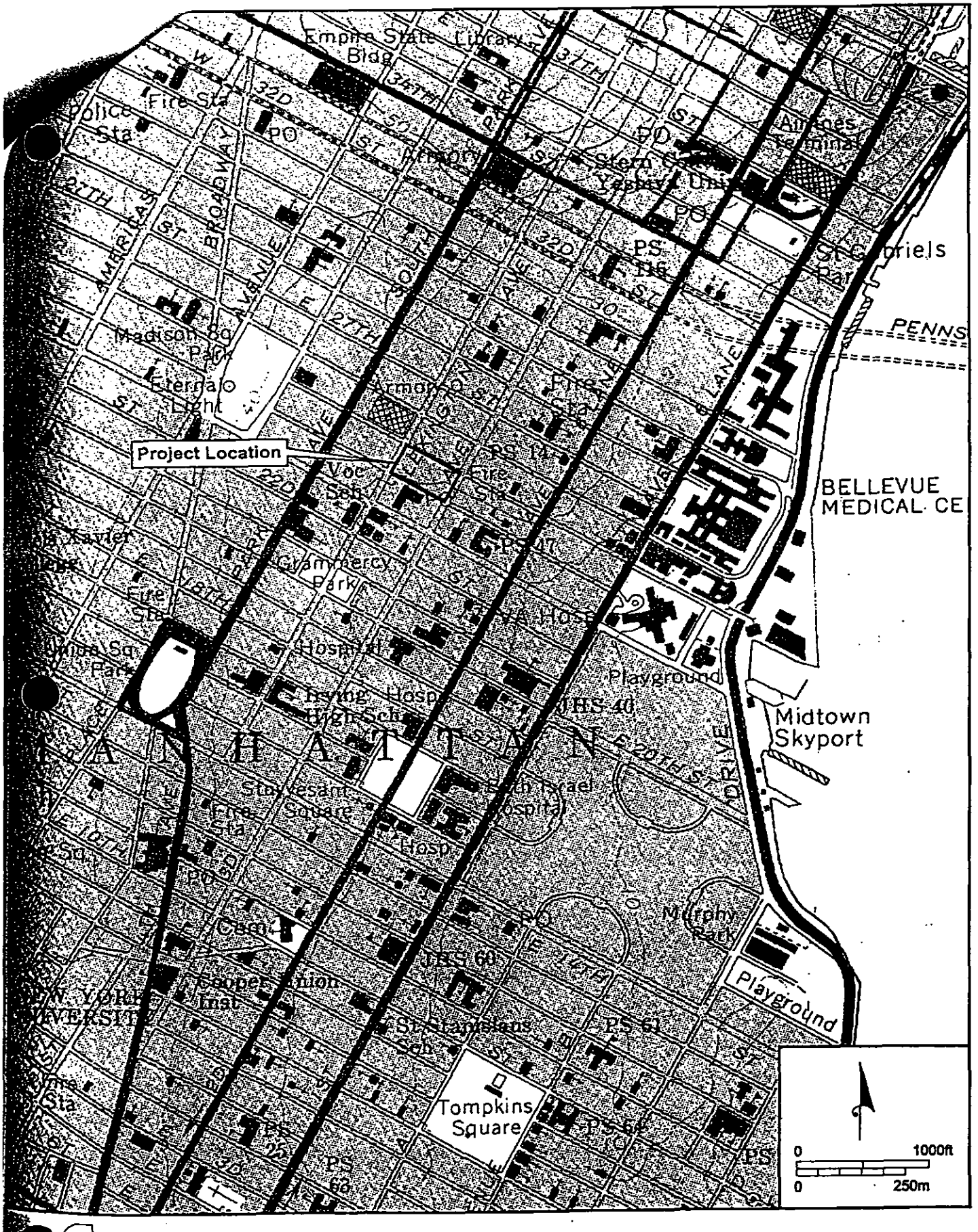


Figure 1. Detail, *Brooklyn, N.Y. Quadrangle USGS 7.5 minute series* (1967, photorevised 1979).

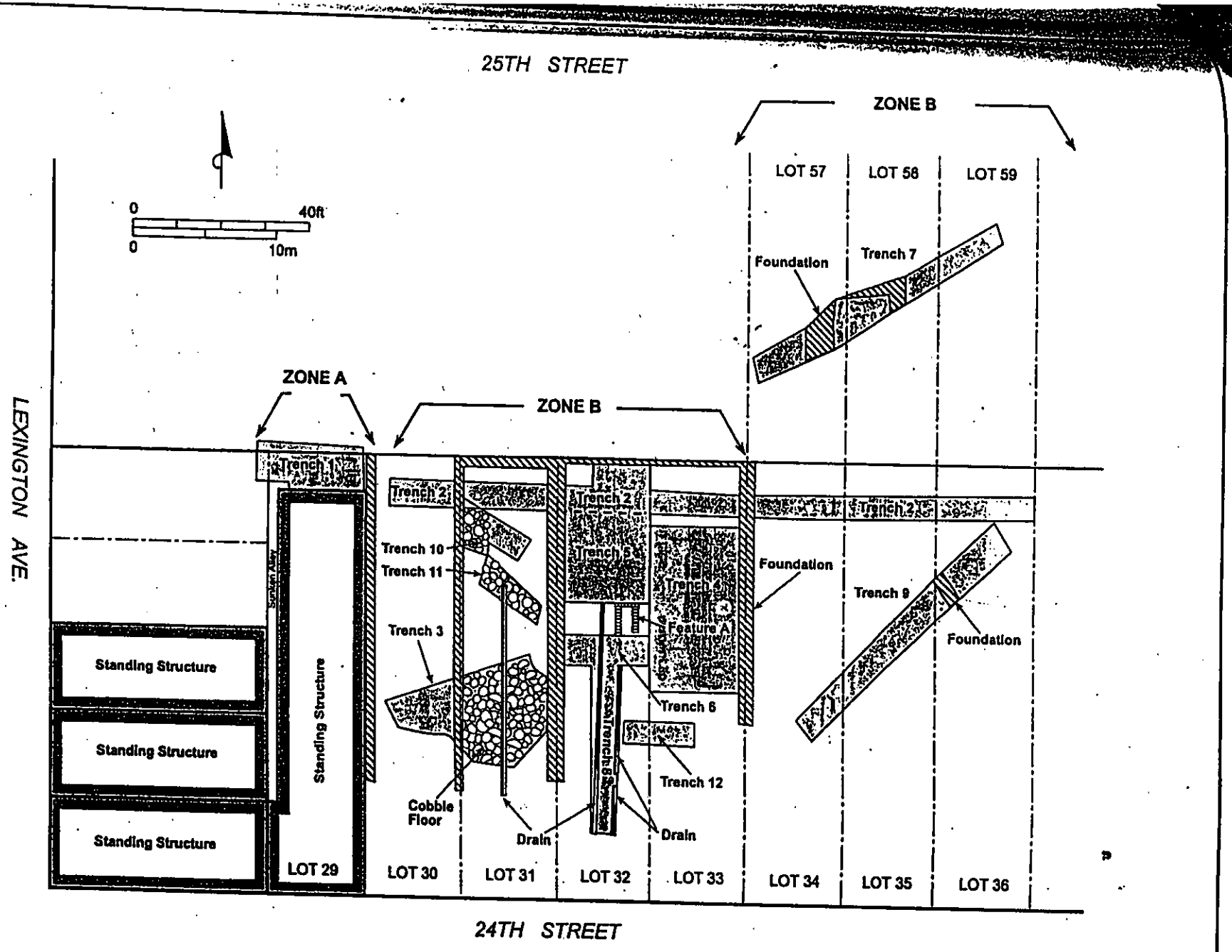
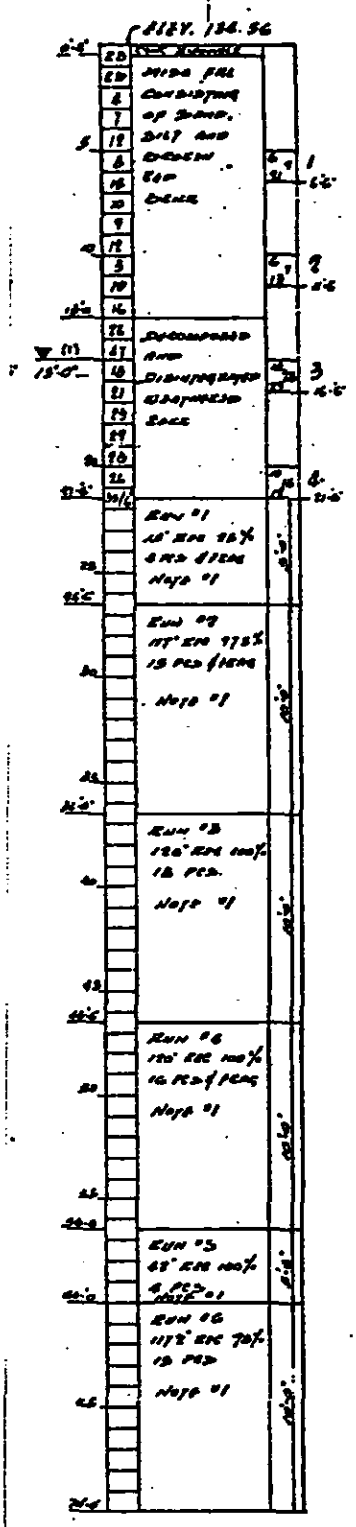


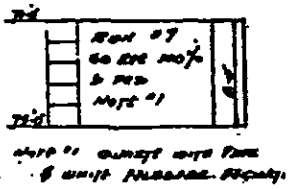
Figure 5. Location of JMA test trenches and archeological features at Bernard M. Baruch College Site B (Block 880).

4.4.7.3 Soil Boring Logs

M 73A



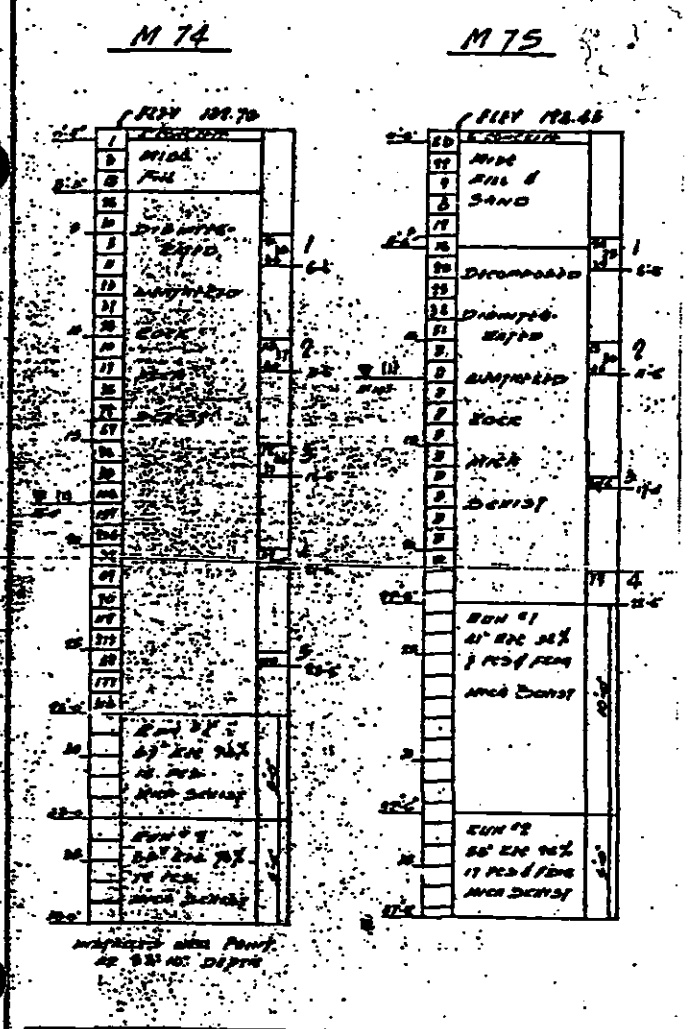
M 73A CONT

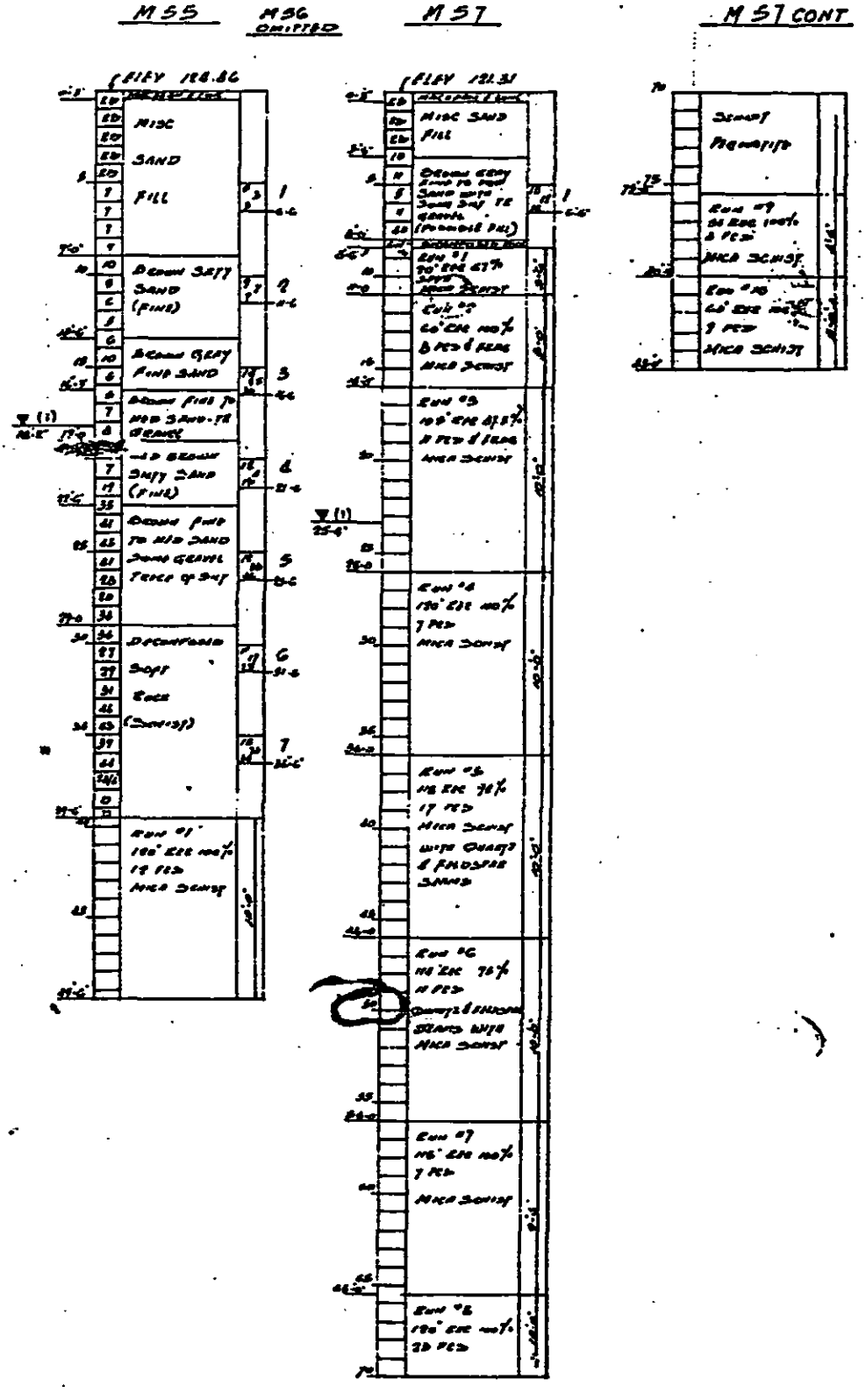


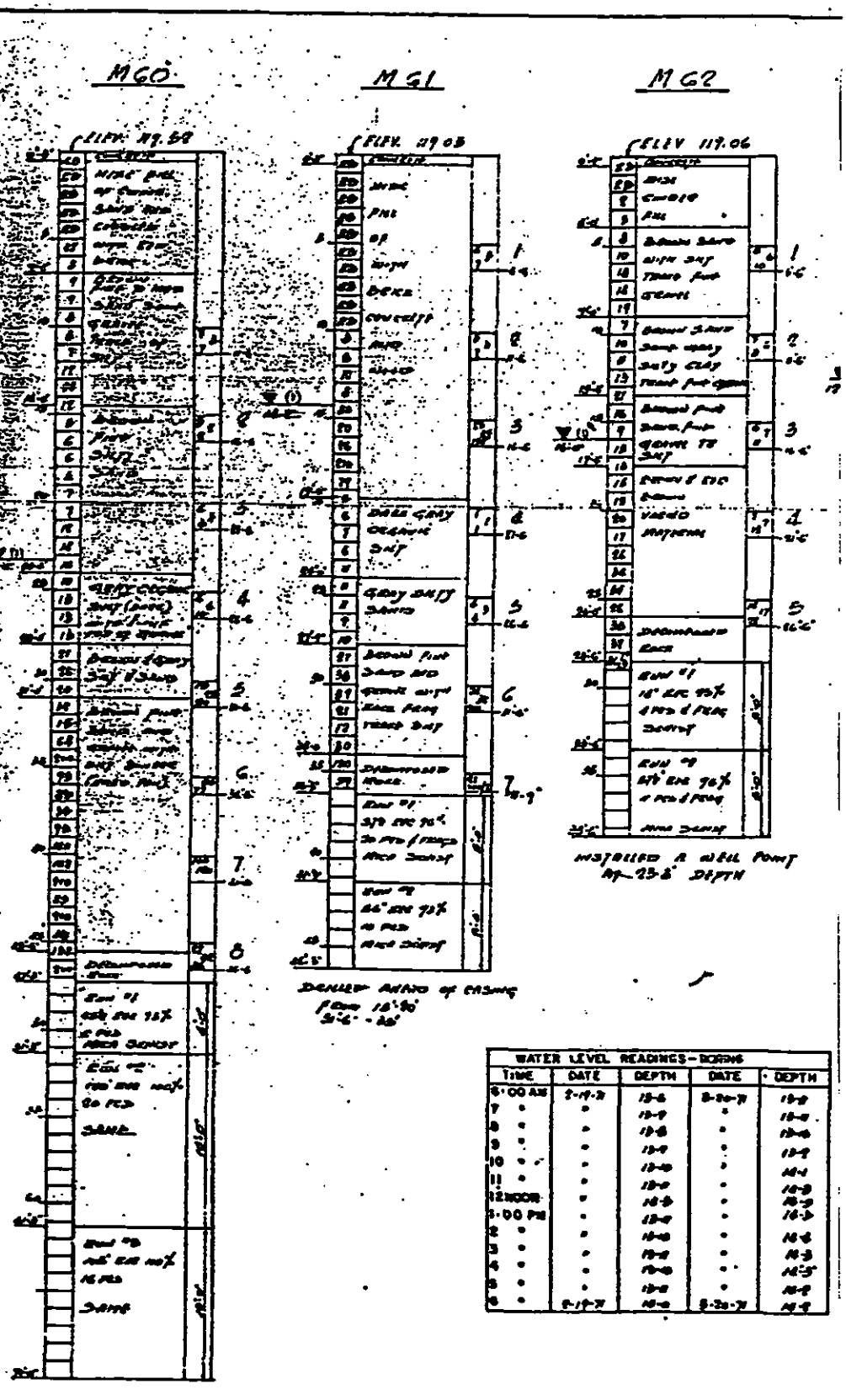
RAYMOND INTERNATIONAL, INC.

This is to certify that this report is a compilation of information obtained from the field boring logs.

JAMES E. [illegible]
Asst. Vice P[illegible]

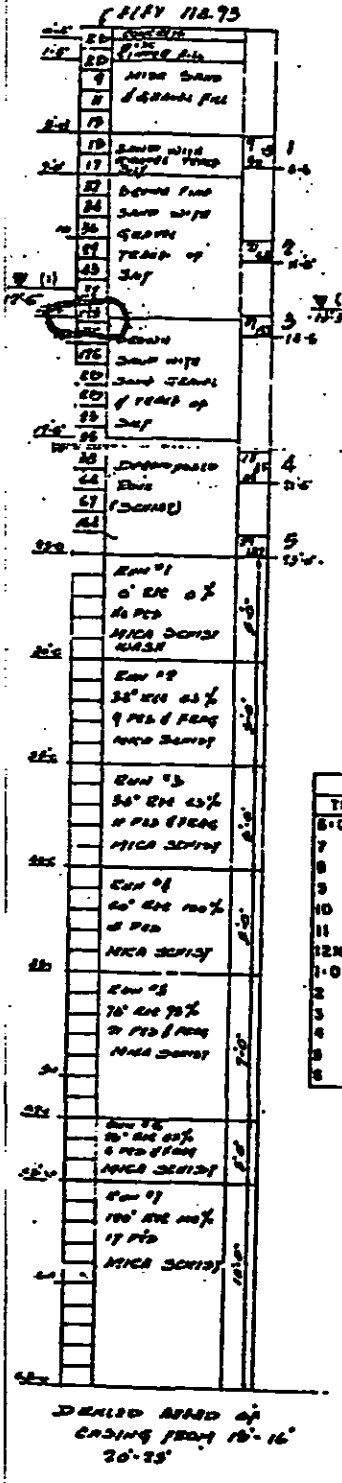

M 74
M 75
ELEV 198.70
ELEV 198.45
MIDD
FILL
DECOMPOSED
DISINTEGRATED
WEATHERED
ROCK
MICA
SCHIST
RUN #1
RUN #2
MICA SCHIST
WATER LEVEL READINGS - BORING
TIME
DATE
DEPTH
DATE
DEPTH
8:00 AM
12 NOON
1:00 PM


M55
M56 OMITTED
M57
M57 CONT
ELEV 128.86
MISC SAND FILL
BROWN SILTY SAND (FINE)
BROWN GRAY FINE SAND
BROWN FINE TO MED SAND-TR GRAVEL
MED BROWN SILTY SAND (FINE)
BROWN FINE TO MED SAND SOME GRAVEL TRACE OF SILT
DECOMPOSED SOFT ROCK (SCHIST)
RUN #1
MICA SCHIST
ELEV 121.31
MISC SAND FILL
RUN #1
MICA SCHIST
RUN #2
MICA SCHIST
RUN #3
MICA SCHIST
RUN #4
MICA SCHIST
RUN #5
MICA SCHIST
RUN #6
MICA SCHIST
RUN #7
MICA SCHIST
RUN #8
MICA SCHIST
SCHIST PREMATITE
RUN #9
MICA SCHIST
RUN #10
MICA SCHIST



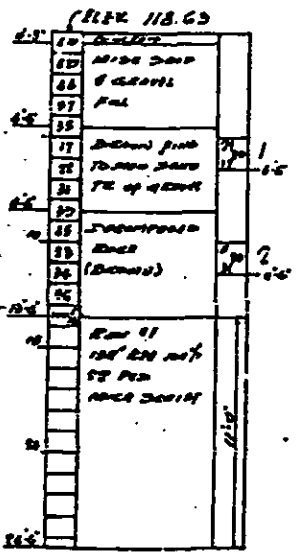
WATER LEVEL READINGS – BORING				
TIME	DATE	DEPTH	DATE	DEPTH
9:00 AM	2-19-71	13.6	3-30-71	13.9
7 "	"	13.9	"	13.9
8 "	"	13.8	"	13.8
9 "	"	13.9	"	13.9
10 "	"	13.8	"	14.1
11 "	"	13.9	"	13.9
12 NOON	"	13.8	"	13.9
1:00 PM	"	13.9	"	13.8
2 "	"	13.8	"	13.8
3 "	"	13.8	"	13.8
4 "	"	13.8	"	14.3
5 "	"	13.8	"	13.9
6 "	2-17-71	13.9	3-31-71	13.9

MC3



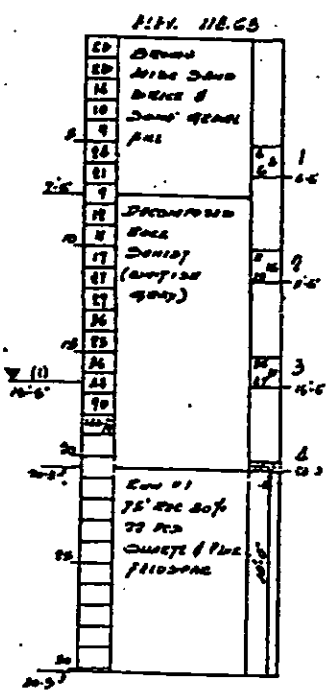
DRILLED AHEAD 4" CASING FROM 15'-16' 20'-25'

MC4



INSTALLED A WELL POINT AT 23.5' DEPTH

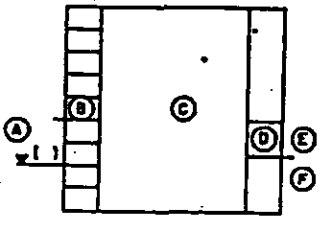
MC5



WATER LEVEL READINGS – BORING

TIME	DATE	DEPTH	DATE	DEPTH
6:00 AM	3-20-71	16-1	3-29-71	16-8
7 "	"	16-1	"	16-8
8 "	"	16-6	"	16-8
9 "	"	16-6	"	16-8
10 "	"	16-5	"	16-8
11 "	"	16-6	"	16-8
12 NOON	"	16-1	"	16-7
1:00 PM	"	16-1	"	16-7
2 "	"	16-6	"	16-7
3 "	"	16-7	"	16-8
4 "	"	16-9	"	16-5
5 "	"	16-6	"	16-7
6 "	3-20-71	16-6	3-29-71	16-7

LEGEND



(A) WATER LEVEL ( ) HOURS AFTER COMPLETION.

(B) NUMBER OF BLOWS OF A 300 LB. HAMMER FALLING 18" REQUIRED TO DRIVE A 2½" DIA. CASING (UNLESS OTHERWISE NOTED) EACH 12".

(C) STRATA DESCRIPTION.

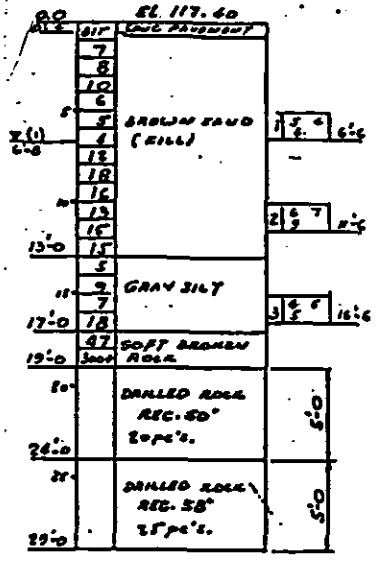
(D) NUMBER OF BLOWS OF A 140 LB. HAMMER (UNLESS OTHERWISE NOTED) FALLING 30" REQUIRED TO DRIVE A 2" SPLIT SPOON EACH 6".

(E) SAMPLE NUMBER.

(F) DEPTH AT END OF SAMPLE DRIVE.

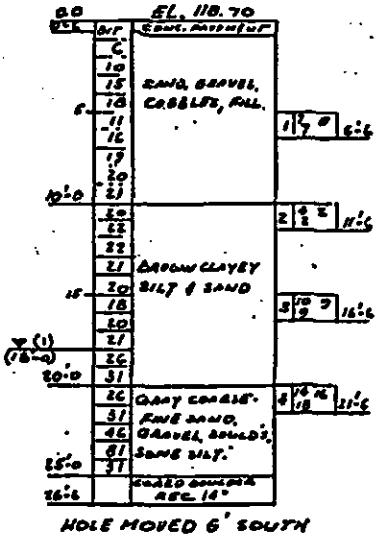
2-2

EL. 117.40



2-3 (ABONDONED)

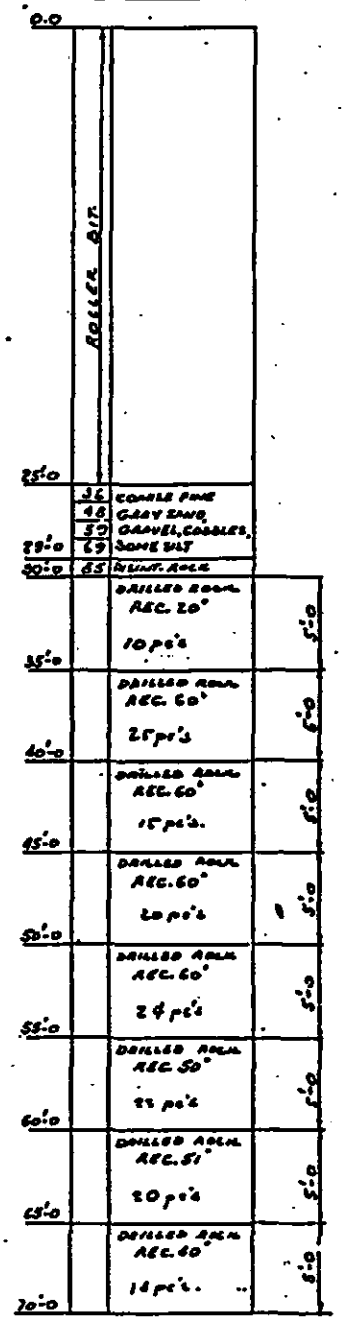
EL. 118.70

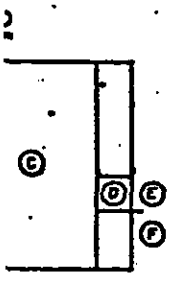


HOLE MOVED 6' SOUTH

BORING CONTINUED ON 2-3A.

2-3A (6' SOUTH).





EL. ( ) HOURS AFTER COMPLETION.

' BLOWS OF A 300 LB. HAMMER
8" REQUIRED TO DRIVE A 2½" DIA.
(LESS OTHERWISE NOTED) EACH 12".

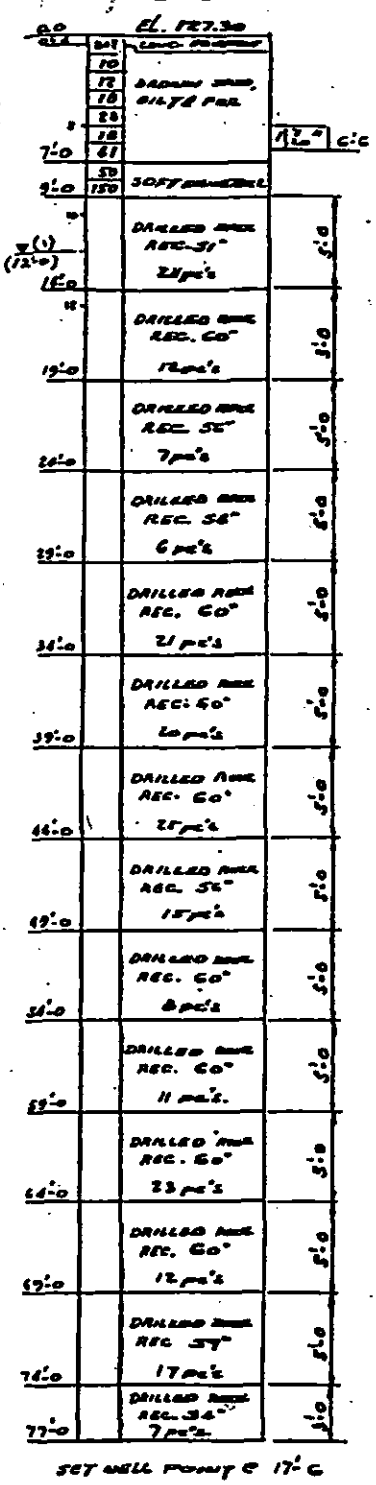
ESCRIPTION.

' BLOWS OF A 140 LB. HAMMER
THERWISE NOTED) FALLING 30"
TO DRIVE A 2" SPLIT SPOON EACH 6".

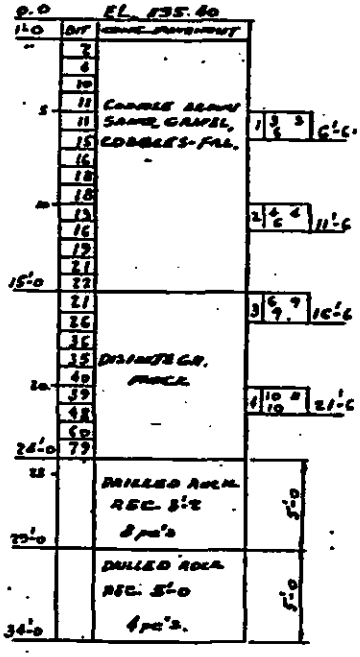
MBER.

END OF SAMPLE DRIVE.

2-5

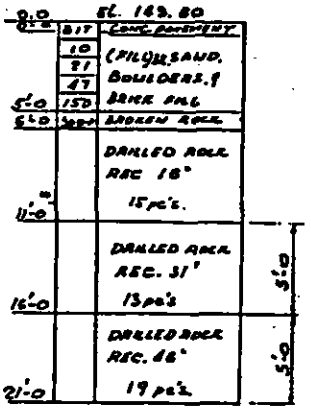


2-6



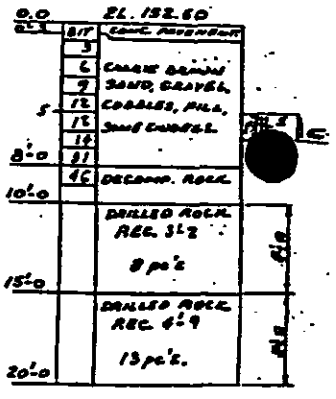
NO WATER AFTER COMPLETION

2-7



NO WATER

2-8



NO WATER AFTER COMPLETION

WATER READING BORING 2-1

DATE	TIME	WATER LEVEL
10-7-69	6 A.M.	16'-10
	7 "	16'-10
	8 "	16'-10
	9 "	16'-9
	10 "	16'-8
	11 "	16'-8
	12 Noon	16'-10
	1 P.M.	16'-10
	2 "	16'-10
	3 "	16'-9
	4 "	16'-9
	5 "	16'-9
10-7-69	6 "	16'-9
10-8-69	6 A.M.	16'-10
	7 "	16'-9
	8 "	16'-9
	9 "	16'-9
	10 "	16'-9
	11 "	16'-9
	12 Noon	16'-8
	1 P.M.	16'-9
	2 "	16'-9
	3 "	16'-9
	4 "	16'-9
	5 "	16'-9
10-8-69	6 "	16'-9

WATER READING BORING 2-5

DATE	TIME	WATER LEVEL
10-7-69	6 A.M	12'-6
	7 "	12'-6
	8 "	12'-6
	9 "	12'-6
	10 "	12'-9
	11 "	12'-9
	12 NOON	12'-9
	1 P.M	12'-9
	2 "	12'-9
	3 "	12'-9
	4 "	12'-6
	5 "	12'-6
10-7-69	6 P.M	12'-6
10-8-69	6 A.M	12'-8
	7 "	12'-8
	8 "	12'-8
	9 "	12'-6
	10 "	12'-6
	11 "	12'-6
	12 NOON	12'-6
	1 P.M	12'-6
	2 "	12'-6
	3 "	12'-6
	4 "	12'-6
	5 "	12'-6
10-8-69	6 P.M	12'-6

FOR LEGEND & GEN NOTES SEE DWG. 15433-3-3

RAYMOND INTERNATIONAL

TEST BORING

NEW YORK CITY TRANSIT S...

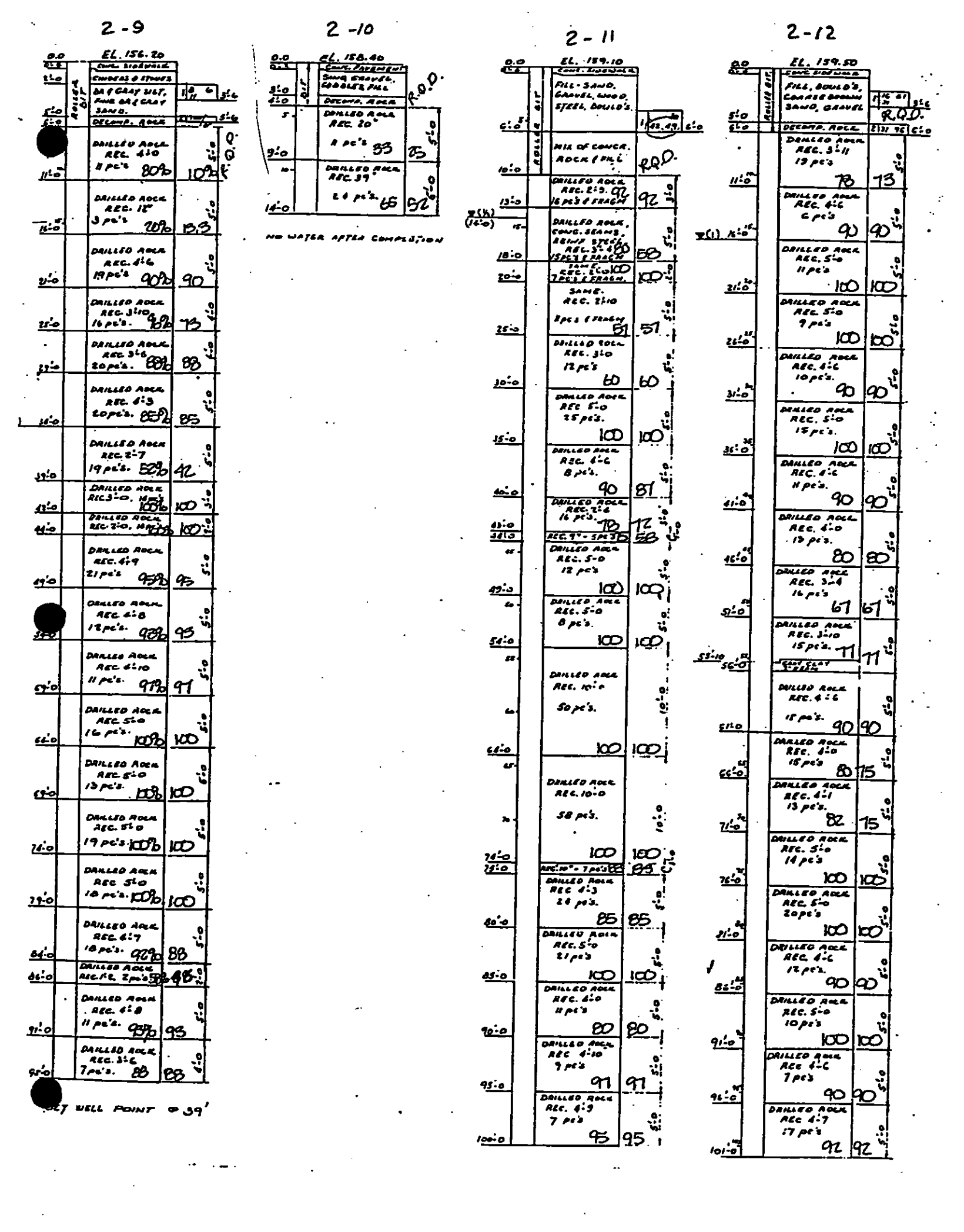
BOROUGH OF MANHATTAN

2ND AVE. FROM 38TH ST

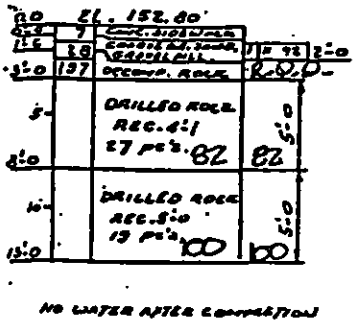
EAST 125TH STREET

ROUTE 128A

T-5

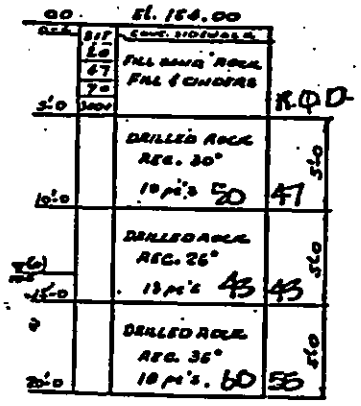

2-9
EL. 156.20
CONC. SIDEWALK
CINDERS & STONES
BR & GRAY VEL, FINE BR & GRAY SAND.
DECOMP. ROCK
DRILLED ROCK REC. 4:0 11 pc's 80%
DRILLED ROCK REC. 1'8" 3 pc's 20%
DRILLED ROCK REC. 4:6 19 pc's 90%
DRILLED ROCK REC. 3'10 16 pc's. 80%
DRILLED ROCK REC. 3'6 20 pc's. 88%
DRILLED ROCK REC. 4:3 20 pc's. 85%
DRILLED ROCK REC. 2:7 19 pc's. 52%
DRILLED ROCK REC. 3:0, 18 pc's 100%
DRILLED ROCK REC. 2:0, 18 pc's 100%
DRILLED ROCK REC. 4:9 21 pc's 95%
DRILLED ROCK REC. 4:8 12 pc's. 93%
DRILLED ROCK REC. 4:10 11 pc's. 91%
DRILLED ROCK REC. 5:0 16 pc's. 100%
DRILLED ROCK REC. 5:0 13 pc's. 100%
DRILLED ROCK REC. 5:0 19 pc's 100%
DRILLED ROCK REC 5:0 18 pc's. 100%
DRILLED ROCK REC. 4:7 18 pc's. 92%
DRILLED ROCK REC. 1'2, 2 pc's 50%
DRILLED ROCK REC. 4:8 11 pc's. 93%
DRILLED ROCK REC. 3:6 7 pc's. 88
WET WELL POINT @ 39'
2-10
EL. 158.40
CONC. PAVEMENT
SAND, GRAVEL, COBBLES, FILL
DECOMP. ROCK
DRILLED ROCK REC. 20" 8 pc's 33
DRILLED ROCK REC. 39" 24 pc's. 66
R.Q.D.
NO WATER AFTER COMPLETION
2-11
EL. 159.10
CONC. SIDEWALK
FILL - SAND, GRAVEL, WOOD, STEEL, BOULD'S.
MIX OF CONCR. ROCK & PAVT.
DRILLED ROCK REC. 2'9. 16 pc's & FRAGM 92
DRILLED ROCK, CONC. SEAMS, REINF STEEL REC. 3'4 15 pc's & FRAGM 50
SAME REC. 5'0 7 pc's & FRAGM. 100
SAME. REC. 2'10 8 pc's & FRAGM 51
DRILLED ROCK REC. 3:0 12 pc's 60
DRILLED ROCK REC 5:0 25 pc's. 100
DRILLED ROCK REC. 4:6 8 pc's. 90
DRILLED ROCK REC. 2'6 16 pc's. 72
REC. 9" - 5 pc's 36
DRILLED ROCK REC. 5-0 12 pc's 100
DRILLED ROCK REC. 5-0 8 pc's. 100
DRILLED ROCK REC. 10:0 50 pc's. 100
DRILLED ROCK REC. 10-0 58 pc's. 100
REC. 10" - 7 pc's 88
DRILLED ROCK REC 4:3 24 pc's. 85
DRILLED ROCK REC. 5:0 21 pc's 100
DRILLED ROCK REC. 4:0 11 pc's 80
DRILLED ROCK REC 4:10 9 pc's 97
DRILLED ROCK REC. 4:9 7 pc's 95
2-12
EL. 159.50
CONC. SIDEWALK
FILL, BOULD'S, COARSE BROWN SAND, GRAVEL
R.Q.D.
DECOMP. ROCK
DRILLED ROCK REC. 3:11 19 pc's 73
DRILLED ROCK REC. 4:6 6 pc's 90
DRILLED ROCK REC. 5:0 11 pc's 100
DRILLED ROCK REC. 5:0 9 pc's 100
DRILLED ROCK REC. 4:6 10 pc's. 90
DRILLED ROCK REC. 5:0 15 pc's. 100
DRILLED ROCK REC. 4:6 11 pc's. 90
DRILLED ROCK REC. 4:0 13 pc's. 80
DRILLED ROCK REC. 3:4 16 pc's 67
DRILLED ROCK REC. 3:10 15 pc's. 77
SOFT CLAY & SILT
DRILLED ROCK REC. 4:6 15 pc's. 90
DRILLED ROCK REC. 4:0 16 pc's 80
DRILLED ROCK REC. 4:1 13 pc's. 82
DRILLED ROCK REC. 5:0 14 pc's 100
DRILLED ROCK REC. 5:0 20 pc's 100
DRILLED ROCK REC. 4:6 12 pc's. 90
DRILLED ROCK REC. 5:0 10 pc's 100
DRILLED ROCK REC 4:6 7 pc's 90
DRILLED ROCK REC 4:7 17 pc's 92

2-13

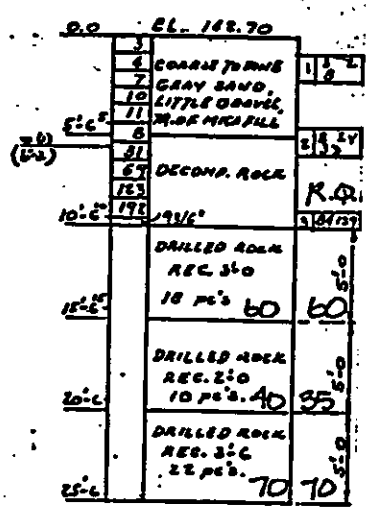


NO WATER AFTER CONNECTION

2-14



2-15



WELL POINT SET @ 14'

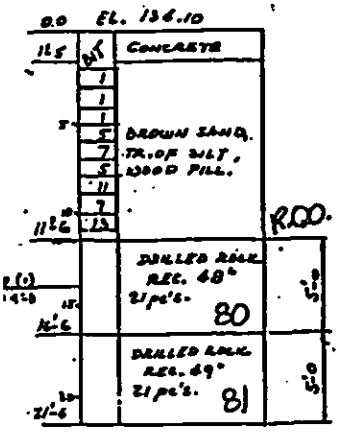
WATER READING - BORING 2-9

DATE	TIME	WATER LEVEL
10-7-69	6 A.M.	35'-0
	7 "	"
	8 "	"
	9 "	"
	10 "	"
	11 AM	"
	12 Noon	35'-0
	1 P.M.	35'-2
	2 "	35'-1
	3 "	35'-2
	4 "	35'-0
	5 "	35'-0
10-7-69	6 "	35'-0
10-8-69	6 A.M.	35'-0
	7 "	35'-1
	8 "	35'-0
	9 "	35'-0
	10 "	"
	11 "	"
	12 Noon	"
	1 P.M.	"
	2 "	"
	3 "	"
	4 "	"
	5 "	"
10-8-69	6 "	35'-0

WATER READING BORING 2-15

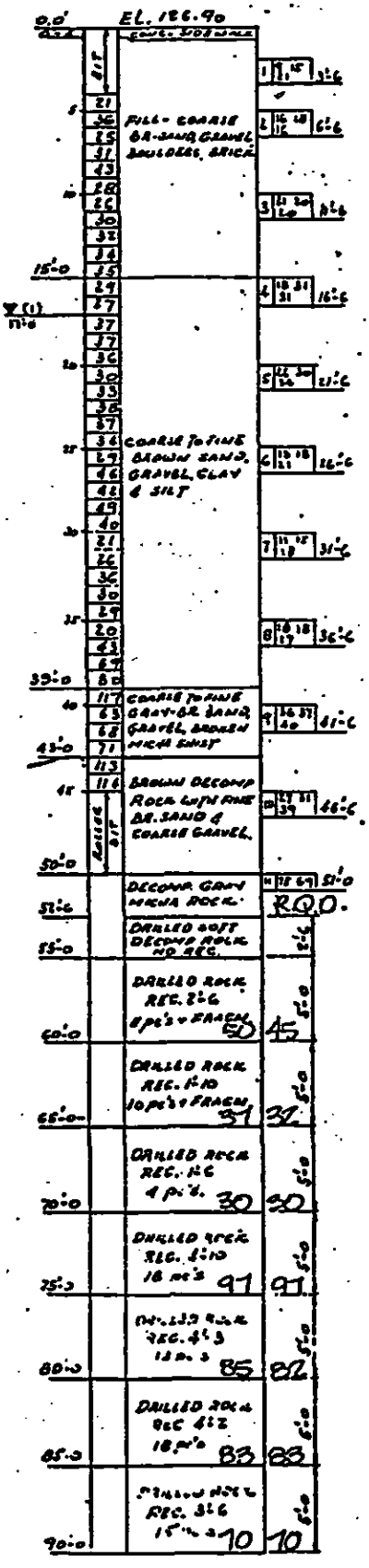
DATE	TIME	WATER LEVEL
10-7-69	6 A.M.	7'-6
	7 "	7'-5
	8 "	7'-6
	9 "	7'-5
	10 "	7'-4
	11 A.M	7'-5
	12 Noon	7'-5
	1 P.M.	7'-6
	2 "	7'-6
	3 "	7'-6
	4 "	7'-5
	5 "	7'-6
10-7-69	6 P.M.	7'-6
10-11-69	6 A.M.	7'-6
	7 "	7'-6
	8 "	7'-6
	9 "	7'-6
	10 "	
	11 A.M.	
	12 Noon	
	1 P.M.	
	2 "	
	3 "	
	4 "	
	5 "	
10-11-69	6 P.M.	7'-6

2-17

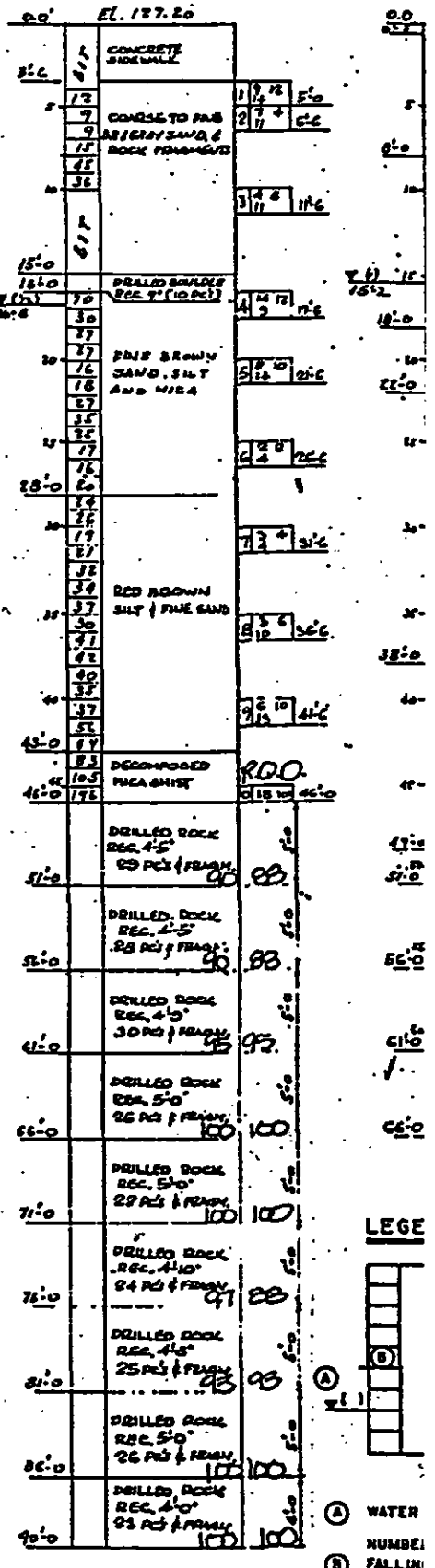


WATER READING BORING 2-21		
DATE	TIME	WATER LEVEL
10-7-69	6 A.M.	13'-9
	7 "	14'-0
	8 "	
	9 "	
	10 "	
	11 A.M.	14'-0
	12 NOON	14'-1
	1 P.M.	14'-1
	2 "	14'-1
	3 "	14'-2
	4 "	14'-0
	5 "	14'-0
10-7-69	6 P.M.	14'-0
10-11-69	6 A.M.	14'-0
	7 "	14'-0
	8 "	14'-1
	9 "	14'-1
	10 "	14'-0
	11 A.M.	
	12 NOON	
	1 P.M.	
	2 "	
	3 "	
	4 "	
	5 "	
10-11-69	6 P.M.	14'-0

2-18



2-19



LEGE

(A) WATER

(B) NUMBE FALLIN CASING

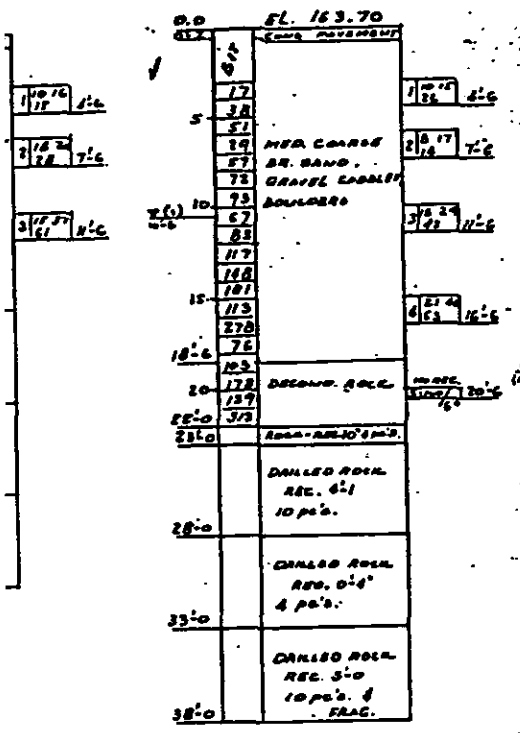
(C) STRATA

(D) NUMBE (UNLES REQUIR

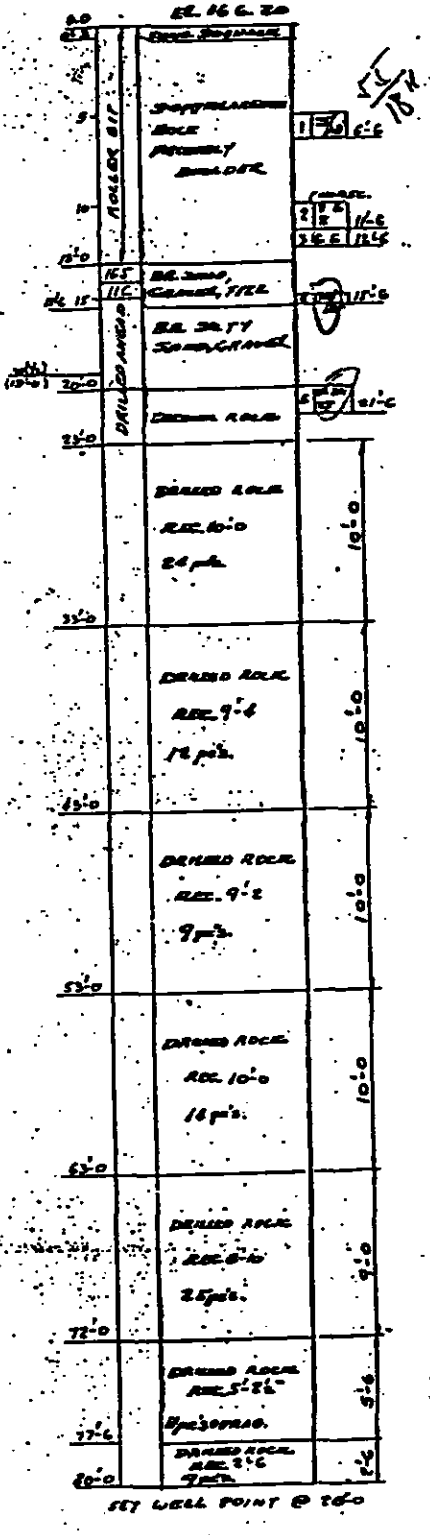
(E) SAMPL

(F) DEPTH

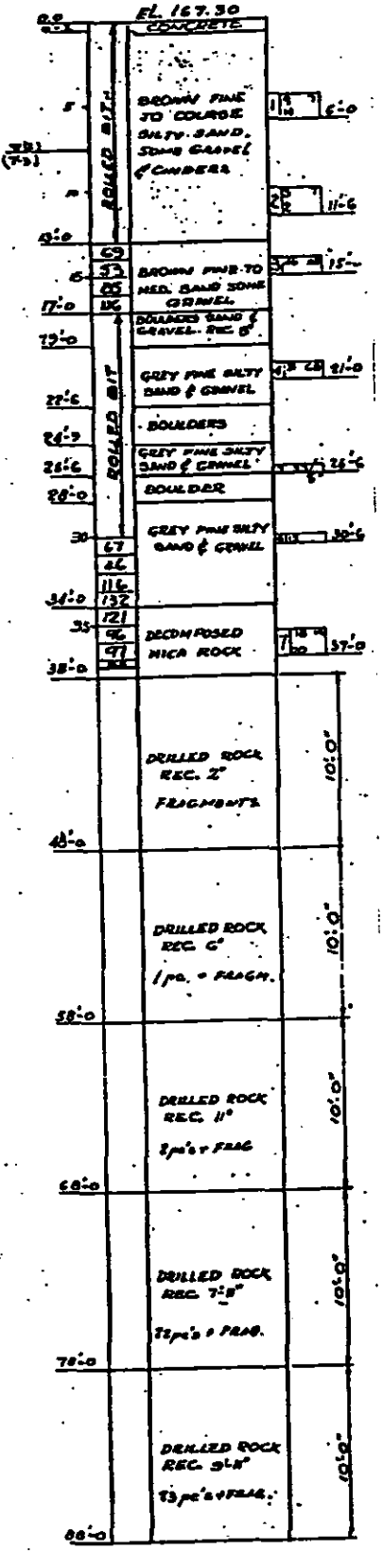
2-36



2-37



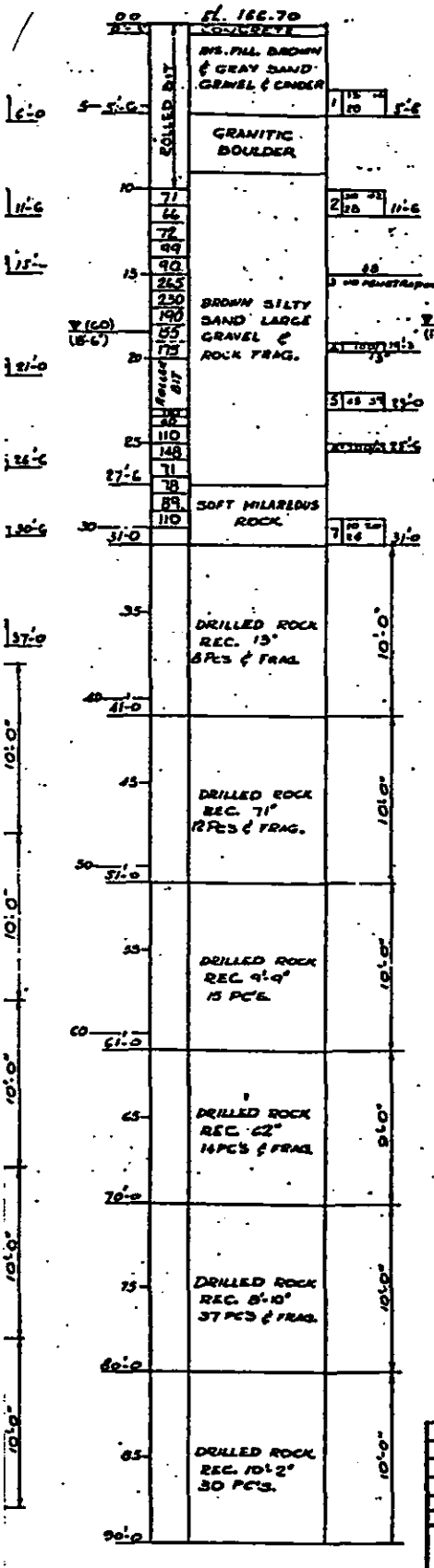
2-38



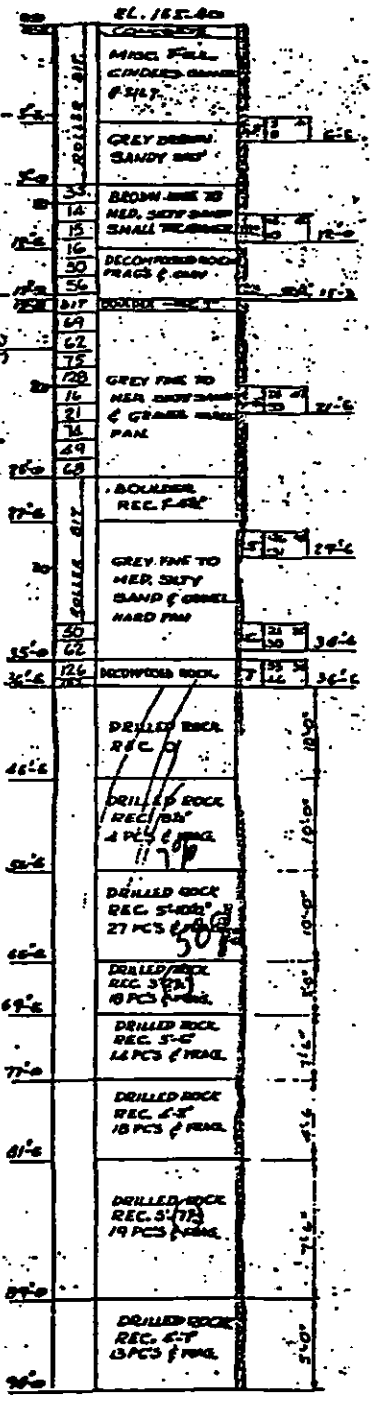
WATER READING - BORING 2-37

DATE	TIME	WATER LEVEL
10-7-69	6 A.M.	20'-0
	7 "	
	8 "	
	9 "	
	10 "	
	11 "	
	12 NOON	
	1 P.M.	
	2 "	
	3 "	
	4 "	
	5 "	
10-7-69	6 "	20'-0
10-8-69	6 A.M.	Dry
	7 "	
	8 "	
	9 "	
	10 "	
	11 "	
	12 NOON	
	1 P.M.	
	2 "	
	3 "	
	4 "	
	5 "	
10-8-69	6 "	20'-0

C-39



C-40



RAYMOND CONCRETE PILE DIVISION

This is to certify that this report is a compilation of information obtained from the hold boring logs

J. E. Bush
J. E. BUSH
Vice-President

NOTES SEE DWG. 154 33-3-3

RAYMOND INTERNATIONAL

TEST BORING REPORT

NEW YORK CITY TRANSIT SYSTEM

BOROUGH OF MANHATTAN

2ND AVE., FROM 34TH ST. TO EAST 126TH ST.

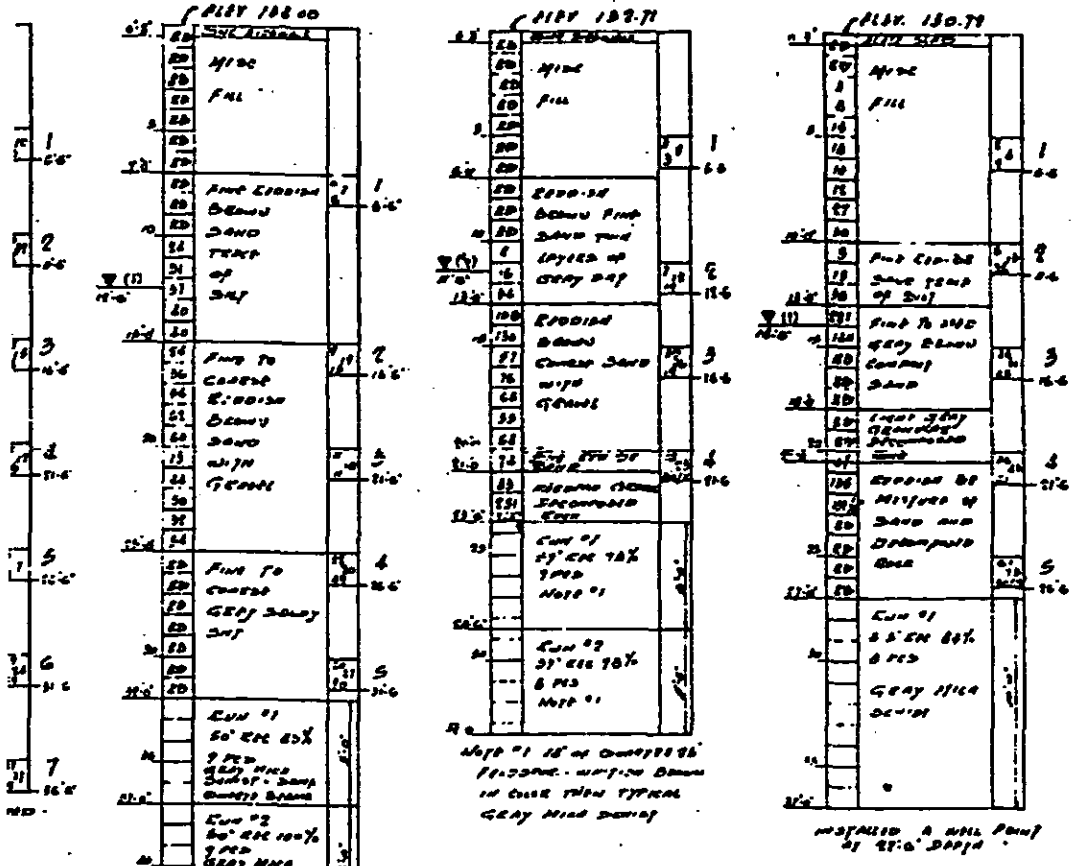
ROUTE 132A

2-5-70

CONTRACT 44D

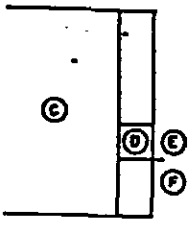
M45 M46 M47

623



WATER LEVEL READINGS - BORING				
TIME	DATE	DEPTH	DATE	DEPT
6·00 AM	4-5-71	18'6"	3-9-71	19'6
7 "		18'5"	"	19'8
8 "	"	18'6"	"	19'9
9 "	"	18'6"	"	19'9
10 "	"	18'6"	"	19'10
11 "	"	18'6"	"	19'11
12 NOON	"	18'7"	"	19'0"
1·00 PM	"	18'7"	"	19'5
2 "	"	18'9"	"	19'9
3 "	"	18'8"	"	19'6
4 "	"	18'8"	"	19'8
5 "	"	18'7"	"	19'8
6 "	3-8-71	18'7"	4 7 71	19'8

ND



...EVEL ( ) HOURS AFTER COMPLETION.

OF BLOWS OF A 300 LB. HAMMER 18" REQUIRED TO DRIVE A 2½" DIA. (UNLESS OTHERWISENOTED) EACH 12".

DESCRIPTION.

OF BLOWS OF A 140 LB. HAMMER OTHERWISE NOTED) FALLING 30" D TO DRIVE A 2" SPLIT SPOON EACH 6".

NUMBER.

ST END OF SAMPLE DRIVE.

623

RAYMOND INTERNATIONAL INC.

This is to certify that this report is a compilation of information obtained from the field boring logs

JAMES E. POTTS
Asst. Vice President

RAYMOND INTERNATIONAL INC

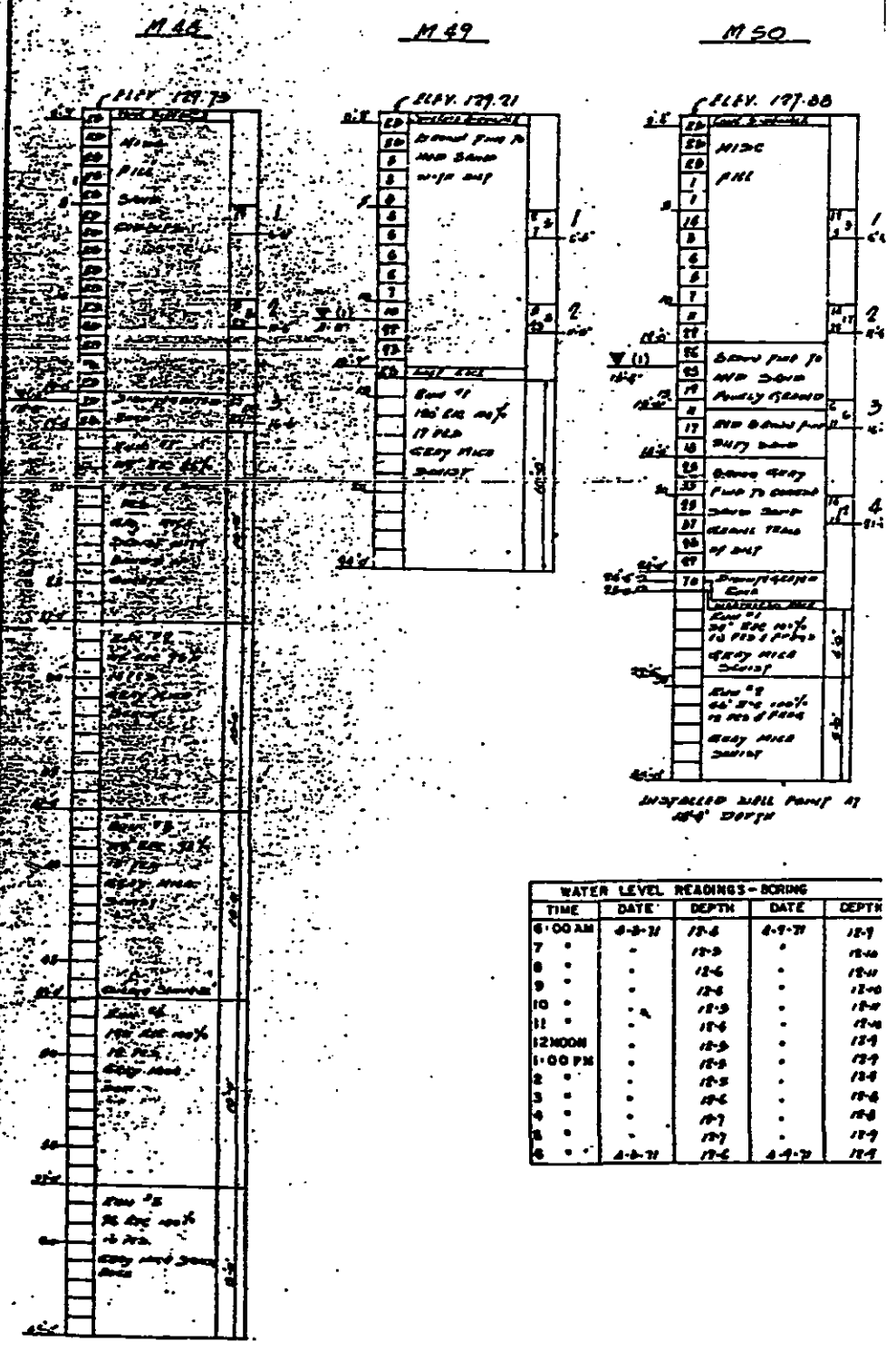
TEST BORING REPORT

NEW YORK CITY TRANSIT SYSTEM
BOROUGH OF MANHATTAN
2ND AVE. SUBWAY ST. OF JAMES K
...AMES ST, & WATER ST. FROM E 34TH ST N
VICINITY OF 2 ROAD OF FDR DRIVE

...SURFACE ELEV. AAJ Datum USE

JOB NO. 179-65

DRG. NO 3

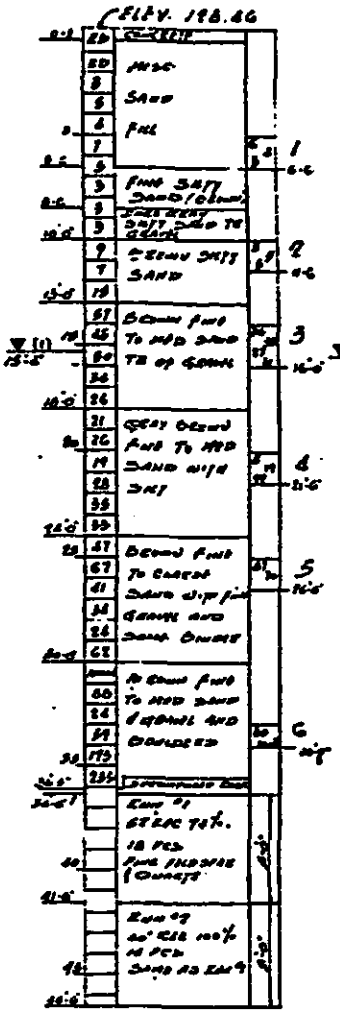


WATER LEVEL READINGS - BORING				
TIME	DATE	DEPTH	DATE	DEPTH
6:00 AM	4-8-71	12-4	4-9-71	12-9
7 "	"	12-5	"	12-10
8 "	"	12-6	"	12-11
9 "	"	12-6	"	12-10
10 "	"	12-5	"	12-11
11 "	"	12-6	"	12-10
12 NOON	"	12-5	"	12-9
1:00 PM	"	12-5	"	12-9
2 "	"	12-5	"	12-9
3 "	"	12-6	"	12-8
4 "	"	12-7	"	12-8
5 "	"	12-7	"	12-9
6 "	4-8-71	12-6	4-9-71	12-9

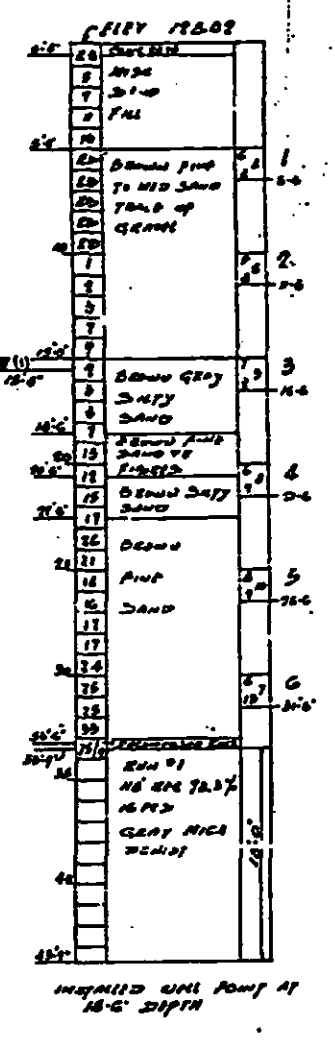
Dwg

CONT. NO.

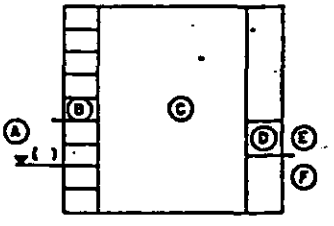
M52



M53



LEGEND



(A) WATER LEVEL ( ) HOURS AFTER COMPLETION

(B) NUMBER OF BLOWS OF A 300 LB. HAMMER FALLING 18" REQUIRED TO DRIVE A 2½" DIA. CASING (UNLESS OTHERWISE NOTED) EACH 12"

(C) STRATA DESCRIPTION.

(D) NUMBER OF BLOWS OF A 140 LB. HAMMER (UNLESS OTHERWISE NOTED) FALLING [redacted]" REQUIRED TO DRIVE A 2" SPLIT SPOON EACH

(E) SAMPLE NUMBER.

(F) DEPTH AT END OF SAMPLE DRIVE.

WATER LEVEL READINGS - BORING				
TIME	DATE	DEPTH	DATE	DEPTH
6:00 AM	3-16-71	18-4	3-22-71	18-0
7 "	"	18-4	"	18-0
8 "	"	18-4	"	18-0
9 "	"	18-4	"	18-0
10 "	"	18-0	"	18-0
11 "	"	18-1	"	18-0
12 NOON	"	18-0	"	18-0
1:00 PM	"	18-0	"	18-0
2 "	"	18-0	"	18-0
3 "	"	18-0	"	18-0
4 "	"	18-0	"	18-0
5 "	"	18-0	"	18-0
6 "	3-20-71	18-0	3-22-71	18-0

624

RAYMOND INTERNATIONAL, INC.

This is to certify that the report is a compilation of information obtained from the field boring logs.

JAMES E. PRICE
Asst. Vice President

RAYMOND INTERNATIONAL INC

TEST BORING REPOR

NEW YORK CITY TRANSIT SYSTEM
BOROUGH OF MANHATTAN

5TH AVE. LINE STA. 21 [redacted]
AVENUE 21, FROM A 34TH ST TO [redacted]
21 BORING 21 - 8 INCH CASE

CONTRACT 801 BASIS REC.

JOB NO. 175-68

4.5. EAST 6TH STREET TO DELANCEY STREET

4.5.1 Study Area Description

North of East Houston Street

The APE for this section includes the Second Avenue roadbed, from building line to building line, from the south boundary of East 6th Street to the south boundary of East Houston Street, as well as Shaft Sites B, C, and D (Photographs 4.5-1 through 4.5-17). Shaft Sites B and D are tangential and cover what are now Lots 29, 32, 33, 34, and 38 on Block 457, just west of second Avenue between East 1st and 2nd Streets. Shaft Site C covers what is now Lot 1 at the southwest corner of Block 443 near the intersection of Second Avenue and East 1st Street.

Except for stations, stairways, and vents, which would be constructed using cut-and-cover methods, most construction in this area would be accomplished with an EPBM.

South of East Houston Street

Because of two different alignment options under consideration in this area, the Shallow Chrystie Option and the Forsyth Street Option, the southern section of the APE was conservatively defined to include the area between Chrystie Street and Forsyth Street, and from East Houston Street to Delancey Street, from building line to building line, including Sara Delano Roosevelt Park (Photographs 4.5-1 through 4.5-17). The Shallow Chrystie Option would be built in Chrystie Street, while the Forsyth Street Option would involve construction in Forsyth Street and possibly within Sara Delano Roosevelt Park. What is now the Park north of Delancey Street, currently city Block 420, was formerly three city blocks bisected by Stanton and Rivington Streets. There is an existing subway tunnel beneath Chrystie Street between East Houston Street and Delancey Street. These built areas are not considered potentially sensitive for archaeological resources since they have experienced severe subsurface effects (see 4.5-APX11 and 4.5-APX12). However, directly outside of the existing tunnels and ventilation shafts, there may be potential effects to the APE in areas left undisturbed by the tunnel's construction where new shafts or access is proposed.

Except for stations, stairways, and vents, which would be constructed using cut-and-cover methods, most construction in this area would be accomplished with an EPBM.

4.5.2 Existing Conditions

4.5.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

There are two possible Native American resources reported by Grumet in proximity to the APE. One is the Wickquasgeck Road, a trail which ran from the northern to the southern tip of Manhattan. This trail was well traveled, connecting settlements at the

southern part of the island with those in the north (Grumet 1981:68). According to Grumet's map, the trail was west of the project site.

The other potential precontact site is shown by Grumet at approximately East 10th Street. It consists of a second Native American trail crossing from planting fields located west of the APE near the Hudson River to a habitation site that Grumet calls "Schepmoes." However, the location is questionable; Schepmoes was not an Indian word, but was rather the name of a prominent Dutch settler who had extensive land holdings in Lower Manhattan. Beauchamp identified the "Kil of Schepmoes," a name mentioned in a 1639 deed, as a stream running from the East 50s to Kips Bay at about East 35th Street, north of this APE (Grumet 1981:51).

Archaeological Potential

North of East Houston Street

Based on topographic maps and comparative site location data, the Second Avenue roadbed APE has a moderate potential for precontact and contact period peoples. The closest stream was one block east of the northeast boundary of the APE. The area was probably fairly level, dry sandy land, which may not have been ideal for habitation but could have served for other uses. Precontact sites in the New York area typically encounter archaeological resources within three to four feet of the then living surface. Since sidewalks tended to be created from roadbed areas, not from within blocks, and few buildings along this section of the APE have basements that might have extended beneath the sidewalks, there is a moderate potential for encountering precontact and contact period remains within four feet of the base of the fill layer, which is about ten feet deep here. The exception would be in the area of the historical cemeteries adjacent to the APE on Block 457, should they have extended beneath the sidewalk. Soil borings taken from Second Avenue show that beneath the fill layers are levels of fine and coarse sands as well as silt and gravel that are deeper than the three or four feet. It is within the sands, silt, and gravel that underlie the fill, then, that there may the potential for precontact and contact archeological remains.

South of East Houston Street

According to the soil borings the water table is very deep in this area. On the section of this APE where basements were once present beneath 19th century structures, excavations may have affected the potential for encountering precontact and contact material remains. However, this depends upon the depth of fill added prior to the excavation of the basements. If deep fill levels were added prior to and during the 19th century intensive development, precontact and contact resources may be buried deep enough to have escaped disturbance. As is the case with the blocks north of East Houston Street, this section of the APE has only a moderate potential for cultural remains three to four feet beneath the base of the fill layers both within the Chrystie and Forsyth Street roadbeds, and beneath Sara Delano Roosevelt Park. However, there is no precontact potential where the subway runs beneath Chrystie and East Houston Streets due to extensive construction disturbance. There is also no precontact potential where there may potentially be burials beneath the northern half of Block 420, where a former cemetery

stood. There is also no potential sensitivity beneath the eastern and western sidewalks on Chrystie Street and the eastern sidewalk on Forsyth Street on the north half of the block between East Houston and Stanton Streets where cemeteries could have extended out from adjacent blocks beneath the sidewalk.

4.5.2.2 Historical Archaeological Potential

Archaeological Potential

The following discussion of Historical Archaeological Potential first presents the concept of resource categories, as defined by NYCLPC. Secondly, there is an identification of and discussion of one specific resource category, cemeteries, that was identified in more than one area of the APE. Finally, a synopsis of the range of resource categories and potential sensitivity of distinct geographic sections of the APE is presented by location. A detailed discussion of the history and development of each section of the APE, including tax records and directory data for the shaft sites, is presented in Appendix 4.5.7.

The NYCLPC has previously identified various categories of potential cultural resources that may be archaeologically visible and may provide for future research topics (see Chapter 3). Not only can these NYCLPC categories be considered as sources of potential archaeological resources, but they can also be seen as having an effect on other subsurface cultural materials. For this section of the APE the categories include land transportation such as trolley lines, elevated trains, and subways; public services like city water and sewerage systems; and domestic/residential, industrial and cemeteries. These categories are considered both in terms of providing potential archaeological resources and potential effects on other subsurface cultural materials.

The following five cemeteries along the APE are representative of the cemetery resource category. They have a moderate historical archaeological potential provided that fill layers within their vicinity are shallow. Unfortunately, there are no soil borings available for the blocks on which four of the five cemeteries lay. In order to assess the potential for burials, subsurface conditions from one of the nearby cemeteries was reviewed for comparative purposes. At the nearby New York Marble Cemetery, vaults were buried ten feet below surface, despite the traditional depth of six feet for burial shafts (Trustees of the New York Marble Cemetery 1830; Brown 1999:vii).

The following is a synopsis of the locations of the cemeteries, which either clearly fell within the APE, or were close enough that they may have extended into it:

Block 457 between East 1st and East 2nd Streets, Second Avenue and Bowery
Methodist Cemetery, Methodist Episcopal Church, 1805-1851 (Doggett 1851; City Register, n.d.).
-burials may be under the sidewalk on the west side of Second Avenue, if the cemetery was ever extended beneath the sidewalk.
-burials may be located on Block 457 where Shafts B and D may be sited.

Block 442 between East 1st and East Houston Streets, and Second and First Avenues
Baptist Cemetery, First Baptist Church, 1815-1851(City Register, n.d.; Inskeep 2000:57).
-burials may have once been under the sidewalk on the north side of East Houston Street between Chrystie and Forsyth Streets, but these were disturbed by the 1936 subway construction beneath East Houston Street.

Block 420 between East Houston and Stanton Streets, Chrystie and Forsyth Streets
Presbyterian Cemetery, 1803-1865 (Doggett 1851; City Register, n.d.; Greenwald 1933:18; Inskeep 2000:138).
-burials may be under sidewalks on east side of Chrystie, south side of East Houston, and west side of Forsyth Streets. Chrystie Street was widened on the east side; Forsyth Street, on the west side.
-burials may be found within the northern two-thirds of the block - now Sara Delano Roosevelt Park - fronting East Houston Street (Dripps 1852 and 1867; Figure 4.5-3a and b).

Block 422 between East Houston and Stanton Streets, Forsyth and Eldridge Streets
German Evangelical Mission Cemetery, 1796-1866 (City Register, n.d.).
-burials may be under the sidewalk on the east side of Forsyth Street, on the northern half of the block (Dripps 1852, 1867; Figure 4.5-3a and b).

Block 426 between Stanton and Rivington Streets, Chrystie and Bowery Streets
Negro Burying Ground/African, Protestant Episcopal, St. Philip's Cemetery, 1795-1852 (Doggett 1851; City Register, n.d.; Inskeep 2000:172).
-burials may be under the sidewalk on the west side of Chrystie Street, if the cemetery was ever extended beneath the sidewalk.

A full discussion of each of these cemeteries is included in Appendix 4.5.7.1 *Documentary Assessment of APE.*

The 1823 and 1830 city ordinances would have allowed for an increased use of these cemeteries since they were north of Canal Street. Approximately 20 years later the 1847 law and the 1851 ban brought to a close the period in which so many cemeteries were concentrated in this flat, sandy, fairly dry area of the APE.

Based on the documentary research, there may be an effect to these potential cemetery resources for one of several reasons: 1) the cemetery lies within blocks that are the location of proposed Shaft Sites B and D or may be within the route of the tunnel; 2) cemetery interments may have extended beneath sidewalks within the APE due to overcrowding conditions or other reasons; or 3) cemetery lands may lie beneath sidewalks and roadbeds as a result of street widening.

The cemetery lands were redeveloped during the second half of the 19th century and some sites later included multi-family tenements, many with shops on the street level. Although this redevelopment may have compromised the sensitivity for burials, there is still the possibility that some were potentially left *in situ* and were left undisturbed where yards were left undeveloped or basements were not excavated. Furthermore, construction

did not extend out into the streets or sidewalks (with the exception of Block 420 which falls within the APE - see below), so any potential burials beneath sidewalks may not have been disturbed by these activities.

North of East Houston Street

Second Avenue

Second Avenue, from East 6th Street south to North Houston Street, was found to have no potential for historical period resources, except for a small section of the APE on the west side of the street between East 2nd and 1st Streets. A cemetery once stood on Block 457 adjacent to the APE. If burials extended out beneath the sidewalk, then this section of the APE may be sensitive for potential osteological resources from the surface down to about 13' below grade, which is about ten feet below the three feet of fill reported at Second Avenue and 2nd Street.

Shaft Sites B and D, Block 457

There is a possibility that historical subsurface remains exist within Block 457, the previous location of a Methodist cemetery and the proposed location of Shafts Sites B and D. A previously completed documentary study of the archaeological potential of Block 457 determined that Lots 27, 28, 36, and 42, which all fall within the Second Avenue Subway APE, are potentially sensitive for cemetery related resources (Parsons Engineering Science Inc., 2000:43).

After the cemetery ceased being used, the block experienced 19th century development. Although there were basements beneath the multi-storied buildings that eventually covered most of the lots over the former Methodist cemetery site on Block 457, their locations may still be sensitive for burials if construction effects did not extend as deep as burial shafts (Parsons Engineering Science, Inc., 2000: 43). Furthermore, the backyards of the lots facing 1st Street have the potential for containing shaft features such as wells, cisterns, ash pits, and privies associated with these mid-19th century structures (Dripps 1852:5 of 10; Dripps 1867:7; City Register, n.d., Figures 4.5-3a, 4.5-3b and 4.5-4). Specifically, historic Lot 24, which is now a part of the consolidated Lot 1, was identified as potentially sensitive for domestic resources in the 2000 study of the block (Parsons Engineering Science, Inc., 2000:43).

An Iron Foundry, under the ownership of McKinley and Smith, operated at 31 Second Avenue for approximately 20 years. This small shop, first listed in a city directory in 1851, pre-dates municipal services. A steady supply of water was critical to foundry operations. Deep shaft deposits could very possibly augment the foundry remains, which would be substantial but relatively shallow. The possible presence of such shaft features makes this historic address potentially sensitive.

Shaft Site C, Block 443

Map research suggests that Shaft Site C was first developed in the 19th century between 1820 and 1836. By 1852 at least six structures stood on the site, but by 1885 it had been redeveloped with the construction of the Fourth District Court. This building was later

replaced by a structure housing Turkish Baths, and this was in turn replaced by a gas station.

There is still the possibility that truncated sections of early 19th century homelot features, specifically deep wells and privies, would have survived beneath the later site developments. Specifically, at 30 and 32 East 1st Street there may be intact evidence from both yard features and potential shaft features that may lie beneath abutting passageways. Beneath the mid-19th century structures there also may be evidence from the Peter Crawbuck complex drawn on the Randel 1820 farm map (Figure 4.5-2). Therefore, the Shaft Site C APE on Block 443 at 30 and 32 East 1st Street is conservatively assumed to be potentially sensitive for historic period shaft features relating to its 19th century occupation.

East Houston Street, Second Avenue to Forsyth Street, Block 442

The cemetery of the First Baptist Church was mapped as abutting the sidewalk on the north side of East Houston Street, with maps portraying its boundaries outside of the APE on Block 442 (Appendix 4.5.7.1). However, cartographic depictions of cemetery boundaries are not always accurate. The cemetery's inception date postdated the ordinance rescinding the licenses for building under sidewalks and streets. Even if burials did extend under the sidewalk, cut-and-cover excavations undertaken in the 1930s for the subway station at East Houston Street would have adversely affected any potential historical archaeological material in this area. Unfortunately, there were no soil borings available for Block 442 to aid in the assessment of subsurface conditions. Regardless, due to prior subway construction there is little possibility that there are intact remains within the East Houston Street APE adjacent to this block.

South of East Houston Street

Chrystie Street, Forsyth Street and Block 420, Sara Delano Roosevelt Park, from East Houston to Delancey Street

In 1795, after the closure in 1794 of the African Burial Ground near Duane Street and Broadway, the African Society asked the City of New York for, and was granted, property on the west side of Chrystie Street between Stanton and Rivington Streets for use as a new burial ground (Taylor-Roberts 1797, Figure 4.5-1; Inskeep 2000:172). The Negro Burying Ground/African, Protestant Episcopal, St. Philip's burial ground was in use until at least 1851 (Doggett 1851), and was replaced, in part, by a "Soap & Candle Manufactory" some time between 1857 and 1862 (Perris 1857-62). The bodies were reportedly removed to Cypress Hills Cemetery in 1863 (Inskeep 2000:172). Nevertheless, it may be that not all the human remains were exhumed and reinterred. If the cemetery expanded under the sidewalk, there is a potential for encountering osteological remains.

Therefore, because burial shafts can be at least ten feet deep, there is the potential for burials related to the cemetery in the area of the sidewalk on the west side of Chrystie Street, between Stanton and Rivington Streets, and these could be up to14' below the surface elevation.

The Presbyterian Cemetery on Block 420, now the northern end of Sara Delano Roosevelt Park between Chrystie and Forsyth Streets, predated the 1823 ordinance banning vaults and graves south of Grand Street. Therefore, there could be burials from a 25-year span surrounding the Presbyterian Church that stood on the south side of East Houston Street within Block 420. Even if some bodies were reinterred at a later date, as reported, there is always the possibility that unmarked burials were left *in situ.*

The widening of the east side of Chrystie Street and the west side of Forsyth Street in 1930 may have incorporated sections of the graveyard into what are now the sidewalks on the east side of Chrystie Street and the west side of Forsyth Street, within the APE. Therefore, the sidewalks along either side of the Park at the northern end of Block 420 are potentially sensitive for burials for at least ten to 12' below grade (a conservative estimate of the depth of burial vaults).

The Presbyterian cemetery that was once on the site of Sara Delano Roosevelt Park, Block 420, was sold and redeveloped some time between 1852 and 1867 (Dripps 1852:5 of 10; Dripps 1867:7; City Register, n.d., Figures 4.5-3a, 4.5-3b, and 4.5-4). At that time, the block was subdivided and the 25-foot lots were developed fully to their widths along the East Houston, Chrystie, and Forsyth Street sides. Open backyards were left behind the multi-storied, brick tenements (Dripps 1867:7; Robinson 1885:8, Figure 4.5-4). Even though both Chrystie and Forsyth Streets had sewer lines in place in 1867, and presumably a water main was installed around the same time, wells, privies, and cisterns were frequently in use after these utilities were available (WPA 1937). Therefore, these backyards and alleyways have the potential for containing such shaft features as wells, cisterns, ash pits, and privies: 131 Houston Street; 166-160, 176, 170-168, 196 ½, 198, and 230-214 Chrystie Street; 139, 141, 143, 149, 151, 157, 179-175 and 207-201 Forsyth Street; 33 and 38 Stanton Street; 28 and 30 Delancey Street; and, 24, 25, and 32 Rivington Street. Shaft features may extend from the surface down to the approximate depth of the water table, which varies between about 30 and 35' in this area, although privy vaults may be shallower.

By 1885, there was a brass foundry and iron cornice works at the rear of the backyards of the brick tenements facing Forsyth Street, which stood on Block 420 north of Stanton Street (Robinson 1885:8). The street address was 209 Forsyth Street but the associated yard resources might fall into adjoining properties. It occupied the central portion of the block, and by 1911 there was a change in the buildings' footprints (Bromley 1897:8; Bromley 1911:8). Thus, there were more than 15 years of industrial activity on the interior section of this Block 420. Potentially, there are archaeological remains from this industrial site that fronted on 209 Forsyth Street. Potential resources could also extend from the surface down to the depth of the water table, which is about 30' below grade in this area.

4.5.3 Summary of Archaeological Potential

North of East Houston Street

Second Avenue

Portions of this APE are sensitive for precontact through mid-19th century historical period resources, particularly in terms of the material culture of burial places. Precontact potential exists in the Second Avenue streetbed and adjacent sidewalks, except where potential burials may exist beneath the sidewalk on the west side of Second Avenue between East 2nd and 1st (Figure 4.5-5a). Precontact period archaeological materials tend to lie three to four feet beneath the then living surface, which varies within the APE with the depth of fill that varies from two to 18 feet in depth in the Second Avenue APE. Therefore, potential precontact resources may lie buried beneath Second Avenue between about two and 23' below grade.

A cemetery once stood on Block 457, between East 2nd and 1st Street, directly adjacent to Second Avenue but this may have once extended out beneath the sidewalk. Historical burials, which varied in depth, usually extended about six feet below existing grade at the time of the interment. However, a cemetery located one block north of Block 457 reported burial vaults as ten feet below grade at time of interment. Therefore, accounting for a three foot fill layer reported in a boring taken just north of East 2nd Street and Second Avenue, there is the possibility of encountering potential historic burials from current grade elevation to a depth of approximately 13' below street level beneath the sidewalks on the west side of Second Avenue between East 2nd and East 1st Streets.

It is very possible that support structures for the earliest electrified trolleys are still buried in the Second Avenue 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.

Shaft Sites B and D, Block 457

This APE has no potential for precontact resources due to extensive historic usage, but it is potentially sensitive for a variety of historic period resources. A Methodist Cemetery, which was active from 1805 to 1851, stood within the APE. The depth of these resources may extend from the surface down to approximately 13 feet below grade based on the depth of fill established on adjacent Second Avenue (see Summary of Archaeological Potential for Second Avenue directly preceding this section); although no soil borings from within the block itself were available for review to confirm subsurface conditions. Regardless, burials are anticipated to be at least 10' below grade, and may possibly lie as deep as 13' below grade if there is three feet of fill on the block as there is on adjacent Second Avenue (Figure 4.5-5a).

In addition to the potential for burial remains, there is also the potential for deep wells associated with early residences and tenements on Blocks 457. Historic Lot 24, which is now a part of the consolidated Lot 1, is potentially sensitive for domestic shaft features. Such resources may extend to more than 52' below grade, the approximate depth of the

water table identified specifically in the 2000 study of the block (Parsons Engineering Science, Inc., 2000:43). Potential foundations remains, wells, and privies associated with an Iron Foundry, owned by McKinley and Smith and operated at 31 Second Avenue during the second half of the 19th century, may be considered a potential resource. If deep wells exist, they may extend from the surface down to the reported depth of the water table (as per a soil boring taken at 2nd Street and Second Avenue), which lies about 52' below grade, as established by the earlier archaeological study (Ibid.).

Shaft Site C, Block 443

Shaft Site C has no potential for precontact resources due to extensive historic development, but it is potentially sensitive for historic period resources. Specifically, at 30 and 32 East 1st Street there may be intact evidence from deeply buried and truncated mid 19th century domestic shaft features which could extend down from the surface to the depth of the water table, which was reported at 71' below grade here (Figure 4.5-5a).

South of East Houston Street

Chrystie Street, Forsyth Street and Block 420, Sara Delano Roosevelt Park, from East Houston to Delancey Street

This section of the APE has only a moderate potential for precontact resources which may lie three to four feet beneath the base of the fill layers both within the Chrystie and Forsyth Street roadbeds, and beneath Sara Delano Roosevelt Park. Precontact potential is estimated to lie below fill levels which range between two and 18' below grade. Therefore, precontact resources may lie between about two and 23' below grade within this section of the APE. However, there is no precontact potential where the subway runs beneath Chrystie and East Houston Streets due to extensive construction disturbance or beneath the northern half of Block 420 and adjacent sidewalks on Chrystie and Forsyth Streets, where a former cemetery stood. Finally, there is also no precontact potential on the west side of Chrystie Street and the east side of Forsyth Street where cemeteries could have potentially extended out from the adjacent blocks beneath the sidewalk (Figure 4.5-5b).

The northern end of Sara Delano Roosevelt Park was once the site of a Presbyterian Cemetery. When Chrystie Street was widened on its eastern side, and Forsyth was widened on its western side, this widening occurred over the boundaries of the historic cemetery. Therefore, there is the potential for burials from a 25-year span to exist within the APE from the surface down to about ten to 12' below the surface within the cemeteries original boundaries. This includes both the northern half of Block 420 as well as sidewalks on Chrystie and Forsyth Streets along either side of the northern end of the Park.

A second cemetery, the Dutch or German Evangelical Mission, stood just east of Forsyth Street between East Houston and Stanton Streets on Block 422 outside of the APE. The cemetery was in operation between 1796 and 1866. It is possible that burials extended out under the adjacent sidewalks within the APE. Therefore, the sidewalk on the east side of Forsyth Street may also be sensitive for burials to a depth of between about ten to 12' below grade.

Block 426, directly west of the APE, was once the site of the Negro Burying Ground/African, Protestant Episcopal, St. Philip's cemetery. Burials may have extended beyond the mapped boundaries of the cemetery and beneath the adjacent sidewalk. Therefore, the sidewalk in the APE on the west side of Chrystie Street, between Stanton and Rivington Streets, is potentially sensitive for burial remains associated with this cemetery (Figure 4.5-5b). Based on a review of soil borings, these could be as deep as 14' below the surface elevation.

There is also the potential for shaft features including deep wells associated with 19th century tenements which once stood on Block 420, now Sara Delano Roosevelt Park. These resources may extend to more than the approximate depth of the water table, which is more than 34 feet in some sections of the block and approximately 27 feet below grade in other sections. Backyards and alleyways have the potential for containing such shaft features as wells, cisterns, ash pits, and privies. The following historic lots were found to be potentially sensitive for these resources: 131 Houston Street; 166-160, 176, 170-168, 196 ½, 198, and 230-214 Chrystie Street; 139, 141, 143, 149, 151, 157, 179-175 and 207-201 Forsyth Street; 33 and 38 Stanton Street; 28 and 30 Delancey Street; and, 24, 25, and 32 Rivington Street. A large foundry stood on Block 420, at 209 Forsyth Street, within the APE. There is the potential for remnants of the industrial complex to be within the APE; however, these resources would likely be shallower than the depth of potential wells associated with the shop (Figure 4.5-5b).

4.5.4 Proposed Project Effects

Second Avenue, between East 6th and Houston Streets (excluding the west side of Second Avenue between East 2nd and East 1st Streets), is potentially sensitive for precontact resources between approximately two and 23 feet below grade. The west side of Second Avenue, between East 2nd and East 1st Streets is potentially sensitive for historic burials related to the Methodist Cemetery from the surface down to approximately 13 feet below grade. The proposed cut and cover construction of a station, which would extend from the surface down to 70 feet below grade, could potentially affect each of these resource types (SYSTRA Drawing CT-05, Marcy 1, 2002).

Shaft Sites B and D on Block 457 will not be affected. However, potential mid-19th century residential features on Block 443, Shaft Site C would be affected by proposed excavations for a shaft. This would entail excavating an area of about 30 feet by 50 feet from the surface down to at least 30 feet below grade. A proposed staging area, measuring between 40,000 and 80,000 square feet, may cause surface effects which could potentially disturb historic resources that may lie from grade elevation down to a depth of about 71 feet below grade, the depth of the water table.

Construction of a shaft site on Houston Street at the foot of Second Avenue would have no adverse effects on potential archaeological resources, as Houston Street has already been disturbed by the construction of the existing subway tunnel.

On Chrystie Street, Forsyth Street, and Block 420, there is the potential for precontact resources to lie between about two and 23 feet below grade, except where an existing subway runs beneath Chrystie Street. Under the Shallow Chrystie Option (SYSTRA

Drawing CR-04, March 8, 2002), cut and cover excavations on Chrystie Street outside of the tunnel could extend from the surface down to 25 to 40 feet below grade. This would affect potential precontact resources in this vicinity. Under the Forsyth Street Option (SYSTRA Drawing CT-04, Marcy 1, 2002), mining through soil is proposed for Block 420 and Forsyth Street. This construction would occur at a depth of approximately 80 to 85 feet below grade, therefore not affecting potential resources unless excavations were to become more shallow than 23 feet below grade. The Shallow Chrystie Option would affect potential historic burials from the Presbyterian Cemetery, which may exist at the northern end of Sara Delano Roosevelt Park and its adjacent sidewalks. Potential burials may extend from the surface down to 12 feet below grade. The Forsyth Street Option would not affect potential resources, since construction using mining techniques would occur no shallower than 70 feet below the surface. Were construction to be more shallow than 12 feet, then effects would occur to potential resources.

The potential historic burials related to the German Mission Cemetery on the east side of Forsyth Street between East Houston and Stanton Streets will not be affected under either alternative. The Shallow Chrystie Option is not proposed in Forsyth Street, and proposed mining in Forsyth Street for the Forsyth Street Option would occur no shallower than 70 feet below the surface, thereby avoiding potential effects to burials estimated at a depth of 0 to 12 feet below grade. However, the potential burials from the African Protestant Episcopal Cemetery on the west side of Chrystie Street between Stanton and Rivington Streets may be affected under the Shallow Chrystie Option. Proposed cut and cover construction from zero to 25 to 40 feet below grade would affect potential burials that may lie between zero and 14 feet below grade.

Much of Sara Delano Roosevelt Park, Block 420, is also potentially sensitive for 19th century residential and commercial features that may extend from the surface down to about 34 feet below grade. Under the Shallow Chrystie Option, cut and cover construction down to 25 to 40 feet below grade on the west side of the park would affect potential resources. Under the Forsyth Street Option, mining through soil at a depth no more shallow than 70 feet below the surface would not affect Block 420 and Forsyth Street.

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.

4.5.5 Recommendations

There is a possibility that this section of the APE was utilized at some time during the precontact and contact periods and documentary research clearly establishes an 18th through 20th century presence.

Although the likelihood that precontact resources would have survived the 19th and 20th century development of this part 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 from approximately two to 18' below grade. Prior effects also varied in depth. The possibility that *in situ* precontact and contact period resources may exist in this part of Manhattan dictates further investigation of subsurface conditions. There is also a moderate to probable expectation of encountering intact, significant historical-period remains beneath sidewalks that line the APE, as well as within blocks that may have shaft sites for spoils removal. Again, a subsurface testing plan will be warranted to test these potentially sensitive areas when the locations of effects are known.

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] While the probability of finding intact, significant precontact resources eligible for inclusion on the National Register of Historic Places is remote, the scant possibility should be corroborated by evidence from additional soil borings. Analyzing the soil borings would serve to help identify the presence of markers typically associated with a precontact presence. The absence of definitive signs of a Native American presence, and/or the presence of a habitable living surface buried beneath the fill would suggest that no potential remains. Soil borings would also allow archaeologists to better determine the potential depth of historical period resources. Because sections of the APE are potentially sensitive for burial shafts, soil borings are not recommended for those. Test borings for subsurface information on the areas sensitive for possible burial remains will have to be conducted in the abutting and previously disturbed roadbed.

Following the review of soil borings, some sites 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 prepared in consultation with SHPO. It is expected that the additional documentary research will aid in the formulation of a specific subsurface testing plan.

In areas of potential precontact or historic sensitivity, a subsurface testing plan will be warranted to test these potentially sensitive areas. Its goal would be to establish the presence or absence of cultural resources, their horizontal and vertical extent, site integrity, and their potential significance as defined by eligibility for inclusion on the

[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.

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 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.

For areas sensitive for human remains, additional documentary research will be undertaken to establish, if possible, interment and reinterment data, and the horizontal and vertical extent of the burials. After this is completed, potential effects will be reassessed as construction plans become refined. In the event that avoidance of the resource is not possible, then field verification will be undertaken to establish the presence/absence of burials, utilizing a field research plan created in coordination with SHPO and LPC. Unless complete site disturbance can be established with absolute certainty, additional measures may be necessary at the time of construction to ensure that undocumented burials are not disturbed. This could entail monitoring by a physical anthropologist during the construction phase. The Programmatic Agreement for the project will specify the protocol and treatment of any unanticipated human remains in the event that any such remains are encountered during field investigations or project construction will be developed and in place prior to such work.

4.5.6 Figures and Photographs

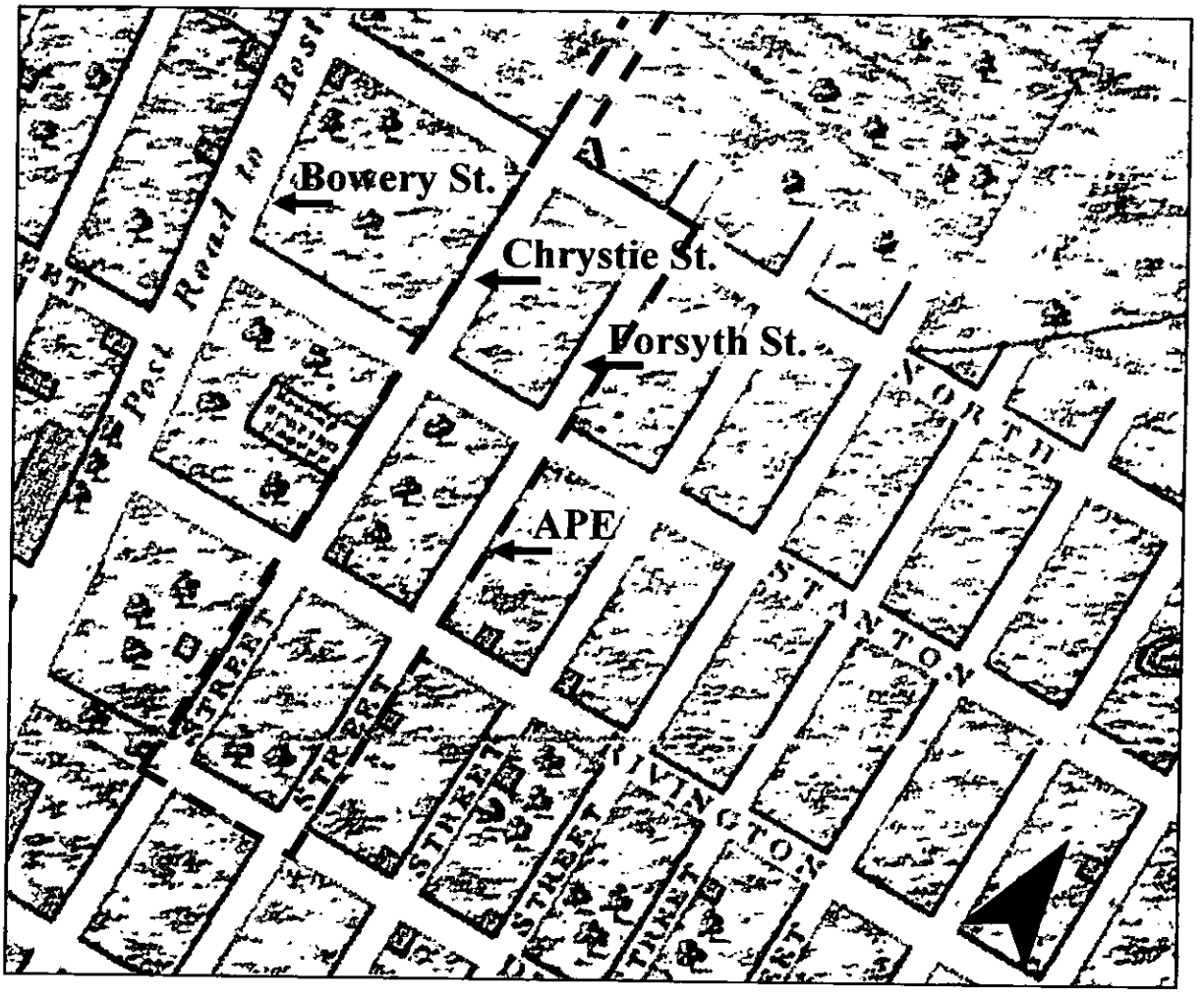


FIGURE 4.5-1

A New and Accurate Plan of the City of New York in the State of New York in North America. Chrystie Street, North Street to Rivington Street. Taylor-Roberts 1797.

Approximate Scale: ¼ inch = 100 feet

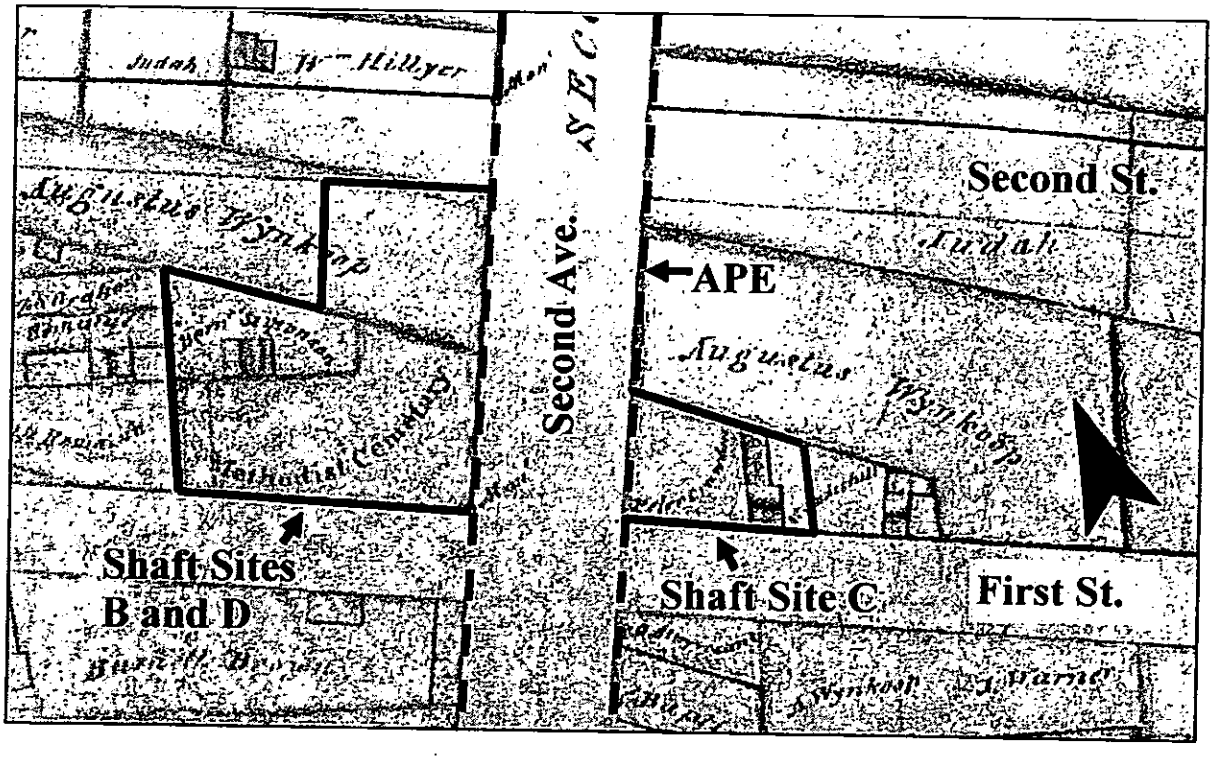


FIGURE 4.5-2

Farm Maps. Second Avenue, East 2nd Street to East 1st Street. Randel 1820.

Approximate Scale: ¾ inch = 100 feet

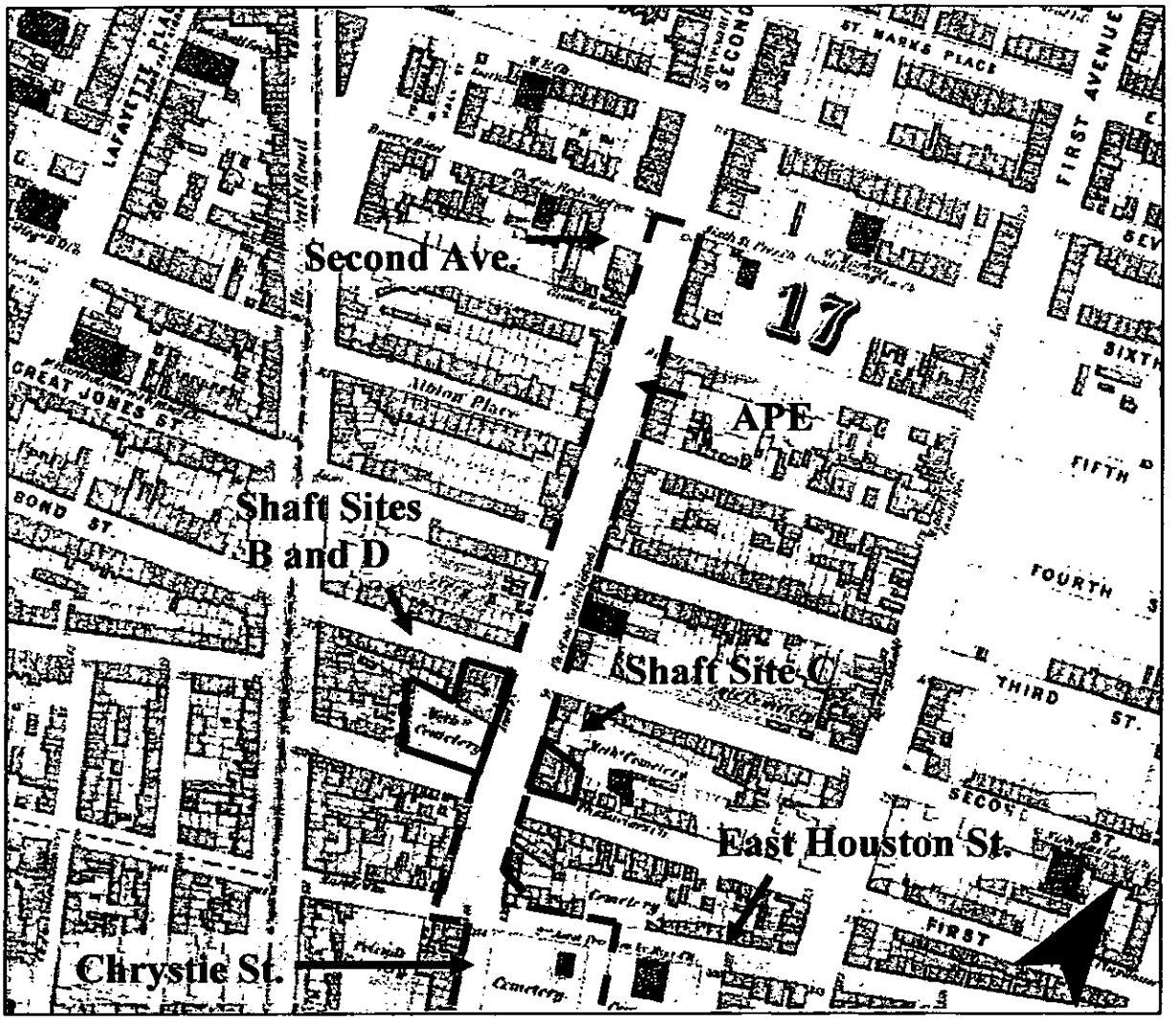


FIGURE 4.5-3a

Map of the City of New York Extending Northward to 50th Street.
Second Avenue, East Sixth Street to East Houston Street.
Dripps 1852.

Approximate Scale: ¼ inch = 100 feet

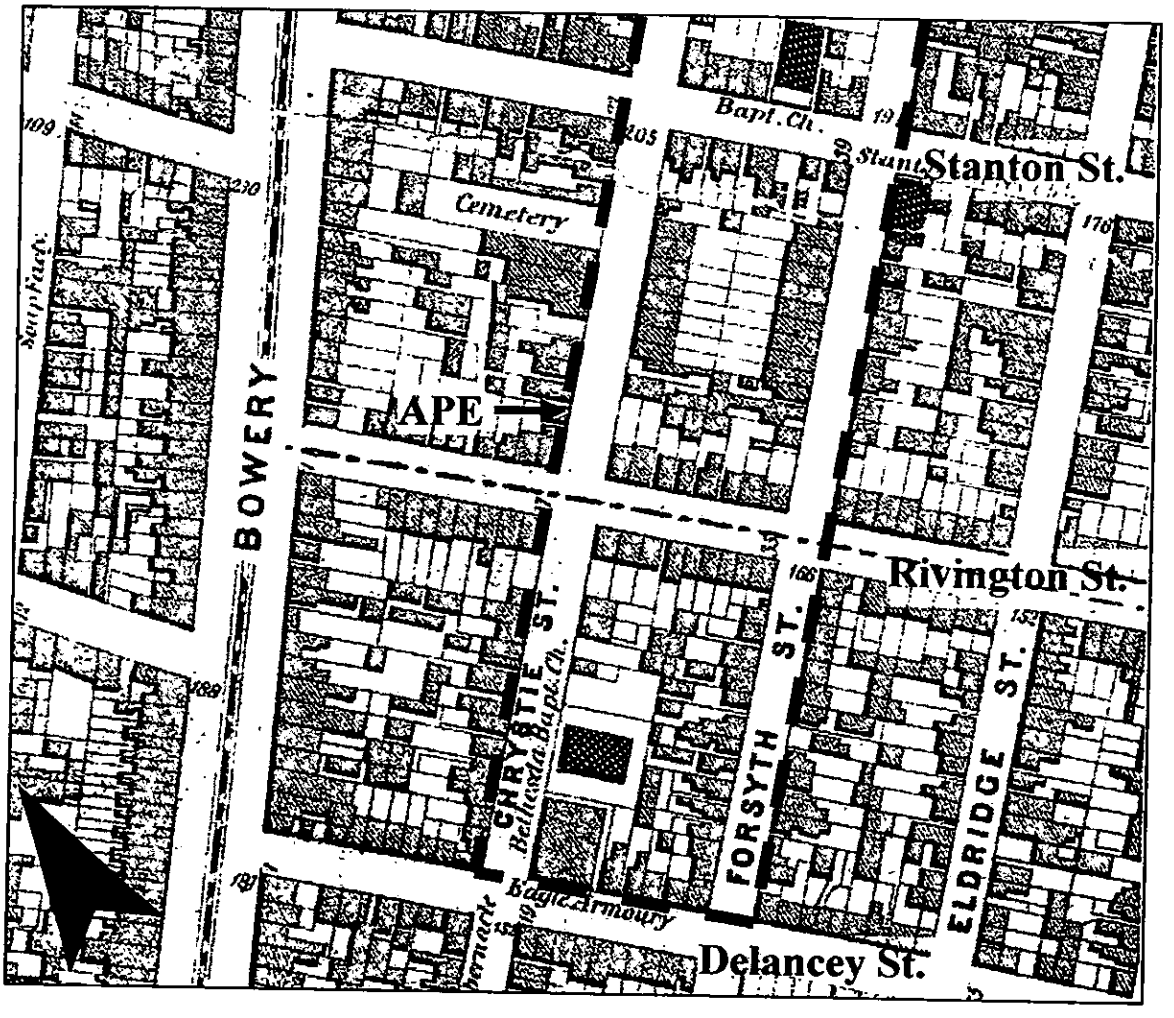


FIGURE 4.5-3b

Map of the City of New York Extending Northward to 50th Street.
Chrystie Street, Stanton Street to Delancey Street. Dripps 1852.

Approximate Scale: ¼ inch = 100 feet

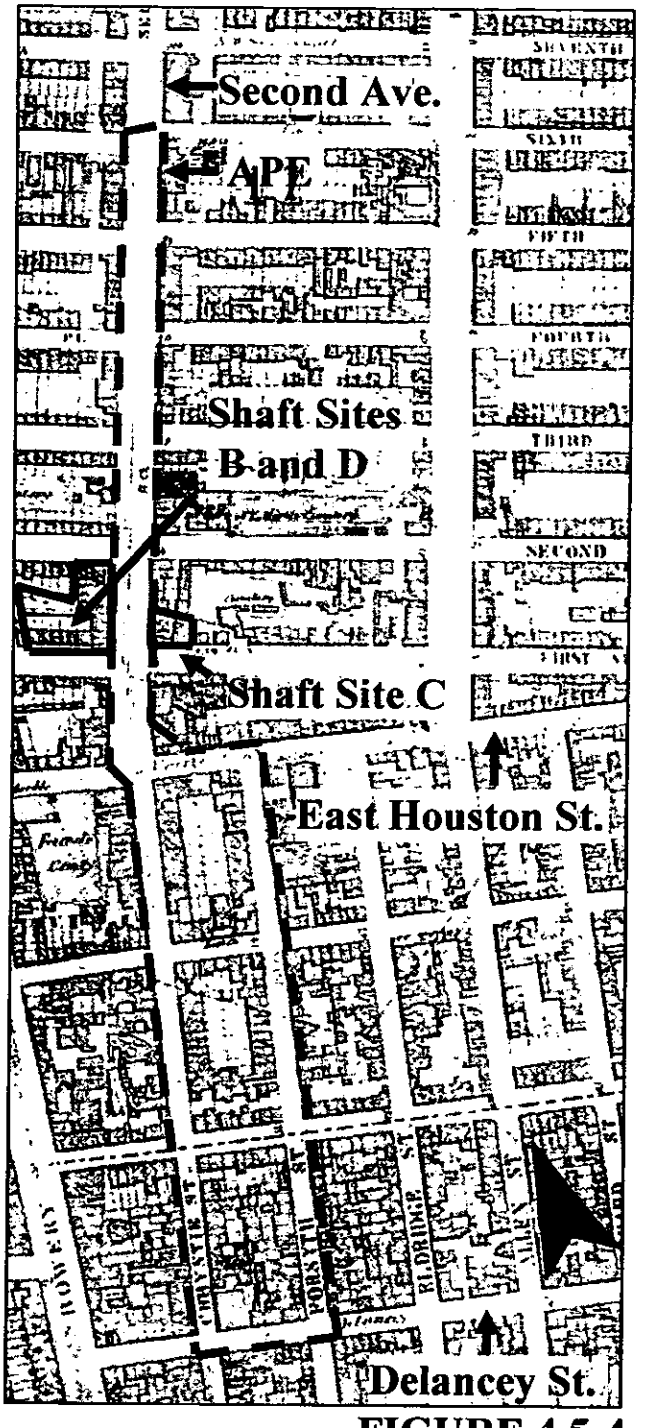


FIGURE 4.5-4

New York City, County, and Vicinity.
Second Avenue and Chrystie Street, East Sixth Street to Delancey Street.
Dripps 1867.

Approximate Scale: 3/16 inch = 100 feet

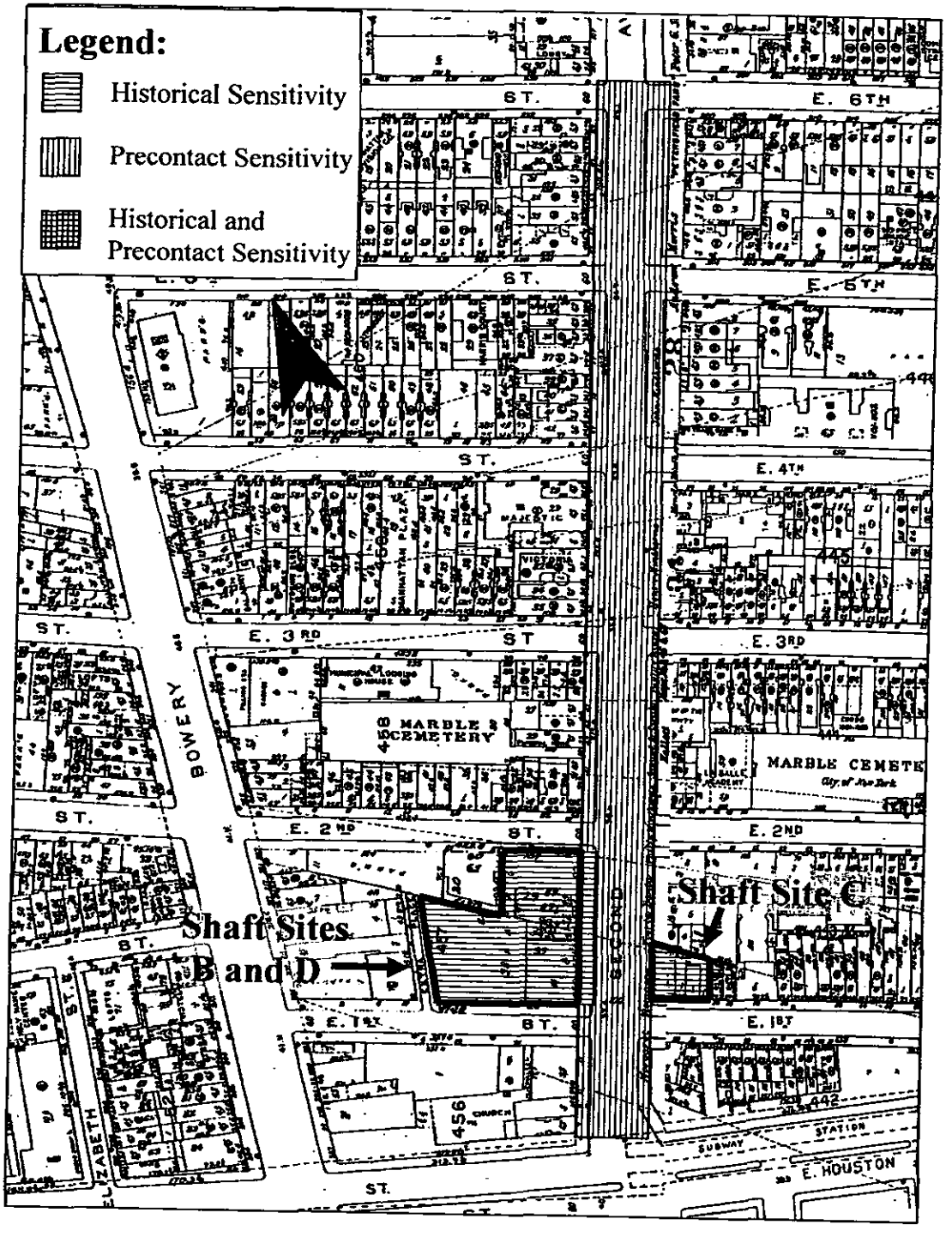


FIGURE 4.5-5a

Area of Potential Archaeological Sensitivity.
Second Avenue, East 6th Street to East Houston Street. Sanborn 2001.

Approximate Scale: ½ inch = 100 feet

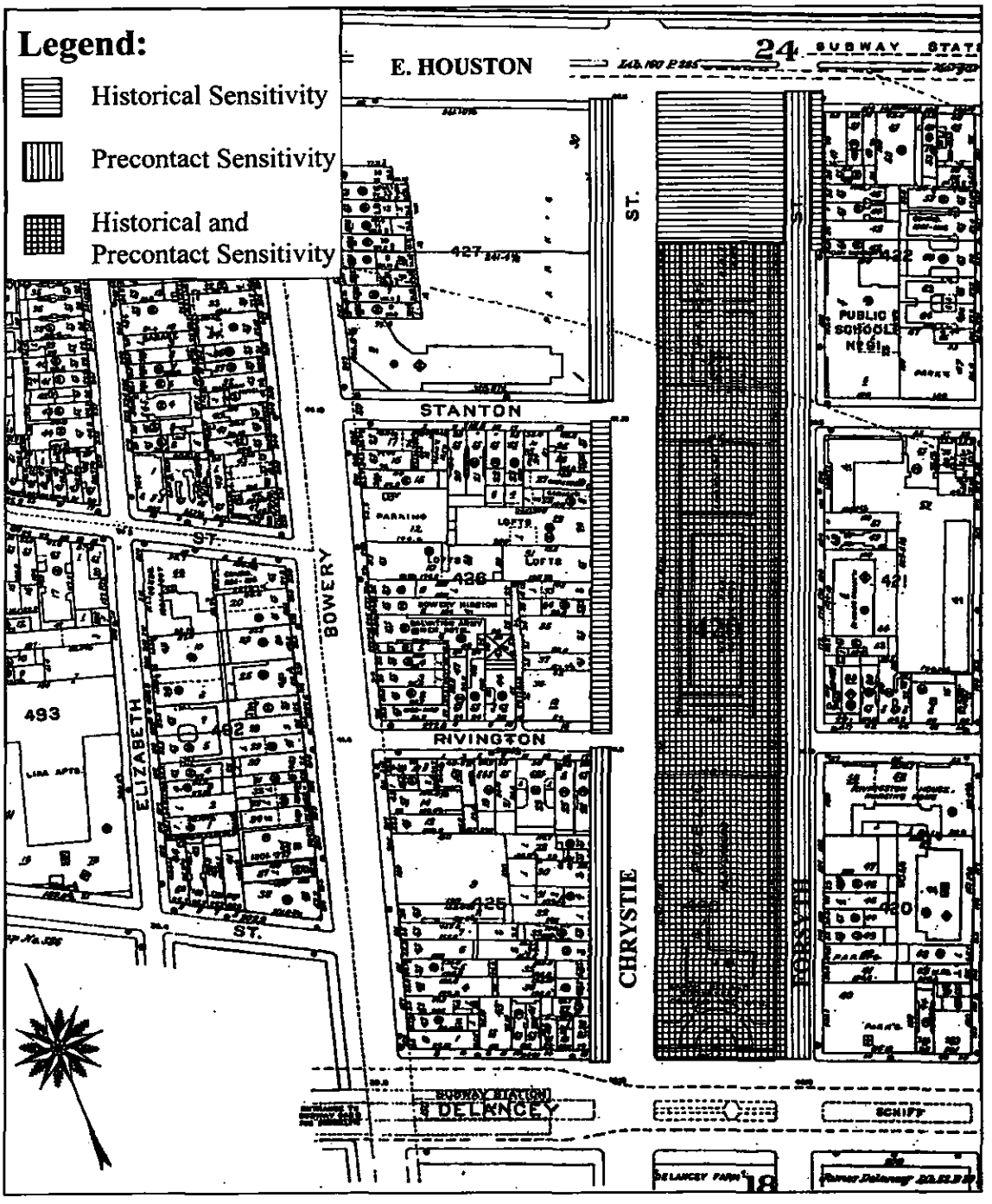
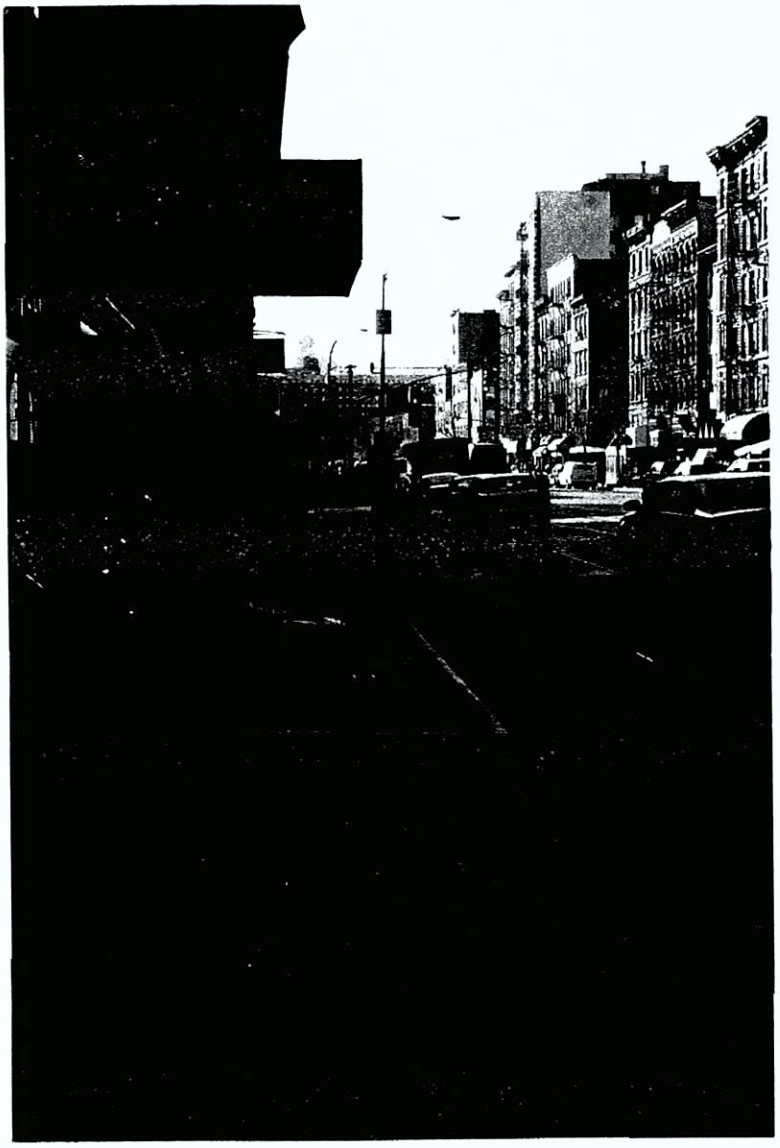


FIGURE 4.5-5b

Area of Potential Archaeological Sensitivity.
Chrystie Street, Forsyth Street, and Sara Delano Roosevelt Park between East Houston Street and Delancey Street. Sanborn 2001.

Approximate Scale: ½ inch = 100 feet



Photograph 4.5- 1: Facing south on the east side of Second Ave. and Sixth Street.



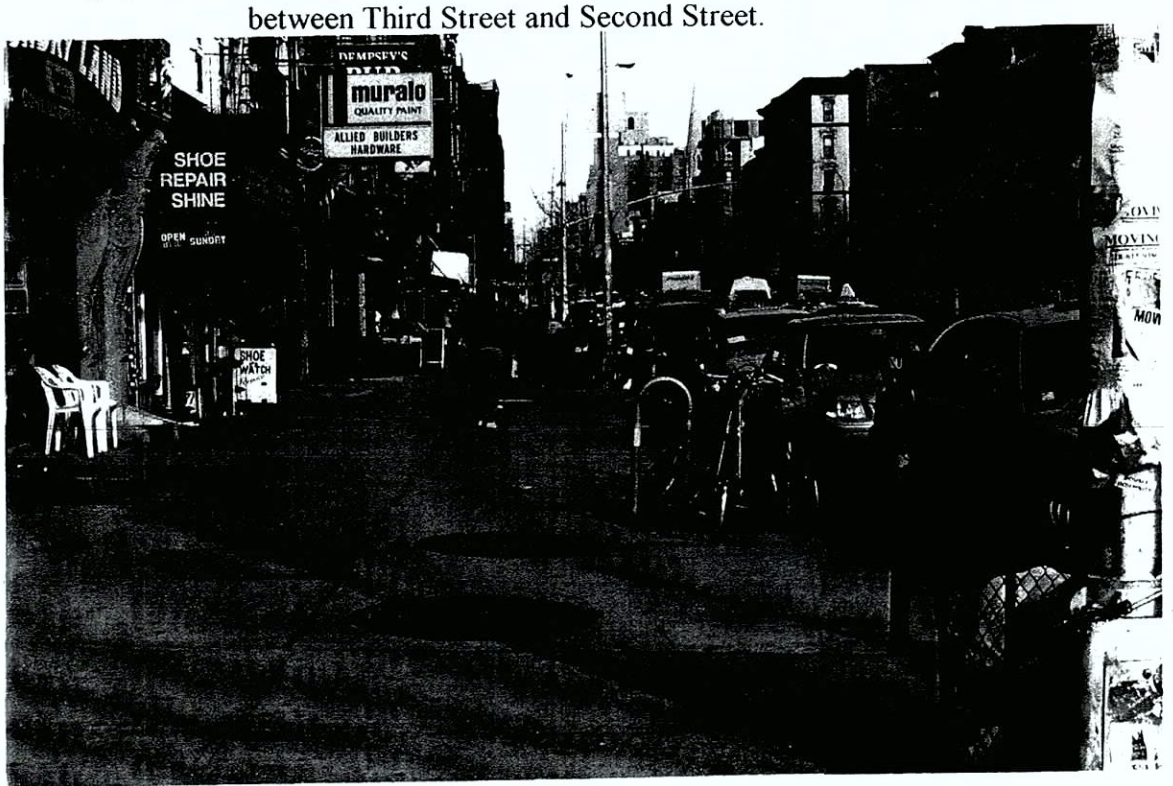
Photograph 4.5- 2: Facing south on Second Ave from Fifth Street.



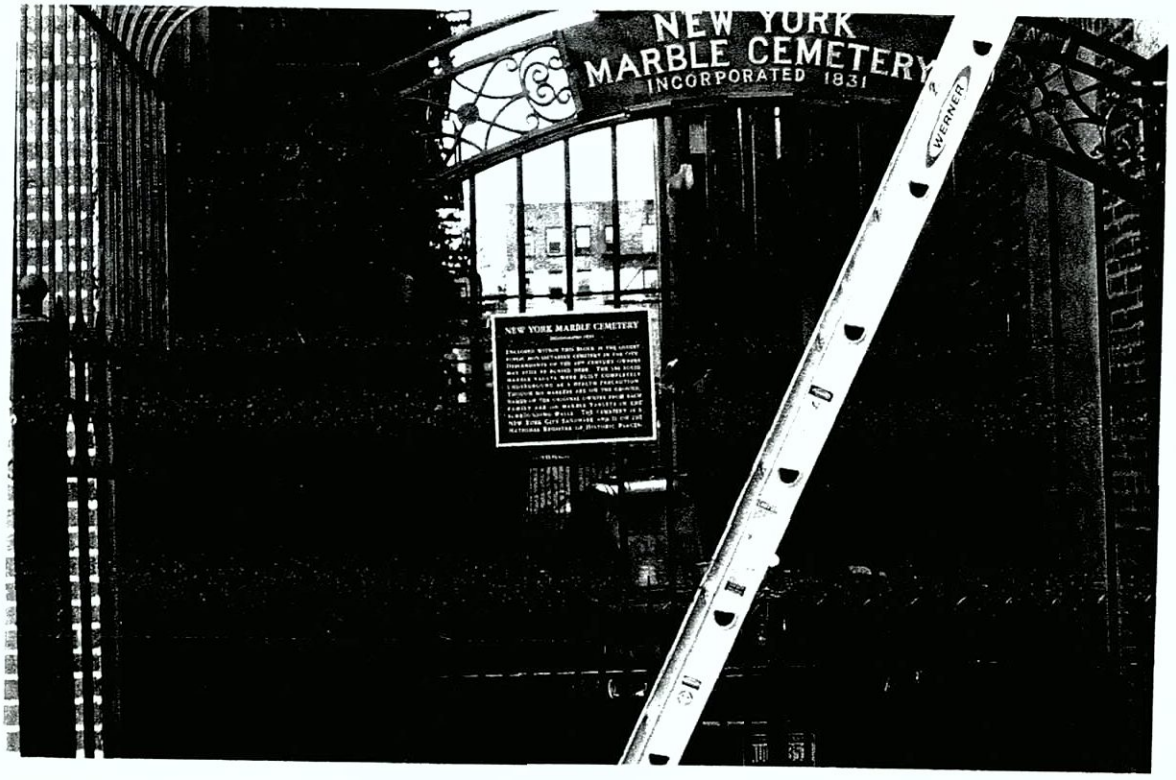
Photograph 4.5-3: Facing south on Second Ave. from the corner of Fourth ave.
Note: street bed.



Photograph 4.5- 4: Facing south on the east side of the sidewalk on Second Ave. between Third Street and Second Street.



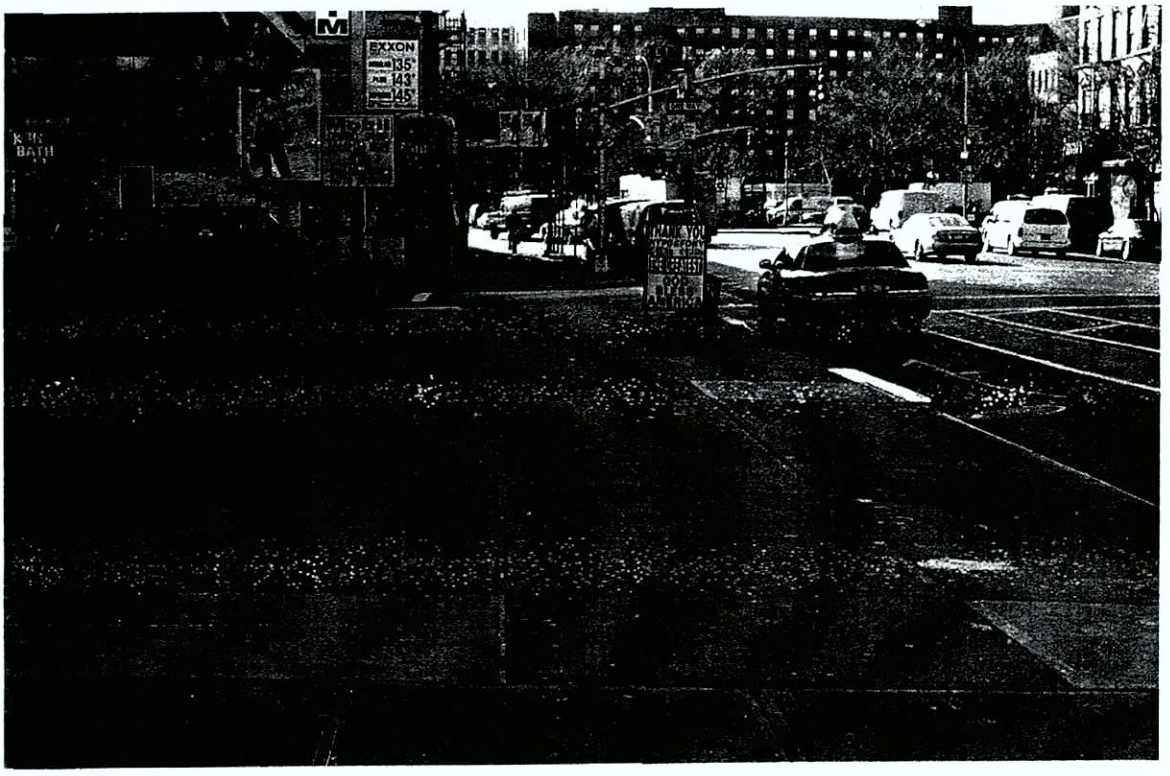
Photograph 4.5-5: Facing north on the west side of the sidewalk on Second Ave and Third Street.



Photograph 4.5- 6: Cementary located on the west side of Second Ave. between Second Street and Thrid Street.



Photograph 4.5-7: Facing south on Second Street towards Second Ave. Note: street bed.



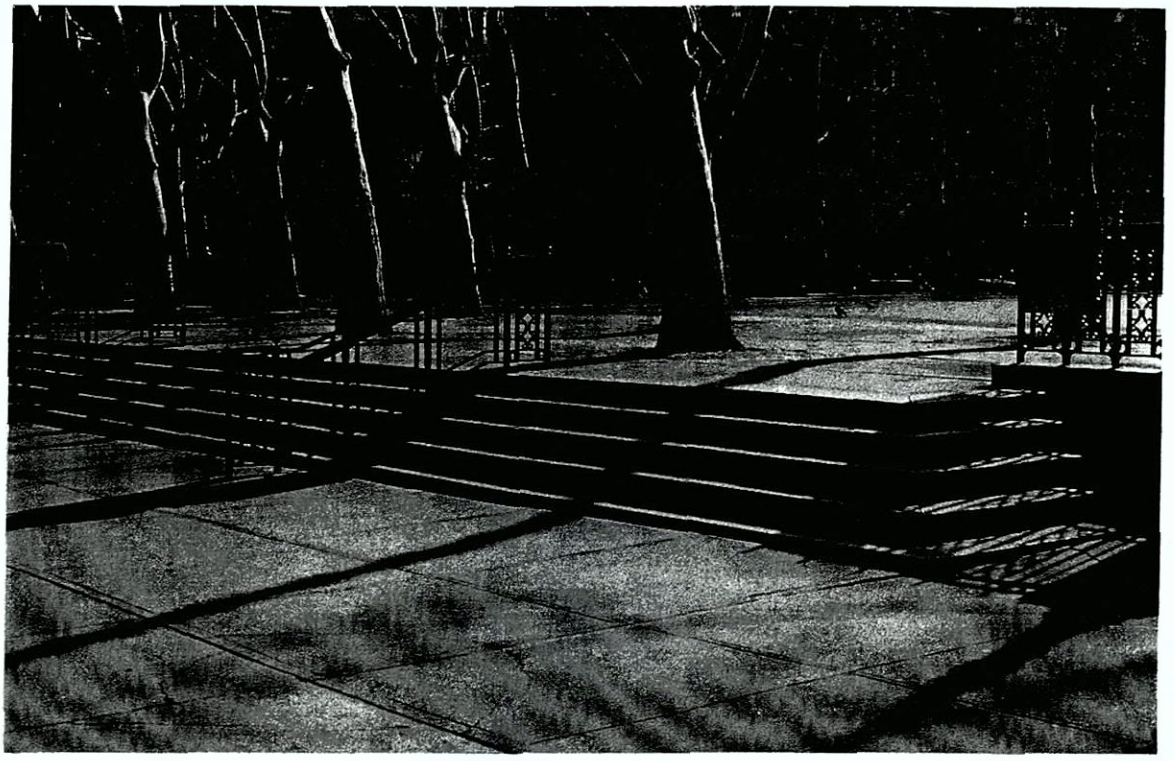
Photograph 4.5- 8: Facing south on east side of Second Ave. between Second Street and First Street.



Photograph 4.5-9: Facing north on the west side of Second Ave. and East Houston Street.



Photograph 4.5- 10: Facing south from East Houston towards Sarah Delano Roosevelt Park located between Forsyt Street and Chrystie Street.



Photograph 4.5-11: Facing east from East Houston Street towards the Sarah Delano Roosevlt Park located between Foryth Street and Chrystie Street.



Photograph 4.5- 12: Facing south on the west side of Chrystie Street between East Houston and Stanton Street .



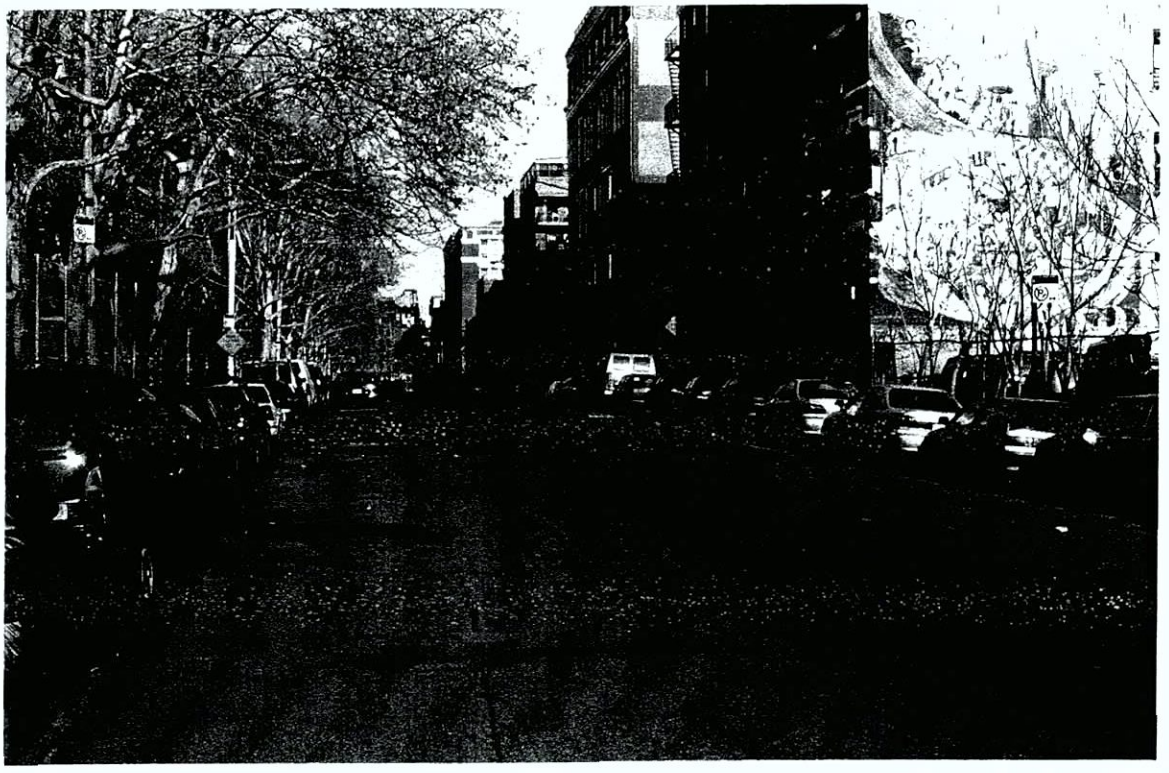
Photograph 4.5-13: Facing south on the west side of Chrystie Street on the corner of Rivington Street.



Photograph 4.5- 14: Facing north on the corner of Stanton Street towards Forysth Street.



Photograph 4.5-15: Facing north on Forsyth Street near the corner of Rivington Street.



Photograph 4.5- 16: Facing north on the corner of Delancy Street towards Forsyth Street.



Photograph 4.5-17: Facing east on Park Street between Forsyth Street and Chrystie Street. Note: Southern half is under construction.

4.5.7 Appendices

4.5.7.1 Documentary Assessment of APE

Second Avenue and Chrystie Street roadbeds

The cartographic history of the Second Avenue and Chrystie Street roadbeds from East 6th Street south to East Houston Street, and from East Houston Street south to Delancey Street is detailed below. Several blocks, which fall outside the APE, but could have potential resources, which extended into the APE, are discussed as part of this cartographic history. Separate histories for Blocks 457, 443, and 420 follow.

Cartographic History

Manatus 1639: The APE is depicted as fairly flat open space with decentralized, dispersed farms (bouweries).

Castello 1660: Area not included on map. Castello Plan's northern border is just north of Wall Street, approximately 9000' south of the area.

Miller 1695: APE is approximately 9000' north of northern boundary of Miller map.

Lyne-Bradford 1730: Area approximately 5000' north of northern boundary of Lyne-Bradford map.

Carwitham 1730: APE is approximately 5000' north of northern boundary of map.

Buchnerd 1735: The APE is about 5000' north of northern boundary of these plans.

Grim 1743: Area is just north of the northern boundary of the Grim Plan.

Maerschalck 1754: The APE is about 1500' north of the northern boundary of this plan.

Montresor 1766: The APE appears to be a patch-work quilt of bounded open fields, one with an orchard.

The "James Delancey" estate on the east side of the "Road to Albany and Boston" lies to the south and west of the APE. Several other residences with walled-in gardens front on the "Road to Albany and Boston," otherwise known as "Bowry Lane" (Ratzer 1766). The APE lies about 400-500' east of the Bowery Lane. First Street (later Chrystie Street), one block east of Bowery Lane, does not yet appear on the map. More residences face east than west onto Bowery Lane. However, the accuracy of this figure is questionable given that Augustyn and Cohen called it "John Montresor's flawed map" (1997:73).

Ratzer 1766/67: The northernmost boundary of the APE lies approximately 700' north of the northern boundary of the Ratzer Plan. A series of northwest to southeast running diagonal property lines appear on the Ratzer Plan and continue to be noted on modern maps. The northernmost diagonal line cuts through the southeastern corner of the block between East 6th Street and East 5th Street, and the southernmost diagonal line cuts through the southern one-third of

the block between East Houston Street on the north and Stanton Street on the south.

This southernmost diagonal line north of the Depeyster property is shown on the 2001 Sanborn as running through the project site just north of Stanton Street. This section of the APE falls just north and east of the "M. Depeyster" estate garden and residence complex that fronts on the east side of Bowery Lane. Measurements indicate that the APE is 400-500' east of "Bowry Lane," and this map shows it as open fields and orchards for the three structures, presumed to be residences, that lie close to the road on the east side of Bowery Lane. First Street (Chrystie Street) is not depicted.

British Headquarters 1782: The APE continues to be depicted as residential and agricultural. A series of structures, represented by red squares, lie along the east side of Bowery Lane, and several are scattered in the tree-studded fields to the east of the road. There are also several structures, east of Bowery Lane, which appear to be close to, but not within, this section of the APE. The landscape within the APE is fairly flat, with hills rising to the east and west. Lanes appear along the trapezoidal division lines discussed above. A stream runs roughly north and south, about a block east of the APE.

McComb 1789: The APE appears as undeveloped land with dotted lines outlining only the trapezoidal-shaped property boundaries.

Taylor-Roberts 1797: The APE, from roughly East 4th Street south, is included on the Taylor-Roberts Plan, but it is not shown as being subdivided into city blocks. Trapezoidal property boundaries differ somewhat from the 1766 Ratzer and 2001 Sanborn maps, as they appeared to be somewhat straightened out. What will become the eight blocks on either side of Second Avenue from East 4th Street south to East 1st Street appear as flat, tree dotted, open land divided diagonally (northwest to southeast) by property lines that front on the east side of Bowery Road. The north/south street grid terminates just north of "North Street" (East Houston Street) and just south of the trapezoidal-shaped properties. What will become East Houston Street was named "North Street" and ran between Bowery Road and the East River.

Chrystie Street, then 1st Street, was present. The "Negros BURYING GROUND" appears as a rectangular plot of land that lies on the west side of 1st Street mid-way between Stanton Street and Rivington Street, on what will eventually become Block 426. Both the block and the cemetery appear to lie directly west of the APE. There appear to be no other developments on the APE.

Bridges 1803/1807: The immediate area has been gridded. East Houston Street, then North Street, and Chrystie, then 1st Street, are both present. The configuration as well as the names of the streets (there are no avenues listed) north of East Houston Street differs from other maps, including the mapping Randel completed in 1820 in

conjunction with his manuscript farm maps. Randel's avenue and street placements, which are considered accurate, coincide with their current locations.

Randel 1820: This manuscript farm map shows Second Avenue and the cross streets in place, thus depicting the Commissioners' grid overlaid on the landscape that is shifting from agricultural and residential use to commercial, cemetery, and residential use. There are no structures in the roadbed of this section of the APE. The northern four blocks bounding the APE between East 6th Street and East 2nd Streets show no development in the APE. Topographically, Randel penciled in a gentle ridge that ran in a diagonal, northeast to southwest line, traversing the APE from just south of the Second Avenue and East 6th Street intersection to just south of the Second Avenue and East 5th Street intersection.

On Block 442, between East 1st Street and East Houston Street, the northern one-third of the block has no development on Second Avenue, but the southern two-thirds has four structures with some intervening open space. On that same block along the north side of North (East Houston) Street there is the "Cemetery of the 1st Baptist Church." Running from west to east, it occupies the mid-section of the block. Just west of and adjacent to the cemetery, the "First Baptist Church" also has property that is part of the open or undeveloped area in the northern one-third of the block, mentioned above.

Colton 1836: The general area of the APE is subdivided into city blocks and each block is shaded suggesting development. Second Avenue as well as surrounding streets (e.g. East 6th, East 5th, East 4th, etc.) continues to be noted. Houston Street and Chrystie Street names are in place. The general configuration of the blocks north of Houston Street and the street alignments are similar to their 2001 configuration. No structures or other features appear in the roadbed, and no specific features or structures are depicted within the APE between East 6th Street south to East 3rd Street.

On the east side of the APE, about half-way between East 3rd Street and East 2nd Street (now Block 458), sits a rectangular structure surrounded on three sides with a narrow strip of undeveloped land. It is labeled "Second Avenue" Presbyterian Church (Tanner 1836).

Along the APE between the north side of Houston Street and Delancey Street, Colton notes three areas that appear as cemeteries when compared to an 1820 map, another 1836 map, and an 1852 map (Randel; Tanner; Dripps). On the north side of "Houston" between Second Avenue and First Avenues (Block 442) is an unnamed, trapezoid-shaped open space that corresponds to the 1st Baptist Church Cemetery on the 1820 Randel farm map. On the south side of Houston Street between Chrystie Street on the west

and Eldridge Street on the east there are two rectangular open areas on the northern halves of their blocks (Blocks 420 and 422). The boundary lines of these two rectangles abut not only Houston Street, but also the east side of Chrystie Street as well as the west and east sides of Forsyth Street. On the Colton map, the open spaces appear to be either planted with shrubs or else dotted with gravestones. On the northwest corner of the eastern block there is a rectangular structure with the plantings or grave markers surrounding it.

Another 1836 map (Tanner) differs in some of the details concerning these two open areas. Tanner notes only a structure and no open area on what later becomes Block 420. The Tanner atlas map lists the structure on the western section of the block as the "Union" Baptist Church. Colton and Tanner also differ on the location of the structure on the eastern side of the block. While Colton places it in the northwest corner of the block surrounded by plants or gravestones, Tanner shows it in the northeast corner surrounded by open space and labels it "Mission" Reformed Dutch Church. The Dripps map labels each of the three areas that abut Houston Street, Chrystie Street, and Forsyth Street as "Cemeteries."

Dripps 1852:

The following description of the 1852 Dripps map relies on the 2001 Sanborn maps' block-numbering system, reading west to east, beginning at East 6th Street on the north and continuing south to Delancey Street.

Five cemeteries either fall within or appear to abut the Second Avenue, Houston Street, Chrystie Street, and Forsyth Street corridor (Plates 3 and 5). The cemeteries in proximity or within the APE are on (current) Blocks 457, 442, 420, 422, and 426. Shaft Sites B and D fall on Block 457, while Shaft Site C falls on Block 443. Details from Dripps' depiction of each block are presented below or in the separate cartographic history for that block.

Block 442 lies between East 1st and East Houston Streets, east of Second Avenue. On the southern side of Block 442 fronting East Houston Street there is a green-shaded open space labeled "Cemetery" approximately in the middle third of the block.

Block 422 is bound on the west by Forsyth Street and on the east by Eldridge Street, and lies just south of East Houston Street east of the APE. Here, there is another green-shaded open space with a "Cemetery" label that reads "Ger. Ev. Miss. Ch." This cemetery occupies approximately the northern half of the block. A church is shown associated with the cemetery fronting East Houston Street, outside of the APE.

Block 426 lies west of Chrystie Street between Stanton and Rivington Streets. It appears to have a green-shaded 50' by 200' area marked "Cemetery" fronting Chrystie Street; it lies approximately 100' south of the northeast corner of the block.

This corresponds with the "Negros BURYING GROUND" noted on the 1797 Taylor-Roberts Plan.

Perris 1857-1862: The APE is virtually unchanged from Dripps 1852, but changes that do occur are to the locations of the cemeteries on Blocks 457, 442, and 426 (Plates 41, 40, 37, 33). Here, structures appear to occupy property that had previously been the locations of the three graveyards.

Block 442 shows a row of five-story tenement houses on the site of the cemetery noted on the 1852 map, fronting East Houston Street.

Block 426 shows an unlabeled building on the north half of what had been previously mapped as the cemetery (the "Negros BURYING GROUND" on the 1797 map). On the south half of the cemetery site was a "Soap & Candle Manufactory." Both buildings directly front the west side of Chrystie Street, just west of the APE.

At this time, Second Avenue is depicted as 90' wide, with structures flanking either side. Chrystie Street is 50' wide.

According to the labels on the maps, there is a mixed land use along the Second Avenue and Chrystie Street corridor and it includes, other than cemeteries, a schoolhouse, church, factories, a provisioner, and a slaughterhouse. Tenant houses are also present along the APE. Conversion of earlier three- and four-story one-family houses into use by two families per floor was already well in place before 1850; and by 1861 tenement houses constructed for multiple-family occupancy were the primary housing stock for the dwellings along the APE (Homberger 1994:110-111).

Viele 1864/1865: Viele depicts the APE as generally meadowland. The toe of a slope is just north of the Second Avenue and East 2nd Street intersection; the land begins to rise more sharply toward the corner of East 2nd Street and First Avenue, on the eastern part of Block 443. There are no streams noted within the APE, and the nearest runs diagonally southwest to northeast on the block bounded by First Avenue and Avenue A between East 7th and East 6th Streets, then running through Tompkins Square to the east.

Dripps 1867: Two more of the cemeteries along the APE appear to have succumbed to urban development.

Block 422 just east of the APE still shows a cemetery, although it has been reduced in size on its northwest corner. It lies around a church labeled "Ger. Luth. Ch." on the east side of Forsyth Street.

Horse or cable car tracks run along the center of Second Avenue and Chrystie Street.

Robinson 1885: *Block 422* no longer shows a cemetery present, and the "GER. EVAN. MISSION" is listed as occupying the building that had been labeled "Ger. Luth. Ch." in 1867 (Plate 8). Thus, the last of the five cemeteries along the APE was gone.

A horse or cable car line runs along the center of Second Avenue and Chrystie Street. Another runs along the middle of East

Houston Street. An elevated steam railroad line as well as a horse or cable car line runs along First Avenue, east and outside the APE, and crosses Houston Street. Along Second Avenue there are seven fire hydrants in the streetbed between East 6th and Houston Streets. There are five fire hydrants between Second and First Avenues along Houston Street, and ten in the streetbed of Chrystie Street between Houston and Rivington Streets.

Bromley 1897: A horse or cable car line runs along the center of Second Avenue and Chrystie Street as well as along the middle of Houston Street. Fire hydrants are noted on the sidewalks along Second Avenue and Chrystie and Houston Streets. The street elevations correspond exactly with the 1885 and 2001 elevations.

Bromley 1911: The APE is relatively unchanged from 1897 (Plates 24, 23, 19, 8).

Bromley 1916: The APE is virtually the same as 1897 and 1911.

Bromley 1926: The built environment is very similar to the 1916 Bromley (Plates 28, 24, 23, 19).

Bromley 1932: With a few exceptions, the built environment is very similar to the 1926 Bromley (Plates 28, 24, 23, 19). The southernmost section of Block 420 continues to have the Libby Hotel on the southwest corner.

Bromley 1955: *Block 442* has a subway station beneath the southern half of the block, presently the Second Avenue stop on the F line. The street-level land above the subway station and tracks is vacant.

Bromley 1967: Other than three episodes of the leveling of buildings and one street widening, there seem to be no changes between 1955 and 1967 (Plates 28, 24, 23, 19). East Houston Street is widened to 100', thus narrowing Block 442. The portion of Block 442 that was the Baptist cemetery has been encroached by not only the subway station beneath the block, but also by the widening of East Houston Street on the north side.

Sanborn 1984/1985: The APE is virtually the same as in 1974 (Plates 28, 24, 23, 19). On the eastern half of Block 442, what had been vacant land since some time between 1926 and 1932, is open space labeled "Park".

Sanborn 1990/1991: The APE is the same as the Sanborn 1984/85.

Sanborn 2001: The following city blocks fall directly within the APE (Plates 28, 24, 23, 19).

Block 442 During the 19th century a Baptist cemetery was located mid-block on the south side of Block 442. Also beneath the block on the south side is the subway tunnel for the IND F line (and V after December 16, 2001).

Houston Street Station and Tunnel. The northern border of the IND 6th Avenue line subway station runs beneath the sidewalk at the building line of Block 442 and west into the center of the southern terminus of Second Avenue. The southern border of the subway station runs beneath the median divider on East Houston Street and west into the center of the southern terminus of Second Avenue.

Street Elevation Table

Generally this section of the APE is fairly level, sloping upward to the south and east with no more than six feet difference among the elevation readings along the APE. The 1885 and 2001 elevations vary only by two-tenths of a foot, suggesting that the introduction of the subway beneath East Houston Street did not vary the streetbed elevations (Robinson 1885, Sanborn 2001). Street Elevations over time for both the roadbeds and shaft site blocks are presented in the table below.

Street Elevation	1885	1897	1911	1923	1926	1932	1981+	2001
Second at E. 6th	35.0	38.1	38.1	35.04	38.1	38.1	35.2	36.1
Second at E. 5th	34.5	34.7	34.7	34.92	34.7	34.7	35.1	34.7
Second at E. 4th	33.5	33.6	33.6	34.32	33.6	33.6	34.4	33.6
Second at E. 3rd	35.4	35.5	35.5	36.37	35.5	35.5	36.3	35.5
Second at E. 2nd	36.9	36.11	36.11	37.54	36.11	36.11	37.4	36.1
Second at E. 1st	37.0	37.4	37.4	38.34	37.4	37.4	38.3	37.4
Houston at Chrystie	40.9	40.11	40.11	40.35	40.11	40.11	41.2	40.1
Houston at Forsyth	38.7	38.9	38.9		38.9	38.9	37.9	38.9
Chrystie at Stanton	41.8	41.1	41.1		41.1	41.1	40.9	41.1
Chrystie at Rivington	41.7	41.9	41.9		41.9	41.9	40.9	41.8
Chrystie at Delancey		40.1	40.1		40.1	40.1	39.8	40.1

Legend:

- Measurements in feet
- Sources: Robinson 1885; Bromley 1897, 1911, 1926, 1932; City of New York Topographic Bureau 1923, 1953, n.d. (post 1981); Sanborn 2001.
- Randel (1820) street elevations for First Avenue: East 6th, 41.51; East 5th, 32.05; East 4th, 37.25; East 3rd, 38.16; East 2nd, 23.64; East 1st, 41.56. Randel noted elevations only on First and Third Avenues.

Block, Street, and Sidewalk Widths (in feet) between East Houston and Rivington Streets

Data Source	West side of Chrystie sidewalk	Chrystie Street	East side of Chrystie sidewalk	Block 420 between Chrystie and Forsyth	West side of Forsyth sidewalk	Forsyth Street	East side of Forsyth sidewalk
1820	n/a	50	n/a	200	n/a	50	n/a
1857/62	n/a	50	n/a	200	n/a	50	n/a
1926	13	25	12	200	12	25	13
1930	n/a	50	n/a	195.4	n/a	50	n/a
1953	12.5	68.75	18.75	125	18.75	43.75	12.5
n.d.	12	68.5	20	125.83	17	45+/-	12
2001	15	60	7.5+/-	127.5	7.5+/-	45	11.25

Notes:

- n/a = not available on map
- The northern part of Block 420 is where the Presbyterian church and cemetery were.
- There's a 1949 draft damage map for East Houston Street from Broadway to Essex Street, but it is unavailable (Borough Presidents Office, City of New York).

Precontact Sensitivity

The Second Avenue/Chrystie Street corridor that includes the 16-block area that abuts the Second Avenue Subway APE from East 6th Street to Delancey Street lies between 400 and 500' east of Bowery. Historically the Bowery was a roadway that may have also served as a pathway that precontact and contact period peoples traveled along the north/south axis of Manhattan. The area was relatively flat, with the closest stream running near First Avenue, one block east of the APE near East 6th Street. A more substantial fresh water source, the Collect, was located within about a mile southwest of this APE near what is now City Hall Park. Streams and marshes also ran near what is now Tompkins Park several blocks northeast of the northern end of this APE. While these were much closer, they were not as easily reached since their access would have involved going up a hill, along the top of the ridge, and then down the hill to get to the water (Manatus 1639; Montresor 1766; Ratzer 1766/67; British Headquarters Map 1782; Taylor-Roberts 1797, Figure 4.5-1; Bridge's Adaptation of the Commissioners' Plan 1811; Viele 1874).

North of East Houston Street

Prevailing archaeological predictive models of site location suggest that this APE has a moderate to high potential for precontact and contact period use. The closest stream was a little more than one block east of the northeast boundary of the APE, at the intersection of First Avenue and East 6th Street, about 750' from the APE (Viele1874). The area was probably fairly well-drained during much of the precontact period, as current soil borings report that the water table varies anywhere from 17.3' to 24' below surface (DeLeuw, Cather & Co.,1973; Raymond International, Inc., 1968, 1970s, 1974; WPA, ca. 1935; Warren George, Inc., 1972). The water table was deeper than the terminus of the test in only one soil boring (C7-1NX, taken on Block 460; Appendix 4.5.7.3). It should be noted that the precontact water table levels probably fluctuated through time, and that even in the historical period they varied. For example, the 20th century water table depths observed in soil borings are reportedly shallower than at least one noted in 1830 on Block 458, which showed water at 35' below grade (Trustees of the New York Marble Cemetery 1830; Brown 1999:vii).

It is also possible that the relatively level, sandy, dry area in this section of the APE that was considered a prime area for historical burials, may have also provided a good location for precontact and contact burials. While the sandy soils observed below fill in the soil borings may have been less than ideal for habitation, this is not to say that this section of the APE could not have been utilized in some capacity during the precontact period.

Archaeological sites in the Northeast tend to be encountered within three to four feet of the then living surface, unless they were deposited in an alluvial setting, such as along the banks of a larger river or area experiencing seasonal flooding. Since that is not the case

with this section of the APE, it should be anticipated that if precontact resources were ever deposited here, they would have been fairly shallowly buried beneath the precontact surface. Therefore, unless these resources are buried beneath historic landfill, which served to protect them, they are easily disturbed by the process of urbanization.

Soil boring data for the blocks north of East Houston Street on Second Avenue reveal undulating fill layers ranging from one foot to 19.3' in depth (DeLeuw, Cather & Co.,1973; Raymond International, Inc., 1968, 1970s, 1974; WPA, ca. 1935; Warren George, Inc., 1972). The deepest fill levels were reported near the northernmost blocks of this section of the APE; the fill extended almost as deep as the water table (Ibid.). This coincides with the precontact topography portrayed on a 19th century map, which shows this area at lower elevations (Viele 1874). Conversely, the fill is shallower in areas with a deeper water table (Ibid.). Beneath the fill levels are layers of fine and coarse sands as well as silt and gravel that are more than three to four feet thick. It is within the sands, silt, and gravel that underlie the fill, then, that there may the potential for precontact and contact archeological remains.

The soil borings also revealed that hard quartz and mica schist appeared in seven of the 12 soil borings taken north of East Houston Street, whereas there was no bedrock noted on the soil boring data taken from south of East Houston Street. This bedrock was found well below three to four feet of sands, silt, and gravel, the depth of which is generally understood to have potential for precontact and contact period cultural materials. Therefore, precontact sensitivity may lie below the fill, but above the bedrock.

Street elevations generally slope gently upward from north to south, but there is a small dip between East 4th and East 2nd Streets (Ibid.). Although the topography of this section of the APE has been fairly stable since at least the middle of the 18th century, both the sewer lines running beneath the center of the APE corridor as well as the other utility lines running outboard of the sewers could compromise any precontact period material remains where they extend beneath the fill (WPA 1937; Street Elevation Table). However, precontact potential may exist within the roadbeds beneath fill levels where utilities, and subway tunnels, are not present.

Since sidewalks within the APE tended to be created from roadbed areas, not from within blocks, and few buildings along this section of the APE have basements that might have extended beneath the sidewalks, there is a moderate potential for encountering precontact and contact period remains within the sidewalk area beneath the fill layer. The exception may be in the area of the historical cemeteries adjacent to the APE on Blocks 457 and 442, should these cemeteries have extended beneath the sidewalk, since burial excavations may have compromised precontact potential.

South of East Houston Street

Based on a review of the soil borings, the APE between East Houston Street south to Delancey Street has the potential for precontact resources beneath existing fill, except where the APE has been previously affected by the East Houston Street and Chrystie Street subway lines. The deep layers of sand which were present prior to historic development suggests that this area may have been well suited for precontact burials or other use, but not necessarily for long-term habitation. The area is excessively well-

drained, with either "no water" recorded on the boring logs, or water found between 25 to 33.5' below the surface. Two of the borings taken from this area had fill from the surface down to between 18.5 and 25.8' below grade (Soil Borings C6-22 and C6-16, Raymond International Inc., 1974).

Therefore, as was the case with the blocks north of East Houston Street, this section of the APE has a moderate potential for cultural remains three to four feet beneath the fill layers outside of the area of prior effect by the two subway lines. Bedrock was not encountered in any of the soil borings for this section of the APE.

Historical Sensitivity

Bowery Street continued to be an important link between the population center developing at the southern tip of Manhattan and village clusters to the north. Known as Bowry (sic) Lane in colonial times, the roadway was labeled on maps variously as the Road to Albany and the Road to Boston. This section of the APE would have been 400 to 500' from the rear of farm houses and estates that fronted the east side of Bowery Lane (Grim 1742-1744; Montresor 1766; Ratzer 1766/67; British Headquarters 1782; Taylor-Roberts 1797, Figure 4.5-1; Bridge's Adaptation of the Commissioner's Plan 1811). Early maps indicate that the study area was a patchwork of agricultural and tree-studded fields as parts of properties that had narrow frontage on the east side of Bowery Lane and ran diagonally northwest/southeast (Ratzer 1766/67). British encampments may have stood on the study area during the American Revolution, but their precise location would be difficult to place on the modern landscape due to later topographic changes (British Headquarters 1782; NYCLPC Historical Sensitivity Map-Lower East Side). The leveling of knolls and filling of low areas to create the relatively level landscape of today, as well as historic surface and subsurface development would probably have compromised evidence of military encampments, which tend to have low visibility in terms of archaeological resources. Soil boring data corroborate this.

Early in the nineteenth century, as Manhattan moved uptown and the Commissioners' grid was implemented, blocks and lots were built upon and avenues extended further north, while streets extended further west and east. In 1817 1st Street was renamed Chrystie Street, and in 1833 North Street became East Houston Street (Goodrich 1827; Augustyn and Cohen 1997:114-115). The APE both north of East Houston Street and south of it was beginning to be developed into city blocks and lots sometime after 1797, but certainly by the 1830s.

In the first three decades of the twentieth century, the built environment of the study area remained very much as it had been at the turn of the century. The notable exception was the subsurface changes, such as buried 12- and 20-inch pipes, so labeled on period insurance maps (Bromley 1897, 1911, 1916, 1926, 1932) for both the Chrystie Street/Second Avenue corridor and Houston Street. In some instances, though, brick buildings were razed and the lot(s) were left vacant. This is evident for the north side of East Houston Street, and was probably done in preparation for the construction of the subway line. On January 1, 1936, the subway along Houston and Essex Streets (connecting West 4th Street with Jay Street) opened, and a station was built at East Houston Street, extending under the southern portion of Block 442 (New York City Subway Resources 1995-2001).

Within the APE, streets were opened and/or officially regulated on the following dates:

- Second Avenue between East 6th and East Houston Streets began to be laid out in 1811 (Stokes 1926:1534); and was legally opened in 1815 (City of New York Topographic Bureau, n.d.; WPA 1937).
- Houston Street, laid out prior to 1797 (Stokes 1918:1006; Taylor-Roberts 1797), was legally opened in 1814 (WPA 1937). While it was originally named North Street (Stokes 1918:1006-1007), its named changed in 1833 (Ibid.).
- Forsyth Street was legally opened in 1760 (WPA 1937), and it was originally named 2nd Street (Stokes 1928:594). Its name was changed in 1817 (Stokes 1926:1591).
- Chrystie Street was legally opened in 1760 (WPA 1937). The section of Chrystie Street within the APE was present on a 1797 map (Taylor-Roberts 1797). It was originally named 1st Street (Stokes 1918:999), but its name was changed in 1817 (Stokes 1926:1591). In 1812 it only extended as far north as what was then North Street (now East Houston Street) (Elliot 1812).
- Stanton Street was legally opened in1795 (WPA 1937).
- Rivington Street was legally opened in 1795 (WPA 1937).
- Delancey Street was legally opened in1795 (WPA 1937).

It is particularly noticeable that Houston Street served as a divider, of sorts, between the colonial town of New York and the federal City of New York, in that the streets south of Houston, in the old town, do not exactly align with the Commissioners' street grid north of Houston. The junction of Chrystie Street and Second Avenue is a case in point.

According to a November 2001 engineering report, "the existing [subway] tunnels of the [lines] that cross the Nassau and Water [Streets] proposed alignments [of the APE] are believed to have shallow profiles (not deeper than 50' from the surface of the street) and to have been constructed by cut and cover methods" (SYSTRA 2001). The existing west/east subway station within the APE at Second Avenue and East Houston Street (IND F Line) that runs beneath East Houston Street, is an example of cut and cover construction (www.nycsubway.org). It is assumed that the F Line subway station at Second Avenue was built similarly to the Bowery/East Houston Street station. Outside the APE, one block west of the Second Avenue APE at Bowery and East Houston Street, there is a square/cut and cover subway tunnel with the base of the rails about 41.5' below street level (Claudia Cooney, personal communication, November 15, 2001). One block west of the Chrystie Street APE, at Bowery and Delancey Street, there is another square/cut and cover subway tunnel whose approximate base of the rail bed is 44' below grade (Ibid.).

Major effects to Chrystie Street occurred when part of the original Second Avenue proposal (the Chrystie Street connection) was built in 1967 (Cudahy 1988:132). According to New York City Subway Resources, "along Chrystie Street, provision was made to allow for the construction of a future Second Avenue Line. The Grand Street Station was built as a two track station with side platforms, but was designed for eventual expansion to a four track, two island platform station" (1995-2001). The construction of the Chrystie Street connection tunnel, built by cut-and-cover, would have affected any potential resources within its path (Taylor 2001:2). The aborted subway construction may have had further effects along Second Avenue since related utility relocation work

was reportedly conducted along the Avenue from East 2nd to East 9th Streets (New York City Subway Resources 1995-2001: Second Avenue Timeline).

In the 1960s, the APE was further changed with the construction of the Chrystie Street connector (which includes the Grand Street station) built by the MTA after unification. The connector served to link the Manhattan Bridge lines of the BMT with the Sixth Avenue lines of the IND, such that trains from Brooklyn gained access to all of the BMT and IND trunk lines in Manhattan (New York City Subway Resources 1995-2001). The connector, which runs beneath Chrystie Street and curves to the west beneath Block 427 where the Friend's Cemetery formerly stood, was built via cut-and-cover construction. Excavations affected any archaeological potential within its path.

The 1960s subway tunnel and equipment is not considered to be significant archaeologically. However, their construction and alterations to them undoubtedly compromised the integrity of potential archaeological resources in the East Houston Street and Chrystie Street roadbeds.

Besides the existing subway tunnel and station within the APE beneath East Houston Street, there is evidence for other public service and public utility subsurface activities beneath the APE's streetbed. The introduction of municipal services, which began as early as 1854 with the introduction of "Croton Water" on Second Avenue between 3rd and 4th Streets (Board of Aldermen 1857), is noted in the preceding cartographic histories. Sewer lines vary as much as nine feet in inverted elevation, lying about 15' beneath street level along the APE.[2] Above the sewer lines lie a variety of utility lines anywhere from 1.5' to 4.75' below street level (WPA 1937). In and of themselves, the utilities are not considered to be significant material remains, but their construction and alterations may have compromised the integrity of potential archaeological resources in the roadbed.

Cemeteries

While early residential, agricultural, and military sites have a low probability for subsurface remains along this section of the APE, cemetery sites are another matter. On mid-1830s maps, there were three enclosed gardens noted on blocks adjacent to or within the APE as well as three other rectangular-shaped areas within the same blocks (Colton 1836; Tanner 1836). An 1852 map showing cemeteries and development within and adjacent to the APE depicted eight cemeteries between East 3rd Street and Stanton Street, within a block on either side of the APE (Dripps 1852; Figure 4.5-3a and b). Several of the cemeteries were associated with adjacent churches. Of these eight cemeteries, five either stood within, or may have extended into, the APE (Block 457, 442, 420, 422, 426). The following discussion documents the potential sensitivity for grave shafts and or cemetery remains within the APE, from north to south. Cemeteries, which were clearly outside of the APE, are not discussed but the records of these four cemeteries provide contemporary evidence.

[2] The sewer depths are measured from an inverted elevation of 22.21' at the northern end of the APE at East 6th Street and Second Avenue [where street elevation is 36.1' in 2001], to 20.10' between East 4th and East 3rd Streets [where street elevation is 34.3 - 36.2'], to 29.83' between Stanton and Rivington Streets [where street elevation is 40.9]) (WPA 1937).

North of East Houston Street

Block 457: The Methodist Cemetery which stood on Block 457, between East 1st and 2nd Streets, west of Second Avenue (Dripps 1852), was the topic of an intensive documentary study completed by Parsons Engineering Science in August 2000. (Figure 4.5-3a and b) Details of their findings, which concluded that Lots 36, 27, 28 and 42 were potentially sensitive for grave features and/or human remains, are reported in the following Block 457 Historical Sensitivity section. For more details on this potential resource, see the Block 457 presentation below.

Block 442: Between East 1st and East Houston Streets, and Second and First Avenues was once the site of the Baptist Cemetery of the First Baptist Church, 1815-1851 (City Register, n.d.; Inskeep 2000:57). While the cemetery of the First Baptist Church was mapped as abutting the sidewalk on the north side of East Houston Street, with maps portraying its boundaries outside of the APE on Block 442, it may have extended beneath the sidewalk. The cemetery's inception date postdated a city ordinance (1836) rescinding the licenses for building under sidewalks and streets, suggesting that burials could have extended into the APE. However, even if burials did extend under the sidewalk, cut-and-cover excavations for the subway station at East Houston Street would have adversely affected any potential historical archaeological material within the APE.

South of East Houston Street

In 1828 a New York City guidebook noted that "there are three large burying grounds at North Street [East Houston Street] east of the Bowery, viz., one for the Friends (Quakers) [Block 427 west of the APE], one for the Dutch, and one for the Presbyterians...." (Goodrich 1828:420-421 in Greenwald 1933:7).

Block 420: The Presbyterian cemetery lay within the APE, between Chrystie and Forsyth Streets south of East Houston Street where Sara Delano Roosevelt Park now lies. The cemetery was in operation from 1803 to 1865 (Doggett 1851; City Register, n.d.; Greenwald 1933:18; Inskeep 2000:138). By 1867, the cemetery site had been sold, and the block was subdivided and developed (Dripps 1867; Figure 4.5-4). Although burials were reportedly reinterred, there is always the possibility, as is the case with most cemeteries, that not all bodies were removed.

The land for the Sara Delano Roosevelt Park, which now covers Block 420, was purchased in 1929, and the public park was constructed in 1934 between Chrystie and Forsyth Streets (Alexander R. Brash; personal communication, December 5, 2001). The original design and construction included creating the playing surface approximately six feet below existing grade. In conjunction with this, in 1930 Chrystie Street was widened on the east side and Forsyth Street on the west side, each by about 25'. In 1934 the park was completed (Topographic Bureau 1930; Alexander R. Brash, personal communication, December 5, 2001). Originally designed to have "depressed" surfaces for playground and wading pool areas, the park has recently been raised to street-level (Ibid).

The northern half of the Sara Delano Roosevelt Park block had served as the site of the Presbyterian cemetery during the first half of the 19th century. Where later basements did not affect the cemetery, there is the potential for grave shafts or cemetery remains from East Houston Street south to about Stanton Street.

Not only does Block 420 (the Park) encompass what was formerly the cemetery but also because both Chrystie and Forsyth Streets were widened over the former block, there is the potential for the cemetery to have existed within the APE beneath the adjacent sidewalks. The cemetery extended almost as far south as Stanton Street. For more details on this potential resource, see the Block 420 presentation below.

Block 422: The Dutch (or German Evangelical Mission) stood just east of Forsyth Street. The cemetery was in operation between 1796 and 1866, predating the 1823 restriction banning burials beneath sidewalks by at least 27 years (City Register, n.d.). It may be that burials extended out under the sidewalks, therefore the east side of Forsyth Street may be sensitive for burials between East Houston and Stanton Streets. Unfortunately, there is no soil boring data to study for the parts of the blocks on which the cemeteries stood (Blocks 420 and 422).

Block 426: The Negro Burying Ground/African, Protestant Episcopal, St. Philip's Cemetery, which was active from 1795 to 1852, was between Stanton and Rivington Streets, Chrystie and Bowery Streets (Doggett 1851; City Register, n.d.; Inskeep 2000:172). In 1795, after the closure in 1794 of the African Burial Ground near Duane Street and Broadway, the African Society asked the City of New York for, and was granted, property on the west side of Chrystie Street between Stanton and Rivington Streets for use as a new burial ground (Taylor-Roberts 1797, Figure 4.5-1; Inskeep 2000:172). The Negro Burying Ground/African, Protestant Episcopal, St. Philip's burial ground was in use until at least 1851 (Doggett 1851), and was replaced, in part, by a series of structures (Perris 1857-62). Late 19th century development of the former cemetery site within Block 426 reportedly included exhuming the remaining skeletal remains for reburial elsewhere (Inskeep 2000:109). Nevertheless, it may be that not all the human remains were exhumed and reinterred, and that burials extended beneath the sidewalk, as the cemetery predates the 1823 ordinance banning such practices by 28 years.

For example, at another site outside the APE by a half block, it was found that the Methodist cemetery on Block 443 may have missed some graves when that cemetery closed about 1851, although it was assumed that all the remains had been reinterred in Cypress Hills Cemetery (Inskeep 2000:172).

Soil boring data for the block on which the Negro Burying Ground/African, Protestant Episcopal, St. Philip's burial ground stood reports four feet of "misc. fill" overlaying a substrate made up of sands, a little silt, and some gravel (Boring C6-23, Raymond International, Inc., ca.1970s).

Discussion

Regardless of the boundaries of these cemeteries depicted on historic maps, it was not uncommon for indigents, servants, or people perceived of lesser importance to be buried

outside of the proper boundaries of a cemetery (Owsley, et al 1997:202). Furthermore, the accuracy of cemetery boundaries demarcated on historic maps is frequently imprecise (Ibid:203). The limits of a cemetery perceived by a cartographer may not necessarily coincide with the actual subsurface extent. These two factors alone suggest there is the possibility that cemeteries, which were mapped outside of the APE, may have actually extended into it.

Several 19th century ordinances concerning graveyards also had a bearing on the cemeteries along the APE, potentially increasing the likelihood for human remains to be encountered beneath the fill, which lies below grade. For a short period of time in 1809 churches were allowed to extend their cemeteries beneath sidewalks to alleviate the overcrowding conditions in the graveyards (Greenwald 1933:17). Four of the above five cemeteries (Block 457 Methodist; Block 420 Presbyterian; Block 422 German; Block 426 Negro/African) predate this 1809 allowance.

In 1820, after considering complaints against the "African burying ground in Chrystie Street" (Block 426), the City's Committee on Public Lands recommended "that no Corpse shall be left at any time, without a covering of earth at least two feet deep.... No Corpse, shall be deposited nearer the surface of the ground than four feet. Nor shall any person whose death was occasioned by any contagious or putrid fever be interred otherwise than in a single grave six feet deep" (Stokes 1926:1611). In 1823, the City Council passed an ordinance prohibiting any interments, either in vaults or graves, south of Grand Street under a penalty of $250.00 for each offense (Ruggles 1856:9). Some people who probably felt it was important to be buried in their church's cemetery for personal reasons, were willing to risk the penalty and paid the fees. The Presbyterian Church, then south of Grand Street, was one of the owners of the Presbyterian cemetery (Block 420) and it is probable that some of their parishioners were buried in the East Houston Street graveyard. By 1830 an ordinance was passed that forbade burials south of Canal Street, and by 1851 there was a ban on burials below 86th Street (Inskeep 2000:138). Furthermore, the state Rural Cemeteries Act of 1847 encouraged the development of suburban cemeteries (Jackson 1995:198).

In 1851 the New York City Common Council passed legislation banning all burials below 86th Street, and prohibiting the establishment of any new cemeteries within Manhattan. Encroachments by developers resulted in most of the study area's cemeteries succumbing to development by the end of the Civil War (Dripps 1867, Figure 4.5-4). All of the cemeteries were eventually sold to private parties, and relocated to the larger cemeteries established in Brooklyn and Queens. Where the former cemeteries lay, the land was typically subdivided into twenty-five foot wide lots with structures abutting the lot lines on three sides, and open yards left behind.

Horse or Cable Cars, Elevated Trains, and Trolley Lines

Horse or cable cars ran on Second Avenue and Chrystie Street 1867, allowing transportation to and from this area with greater ease (Dripps 1867, Figure 4.5-4). By 1885, in addition to the Second Avenue /Chrystie Street tracks, another set of horse or cable car tracks ran along the center of Houston Street (Robinson). Other examples of

civil engineering and public services, specifically subsurface ones such as fire hydrants, are noted along Chrystie, Houston, and East 2nd Streets (Robinson 1885).

Horse or cable cars ran along Second Avenue and Chrystie Street at least from 1867 to 1885 (Dripps, Robinson). The Second Avenue El was opened in 1879 and remained in place until 1942 (Stelter 1995:9). By 1899 Second Avenue had an electrified trolley line. As it was pointed out in Chapter 3, there may be a need to document subsurface features such as support structures for the earliest electrified trolleys should they be encountered in the APE. Other than that, in terms of the NYCLPC's study categories, transportation features probably have minimal research potential.

Twentieth-century land use around and within the APE continued the established late nineteenth-century pattern for a mixture of residential and ancillary commercial activities, as well as increasing public park areas as the cemeteries turned over their land for development and a subway line ran across the west/east main street.

Shaft Site B and D, Block 457

Shaft Sites B and D are tangential and cover what are now Lots 29, 32, 33, 34, and 38 on Block 457, just west of second Avenue between East 1st and 2nd Streets.

Cartographic History

The cartographic history of Block 457 has been researched and presented in a prior study (Parsons Engineering Science Inc., 2000). This earlier study noted when a cemetery appeared on the landscape and when residential structures commanded the street fronts. In order to avoid replication of a recent and thorough study, only specific cartographic details, noting the identified historic period resources, will be presented.

Randel 1820: This manuscript farm map shows Second Avenue and the cross streets in place, thus depicting the Commissioners' grid overlaid on the landscape that is shifting from agricultural and residential use to commercial, cemetery, and residential use. At the northwest corner of the intersection of East 1st Street and Second Avenue is the "Methodist Cemetery" (Block 457) that faces both Second Avenue to the east and East 1st Street to the south. The cemetery occupies approximately one-half of the block that lies on the west side of Second Avenue and approximately one-half of the block that faces south onto East 1st Street. The boundaries of the cemetery appear to be outside of the APE.

Dripps 1852: *Block 457* lies between East 2nd and East 1st Streets, west of Second Avenue. The northern half of the block is fully developed and has a label, "Iron Fy" presumably an Iron Foundry. A property boundary line runs diagonally northwest/southeast through the block and reflects the property line that appears as early as on the 1766 Ratzer Plan. An irregular-shaped, green-shaded trapezoidal area lies just south of the diagonal property line, covering the southern half of Block 457. This and is labeled the "Methdst.

Cemetery" and covers Shaft Sites B and D, abutting East 1st Street to the south.

Perris 1857-1862: The APE is virtually unchanged from Dripps 1852, but one change that did occur was to the location of the cemetery on Block 457. However, *Block 457* now has a row of buildings fronting Second Avenue that replaces what had previously been labeled as the Methodist Cemetery. These lie immediately south of the "Iron Foundry" which is still present on the north half of the block. All of these structures lie within the proposed location of Shaft Sites B and D.

Bromley 1897: *Block 457* (Shaft Sites B and D) shows basements beneath the four-story brick buildings in the area that had contained the Methodist Cemetery.

Bromley 1926: The built environment is very similar to the 1916 Bromley (Plates 28, 24, 23, 19).
Block 457 has two, 12-inch pipes that run adjacent to it beneath the streetbed of Second Avenue

Bromley 1967: Other than episodes of the leveling of buildings and street widening, there seem to be no changes between 1955 and 1967 (Plates 28, 24, 23, 19). A paste-over on Block 457 shows vacant land at the northeast corner of the block as well as on the western approximately two-thirds of the southeast quadrant of the block, the area of the Methodist cemetery.

Bromley 1974: The southeast quadrant of Block 457, the site of the Methodist cemetery, continues to be vacant.

Sanborn 2001: *Block 457* currently has a street-level parking lot at the northeast and southeast corners of Block 457 over Lot 38, which encompasses most of Shaft Sites B and D. The southeast quadrant of the block is where the Methodist Cemetery was located during the first half of the 19th century. There appear to be no basements beneath buildings on Lots 29 through 33 on Block 457, although there are stores noted on Lots 29 and 32.

Street Elevation Table

Block 457 street elevations over time are presented in the Second Avenue and Chrystie Street roadbed section of this appendix.

Tax and Directory Tables

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 457 Second Ave. Between East 2nd Street and East 1st Street								

33 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	John Vanhorn, Boot Maker	Not for this Yr.	Not for this Yr.	McKinley & Smith
31 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	Mckinley & Smith, Ironfounds *Robert McKinley *J.V Smith	McKinley & Smith	McKinley & Smith	E.M. Bacon
29 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	Joseph Alder, Hotel	E.M. Bacon	E.M. Bacon	T. Weber
27 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	Vacant Lot	J.W Edwards	Kasyeh Fremmerer	J.W Edwards
25 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	Vacant Lot	J.W Edwards	J.W Edwards	J.W Edwards
23 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	Vacant Lot	J.W Edwards	J.W Edwards	J.W Edwards
21 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	Vacant Lot	J.W Edwards	J.W Edwards	Herman
19 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	Vacant Lot	J.W Edwards	J.W Edwards	Herman
17 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	Vacant Lot	Jermah Pui	J.W Edwards	J. Frier

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 457 East 1st Street between Bowery and Second Avenue								
12 East 1st Street	No Reels	No Reels	No Reels	Not for this Yr.	Elias Deforest	Elias Deforest	James Brother	C.P Way
14 East 1st Street	No Reels	No Reels	No Reels	Not for this Yr.	Vacant Lot	J.W Edwards	J.W Edwards	Not for this Yr.
16 East 1st Street	No Reels	No Reels	No Reels	Not for this Yr.	Vacant Lot	J.W Edwards	J.W Edwards	Not for this Yr.
18 East 1st Street	No Reels	No Reels	No Reels	Not for this Yr.	Vacant Lot	J.W Edwards	J.W Edwards	J. Tier
20 East 1st Street	No Reels	No Reels	No Reels	Not for this Yr.	Vacant Lot	J.W Edwards	J.W Edwards	J. Tier
22 East 1st Street	No Reels	No Reels	No Reels	Not for this Yr.	Not in Directory	J.W Edwards	Theodore Taylor	J. Tier
24 East 1st Street	No Reels	No Reels	No Reels	Not for this Yr.	Not in Directory	J.W Edwards	J. Tier	J. Tier
26 East 1st Street	No Reels	No Reels	No Reels	Not for this Yr.	Vacant Lot	Not for this Yr.	Not for this Yr.	Not for this Yr.

Precontact Sensitivity

Based on topographic maps and comparative site location data, the Block 457 APE has a moderate potential for precontact period resources. The closest stream was about six blocks north of this block. The area was probably fairly level, dry sandy land, which may not have been ideal for habitation but could have served for other uses.

Precontact sites in the New York area typically encounter archaeological resources within three to four feet of the then living surface. Since sidewalks tended to be created from roadbed areas, not from within blocks, and few buildings along this section of the APE have basements that might have extended beneath the sidewalks, there is a moderate potential for encountering precontact and contact period remains within four feet of the base of the fill layer, which is about ten feet deep about one block to the south (Boring 1.25.2, WPA 1937). However this APE has experienced extensive subsurface disturbance first when it served as a cemetery, and later when historic development covered most of it. A previously completed archaeological assessment of this APE undertaken by Parsons Engineering (2000) concluded that there was no sensitivity for precontact resources due to the extensive historical development. Therefore, this APE has no precontact sensitivity.

Historical Sensitivity

There are three types of historic resources represented by the study of Block 457: domestic/residential, industrial, and cemetery. The earlier, detailed study on this block identified specific resources (Parsons 2000); these were confirmed by the current research.

Historic dwellings were constructed within the APE sometime between 1852 and 1857-62 (Dripps 1852; Perris 1857-62). As discussed in Chapter 3, dwellings, along with their associated outbuildings and yards, have the potential to contain resources which may furnish information about past lifeways, urban/suburban residential settlement patterns, socioeconomic status, class distinctions, ethnicity, and consumer choice issues. Such archaeological resources could be preserved in privies, cisterns, or wells, which in the days before the construction of municipal services - namely sewers and a public water supply - were an inevitable part of daily life. Before these services were provided by the municipality, these shafts, in addition to their official function, were convenient repositories for refuse, providing a valuable time capsule of stratified deposits for the modern archaeologist.

Once both water and sewer service was provided by the municipal authorities - approximately ca.1852 in this APE neighborhood - privies, wells and cisterns, no longer required for their original purposes, were quickly filled with refuse and abandoned, providing valuable time capsules of stratified deposits for the modern archaeologist. These shaft features frequently provide a wealth of domestic remains, including animal bone, seeds, glass, metal, stone, ceramics, and sometimes leather, cloth, wood and even paper. By analyzing such artifacts, archaeologists can learn much about the diet, activities, and customs of the site's former inhabitants and attempt to combine this "consumer choice" data with what the documentary record tells us about their ethnicity, socioeconomic status, gender, environment, etc. After the 18th century and the period of dispersed homesteads and estates, this section of the APE was divided into blocks by the 1830s. Maps show some development, including the presence of churches. Therefore, there is the potential for wells and privies to date from the early 19th century. The deposition of cultural materials into these shaft features could date from the early 19th century when the features were constructed, until the time they were no longer used for refuse disposal in the late 19th to early 20th century.

North of East Houston Street, between East 6th Street and East Houston Street, the water table varied as much as 53.7', ranging in depth from 17.3' below grade to 71' below grade. Although there are no soil borings for Block 457, a boring taken four blocks north of it measured the water table at 17.3' below grade (Boring C7-3NX, DeLeuw, Cather & Co., 1973). The water table was reported at 71' below grade on the east side of Second Avenue just across the avenue from Block 457 (Boring 1.25.22, WPA 1935). In 1830, one block to the north, the water table was measured at 35' below grade, and burial vaults there in this area were still dry in 2000 (Trustees of the New York Marble Cemetery 1830, Brown 1999:vii; Kelley 2000). Thus, on Block 457 potential shaft features, such as wells, would probably extend at least 17.3' below grade, and may be as much as 71' below street level, the depth of the water table.

Although there was a sewer line in place along the northern half of Block 457 in 1852, along East 1st Street in 1890, and a water main on East 1st Street in 1909 (WPA 1937), wells, privies and cisterns were known to be continually used even when these public utilities were available. There may be at least a 30-year time period before public services were made available to the mid-19th century occupants of Block 457. While side yard features were nonexistent because of the build out of the lots, there is a likelihood of encountering backyard shaft features. The earlier detailed study of the individual historic lots on Block 457 (Parsons Engineering 2000) identified historic Lot 24 as particularly sensitive for domestic/residential remains. Lot 24, now subsumed in the consolidated Lot 1, was originally in the northwest corner of the block. By 1917, the 23'-wide Lot 24 structure had become the entrance building to the Kessler Theatre.

According to the directory and tax records, the Iron Foundry at 31 Second Avenue was in place by 1851. It was under the ownership of McKinley and Smith for approximately 20 years. This small shop pre-dates the municipal services, introduced in this area in 1852, since it was listed in an 1851 city directory and mapped as fully developed within the next year. Sewers were not immediately available with the first deliveries of water services. A steady supply of water was critical to foundry operations. Therefore, the foundry remains, which would be substantial but relatively shallow, could very possibly have been augmented by deep shaft deposits.

The Methodist Cemetery, which stood on Block 457, between East 1st and 2nd Streets, west of Second Avenue (Dripps 1852, Figure 4.5-3a and b), was the topic of an intensive documentary study completed by Parsons Engineering Science in August 2000. As part of the proposed Cooper Square Urban Renewal Area, Block 457 was studied for historic archaeological potential. The Methodist Cemetery, which once stood on the block, was documented on the "north side of 1st Street beginning 25' east of Extra Place [which bisects the block] through the corner of 2nd Avenue" (Parsons Engineering Science 2000:23). As cartographic research found for the Second Avenue Subway project, they also cited that no pre-1852 maps could be found depicting this cemetery (Tanner 1836; Colton 1836; Dripps 1852). However, deed research confirmed its presence from about 1837 through 1854 (Parsons Engineering Science 2000:27). The property containing historic Lots 32 through 43 was sold by the Corporation of the Methodist Episcopalian

Church in April 1855 to a private party (Ibid.), concluding that the cemetery was in existence from about 1837 through 1854. Despite the fact that documents were cited detailing the reinterment of bodies to Cypress Hills Cemetery between 1854 and 1856, the authors of the 2000 study concluded that there was still the possibility that burials, or remnants of such, were left behind (Ibid.:38). Specifically, Lots 36, 27, 28 and 42 were flagged as potentially sensitive for grave features and/or human remains (Ibid.:43).

With no soil borings available from directly within Block 457, it is not possible to determine the extent of any fill layer. Nonetheless, a soil boring (C7-9) taken on the East side of Second Avenue near East 3rd Street, within one-half block of the Methodist cemetery, has a reported fill layer of three feet (DeLeuw, Cather & Co., 1973). Furthermore, the solid marble vaults of the New York Marble Cemetery on the interior of Block 458 one block to the north were placed ten feet below ground (Trustees of the New York Marble Cemetery 1830; Brown 1999:vii). Thus, if there were a relatively shallow layer of fill below grade, or none at all, there is a possibility for encountering subsurface remains from the Methodist cemetery to a depth of at least 13' below existing grade within the block. It is unlikely that the cemetery actually extended out into the active streetbed.

Block 443

Shaft Site C lies on Block 443, covering all of Lot 1. This includes 24, 22, and 20 Second Avenue and 26, 28, 30, and 32 East 1st Street.

Cartographic History

The cartographic history of Block 443 is presented below.

Manatus 1639:	Block 443 area is depicted as fairly flat open space with decentralized, dispersed farms (bouweries).
Castello 1660:	APE not included on map. Castello Plan's northern border is just north of Wall Street, approximately 9000 feet south of the area.
Miller 1695:	Block 443 area is approximately 9000 feet north of northern boundary of Miller map.
Lyne 1730:	APE approximately 5000 feet north of northern boundary of Lyne-Bradford map.
Carwitham 1730:	Block 443 area is approximately 5000 feet north of northern boundary of Carwitham map.
Buchnerd1735:	The APE is north of northern boundary of these plans.
Grim 1743:	Block 443 is just north of the northern boundary of the Grim Plan.
Maerschalck 1754:	APE is approximately 1500 feet north of the northern boundary of this plan.
Montresor 1766:	APE appears to be a patch-work quilt of bounded open fields, one with an orchard. Early title history notes that Block 443 is included in the Philip Minthorne farm as early as 1711 (City Register).
Ratzer 1766/67:	Early title history indicates that Block 443 is part of the parcel within the Philip Minthorne farm that was passed to Nicholas and Margaret Romaine in 1765 (City Register). The Minthorne farm

was divided up (1765-1818), and the 18th century and 19th century property lines appear on Sanborn 2001. These diagonal lines (northwest to southeast) help create trapezoidal-shaped properties. One of the diagonal lines forms the northern boundary of Lot 1, Block 443, the location of the proposed site for Shaft Site C (Sanborn 2001).

What becomes Block 443 lies 400-500 feet east of "Bowry Lane" and appears as open fields and orchards at the rear of a structure, presumed to be a residence, that lies close to the road on the east side of Bowery Lane.

British Headquarters 1782: Block 443 area continues to be depicted as residential and agricultural. Landscape is fairly flat, with hills rising to the east and west. Lane appears along the diagonal division line that forms the northern boundary of what becomes Lot 1. A stream runs roughly north and south, probably just east of Lot 1 (Sanborn 2001). Several structures, represented by red squares, east of the east side of Bowery Lane, appear to be close to, but not within Lot 1 on Block 443, 24-16 Second Avenue and 28-32 East 1st Street.

McComb 1789: Block 443 area appears as undeveloped land with dotted lines outlining only the trapezoidal-shaped properties created by the diagonal property lines.

Taylor-Roberts 1797: Block 443 area appears as flat, tree dotted, open land. The north/south street grid terminates just north of "North Street" (East Houston Street) and just south of the trapezoidal-shaped properties, including what becomes Lot 1 on Block 443 (Sanborn 2001).

Bridges 1803/1807: What becomes Lot 1 on Block 443 continues to be flat, open space dotted with trees on the Bridges 1803/1807 map. The configuration as well as the names of the streets (there are no avenues listed) north of North Street differ from other maps and do not agree with the mapping Randel did in 1820 in conjunction with his manuscript farm maps. Randel's avenue and street placements agree with later 19th and 20th century locations.

Randel 1820: Both cross streets, East 2nd and East 1st Streets, and both avenues, Second and First Avenues, are in place. There are two buildings and open space on what becomes Lot 1. On the eastern boundary of what becomes Block 443, Lot 1, Randel depicts what appears to be a 25-foot wide residence with attached outbuilding that runs the full depth of the property, abutting the northern boundary line of what becomes Lot 1. The structures lie on the north side of East 1st Street. Except for the structures, there is only open space on this irregular-rectangular property on the southwest corner of Block 443. Randel penned the name "Peter Crawbuck" in the open space.

Colton 1836: What becomes Block 443 is bounded by Second and First Avenues and East 2nd and East 1st Streets. Block 443 is shaded, indicating development.

Tanner 1836: Block 443 is shaded, indicating development.

Mitchell 1846: Block 443 appears unchanged from Colton 1836 and Tanner 1836.

Dripps 1852: What becomes Lot 1 on Block 443 is fully developed, indicated by shading. From north to south and west to east, the following structures stood within the APE on what became Lot 1. There are either ten or seven structures on Lot 1.

24 through 20 Second Avenue: Three structures lie on the east side of Second Avenue. There appears to be a structure at the rear of each of the two northernmost structures on Second Avenue, but they could be extensions of buildings on East 1st Street. Open space that can be reached by an alleyway on East 1st Street lies between the front and rear structures on the Second Avenue side.

26 through 32 East 1st Street: Four structures lie on the north side of East 1st Street; the easternmost one (that may actually be a building with a rear extension) at 32 East 1st Street, runs the full depth from the northern lot line to East 1st Street. It is uncertain as to whether the two structures noted at the rear of the Second Avenue side might not be, instead, attached outbuildings for the buildings at 30 and 32 East 1st Street. There are two alleyways on East 1st Street. The western one, immediately west of 30 East 1st Street, leads to the structures at the rear of the Second Avenue lots (that may actually be expansions at the rear of 30 East 1st Street). The eastern alley, just east of 32 East 1st Street, lies along the eastern boundary of what becomes Lot 1 and opens up to vacant space on the northern half of the alleyway.

Perris 1853: There are probably nine structures on what becomes Lot 1. Both configuration and numbers of the buildings vary between Dripps 1852 and Perris 1853.

24 through 20 Second Avenue: There are three brick structures on what becomes 24-20 Second Avenue, at the rear of which are open areas. Only 24 Second Avenue's footprint remains the same as shown in 1852. The corner building appears to be fronting on East 1st Street, rather than on Second Avenue, thus there are five frame structures between 26 and 32 East 1st Street.

26 through 32 East 1st Street: The footprints of the three frame buildings at 26 and 28 East 1st Street cover the land. There appear to be no open areas, either on the sides or to the rear of the buildings. The frame buildings at 30 and 32 East 1st Street appear to have rear extensions that abut the northern boundary of Lot 1. The northernmost extension onto the frame building at 30 East 1st Street is brick. There continue to be two alleyways, one just west of 30 East 1st Street; the other, just east of 32 East 1st Street, and they open up to vacant areas adjacent to sides of the buildings at 30 and 32 East 1st Street.

Perris 1857-1862: On what becomes Lot 1 there appear to be 13 buildings, four of which have rear-attached structures.

24 through 20 Second Avenue: While there remain four building lots between 24 and 20 Second Avenue, there appear to be further

changes to both the numbers and configurations of the structures at those addresses. 24 Second Avenue appears to be open space. 22 Second Avenue has removed a brick structure along the southern boundary line, creating a narrow passage way to three brick structures at the rear of the lot. The building at 20 Second Avenue has a frame extension to the rear of the brick building, thus reducing the open area at the rear of the lot. There are four brick structures abutting the rear of the buildings on Second Avenue, so that the open areas at the rear are now covered with structures. The variability between the Dripps 1852 and Perris 1853 could be seen as differences between map makers. On the other hand, the two versions of the Perris maps suggest that there is some redevelopment along the Second Avenue side between 1853 and 1862.

26 through 32 East 1st Street: To a lesser extent, the five frame structures between 26 and 32 East 1st Street exhibit changes in their footprints, particularly the building between 28 and 30 East 1st Street. There appears to continue to be an open area to the rear of 28 East 1st Street. There are changes to the footprints of the rear extensions of the buildings at 30 and 32 East 1st Street, yet there remains some open space to the west of 30 and to the east of 32 East 1st Street. The alleyways west of 30 East 1st Street and east of 32 East 1st Street may be closed off about 25 feet north of East 1st Street.

Viele 1864/1865: The APE for Shaft Site C appears as an open meadow. The nearest stream is approximately seven blocks from the APE.

Dripps 1867: On what becomes Lot 1 there appear to be seven buildings, all of which are denoted by the same shading, making understanding construction material difficult.

24 through 20 Second Avenue: The footprint of the building at 24 Second Avenue covers the entire lot. The building on the northern half of 22 to 20 Second Avenue fills the lot. The rear yard on the southern half of 22 to 20 Second Avenue is open with a structure on Second Avenue that may be part of the building at 22 Second Avenue.

26 through 32 East 1st Street: Three structures occupy 26 through 28 East 1st Street. The corner building's footprint covers the lot. What is presumed to be 28 East 1st Street has two abutting structures on the street. The western building fills the lot, while the eastern one has a shallow open rear yard. 30 and 32 East 1st Street remain similar to Perris 1853.

Robinson 1885: There are two buildings on what becomes Lot 1.

24 through 20 Second Avenue: There is one iron building labeled "FOURTH DISTRICT COURT" occupying the southwest corner of Block 443 replacing two structures and small rear yard that stood there on Second Avenue in 1867. The iron building extends

onto the north side of East 1st Street. There is no open area on any side of the building.

26 through 32 East 1st Street: 26 through 30 East 1st Street are subsumed into the iron district court building at 24 through 20 Second Avenue. There is a brick building at 32 East 1st Street with an open rear yard. There are no alleyways.

Bromley 1897: There are two buildings on what becomes Lot 1.

24 through 20 Second Avenue: The one iron and brick building that faces both Second Avenue and East 1st Street is labeled as the "FLORENCE BUILDING," and has four stories and a basement. There is no open space surrounding the building.

26 through 32 East 1st Street: 26 through 30 East 1st Street are part of the Florence Building. The brick building at 32 East 1st Street has 5 stories and no basement. There is a brick extension at the western rear of the brick building, leaving a small open area in the northeast corner of the lot.

Bromley 1911: Except for the addition of two stories as well as stores to the Florence Building at 24 through 20 Second Avenue, what becomes Lot 1 is unchanged from 1897. There is no basement label for the six-story Florence Building.

Bromley 1916: There continues to be two buildings with some slight changes on what becomes Lot 1.

24 through 20 Second Avenue: The six-story Florence Building has a label that indicates stores, but no basement. "4th DIST. COURT" lies on the East 1st Street side of the Florence Building.

32 East 1st Street: The five-story brick building at 32 East 1st Street has reconfigured its footprint, creating an irregular rectangular open area at the rear of the lot. It is also labeled as having a store.

Bromley 1926: There continues to be two buildings with a change in function for the building on Second Avenue on what becomes Lot 1.

24 through 20 Second Avenue: The six-story, iron-clad brick building with a store is labeled "TURKISH BATHS" stands on the southwest corner of Block 443.

32 East 1st Street: Unchanged from 1916.

Bromley 1932: The APE is unchanged from 1926.

Bromley 1955: The APE is unchanged from 1926. The six-story all-brick Turkish Baths at 24 through 20 Second Avenue continues to be situated on the southwest corner of the block and is named the "2ND AVE. BATHS". There is no label indicating a basement beneath 24 through 20 Second Avenue.

Bromley 1967: There is one building on Lot 1.

24 through 20 Second Avenue and 32 East 1st Street: A paste-over indicates that the 2nd Avenue Baths on Second Avenue and brick building on East 1st Street were demolished some time between 1955 and 1967. In their place is a one-story brick structure set back about 75 feet from Second Avenue. It is labeled "GAS STA.".

Bromley 1974: The APE is unchanged from 1967.

Sanborn 1984/1985: The APE is unchanged from 1967, except that there is a one-story building on East 1st Street to the rear of the gas station building against the eastern boundary of Lot 1.

Sanborn 1990/1991: The APE is unchanged from 1984/1985.

Sanborn 2001: There are two buildings and a canopy on piers over the gas pump area on Lot 1. The only change is the canopy.

24 through 20 Second Avenue and 32 East 1st Street: The gas pump area lies about 20 feet east of Second Avenue. An Exxon gas station's one-story building sits approximately 60 feet east of Second Avenue on Block 443's Lot 1. There is a one-story building on East 1st Street to the rear of the gas station building.

Street Elevation Table

Block 443 street elevations over time are presented in the Second Avenue and Chrystie Street roadbed section of this appendix.

Tax and Directory Table

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 443: 2nd Ave. between East 2nd St. and East 1st St.								
24 Second Ave	No Reels	No Reels	No Reels	No street numbers [copies made]	Refused	Frederick Johnson	Jeremiah Tier	J. Tier
(22)	No Reels	No Reels	No Reels	No street numbers [copies made]	Charles Myer, *barber*	Jeremiah Tier	Not for this yr.	J. Tier
20 Second Ave.	No Reels	No Reels	No Reels	No street numbers [copies made]	Joe Hayman, Bootmaker	Jeremiah Tier	Jeremiah Tier	J. Tier
(18)	No Reels	No Reels	No Reels	No street numbers [copies made]	20 Charles Bhode, *grocer*	Jeremiah Tier	Jeremiah Tier	Jeremiah Tier
(16)	No Reels	No Reels	No Reels	No street numbers [copies made]	John Miller	Not for this yr.	Not for this yr.	Not for this yr.
Block 443: East 1st Street between Second Ave. and First Ave.								

(28)	No Reels	No Reels	No Reels	Not for this yr.	Charles Bohde,*grocer*	Not for this yr.	Not for this yr.	Not for this yr.
30 East 1st Street	No Reels	No Reels	No Reels	Jeremiah Tier	George Jarvis, *sexton*	Jeremiah Tier	Jeremiah Tier	Jeremiah Tier
32 East 1st Street	No Reels	No Reels	No Reels	Est. of J. K or H?	T.W.Shull Charles Dusenberry	Mrs. Francis Hill	Jeremiah Tier	Jeremiah Tier

Note: No Reels for 17th Ward prior to 1837

Precontact Sensitivity

Although Block 443 is in an area which may have once been sensitive for precontact period resources, the extensive historical development probably disturbed the original precontact living surface. A series of buildings with basements, and then the installation of buried fuel tanks for the gas station probably disturbed any precontact sensitive levels.

Historical Sensitivity

While this block was shaded by 1836, and by 1852 there were numerous buildings within the APE, over the next century, the lot experienced numerous development episodes, culminating in the construction of a gas station.

Map research suggests that Shaft Site C was first developed in the 19th century between 1820 and 1836. By 1852 at least six structures stood on the site, but by 1885 it had been redeveloped with the construction of the Fourth District Court. This building was later replaced by a structure housing Turkish Baths. This type of facility would have maintained a series of small rooms, each with a separate function, e.g. steam shower, hot water shower or cool water shower. The Baths were in turn replaced by a gas station. The installation of gasoline fuel tanks most likely affected earlier resources, particularly those that were not deeply buried, e.g., the Baths piping system.

A comparison of cartographic sources suggests that what is now consolidated Lot 1 within the APE may have retained historic resource integrity where two former alleys stood at East 1st Street, and where there were vacant pens at the rear of narrow alleys. Beneath the 20th century one-story gas station building and the one-story building on the eastern side of 30 and 32 East 1st Street there may be intact evidence from the earlier alleyways with their open areas to the north as well as from potential shaft features that may lie beneath the passageways. Beneath the mid-19th century structures there may be evidence from the Peter Crawbuck complex (a presumed residence and either barn or factory) drawn on the Randel 1820 farm map (Figure 4.5-2). The tax evaluation data and the directory from 1851 did not provide more data on the earliest known occupant, Crawbuck, or the subsequent owners. Perhaps Jeremiah Tier was a landlord of considerable holdings on this block in the mid-19th century, including 30 and 32 East 1st Street.

The lack of soil borings taken within the lot makes it impossible to assess subsurface conditions, so it is assumed there is still the possibility that early, deeply buried 19th century homelot features, although probably truncated, are still present. Residential wells are a well-documented resource category for understanding a site's former inhabitants by combining "consumer choice" data with what the documentary record tells us about their ethnicity, socioeconomic status, gender, environment, etc. The APE of Block 443 at 30 and 32 East 1st Street is conservatively assumed to be sensitive for historic period resources relating to its 19th century occupation.

Block 420, Sara Delano Roosevelt Park

Several different alignments are under consideration for the APE from East Houston Street south to Delancey Street. Thus, the APE is conservatively defined to include the area on the south side of East Houston Street from the west side of Chrystie Street to the east side of Forsyth Street, from building line to building line. The APE continues south down to the north side of Delancey Street, encompassing both the Chrystie and Forsyth Street roadbeds and the Sara Delano Roosevelt Park that lies between these two streets. What is now the park north of Delancey Street was formerly three city blocks bisected by Stanton and Rivington Streets, which were demapped and the roadbed land included in the park.

Block 420 on the Sanborn 2001 map is the consolidation of three city blocks and two cross streets. The 2001 cross-street boundaries for Block 420 are from the south side of East Houston Street on the north to the north side of Delancey Street on the south, including the demapped Stanton and Rivington Streets. In 2001 the western boundary of Block 420 is Chrystie Street, and the eastern boundary is Forsyth Street.

Before 1934, when the Sara Delano Roosevelt Park replaced three blocks of tenements, the northernmost block (Block 422 West) was bounded by East Houston Street on the north, Chrystie Street on the west, Forsyth Street on the east, and Stanton Street on the south. The middle block (Block 421) was bounded by Stanton Street on the north, Chrystie Street on the west, Forsyth Street on the east, and Rivington Street on the south. The southernmost block (Block 420) was bounded by Rivington Street on the north, Chrystie Street on the west, Forsyth Street on the east, and Delancey Street on the south.

Cartographic History

For this cartographic history of the northernmost three blocks of the Sara Delano Roosevelt Park, what has become Block 420 is divided into Block 420 North, 420 Middle, and 420 South. Each block is presented separately.

Block 420 North

The cartographic history for Block 420 North is considered in four parts.

- North side: East Houston Street: from Chrystie Street, east side, on the west to Forsyth Street, west side, along East Houston Street, south side. The north side of Block 420 North includes eight lots: Lots 10-17, at the street addresses 119-133 East Houston Street.

- West side: Chrystie Street: Chrystie Street, east side, between East Houston Street on the north and Stanton Street on the south. The west side of Block 420 North includes nine lots: Lots 9-1, at the street addresses 230-214 Chrystie Street.
- East side: Forsyth Street: Forsyth Street, west side, between East Houston Street on the north and Stanton Street on the south. The east side of Block 420 North includes 11 lots: 18-28, at the street addresses 219-197 Forsyth Street.
- South side: Chrystie Street, east side, on the west to Forsyth Street, west side, on the east along Stanton Street, north side. The south side of Block 420 North includes seven lots: Lots 37-30, at 28-40 Stanton Street.

Manatus 1639:	Block 420 North area is depicted as fairly flat open space with decentralized, dispersed farms (bouweries).
Castello 1660:	Area not included on map. Castello Plan's northern border is just north of Wall Street, approximately 9000 feet south of the area.
Miller 1695:	Block 420 North area is approximately 9000 feet north of northern boundary of Miller map.
Lyne-Bradford 1730:	Area approximately 5000 feet north of northern boundary of Lyne-Bradford map.
Carwitham 1730:	Block 420 North area is approximately 5000 feet north of northern boundary of map.
Mrs. Buchnerd's Plan 1735:	Area is approximately 5000 feet north of northern boundary of these plans.
Grim 1743:	Block 420 North is just north of the northern boundary of the Grim Plan.
Maerschalck 1754:	Area is approximately 1500 feet north of the northern boundary of this plan.
Montresor 1766:	Area appears to be a patch-work quilt of bounded open fields, one with an orchard.
Ratzer 1766/67:	The southernmost northwest/southeast diagonal line north of the Depeyster orchard depicted on the Ratzer 1766 shows up on the 2001 Sanborn as running through the project block just north of Stanton Street. Area is just north and east of the "M. Depeyster" estate garden and residence complex that fronts on the east side of Bowery Lane. APE still lies 400-500 feet east of "Bowry Lane" and appears as open fields and orchards for the three structures, presumed to be residences, that lie close to the road on the east side of Bowery Lane. 1st Street (Chrystie Street) is not depicted. Based on Augustyn and Cohen, area is shown in greater detail on Ratzen(r) Plan than on the Ratzer Map (1766-1767).
British Headquarters 1782:	Block 420 North area continues to be depicted as residential and agricultural. Landscape is fairly flat, with hills rising to the east and west. The several red squares, indicating structures, east of the east side of Bowry Lane, appear to be close to, but not within Block 420 North.

McComb 1789: Block 420 North area appears as undeveloped land through which diagonal property lines are drawn. The bent diagonal line on the 1789 map probably corresponds to the diagonal line on the Sanborn 2001 that lies south of the East Houston Street lots, but within the project block. Early title history in 1787 indicates that this northernmost section of Block 420 is part of the forfeited estates for which Pierre Van Cortlandt is the grantee (City Register). The following year Pierre Van Cortlandt appears as grantor of the East Houston Street lots. Abraham Beekman is the grantee (Ibid.).

Taylor-Roberts 1797: Block 420 North area appears as flat, tree dotted, open land. The north/south street grid terminates just north of "North Street" (East Houston Street). Chrystie Street is in place as 1st Street; Forsyth Street, as 2nd Street. Stanton Street is in place.

Bridges 1803/1807: What become the East Houston Street lots on Block 420 North continues to be flat, open space, but without trees, on the Bridges 1803/1807 map. Early title history indicates that the Trustees of the First Presbyterian Church in the City of New York were the grantee for these lots in 1807 (City Register).

Colton 1836: What becomes Block 420 North is bounded by East Houston Street on the north; Chrystie Street on the west; Forsyth Street on the east; and Stanton Street on the south.

On East Houston Street
Lots appear as open land with symbols that probably indicate gravestones.

On Chrystie Street
Lots on northern half appear as open land with symbols that probably indicate gravestones.
Lots on southern half are shaded, indicating development.

On Forsyth Street
Lots on northern half appear as open land with symbols that probably indicate gravestones.
Lots on southern half are shaded, indicating development.

On Stanton Street
Lots are shaded, indicating development. Dark rectangle, presumably a church with open space around it, near the southeast corner of the block.

Tanner 1836: On East Houston Street
Lots are shaded, indicating development. A structure, labeled "Union" Baptist [Church], sits on the northeast corner of the block.

On Chrystie, Forsyth, and Stanton Streets
Lots are shaded, indicating development.

Mitchell 1846: Unchanged from Tanner 1836.

Dripps 1852: On East Houston Street

119-125 East Houston Street is part of the "*Cemetery*" that lies on the northern three-quarters of the block. [1851 reverse directory lists these lots as "(vacant lots)".]
129-131 East Houston Street is Labeled "2nd Assot. Pres. [Church] and set back from East Houston Street sits a church building. [1851 reverse directory lists "Associate Presbyt'n church" at this address.]

On Chrystie Street
230-214 Chrystie Street is part of the "*Cemetery*" that lies on the northern three-quarters of the block.

On Forsyth Street
219-197 Forsyth Street is part of the "*Cemetery*" that lies on the northern three-quarters of the block.

On Stanton Street
Nine structures on seven lots.
28 Stanton Street has one structure along the front lot line; another smaller one at the rear lot line, with an open area in between.
30, 32, and 34 Stanton Street has one structure on each lot with an open area in the rear.
36 Stanton Street is the address for the "*Bapt. Ch.*" that lies against the rear lot line and has a narrow band of open space along both the western and eastern sides. There is a narrow open space along the street face. This is a double lot.
38 Stanton Street has a L-shaped structure at the front of the lot with another smaller structure at the rear lot line. There is open space in between the two structures.
40 Stanton Street has a J-shaped structure at the front of the lot with open space at the rear of the lot.

Perris 1853:

On East Houston Street
Four structures on seven lots.
119-125 East Houston Street is part of the "*First Presbyterian Church Cemetery*".
129 East Houston Street has a double-lot structure with party wall and 10-foot deep open backyard.
131 East Houston Street has a building with 10-foot deep open backyard with small structure near southeast corner of lot.
133 East Houston Street's building fills the lot with no open backyard.

On Chrystie Street
No structures.
230-214 Chrystie Street is part of the "*First Presbyterian Church Cemetery*".

On Forsyth Street
One structure on five of the eleven lots on Forsyth Street.

Transfers of Forsyth Street lots from the various churches' trustees to individuals begin in 1852 (City Register). Some of the northern lots (Lots 18, 20, and 22) are transferred first; the others follow chronologically from north to south (Ibid.). By 1866 the grantors of the Forsyth Street lots are all individuals (Ibid.).
219 Forsyth Street's building's footprint covers the entire lot.
217-215 Forsyth Street's building on double lot has a 10-foot deep open backyard.
213 Forsyth Street's building's footprint covers the entire lot.
211-201 Forsyth Street is part of "*Presbyterian Cemeteries*".
199 Forsyth Street's building's footprint covers rear 40 percent of the lot with the remaining area open in front of the structure.
197 Forsyth Street's building's footprint covers rear 40 percent of the lot with the remaining area open in front of the structure.

On Stanton Street
Nine structures on seven lots.
28 Stanton Street is unchanged from 1852.
30, 32, and 34 Stanton Street are unchanged from 1852.
36 Stanton Street's "*Bapt. Ch.*" lies near the rear lot line and has a narrow band of open space along both the western and eastern sides. There is a narrow open space along the street face.
38 Stanton Street is unchanged from 1852.
40 Stanton Street is unchanged from 1852.

Perris 1857-1862:

On East Houston Street
Four structures on seven lots.
119-125 East Houston Street is part of "*Presbyterian Cemeteries*".
129 East Houston has a building similar to 1853 with 10-foot wide rear addition that connects to "Cracker Bakery" at 219 Forsyth Street. Open backyard for eastern section of lot.
131 East Houston Street is unchanged from 1853.
133 East Houston Street has a building with a 10-foot deep open backyard.

On Chrystie Street
230-214 Chrystie Street is part of "*Presbyterian Cemeteries*".

On Forsyth Street
Six of the 11 lots developed.
219 Forsyth Street is labeled "Cracker Bakery". The building covers the entire lot and is connected to an extension at the rear of the building at 129 East Houston Street.
217 Forsyth Street's single building covers single lot with 10-foot deep open backyard.
215 Forsyth Street's single building covers single lot with 10-foot deep open backyard.
213 Forsyth Street's building's footprint is reduced, creating a 15-foot wide open space on the street front. This may allow access to a structure that lies 70 west of Forsyth Street. The footprints of the

two additions to the rear of the northern 10 feet of the northern building cover the lot.
211-201 Forsyth Street is part of "*Presbyterian Cemeteries*".
199 Forsyth Street's building's footprint covers rear 40 percent of the lot with the remaining area open in front of the structure.
197 Forsyth Street's building's footprint covers rear 40 percent of the lot with the remaining area open in front of the structure.

On Stanton Street
Nine structures on seven lots.
28 Stanton Street is unchanged from 1852.
30, 32, and 34 Stanton Street are unchanged from 1852.
36 Stanton Street is unchanged from 1852.
38 Stanton Street is unchanged from 1852.
40 Stanton Street is unchanged from 1852.

Viele 1864/1865: *Block 420 North* appears as an open meadow. The nearest stream is to the northeast and approximately 2000 feet from the APE.

Dripps 1867: On East Houston Street
Nine structures on the seven East Houston Street lots. In 1866 the 123-127 East Houston Street lots are part of a transfer of property from the Corporation of the Presbyterian Church in Rutgers Street to William S. Wright (City Register).
119 East Houston Street, northwest corner lot, has three structures that fill the lot and front on the east side of Chrystie Street. There are neither alleyways between nor basements beneath any of the buildings on the East Houston Street side of Block 420 North.
119-125 East Houston Street buildings fill the lots.
129 East Houston Street has a structure and an approximately 20-foot deep open backyard.
131 East Houston Street has a building and an approximately 10-foot deep open backyard.
133 East Houston Street has a building and an approximately 10-foot deep open backyard.

On Chrystie Street
Ten structures on ten Chrystie Street lots. In 1866 the 230-214 Chrystie Street lots are part of a transfer of property from the Corporation of the Presbyterian Church in Rutgers Street to William S. Wright (City Register).
230-214 Chrystie Street's ten structures cover the front two-thirds of their lots and have an open backyards. There are no alleyways. The Dripps 1867 may show a proposed ten-lot development. From 1885 on there are nine lots on the Chrystie Street side of Block 420 North.

On Forsyth Street
One building on each of the 11 lots. Shading denotes development on each of Forsyth Street lots. In 1866 the last of the church-owned lots are transferred to individuals (City Register). There are no

alleyways. Dripps 1867 may represent a proposed development plan.
219 Forsyth Street's building's footprint covers the approximately 60 percent of the front part of the lot with open space in backyard.
217 Forsyth Street's building's footprint covers the approximately 40 percent of the front part of the lot with open space in the back yard. There is an attached addition at the rear on the northern part of the structure.
215 Forsyth Street's building's footprint covers the approximately 40 percent of the front part of the lot with open space in the back yard.
213 Forsyth Street's building's footprint covers the approximately 40 percent of the front part of the lot with open space in the back yard.
211-201 Forsyth Street has identical structures at the street face with open areas that occupy about half of the backyards.
199-197 Forsyth Street appears the same as Perris 1857-1862 except that it is drawn as a double lot with two structures side-by-side at the rear of the lot. Building footprints cover the rear 40 percent of the lot with the remaining area open in front of the structures.

On Stanton Street
Nine structures on seven lots.
28 Stanton Street is unchanged from 1852.
30, 32, and 34 Stanton Street are unchanged from 1852.
36 Stanton Street is unchanged from 1853.
38 Stanton Street is unchanged from 1852.
40 Stanton Street is unchanged from 1852.

Robinson 1885:

On East Houston Street
Eight brick structures on the eight East Houston Street lots.
119 East Houston Street's brick building fills lot.
121 East Houston Street's brick building has 20-foot deep open backyard.
123-127 East Houston Street brick buildings have 20-foot deep open backyards.
129 East Houston Street's brick building fills lot.
131-133 East Houston Street brick buildings have 10-foot deep open backyards.

On Chrystie Street
Nine brick structures on the nine Chrystie Street lots.
230-214 Chrystie Street has a brick building with a 20-foot deep open backyard on each lot. Lots are labeled A-I.

On Forsyth Street
Ten brick structures and one wood stable on the 11 Forsyth Street lots.

219 Forsyth Street has a brick building footprint that covers entire lot.
217 Forsyth Street has a brick building footprint that covers the front part of the lot with the remaining area a 20-foot deep open backyard.
215 Forsyth Street has a brick building footprint that covers the front part of the lot with the remaining area a 20-foot deep open backyard.
213 Forsyth Street has a brick building footprint that covers entire lot.
209 Forsyth Street has a wood stable that fills the lot and connects with brick and wood complex "*Geo. & Valentine Fischer BRASS FOUNDRY AND IRON CORNICE WORKS*" in the interior of the block. The complex is approximately 412 feet long, north to south, and 112 feet wide, running the length of and at the rear of 219-199 Forsyth Street and also along a small portion of the rear lot line of 197 Forsyth Street.
207-199 Forsyth Street has seemingly identical brick buildings at the front of these five lots, each with a 15-foot deep open space in the backyard. Lots at 203 and 201 Forsyth Street may be marginally wider than the other three lots.
197 Forsyth Street has a brick building at the street face, with an L-shaped open backyard that varies between being 10- and 20-feet deep.

On Stanton Street
Nine structures on seven lots.
28 Stanton Street has a brick building whose footprint fills the lot..
30, 32, and 34 Stanton Street have brick buildings that are unchanged from 1852.
36 Stanton Street's footprint of the brick building is labeled "*U.S. ILLUMINATING CO.*" and covers the double lot.
38 Stanton Street has a brick rectangular building with open area in rear.
40 Stanton Street has a brick rectangular building with open area in rear.

Bromley 1897:

On East Houston Street
Eight brick structures on the eight East Houston Street lots.
119 East Houston Street's six-story brick building fills lot.
121 East Houston Street's six-story brick building has 20-foot deep open backyard.
123-127 East Houston Street six-story brick buildings have 20-foot deep open backyards.
129 East Houston Street's four-story brick building fills lot.
131 East Houston Street's four-story brick building has 10-foot deep open backyard.
133 East Houston Street's four-story building has 10-foot deep open backyard.

On Chrystie Street
Nine brick structures on the nine Chrystie Street lots.
230-214 Chrystie Street has a six-story brick building with a 20-foot deep open backyard on each lot. The exception is the extension to the rear of and attached to the northern half of the building on Lot 7 at 226 Chrystie Street, thus halving the open area on that lot.

On Forsyth Street
Ten brick structures and one wood and brick complex on the 11 Forsyth Street lots.
219 Forsyth Street has a four-story brick building whose footprint covers entire lot.
217 Forsyth Street has a four-story brick building with basement that covers the front part of the lot with the remaining area a 20-foot deep open backyard.
215 Forsyth Street's four-story brick building has a footprint that covers the front part of the lot with the remaining area a 20-foot deep open backyard.
213 Forsyth Street has three-story brick building whose footprint covers entire lot.
211-209 Forsyth Street has a wood structure that fills the narrow lot and connects with a brick (three- and one-story) and wood complex in the interior of the block. The complex is approximately 412 feet long, north to south, and 112 feet wide, running the length of and at the rear of 219-199 Forsyth Street.
207-199 Forsyth Street has seemingly identical five-story brick buildings with basements at the front of these five lots, each with a 15-foot deep open space in the backyard. The variation is only in the widths of the lots.
197 Forsyth Street has a five-story brick building with basement at the street face, with less than an 18-foot deep open backyard.

On Stanton Street
Eight structures on eight lots.
28 Stanton Street's footprint of 4½ story brick building with basement fills the lot.
30 and 32 Stanton Street has a four-story brick building with basement and 60-foot deep open rear yard on each lot.
34 Stanton Street has a four-story brick building with basement and 20-foot deep open backyard.
36 and 36½ Stanton Street are separate lots, rather than a double lot. One, six-story dumb bell brick tenement with no basement and a 15-foot deep open space are on each lot.
38 Stanton Street has a five-story brick rectangular building with basement and 20-foot deep open area in rear.
40 Stanton Street has a five-story brick rectangular building with no basement and a 20-foot open area in rear.

Bromley 1911:

On East Houston Street
Eight brick structures on the eight East Houston Street lots. Unchanged from 1897.

On Chrystie Street
Unchanged from 1897.

On Forsyth Street
Ten buildings on 10 Forsyth Street lots. The street numbering changes on the northern part of the block. Gone is the brick and wood foundry complex. Wider, deeper, and taller buildings are located on the former industrial site.
219 Forsyth Street's footprint unchanged from 1897. Label for store added.
213 Forsyth Street (formerly 217 Forsyth Street) has a wider and deeper six-story brick building with basement covers the front part of the lot with the remaining area a 10-foot deep open backyard. The six-story building with basement overlies the foundry site
211 Forsyth Street has a wider and deeper six-story brick building with a basement that covers the front part of the lot with the remaining area covered by a 10-foot deep open backyard. The six-story building with basement overlies the foundry site.
209 Forsyth Street has a wider and deeper seven-story brick tenement, with no basement, that wraps around behind 207 and 205 Forsyth Street. There is a narrow 10-foot wide air way/passageway at south end of building. A 10-foot open strip is at rear lot line. Building with no basement overlies the foundry site.
207-201 Forsyth Street is unchanged from Bromley 1897.
199 Forsyth Street's footprint is nearly the mirror image of 209 Forsyth Avenue and wraps around 203-201 Forsyth Street. Tenement has six stories with a basement and a narrow air way/passageway at north and south end of building. A 10-foot open strip is at the rear lot line. The tenement with basement overlies the foundry site.
197 Forsyth Street's footprint is virtually unchanged from 1897. The remaining area is open in front of the structures.

On Stanton Street
Seven structures on seven lots. Lot widths have changed for the two lots on the southwest corner of the block. All buildings have stores.
28 Stanton Street has a seven-story brick building with store and no basement and 10-foot deep open space at rear lot line.
32 Stanton Street has a seven-story brick building with store and no basement and 20-foot deep open rear yard.
34 Stanton Street is unchanged from 1897.

36 and 36½ Stanton Street is probably unchanged from 1897. A 1911 map shows rectangular buildings with no airshafts. Both 1897 and 1916 maps show dumb-bell airshafts.
38 Stanton Street is unchanged from 1897.
40 Stanton Street is unchanged from 1897 except for the elimination of the one-story wood attached structure on the Forsyth Street side of the block.

Bromley 1916:

On East Houston Street
Eight brick structures on the eight East Houston Street lots. Only change from 1897 and 1911 is the addition of a label denoting stores for each of the buildings.

On Chrystie Street
Unchanged from 1897. The extension attached to the rear of *226 Chrystie Street* has a one-story extension attached to the rear of the building.

On Forsyth Street
Ten buildings on 10 Forsyth Street lots.
219 Forsyth Street's footprint unchanged from 1897.
213 Forsyth Street has a six-story dumb-bell brick tenement with basement and store. A 15-foot deep open space at rear lot line.
211 Forsyth Street has a six-story dumb-bell brick tenement with basement and store. A 15-foot deep open space is at the rear lot line.
209 Forsyth Street has a seven-story brick tenement with no basement that wraps around behind 207 and 205 Forsyth Street. Store is at street level. Four airshafts are added: one each on the northern and southern sides of the tenement; two others in the wrap around to the rear of 207-205 Forsyth Street. Narrow 10-foot wide air way/passageway is at southern end of tenement. There is a 10-foot deep open strip at rear lot line.
207-201 Forsyth Street is unchanged from Bromley 1897 except for a label indicating a store for each building.
199 Forsyth Street's footprint is nearly the mirror image of 209 Forsyth Avenue and wraps around 203-201 Forsyth Street. Brick tenement has seven stories and no basement. A store is at street level. There are four airshafts: one at northern end, another at southern end; two others in wrap around to the rear of 203-201 Forsyth Street. A narrow air way/passageway is at north end of building, and a 10-foot open strip is at rear lot line. The tenement with no basement overlies the foundry site.
197 Forsyth Street's footprint is virtually unchanged from 1897.

On Stanton Street
Seven structures on seven lots. All buildings have stores.

28 Stanton Street is unchanged from 1911 except for rear addition for western half of open space. Two airshafts added within the building and on the eastern side of the tenement.
32 Stanton Street is unchanged from 1911 except for addition of four airshafts: two within the tenement and two along western and eastern exteriors.
34 Stanton Street is unchanged from 1897 except for a narrowing of the open backyard.
36 and 36½ Stanton Street are probably unchanged from 1897. 1911 map shows rectangular buildings with no airshafts. Both 1897 and 1916 maps show dumb-bell airshafts.
38 Stanton Street is unchanged from 1897.
40 Stanton Street is unchanged from 1897 except for the addition of the one-story brick attached structure on the Forsyth Street side of the block.

Bromley 1926: On East Houston, Chrystie, Forsyth, and Stanton Streets
Unchanged from 1916.

Bromley 1932: On East Houston, Chrystie, Forsyth, and Stanton Streets
Unchanged from 1916 and 1926.

Bromley 1955: On East Houston, Chrystie, Forsyth, and Stanton Streets
The eight East Houston Street lots, the nine lots on Chrystie Street, the 11 lots on Forsyth Street, and the seven lots on Stanton Street are incorporated into the northernmost section of the Sara Delano Roosevelt Park. Land for the park was purchased in 1929, and the public park constructed in 1934 (Alexander R. Brash: personal communication, December 5, 2001). In 1930 Chrystie Street was widened 25 feet on the east side, and Forsyth Street was widened 20 feet on the west side (City of New York, Final Damage Map, 1930).

Bromley 1967: On East Houston, Chrystie, Forsyth, and Stanton Streets
Unchanged from 1955.

Bromley 1974: On East Houston, Chrystie, Forsyth, and Stanton Streets
Unchanged from 1955.

Sanborn 1984/1985: On East Houston, Chrystie, Forsyth, and Stanton Streets
Unchanged from 1955.

Sanborn 1990/1991: On East Houston, Chrystie, Forsyth, and Stanton Streets
Unchanged from 1955.

Sanborn 2001: On East Houston, Chrystie, Forsyth, and Stanton Streets
Unchanged from 1955.

Street Elevation Table

Block 420 street elevations over time are presented in the Second Avenue and Chrystie Street roadbed section of this appendix.

Tax and Directory Table

LOCATION	1808	1820	1834	1844	1858	1869	1876
BLOCK 420A Chrystie and Forsyth Streets between Stanton and East Houston Streets							
180 Chrystie Street	No record	No record	H. Rosenbaum	H. Rosenbaum	C. Washburn	C. Noe	D. Brown
178 Chrystie Street	No record	No record	J. Miller	C. Boyler	W. Stillwell	Mrs. Baker	T. Dolgan
176 Chrystie Street	No record	No record	H. Balls	M. Tice	C. Meday	J. Pieper	J. Pieper
174 Chrystie Street	No record	No record	T. Williams	J. Targer	M. Quackenlofs	W. Mathew	D. Lewis
172 Chrystie Street	No record	No record	J. Eagan	S. Bouten	M. Quackenlofs	G. Wegh	J.J. Donohue
170 Chrystie Street	No record	No record	J. Schort	P.Parks	N. Gregory	J. Wayden	H.J. Webster
168 Chrystie Street	No record	No record	D. Brown	D. Brown	N. Gregory	J. Wayden	J. Wayden
P.S. 20	No record	No record	Ward School	Ward School	Ward School	Ward School	Ward School
158 Chrystie Street	No record	No record	L. Reed	J. Innes	E. Legerdson	E. Legerdson	C. Murray
219 Forsyth Street	No reels	No reels	J. Heathington	M. Wack	H. Cordis		
217 Forsyth Street	No reels	No reels	J. Heathington	M. Wack	E.F. Ridaback		
215 Forsyth Street	No reels	No reels	M. Wickham	F. Burghard	E.F. Ridaback		
213 Forsyth Street	No reels	No reels	P. Techman	M. Pieper	M. Pieper		
209 Forsyth Street	No reels	No reels	M. Wickham	M. Lyons	W. Mathews		
207 Forsyth Street	No reels	No reels	R. Burttett	I. Frolick	W. Taft		
205 Forsyth Street	No reels	No reels	M. Wickham	K. Kuhn	A. Walsh		
203 Forsyth Street	No reels	No reels	W. Cook	J. Schrady	J. Shrady		
201 Forsyth Street	No reels	No reels	D. Vanarsdale	F. Cook	J. Shrady		
199 Forsyth Street	No reels	No reels	D. Vanarsdale	J. Fossey	J. Shrady		
197 Forsyth Street	No reels	No reels	E. Davis	R. Fields	R. Fields		

195 Forsyth Street	No reels	No reels	D. Vanarsdale	R. Fields	R. Fields		
North Side							
28 Stanton Street	No reels	G. Halsey		W.M. Rosenbaum	F. Geisenheimer	E. Valentine	
30 Stanton Street	No reels	M. Truman		D. Brown	P. McMinomy	E. Valentine	
32 Stanton Street	No reels	M. Truman		H. Ackers	A.H. Webster	E. Valentine	
34 Stanton Street	No reels	G. Mumford		M. Leod	J. Flemmer		
36 Stanton Street	No reels	G. Mumford		P. Halsey	J. Flemmer		
38 Stanton Street	No reels	G. Mumford		S. Molt	D.L. Brown		
40 Stanton Street	No reels	G. Mumford		L. Fink	P. Lorillard		
119 East Houston Street	No reels	No reels	D. Robols	H. Collins	No reels		
121 East Houston Street	No reels	No reels	No record	W. Reynolds	No reels		
123 East Houston Street	No reels	No reels	No record	A.M. Baker	No reels		
125 East Houston Street	No reels	No reels	No record	I. Showman	No reels		
129 East Houston Street	No reels	No reels	No record	I. Showman	No reels		
131 East Houston Street	No reels	No reels	C. Osborne	J. Huntington	H. Donnelly		
133 East Houston Street	No reels	No reels	M. Banks	C. Osborne	W. Reynolds		

Precontact Sensitivity

In the absence of soil borings, there is no record available concerning the subsurface disturbance for these lots. Basements beneath structures, which once stood within the APE, may have affected the potential for encountering precontact and contact material remains. However, this depends upon the depth of fill versus the depth of basements. If deep fill levels were added prior to 19th century intensive development, precontact and contact resources may be buried deep enough to have escaped disturbance. As is the case with the blocks north of East Houston Street, this section of the APE, Block 420 North, has only a moderate potential for cultural remains three to four feet beneath the base of

the fill layers that include "misc. fill" as well as red and brown sands, both coarse and fine, with little silt. However, there is no precontact period potential where the subway runs beneath Chrystie and East Houston Streets.

Historical Sensitivity

Chrystie and Forsyth Streets along Block 420 North were widened in 1930. Therefore, there is a possibility that early 19th century and onward historical archaeological features that were within the historical block may lie in the present roadbed and beneath the sidewalks as well as within the block itself. These roadbed resources are considered above; see *Section 4.5.71*, Second Avenue and Chrystie Street roadbeds.

The primary archaeological resource of concern here is the potential evidence from the cemetery that occupied the northern three-quarters of Block 420 North during the first half of the 19th century. As noted above, the early title history indicates that the Trustees of the First Presbyterian Church in the City of New York were the grantee for these lots in 1807 (City Register). Therefore, the Presbyterian Cemetery on Block 420 between Chrystie and Forsyth Streets predated the 1823 ordinance banning vaults and graves south of Grand Street. There could be burials for some of those Presbyterians whose church was a grantee of the East Houston Street property. At the time, the Brick Presbyterian Church was located at Beekman Street, located south of Grand Street, and there were probably some parishioners who either complied with the ordinance or else did not want to pay the fine (Ruggles 1856:9; Inskeep 2000:25, 137-138). Therefore, they may have utilized the Block 420 cemetery. This suggests that there could be burials from a 25-year span surrounding the Presbyterian church that stood on the south side of East Houston Street within Block 420. Even if some bodies were reinterred at a later date, there is always the possibility that unmarked burials were left *in situ.*

The widening of the east side of Chrystie Street and the west side of Forsyth Street in 1930 may have incorporated sections of the graveyard into what are now the sidewalks on the east side of Chrystie Street and the west side of Forsyth Street, within the APE. Therefore, the sidewalks along either side of the Park at the northern end of Block 420 are potentially sensitive for burials for at least ten to 12' below grade (a conservative estimate of the depth of burial vaults).

Within the northern end of Block 420 Sara Delano Roosevelt Park once had a sunken play area, but this was then raised (Alex R. Brash, personal communication, December 5, 2001). While the "sunken" play area probably affected at least six feet of the original ground surface, its creation did not necessarily eradicate the potential for burials related to the church. Therefore, there is still the potential for encountering historical archaeological remains from the Presbyterian Cemetery to a depth of at least 16' below grade (a conservative estimate of six feet of fill plus an additional ten feet for deep vaults).

Like the Methodist cemetery on Block 457, the Presbyterian cemetery that was once on the site of Sara Delano Roosevelt Park, Block 420, was sold and redeveloped some time between 1852 and 1867 (Dripps 1852:5 of 10; Dripps 1867:7; City Register, n.d.). (Figure 4.5-3a and b; Figure 4.5-4) At that time, the block was subdivided and the 25-foot lots were developed fully to their widths along the East Houston, Chrystie, and

Forsyth Street sides. Open backyards were left behind the multi-storied, brick tenements (Dripps 1867:7; Robinson 1885:8; Figure 4.5-4). These backyards have the potential for containing such shaft features as wells, cisterns, ash pits, and privies.

Even though both Chrystie and Forsyth Streets had sewer lines in place in 1867, and presumably a water main was installed around the same time, wells, privies, and cisterns were frequently in use after these utilities were available (WPA 1937). Although there is the possibility that the tenement owners hooked up to the sewer as soon as the public service became available, there is always the possibility that they did not. If wells were present on the back of these lots, they would have been fairly deep, based on the depth of the water table reported on late 20th century soil boring logs. There are no soil borings available from within the northern part of the Sara Delano Roosevelt Park on Block 420, but one taken on the west side of Chrystie Street at the intersection of Stanton Street reports that water was encountered at 28' below street level (C6-24 Raymond International, Inc., ca. 1970s). At 37' below grade, there was no water encountered in either of the borings on the east side of Chrystie within the Park near the intersection with Rivington Street (Borings C6-22 and C6-20, Raymond International, Inc., ca. 1970s). Thus, it is reasonable to assume that if shaft features, such as wells, are present, they would have had to have been dug at least, if not more than, 37' below street level, and that the northern end of Sara Delano Roosevelt Park on Block 420 and its surrounding sidewalks may contain such historical archaeological features.

Subsequent development and redevelopment of the block for residential, industrial, and commercial purposes also may have left traces that are visible in the archaeological record. Archaeological traces from domestic/residential properties could include shaft features like cisterns, wells, privies, and ash pits.

As the cartographic review treated the north, west, east, and south sides of Block 420 North in that order, so, too will the historical sensitivity section that follows.

On East Houston Street
The eight lots were developed with brick multi-story buildings between 1853 and 1885. The footprints of the buildings remained relatively unchanged until 1930, when they were demolished to make way for Sara Delano Roosevelt Park, and the 25 x 10 foot backyard of 131 East Houston Street appears to have remained an open space for approximately 80 years, except for a small, freestanding structure shown on an 1853 map (Perris). No basements are noted on the maps. Thus, there were only two episodes of land-use changes for the lots, that is, tenement building and street widening. Relatively undisturbed archaeological resources may lie beneath one backyard and the sidewalks as well as beneath the buildings on East Houston Street.

On Chrystie Street
The nine lots were developed with brick multi-story buildings between 1867 and 1885. Although a sewer line ran beneath the roadbed along this block of Chrystie Street in 1867 and a water main was in place in 1903, in all likelihood, cisterns, wells, privies, and ash pits were part of the daily life for decades for the dwellers and workers on the block. The footprints of the buildings remained virtually unchanged until 1930, and all but one backyard appear to have remained an open space for more than 60 years. The southern half of the ninth backyard remained an open space. No basements are noted on the maps.

Thus, after the cemetery period, there were only two episodes of land-use changes for the lots, that is, tenement building and street widening. Relatively undisturbed archaeological resources may lie beneath nine backyards and the sidewalk as well as beneath the buildings at 230-214 Chrystie Street.

On Forsyth Street
The ten lots were historically developed with brick multi-story buildings between 1867 and 1885. Although a sewer line ran beneath the roadbed along this block of Forsyth Street in 1868 and a water main was in place in 1904, in all likelihood, cisterns, wells, privies, and ash pits were part of the daily life for decades for the dwellers and workers on the block.

By 1885, there was a brass foundry and iron cornice works at the rear of the backyards of the brick tenements facing Forsyth Street, which stood on Block 420 north of Stanton Street (Robinson 1885:8). It occupied the central portion of the block, and by 1911 there was a change in the buildings' footprints (Bromley 1897:8; Bromley 1911:8). Thus, there were more than 15 years of industrial activity on the interior section of this Block 420. Potentially, there are archaeological remains from this industrial site.

There were at least two episodes of redevelopment of the tenements before they were torn down in the early 1930s, which may have obliterated any evidence of the foundry site. Nonetheless, the narrow backyards at the rear of the tenements with stores at 207-201 Forsyth Street may hold relatively undisturbed evidence from the cemetery period as well as from at least 1885 to 1930. Also, beneath the sidewalk on the west side of Forsyth Street there may the potential for cemetery remains that may have survived the widening of Forsyth Street. Thus, after the cemetery period, there were three episodes of land-use changes for the lots, that is, tenement building, rebuilding, and renovating, and street widening. Undisturbed archaeological resources may lie beneath four backyards and the sidewalk on the west side of Forsyth Street between East Houston Street and Stanton Street.

On Stanton Street
The Stanton Street lots are south of the 19th century cemetery. Stanton Street was legally opened in1795. Sewers were in place along Chrystie and Forsyth Streets in the 1860s and city water was available along these north/south streets between 1904 and 1911. If the availability of city utilities moved uptown on cross streets through time as the WPA utility maps suggest, then Stanton Street tenements had a sewer pipe running beneath the street after 1910 when Delancey Street had a sewer line. Stanton Street had a water main in 1906. The seven lots were initially developed with brick multi-story buildings at least as early as 1836. There were at least two episodes of redevelopment of the tenements before they were torn down in the early 1930s, which may have obliterated any evidence of the industrial site. Nonetheless, the narrow backyard at the rear of the tenement at 38 Stanton Street may hold relatively undisturbed evidence from at least 1836 on, particularly since it appears that city services were not available, much less tapped into or hooked up, for more than 60 years, that is, until the first decade of the 20th century. Thus, there were three episodes of land-use changes for the lots before the development of the park, that is, tenement building, rebuilding, and renovating. Undisturbed archaeological resources may lie beneath the backyard that remained open from at least 1867 to 1930 as

well as in areas beneath the tenements that had footings and foundations, but no basements.

In the absence of soil borings, there is no record available concerning the subsurface disturbance for Block 420 North. Nonetheless, a comparison of cartographic sources suggests that there is a moderate to limited possibility for archaeological materials to remain relatively intact within Block 420 North.

Block 420 (Middle)

Cartographic History

The Cartographic History for Block 420 Middle is considered in four parts:

- North side: Chrystie Street, east side, on the west to Forsyth Street, west side, on the east along Stanton Street, south side. The north side of Block 420 Middle includes eight lots: Lots 13-21, at the street addresses 27-39 Stanton Street.
- West side: Chrystie Street, east side, between Stanton Street on the north and Rivington Street on the south. The west side of Block 420 Middle includes eight lots: Lots 12-1, at the street addresses 200-182 Chrystie Street.
- East side: Forsyth Street, west side, between Stanton Street on the north and Rivington Street on the south. The east side of Block 420 Middle includes 12 lots: Lots 23-34, at the street addresses 187-169 Forsyth Street.
- South side: Chrystie Street, east side, on the west to Forsyth Street, west side, on the east along Rivington Street, north side. The south side of Block 420 Middle includes eight lots: Lots 42-35, at street addresses 20-34 Rivington Street.

Manatus 1639:	Block 420 Middle area is depicted as fairly flat open space with decentralized, dispersed farms (bouweries).
Castello 1660:	Area not included on map. Castello Plan's northern border is just north of Wall Street, approximately 9000 feet south of the area.
Miller 1695:	Block 420 Middle area is approximately 9000 feet north of northern boundary of Miller map.
Lyne-Bradford 1730:	Area approximately 5000 feet north of northern boundary of Lyne-Bradford map.
Carwitham 1730:	Block 420 Middle area is approximately 5000 feet north of northern boundary of map.
Mrs. Buchnerd's Plan 1735:	Area is approximately 5000 feet north of northern boundary of these plans.
Grim 1743:	Block 420 Middle is just north of the northern boundary of the Grim Plan.
Maerschalck 1754:	Area is approximately 1500 feet north of the northern boundary of this plan.
Montresor 1766:	Area appears to be a patch-work quilt of bounded open fields, one with an orchard.
Ratzer 1766/67:	The southernmost northwest/southeast diagonal line north of the Depeyster orchard depicted on the Ratzen(r) 1766 shows up on the

2001 Sanborn as running through the project block just north of Stanton Street. Area is just north and east of the "M. Depeyster" estate garden and residence complex that fronts on the east side of Bowery Lane. APE still lies 400-500 feet east of "Bowry Lane" and appears as open fields and orchards for the three structures, presumed to be residences, that lie close to the road on the east side of Bowery Lane. 1st Street (Chrystie Street) is not depicted. Based on Augustyn and Cohen, area is shown in greater detail on the Ratzen(r) Plan than on the Ratzer Map (1766-1767).

British Headquarters 1782: Block 420 Middle area continues to be depicted as residential and agricultural. Landscape is fairly flat, with hills rising to the east and west. The several red squares, which could indicate structures, east of the east side of Bowry Lane, appear to be close to, but not within Block 420 North.

McComb 1789: Block 420 Middle area appears as undeveloped land through which diagonal property lines are drawn. The bent diagonal line on the 1789 map probably corresponds to the diagonal line on the Sanborn 2001 that lies south of the East Houston Street lots, but within the project block. Early title history in 1787 indicates that this northernmost section of Block 420 is part of the forfeited estates for which Pierre Van Cortlandt is the grantee (City Register). The following year Pierre Van Cortlandt appears as grantor of the East Houston Street lots. Abraham Beekman is the grantee (Ibid.).

Taylor-Roberts 1797: Block 420 Middle area appears as flat, tree dotted, open land. The north/south street grid terminates just north of "North Street" (East Houston Street). Chrystie Street is in place as 1st Street; Forsyth Street, as 2nd Street. Stanton Street and Rivington Streets are in place.

Bridges 1803/1807: Block 420 Middle is bounded Stanton Street on the north, 1st (Chrystie) Street on the west, Second (Forsyth) Street on the east, and Rivington Street on the south. The block is shaded, indicating some sort of development.

Colton 1836: Block 420 Middle is shaded, indicating development. The Chrystie and Forsyth street names replace 1st and 2nd Street names.

Tanner 1836: Unchanged from Colton 1836.

Mitchell 1846: *Unchanged from Colton 1836 and Tanner 1836.*

Dripps 1852: On Stanton Street

Eleven structures on eight lots.

25 Stanton Street has one L-shaped structure along the front lot line with an open area to the rear.

27 Stanton Street has one mirror-image L-shaped structure with an open area in the rear.

29 Stanton Street has one rectangular structure with extension in rear and open area to the rear. There may be a very narrow passage way on west side of lot.

31 Stanton Street has one rectangular structure at the front of the lot with an open area to the rear.

33 Stanton Street has a footprint of a structure that covers the lot.
35 Stanton Street has a rectangular structure set back on the lot with open space on three sides.
37 Stanton Street has two rectangular structures along the western lot line. Front structure flush with street. Back structure near rear lot line. There is a passageway along eastern lot line and the open space to the rear of each structure.
39 Stanton Street has two structures that run full width of lot. Front structure is flush with the street; rear, against the rear lot line. There is open space between structures.

On Chrystie Street
Thirteen structures on 11 lots. All lots are 100 feet deep. There is only one alleyway or passage way, at 184 Chrystie Street.
198 Chrystie Street has a L-shaped building flush with the street and a square; lot-wide building against rear lot line, with open space between the structures.
196 ½ -186 Chrystie Street's rectangular building occupies the front half of each of the eight lots with open space to the rear.
184 Chrystie Street's rectangular building is set back from the street. A narrow, attached structure extends to the rear lot line. There is passage way along southern half of lot, the full depth of the lot.
182 Chrystie Street has a lot-wide rectangular building flush with the street with L-shaped building occupying the southern half of the rear half of the lot. There is a narrow open area along the north side of the rear structure.

On Forsyth Street
Thirteen structures on 12 lots.
187 Forsyth Street has a lot-wide rectangular structure with open backyard.
185-175 Forsyth Street's eight lots have identical lot-wide rectangular structures with approximately 60-foot deep open backyards.
173 Forsyth Street has a J-shaped structure with open space to the south and west of the "extension".
171 Forsyth Street has an irregular-shape structure runs the full depth of the lot on the northern half of the lot with "extension" mid-way along the southern side of the structure, leaving two, small separated open spaces on southern side of lot.
169 Forsyth Street has a lot-wide rectangular structure on a 50-foot deep lot with 20-foot deep open backyard.

On Rivington Street
Twelve structures on eight lots. With the exception of the easternmost lot, which is 75 feet deep, all other seven lots are 100 feet deep.

20 Rivington Street has a lot-wide, rectangular structure along the front lot line with an open area at the rear of the lot.
22 Rivington Street has a lot-wide, rectangular structure along the front lot line with an open area at the rear of the lot.
24 Rivington Street has a lot-wide, rectangular structure along street with open space between it and lot-wide structure at northern lot line.
26 Rivington Street has a lot-wide, rectangular structure along street with open space between it and lot-wide structure at northern lot line.
28 Rivington Street has a lot-wide L-shaped structure along street with open space between it and lot-wide structure at northern lot line.
30 Rivington Street has a lot-wide, rectangular structure along the front lot line with an open area at the rear of the lot.
32 Rivington Street has a lot-wide, rectangular structure along street with open space between it and lot-wide structure near the rear of the lot. Open space between back structure and northern lot line.
34 Rivington Street has a lot-wide, rectangular structure along the front lot line with an open area at the rear of the lot.

Perris 1853:

On Stanton Street
Twelve structures on eight lots.
25 Stanton Street has one L-shaped structure along the front lot line with an open area to the rear. A narrow structure runs full lot width along rear lot line.
Stanton Street is unchanged from 1852 except the narrow passageway appears on the east side of this lot, not on the 29 Stanton Street lot.
29 Stanton Street has one rectangular structure with an open area to the rear. There is no narrow passage way on west side of lot.
31 Stanton Street is unchanged from 1852.
33 Stanton Street has three nearly square structures are flush with the street and have open backyards. Lot is enlarged to the south.
35 Stanton Street has a full-lot width rectangular structure flush with the street with open backyard. It appears to be two buildings with a party wall.
37 Stanton Street has two rectangular structures along the western lot line. Front structure is flush with street. Back structure is near rear lot line. There is a passageway along eastern lot line and open space to the rear of each structure. Very similar to 1852, the footprints are slightly changed.
39 Stanton Street's lot is halved in depth. Nearly square structure is full-lot wide and has open backyard.

On Chrystie Street
Thirteen structures on 11 lots.
Buildings and lots are virtually unchanged from 1852, except for:
198 Chrystie Street's narrow passage way along southern lot line.

184 Chrystie Street has a reduction of depth of lot.
182 Chrystie Street's footprint is unchanged from 1852. There is a passage way to the rear building along the northern lot line.

On Forsyth Street
Fourteen structures on 12 lots.
Buildings and lots are virtually unchanged from 1852, except for:
173 Forsyth Street has an outbuilding added to the west along northern lot line, with open space on three sides.
171 Forsyth Street's front structure is reconfigured allowing a passageway along southern lot line to lot-wide structure against the western lot line. There is an open space between structures.

On Rivington Street
Fifteen structures on eight lots.
20 Rivington Street has a lot-wide, rectangular structure along the street with open space between it and lot-wide structure at northern lot line.
22 Rivington Street has a lot-wide, rectangular structure along street with open space between it and lot-wide structure at northern lot line.
24 Rivington Street has a rectangular structure along street with open space between it and lot-wide structure at northern lot line. There is an addition to the rear of the front building and an alleyway along western lot line to the open area between front and back buildings.
26 Rivington Street has a rectangular structure along street with open space between it and lot-wide structure at northern lot line. There is an addition to the rear of the front building and an alleyway along western lot line to the open area between front and back buildings.
28 Rivington Street has a L-shaped structure along street with open space between it and lot-wide structure at northern lot line. There is an addition to the rear of the front building and an alleyway along western lot line to the open area between front and back buildings.
30 Rivington Street has a rectangular structure along street with open space between it and lot-wide structure at northern lot line. There is an addition to the rear of the front building and an alleyway along western lot line to the open area between front and back buildings.
32 Rivington Street has a lot-wide, rectangular structure along street with a L-shaped addition to the rear and open space at the northern end of the lot.
34 Rivington Street has a lot-wide, rectangular structure along the front lot line with an open area at the rear of the lot as well as a small square structure at northeast corner of the lot.

Perris 1857-1862: On Stanton Street
Thirteen structures on eight lots.

25 Stanton Street is unchanged from 1853.
27 Stanton Street is unchanged from 1853.
29 Stanton Street is unchanged from 1853.
31Stanton Street is unchanged from 1852.
33 Stanton Street is nearly unchanged from 1853. Open space has "*Coal Yard*" label, with and "*Office*" in one of the structures flush with Stanton Street. The lot's, southern addition is covered by a structure.
35 Stanton Street is unchanged from 1853.
37 Stanton Street is unchanged from 1853.

On Chrystie Street
Thirteen structures on 11 lots.
Buildings and lots are virtually unchanged from 1852, except for:
198 Chrystie Street has a lot-wide, rectangular building flush with the street with passage way along the northern lot line. There is a square, lot-wide building against rear lot line, with open space between the structures. The footprint of front building resembles the 196½-186 Chrystie Street footprints.
182 Chrystie Street has a lot-wide rectangular building flush with the street with L-shaped building occupying the southern half of the rear half of the lot. There is a passage way along the north side of the front structure. There is an open area on three sides of the rear structure.

On Forsyth Street
Fourteen structures on 12 lots.
Buildings and lots are virtually unchanged from 1853.

On Rivington Street
Fifteen structures on eight lots.
Buildings and lots are virtually unchanged from 1853.

Viele 1864/1865:

Block 420 Middle appears as an open meadow. The nearest stream is to the northeast and approximately 2500 feet from the APE.

Dripps 1867:

On Stanton Street
Ten structures on nine lots.
Nearly unchanged except for:
25 Stanton Street's rear structure is absent.
33 Stanton Street has a passageway that appears along the west side of the double lot (a change from 1857-1862) giving access to the coal yard. The three structures at the front of the lot on the 1857 map appear to be one building in 1867. Structure on the southern addition to the lot is extended to the west.

On Chrystie Street
Twelve structures on 11 lots.
Buildings and lots are virtually unchanged from 1852, except for:
198 Chrystie Street's rear building is absent.

On Forsyth Street
Fourteen structures on 12 lots.
Buildings and lots virtually unchanged from 1853, except for:
187 Forsyth Street has a square lot-wide structure on western lot line with open space between the front and back buildings.
173 Forsyth Street's two buildings are reconfigured allowing more open space between structures.
171 Forsyth Street's structure reconfigured connecting front and back buildings, still allowing a passageway along southern lot line to lot-wide structure against the western lot line.

On Rivington Street
Fourteen structures on eight lots.
20 Rivington Street is unchanged from 1853.
22 Rivington Street's back building is not present, enlarging open space for the northern half of the lot.
24-32 Rivington Street is unchanged from 1853.
34 Rivington Street's small square structure at northeast corner of the lot is no longer present.

Robinson 1885:

On Stanton Street
Nine structures on nine lots. The passageway at 37 Stanton Street is the only one for the north side of this block.
25 Stanton Street has a brick building that fills the lot.
27 Stanton Street has a rectangular brick building with narrow backyard.
29 Stanton Street has a rectangular stone building with open backyard.
31 Stanton Street has a rectangular stone building with open backyard.
33 Stanton Street has a rectangular stone building nearly fills the western half of the double lot and has a narrow open backyard. The eastern half of the lot has a brick building that is half-lot wide and has a 50-foot deep open area to the rear of the building.
35 Stanton Street has a rectangular brick building that is lot-wide and has a 20-foot deep open area at the rear of the lot.
37 Stanton Street's front structure and passageway are in same location they have been since 1852. Structure is labeled as being wood. The lot is reduced in depth by 20 feet.
39 Stanton Street has a brick building that nearly fills the lot. There is only a sliver of open space to the rear of the structure.

On Chrystie Street
Fifteen structures on 12 lots. Most buildings are brick. There are wood structures at 198, 184, and 182 Chrystie Street. Buildings and lots are practically unchanged from 1852, except for:
200 Chrystie Street has a lot carved out of rear portion of two lots on the south side of Stanton Street. There is a lot-wide rectangular brick building with a five-foot open space at the rear of the lot. The lot depth is 50 feet. All other lots are 100 feet deep.

198 Chrystie Street has a wood rear building present. No passageway is noted.
184 Chrystie Street's two buildings are wood. There is a reconfigured back building.
182 Chrystie Street's rear building is wood and reconfigured. No passageway is noted.

On Forsyth Street
Thirteen structures on 12 lots. All buildings at street face are brick. There is one wood outbuilding.
Buildings and lots virtually unchanged from 1853, except for:
187 Forsyth Street's rear section of lot becomes part of Stanton Street, south side, lots. A lot-wide, brick building fills the lot.
173 Forsyth Street has a change in the footprint of the front, lot-wide brick building. There is a wood outbuilding at rear lot line with open space between buildings.
171 Forsyth Street has a change in footprint of now, lot-wide brick building. There is no passageway, but there is an open backyard.

On Rivington Street
Twelve structures on eight lots. All but one wood structure at 28 Rivington Street are brick.
20 Rivington Street is unchanged from 1853.
22 Rivington Street's footprint of lot-wide, rectangular, brick structure along street is lengthened, leaving a smaller open space at rear of lot.
24 Rivington Street has a lot-wide, rectangular, brick structure along street with open space between it and lot-wide structure at northern lot line. Alleyway is no longer present.
26 Rivington Street has a lot-wide, rectangular, brick structure along street with open space in the backyard. Addition, alleyway, and back building are no longer present.
28 Rivington Street has a L-shaped, wood structure along street with open space between it and lot-wide, brick structure at northern lot line. There continues to be an alleyway along western lot line to the open area between front and back buildings.
30 Rivington Street has a L-shaped, brick structure along street with open space between it and lot-wide, brick structure at northern lot line. There continues to be an alleyway along western lot line to the open area between front and back buildings.
32 Rivington Street's footprint change for lot-wide, rectangular structure along street reduces the open space at the northern end of the lot.
34 Rivington Street has a lot-wide, rectangular brick structure that covers the lot.

Bromley 1897: On Stanton Street
Eight structures on eight lots.
25 Stanton Street is unchanged from 1885. Five stories with no basement.

27 Stanton Street is unchanged from 1885. Five stories with no basement.
29 Stanton Street has a five-story stone-face brick building with about a 35-foot deep open backyard.
31 Stanton Street has a five-story stone-face brick building with about a 25-foot deep open backyard. There is a small attached structure on southeast corner of building.
33 Stanton Street has a five-story brick dumb-bell tenement with basement and 30-foot deep open backyard.
35 Stanton Street has a five-story brick building that is lot-wide and has a 25-foot deep open area at the rear of the lot.
37 Stanton Street's front structure and passageway are in same location that they were in since 1852. Label indicates there is a four story brick-front wood building with basement. The lot is reduced in depth by 20 feet.
39 Stanton Street's five-story brick building nearly fills the lot. There is only a sliver of open space to the rear of the structure.

On Chrystie Street
Fourteen structures on 12 lots. Only the 200 Chrystie Street lot is 50 feet deep. All others are 100 feet deep. There is only one alleyway or passage way, at 184 Chrystie Street.
200 Chrystie Street has a five-story, lot-wide brick building with about an 18-foot deep open area at rear of lot.
198 Chrystie Street has a five-story, lot-wide building flush with the street and a three-story, lot-wide building against rear lot line, with open space between the structures.
196 ½-186 Chrystie Street has three-story, lot-wide brick buildings with basements that occupy the front half of each of the eight lots with approximately 60-feet deep open spaces to the rear. There is a six-story back building at 192 Chrystie Street with about 18 feet of open space between the buildings.
184 Chrystie Street has a five-story, lot-wide brick building with basement and 25-foot deep open backyard.
182 Chrystie Street has a five-story, lot-wide brick building with basement flush with the street with a three-story wood building with basement occupying the rear portion of the lot. There is a 25-foot deep open area between the buildings.

On Forsyth Street
Thirteen structures on 12 lots. All buildings at street face are brick. There is one wood outbuilding. Buildings on all lots but one (169 Forsyth Street) have basements.
Buildings and lots are virtually unchanged from 1885, except for the notation about the number of stories and the presence of basements. Since the footprints remain the same on most of the lots, it is assumed that these are basements beneath many of the buildings that date to at least 1852.
187 Forsyth Street has a five-story brick building with basement.

185 ½ -175 Forsyth Street has a three-story brick building with basement.
173 Forsyth Street has a five-story brick building with basement. There is a wood three-story outbuilding with basement.
171 Forsyth Street has a five-story brick building with basement.
169 Forsyth Street has a five-story brick building with no basement.

On Rivington Street
Ten structures on eight lots.
20 Rivington Street is unchanged from 1853. Front building is three-stories high with no basement; back building, four-stories high with no basement.
22 Rivington Street has a six-story, lot-wide, brick, dumb-bell tenement with no basement and a 10-foot deep open rear yard.
24 Rivington Street's footprints are unchanged from 1885. Front building is five-stories high with no basement; back building, three-stories high with basement.
26 Rivington Street is unchanged from 1885. The building has five-stories.
28 Rivington Street has a lot-wide, four-story, brick stable nearly fills the lot.
30 Rivington Street has a six-story, lot-wide, brick, dumb-bell tenement with no basement and a 10-foot deep open rear yard.
32 Rivington Street is unchanged from 1885.
34 Rivington Street is unchanged from 1885.

Bromley 1911:

On Stanton Street
Eight structures on eight lots. A store is noted for every building.
25 Stanton Street is unchanged from 1885. Building has five stories with no basement.
27 Stanton Street is unchanged from 1885. Building has five stories with no basement.
29 Stanton Street is unchanged from 1897.
31 Stanton Street is unchanged from 1897 except that the small attached structure on southeast corner of building is absent.
33 Stanton Street is unchanged from 1897.
35 Stanton Street is unchanged from 1897.
37 Stanton Street has a six-story, lot-wide, brick building with no basement and approximately an 18-foot deep open backyard.
39 Stanton Street is unchanged from 1897.

On Chrystie Street
Eleven structures on nine lots.
200 Chrystie Street is unchanged from 1897. Label indicates a store.
198 Chrystie Street is unchanged from 1897. Label indicates a store.
196 ½ Chrystie Street is unchanged from 1897.

196 Chrystie Street has a L-shaped six-story brick tenement with store that covers most of the lot. There is an airshaft along southern lot line.
192-190 ½ Chrystie Street has a six-story, double-lot-wide brick tenement with store. There are airshafts along northern and southern lot lines. There is about a10-foot open strip at the rear of the tenement.
188-186 Chrystie Street is unchanged from 1897.
184 Chrystie Street is unchanged from 1897.
182 Chrystie Street is unchanged from 1897. The label indicates a store.

On Forsyth Street
Thirteen structures on 12 lots.
Buildings and lots unchanged from 1885 and 1897.

On Rivington Street
Nine structures on eight lots. A store noted for every building but the stable at 28 Rivington Street.
Buildings and lots are virtually unchanged, except for:
20 Rivington Street's six-story, brick building with store but no basement fills the lot.
22 Rivington Street has a six-story, brick building with store but no basement that replaces the dumb-bell tenement. This may be a draftsman's mistake. There continues to be a 10-foot deep open space in the rear.

Bromley 1916:

On Stanton Street
Eight structures on eight lots. The lots are virtually unchanged except for:
37 Stanton Street's six-story, lot-wide, brick building with no basement and approximately an 18-foot deep open backyard has become a dub-bell tenement with airshafts along the western and eastern sides of the building.

On Chrystie Street
Ten buildings on eight lots.
200 Chrystie Street is unchanged from 1897. The label indicates a store.
198 Chrystie Street is unchanged from 1897. The label indicates a store.
196 ½ Chrystie Street is unchanged from 1897.
196/194 Chrystie Street is unchanged from 1911.
192-190 ½ Chrystie Street is unchanged from 1911.
188-186 Chrystie Street becomes a double lot with the label "SETTLEMENT HOUSE". Footprint unchanged since 1897. Rear yard is about 60-feet deep.
184 Chrystie Street has a five-story brick dumb-bell tenement with basement and store. There is a 20-foot open space at rear of building.

182 Chrystie Street is unchanged from 1897. The label indicates a store.

On Forsyth Street
Thirteen structures on 12 lots.
Buildings and lots unchanged from 1885, 1897, and 1911, except for the labeling for stores. Stores appear at nine addresses: 187, 183-175, and 171-169 Forsyth Street.

On Rivington Street
Nine structures on eight lots.
Buildings and lots virtually unchanged except for:
22 Rivington Street's dumb-bell tenement reappears.

Bromley 1926:

On Stanton Street
Unchanged from 1916.

On Chrystie Street
Eleven buildings on eight lots.
Buildings and lots are unchanged from 1916, except for:
188-186 Chrystie Street has a two-story brick building with basement and one-story rear addition that nearly fills the open space to the rear of the Settlement House.

On Forsyth Street
Ten structures on nine lots.
185-179 ½ Forsyth Street has the only change from 1885-1916. It is a "THEATRE" that occupies four lots and replaces four, three-story brick buildings with basements.

On Rivington Street
Unchanged from 1916.

Bromley 1932:

On Stanton Street
Unchanged from 1916 and 1926.

On Chrystie Street
Eleven buildings on eight lots. Buildings and lots are unchanged from 1916, except for:
188-186 Chrystie Street has a two-story brick building with basement and one-story rear addition that nearly fills the open space to the rear of the Settlement House.

On Forsyth Street
Ten structures on nine lots.
185 ½ Forsyth Street has the only change from 1926. It is now a fully developed lot. A two-story brick storage building with no basement replaces a three-story brick building with no basement and open backyard.

On Rivington Street

Unchanged from 1916 and 1926.

Bromley 1955: On Stanton, Chrystie, Forsyth, and Rivington Streets
The eight Stanton Street lots, the eight lots on Chrystie Street, the 12 lots on Forsyth Street, and the eight lots on Rivington Street are incorporated into the middle-block section of the Sara Delano Roosevelt Park north of Delancey Street. The Stanton Street roadbed and sidewalks are demapped and that land is also included in the park. Land for the park is purchased in 1929, and the public park constructed in 1934 (Alexander R. Brash: personal communication, December 5, 2001). The park has a comfort station and the girls' playground in a depressed area, very similar to the 2001 Sanborn. In 1930 Chrystie Street is widened 25 feet on the east side, and Forsyth Street is widened 20 feet on the west side (City of New York, Final Damage Map.... 1930).

Bromley 1967: On Stanton, Chrystie, Forsyth, and Rivington Streets
Unchanged from 1955.

Bromley 1974: On Stanton, Chrystie, Forsyth, and Rivington Streets
Unchanged from 1955.

Sanborn 1984/1985: On Stanton, Chrystie, Forsyth, and Rivington Streets
Unchanged from 1955.

Sanborn 1990/1991: On Stanton, Chrystie, Forsyth, and Rivington Streets
Unchanged from 1955.

Sanborn 2001: On Stanton, Chrystie, Forsyth, and Rivington Streets
Unchanged from 1955.

Street Elevation Table

Block 420 street elevations over time are presented in the Second Avenue and Chrystie Street roadbed section of this appendix.

Tax and Directory Table

LOCATION	1808	1820	1834	1844	1858	1869	1876
BLOCK 420 Chrystie Street between Stanton and Rivington Streets							
200 Chrystie Street	No reels	No reels	No record	W. Taylor	J.B. Simpson	J.B. Simpson	J. Wilken
198 Chrystie Street	No reels	No reels	T. Parrase	A. Williams	J.B. Simpson	J.B. Simpson	H. Mums
196 ½ Chrystie Street	No reels	No reels	No record	A. Williams	C. Stickney	G. Lars	J. Hau
196 Chrystie Street	No reels	No reels	No record	J.McAfree	L. Baldwin	J. Dickenson	W. Cummings
194 Chrystie Street	No reels	No reels	M. Huges	W. Flanders	J. Horn	D. Brown	A. Jewell
192 Chrystie Street	No reels	No reels	No record	E. Harris0on	J. Horn	D. Brown	P. Anchers

190 ½ Chrystie Street	No reels	No reels	E. Clark	G. Nora	J. Horn	J. Horn	J. Quincy
190 Chrystie Street	No reels	No reels	No reels	G. Nora	J. Horn	J. Horn	M. Tinler
188 ½ Chrystie Street	No reels	No reels	J. Huns	G. Nora	T.W. Dick	A. Walker	W. Thomson
188 Chrystie Street	No reels	No reels	J.M. clark	G. Nora	W. Simpson	J. Fleming	J. Kingsley
186 Chrystie Street	No reels	No reels	N. Wook	C. Brock	P.Lorrillard	J. Flemming	M. Sutton
184 Chrystie Street	No reels	No reels	No record	C. Brock	W. Thorne	D. Bruno	F. Smith
182 Chrystie Street	No reels	No reels	No record	C. Brock	P. Gasner	O.Lorrillard	O. Lorrillard
180 Chrystie Street	No reels	No reels	No record	B. Maverick	W. Taylor	M.M. Rosenbaum	H. Parks
South Side							
23 Stanton Street	No reels	No reels	No record	M. Hunter	R. Riker	M. Frank	E. Valtier
25 Stanton Street	No reels	No reels	No record	M. Willett	R. Riker	J. Miller	E. Valtier
27 Stanton Street	No reels	No reels	J. Smith	C. Garner	H. Beckford	C. Anderson	J. Drake
29 Stanton Street	No reels	No reels	J. Smith	A. connor	S. Smith	H. Balls	J. Drake
31 Stanton Street	No reels	No reels	R. Smith	N. Tood	B. Edmond	R. Giles	E. Hubard
33 Stanton Street	No reels	No reels	J. Morris	M. Whitney	C. Plimpton	T. Williams	T. Krag
35 Stanton Street	No reels	No reels	J. Smith	M.N. Whaley	J. Devlin	G. Morgan	W. Miles
37 Stanton Street	No reels	No reels	Widow Miller	J. Hastings	C. Beekman	C. Beekman	W. Miles
39 Stanton Street	No reels	No reels	J. Munsen	F. Jarois	S. Reynolds	S. Reynolds	S. Reynolds
North Side							
20 Rivington Street	No reels	No reels	S. Cardwell	M. Agden	J. Jarvis	W. Ruick	C. Cushman
22 Rivington Street	No reels	No reels	J. Dockman	W. Cullender	L. Burling	L. Burling	E. Springer
24 Rivington Street	No reels	No reels	S. Martin	J. Linderman	E. Lafhue	L. Burling	R. Kotulski
26 Rivington Street	No reels	No reels	W. Durbran	S. Brush	H. Gregory	J. Had,ey	E. Clark
28 Rivington Street	No reels	No reels	T. Valentine	M. Herren	H. Gregory	J. Loundsey	M. Kirsche
30 Rivington Street	No reels	No reels	Heir of W. Smith	P. Berton	Est of Stillwell	H. Wics	S. Kirsche
32 Rivington Street	No reels	No reels	S. McOduck	L. Ricks	C. Washburn	A. Blue	M. Walters
34 Rivington Street	No reels	No reels	T. Huntington	C. Jordan	E. Farming	E. Farming	A. Hinckley

189 Forsyth Street	No reels	No reels	No record	J. Bings	A. Norris	F. Kennedy	M.M. Quackman
187 Forsyth Street	No reels	No reels	J. Smith	J Brown	J. Brown	K. White	H. Dominick
185 Forsyth Street	No reels	No reels	P. Landlord	J. Brown	S.S. Berry	h. Brades	M. Walters
183 Forsyth Street	No reels	No reels	P. Landlord	H. Broom	B. Allen	M. Wack	A. Saunders
181 Forsyth Street	No reels	No reels	W. Mook	G. Cake	C. Kerl	m. Wack	K. Santry
??? Forsyth Street	No reels	No reels	No record	B. Andrews	W. Crooming	J. Papers	M. Dunsmore
179 Forsyth Street	No reel	No reels	J. Huns	D. Stillwell	N. Stoddard	W. Mathews	C. Giancoplaus
177 Forsyth Street	No reels	No reels	W. Frier	J. Thorne	B. Andrew	G. Wegh	C. Flamm
175 Forsyth Street	No reels	No reels	WidowWisher-field	E. Richards	J. Brinkley	G. Perryman	C. Osborne
173 Forsyth Street	No reels	No reels	W. Mook	D. Winship	J. Soundsberry	J. Shrady	B. Noreen
171 Forsyth Street	No reels	No reels	T. Jeremiah	D. Winship	J. Jackson	J. Shrady	M. Carlos
169 Forsyth Street	No reels	No reels	No record	P. Connor	S. Pitts	J. Mayden	J. Mayden
167 Forsyth Street	No reels	No reels	No record	S. Pitts	S. Pitts	K. Fisher	A. Alder

Precontact Sensitivity

In the absence of soil borings, there is no record available concerning the subsurface disturbance for these lots. Basements beneath structures, which once stood within the APE, may have affected the potential for encountering precontact and contact material remains. However, this depends upon the depth of fill versus the depth of basements. If deep fill levels were added prior to 19th century intensive development, precontact and contact resources may be buried deep enough to have escaped disturbance. As is the case with the blocks north of East Houston Street, this section of the APE, Block 420 North, has only a moderate potential for cultural remains three to four feet beneath the base of the fill layers that include "misc. fill" as well as red and brown sands, both coarse and fine, with little silt. However, there is no precontact period potential where the subway runs beneath Chrystie Street.

Historical Sensitivity

Chrystie and Forsyth Streets along Block 420 Middle were widened in 1930. Therefore, there is a possibility that early 19th century and onward historical archaeological features that were within the historical block may lie in the present roadbed and beneath the sidewalks as well as within the block itself. These roadbed resources are considered in this appendix for the Second Avenue and Chrystie Street roadbeds. The primary archaeological resource of concern here is the potential evidence during the development

and redevelopment of the block for residential, industrial, and commercial purposes, which may have left traces that are visible in the archaeological record. Such archaeological traces include shaft features like cisterns, wells, privies, and ash pits.

The middle section of the Sara Delano Roosevelt Park lies on Block 420 within the APE. After Chrystie and Forsyth Streets were widened in 1930, the park was constructed in 1934 replacing a block of brick multi-storied buildings with very few basements and some open backyards. Until recently, the park contained depressed areas. The sunken areas were constructed so that the playing and wading areas were six feet below grade. The original intention was to minimize the ambient street noise and provide a safe and quiet place to play and rest (Alexander R. Brash, personal communication, December 5, 2001). More recently, concern for other safety issues led to reconfiguring the play areas so that they are presently at street level. Thus, approximately six feet of modern fill lies on top of what had been the 1934 surface. For this study, the recreational park is considered in terms of its effect on previous cultural resources rather than as one of the NYCLPC's topics for further research given its modern date.

Soil borings conducted in the southern section of Block 420 Middle noted sand/brick/cinder fill to 18' below grade in one location and brown, fine-medium sand mixed with concrete/cinder fill to 12' below grade in the second location. Both tests reported "no water observed" when the boring was terminated at 37' below grade. This lack of water at such a depth indicates the depth that historic wells had to be drilled. This increases the likelihood that deeply buried truncated wells could be associated with this section of the APE. As the cartographic review treated the north, west, east, and south sides of Block 420 Middle in that order, so, too will the historical sensitivity section that follows.

On Stanton Street

The Stanton Street lots are south of the 19th century cemetery. There is a very limited possibility for archaeological remains in one of the backyards of the eight lots and beneath the brick buildings without basements. The primary archaeological resources of concern here include the potential evidence from residential backyard shaft features, such as cisterns, wells, privies, and ash pits, and perhaps from a commercial site. Stanton Street was legally opened in1795. Sewers were in place along Chrystie and Forsyth Streets in the 1860s and city water was available along these north/south streets between 1904 and 1911. If the availability of city utilities moved uptown on cross streets through time as the WPA utility maps suggest, then Stanton Street tenements had a sewer pipe running beneath the street after 1910 when Delancey Street had a sewer line. Stanton Street had a water main in 1906. The eight lots were initially developed with brick multi-story buildings at least as early as 1836. There were at least two episodes of redevelopment of the tenements before they were torn down in the early 1930s, which may have obliterated any evidence from the commercial site. Nonetheless, the backyard of the tenement at 33 Stanton Street may hold relatively undisturbed evidence from the mid-19th century coal yard and subsequent use of the property by the tenement dwellers and workers from at least 1885 to 1930. This is particularly true since it appears that city services were not available, much less tapped into or hooked up, for more than 60 years, that is, until the first decade of the 20th century. It is also marginally possible that there may be material evidence beneath the passageway along the east side of 37 Stanton Street. For almost 50 years it was an open area before it was redeveloped as a tenement

with a basement. There were at least two episodes of land-use changes for the lots before the development of the park, that is, tenement building and rebuilding. Additionally, some commercial space was converted to residential use. Thus, undisturbed archaeological resources may lie beneath the backyard of 33 Stanton Street that remained open from at least 1852 to 1930 as well as the more limited possibility of intact resources in areas beneath the multi-storied tenements that had footings and foundations, but no basements.

On Chrystie Street

There is a moderate possibility for archaeological remains in the backyards of two lots at 198 and 196 ½ Chrystie Street. The primary archaeological resources of concern here include the potential evidence from residential backyard shaft features, such as cisterns, wells, privies, and ash pits. The eight lots were developed with brick multi-story buildings at least as early as 1852. On two lots there have been open backyard areas from at least the early 1850s until 1930 when the tenements were demolished in preparation for the Sara Delano Roosevelt Park. The large open areas at the rear of the buildings in the central section of the Chrystie Street side of the block have the potential for providing evidence about the daily activities of the people who lived and worked on the block. Even though sewers were available in 1867 and water in 1903 along this block of Chrystie Street, in all likelihood, cisterns, wells, and privies were still in use well after the construction of the sewer and water lines. Unfortunately, a two-story brick building with basement was built in the open area to the rear of the settlement house, probably having an adverse effect on potentially significant remains of educational and recreational activities there. Thus, before the conversion of a residential and commercial area into a park, there were only two episodes of land-use changes for the lots, that is, tenement building and rebuilding, other than the widening of the east side of Chrystie Street. Relatively undisturbed archaeological resources may lie beneath the backyards, buildings, and sidewalk on the east side of Chrystie Street between Stanton and Rivington Streets.

On Forsyth Street

There is a moderate to good possibility for archaeological remains in three of the twelve backyards, beneath the brick buildings without basements, and beneath the sidewalk on the west side of Forsyth Street. The primary archaeological resources of concern here include the potential evidence from residential backyard shaft features, such as cisterns, wells, privies, and ash pits as well as backyard surfaces that may show traces of daily activities. The twelve lots were developed with brick multi-story buildings at least as early as 1852. Although a sewer ran beneath this section of Forsyth Street in 1868 and water was available in 1904, in all likelihood, for decades, the Forsyth Street dwellers and workers probably continued to use the cisterns, wells, and privies on their lots. There was very little redevelopment of the tenements in the middle of the block before they were torn down in the early 1930s. Thus, the 60-foot deep, open backyards of the tenements with stores at 179-175 Forsyth Street may hold relatively undisturbed evidence about the daily activities of the people who lived and worked on the block from at least 1852 to 1930. In 1930 Forsyth Street was widened on the west side, so that there also may be some evidence about daily life beneath the sidewalk.

On Rivington Street

There is a limited possibility for archaeological remains in two of the backyards of the eight lots and beneath the brick buildings with no basements. The primary archaeological resources of concern here include the potential evidence from residential backyard shaft features, such as cisterns, wells, privies, and ash pits, and perhaps from a commercial site. Rivington Street was legally opened in 1795. Sewers were in place along Chrystie and Forsyth Streets in the 1860s and city water was available along Rivington Street in 1889. If the availability of city utilities moved uptown on cross streets through time as the WPA utility maps suggest, then Rivington Street had a sewer pipe running beneath the street after 1910 when Delancey Street had a sewer line. The eight lots on Rivington Street were initially developed with brick multi-story buildings at least as early as 1836. There were at least two episodes of redevelopment of the tenements before they were torn down in the early 1930s. Nonetheless, the mid-yard at 24 Rivington Street and the backyard at 32 Rivington Street may hold relatively undisturbed evidence from the use of the property by the tenement dwellers and workers from at least 1836 to 1930. This is particularly true since it appears that city services were not available, much less likely to be connected to or hooked up to the tenements, for more than 50 years, that is, until the end of the 19th century. It is possible that for almost 80 years the open areas in the mid- and backyards served the block's dwellers and workers as a place for daily activities. It is also marginally possible that there may be material evidence beneath the four alleyways at 24-32 Rivington Street, which were in place at least during the 1850s and 1860s. Cisterns have been known to be placed beneath alleyways. There were at least two episodes of land-use changes for the lots before the development of the park, that is, tenement building and rebuilding. Undisturbed archaeological resources may lie beneath the mid yard of 24 Rivington Street and the backyard of 32 Rivington Street that remained open from at least 1852 to 1930 as well as in areas beneath the tenements that had footings and foundations, but no basements.

Block 420 (South)

Cartographic History

The Cartographic History for Block 420 South is considered in four parts:

- North side: Chrystie Street, east side, on the west to Forsyth Street, west side, on the east along Rivington Street, south side. The north side of Block 420 South includes nine lots: Lots 11-19, at the street addresses 19-35 Rivington Street.
- West side: Chrystie Street, east side, between Rivington Street on the north and Delancey Street on the south. The west side of Block 420 South includes eight lots: Lots 10-1, at the street addresses 176-156 Chrystie Street.
- East side: Forsyth Street, west side, between Rivington Street on the north and Delancey Street on the south. The east side of Block 420 South includes 12 lots: Lots 20-31, at the street addresses 159-137 Forsyth Street.
- South side: Chrystie Street, east side, on the west to Forsyth Street, west side, on the east along Delancey Street, north side. The south side of Block 420 South includes eight lots: Lots 39-32, at street addresses 20-34 Delancey Street.

Manatus 1639:	Block 420 South area is depicted as fairly flat open space with decentralized, dispersed farms (bouweries).
Castello 1660:	Area not included on map. Castello Plan's northern border is just north of Wall Street, approximately 9000 feet south of the area.
Miller 1695:	Block 420 South area is approximately 9000 feet north of northern boundary of Miller map.
Lyne-Bradford 1730:	Area approximately 5000 feet north of northern boundary of Lyne-Bradford map.
Carwitham 1730:	Block 420 South area is approximately 5000 feet north of northern boundary of map.
Mrs. Buchnerd's Plan 1735:	Area is approximately 5000 feet north of northern boundary of these plans.
Grim 1743:	Block 420 South is just north of the northern boundary of the Grim Plan.
Maerschalck 1754:	Area is approximately 1500 feet north of the northern boundary of this plan.
Montresor 1766:	Area appears to be a patch-work quilt of bounded open fields, one with an orchard.
Ratzen(r)/Ratzer 1766/67:	The southernmost northwest/southeast diagonal line north of the Depeyster orchard depicted on the Ratzen(r) 1766 shows up on the 2001 Sanborn as running through the project block just north of Stanton Street, which is two blocks north of Block 420 South. Area is just north and east of the "M. Depeyster" estate garden and residence complex that fronts on the east side of Bowery Lane. APE still lies 400-500 feet east of "Bowry Lane" and appears as open fields and orchards for the three structures, presumed to be residences, that lie close to the road on the east side of Bowery Lane. First Street (Chrystie Street) is not depicted. Based on Augustyn and Cohen, area is shown in greater detail on Ratzen than on Ratzer (1766-1767).
British Headquarters 1782:	Block 420 South area continues to be depicted as residential and agricultural. Landscape is fairly flat, with hills rising to the east and west. The several red squares, which could indicate structures, east of the east side of Bowry Lane, appear to be close to, but not within Block 420 South.
McComb 1789:	Block 420 South area appears as undeveloped land through which diagonal property lines are drawn. The bent diagonal line on the 1789 map probably corresponds to the diagonal line on the Sanborn 2001 that lies south of the East Houston Street lots, two blocks north of this section of the APE.
Taylor-Roberts 1797:	Block 420 South area appears as flat, tree dotted, open land. The north/south street grid terminates just north of "North Street" (East Houston Street). Chrystie Street is in place as First Street; Forsyth Street, as Second Street. Rivington and Delancey Streets are in place.

Bridges 1803/1807: Block 420 South is bounded by Rivington Street on the north, First (Chrystie) Street on the west, Second (Forsyth) Street on the east, and Delancey Street on the south. The block is shaded, indicating some sort of development.

Colton 1836: Block 420 South is shaded, indicating development. The Chrystie and Forsyth street names replace First and Second Street names. Church and churchyard on Delancey Street is the only specified development on the block.

On Delancey Street

20 Delancey Street, at the southwest corner of the block, contains a black rectangle with surrounding open space on three sides.

Tanner 1836: Differs from Colton 1836 only in that there is no churchyard and the church is labeled "Bethel [Baptist]".

Mitchell 1846: Unchanged from Colton Tanner 1836.

Dripps 1852:

On Rivington Street

Ten structures on nine lots.

19-39 Rivington Street lots have a lot-wide structures with open backyards.

25 Rivington Street's building and lot are deeper than the other lots on Rivington Street.

39 Rivington Street has an outbuilding in the southeast corner of the lot.

On Chrystie Street

Five structures on five lots.

176 Chrystie Street has a lot-wide structure with open rear yard.

174 Chrystie Street has a lot-wide structure with open rear yard.

172 Chrystie Street has an open front portion of the lot with a lot-wide, rectangular structure at the rear lot line.

170 Chrystie Street has a rectangular building in the northwest corner of the lot surrounded by large open yard. It appears to be a double lot.

168 Chrystie Street has a large church building, labeled "*Bethenta Bapt. Ch.*", with a churchyard on four sides. The church is set back slightly from Chrystie Street. It appears to be four lots wide.

On Forsyth Street

Twenty-five structures on 12 lots.

159 Forsyth Street has a lot-wide rectangular building on the front of the lot with open space to the rear of the lot.

157 Forsyth Street has a lot-wide rectangular building on the front of the lot with open space to the rear of the lot.

155 Forsyth Street has a lot-wide rectangular building at both the western and eastern ends of the lot with open space in between.

153 Forsyth Street has a lot-wide rectangular building at both the western and eastern ends of the lot with open space in between. In the open space there is a structure along the north lot line that has an alleyway on the south side.

151 Forsyth Street has a rectangular building at both the western and eastern ends of the lot with open space in between. There is an alleyway along the south side running the full depth of the lot.
149 Forsyth Street has an L-shaped building along the south lot line at the front of the lot and a lot-wide building at the rear lot line with an alleyway along the north lot line. There is an open space between the two buildings.
147 Forsyth Street has an irregular-rectangular shaped building at the front of the lot with a lot-wide rectangular building at the rear lot line. Along the south lot line there is an alleyway as well as an open area between the two buildings.
145 Forsyth Street has an irregular-rectangular shaped building that runs the full depth of the lot. Along the south lot line there is an alleyway that runs the full depth of the lot.
143-141 Forsyth Street is a double lot with two irregular-shaped rectangular buildings in the front of the lot with an alleyway between them opening to an open space in between the front buildings and two buildings that are lot-wide and lie at the rear lot line. There is also an alleyway along the southern lot line.
139 Forsyth Street has an L-shaped rectangular building in front with an alleyway on the northern side running back to an open space between the front building and a lot-wide building at the western lot boundary.
137 Forsyth Street has a lot-wide rectangular building at both the western and eastern ends of the lot with open space in between.

On Delancey Street
Six structures on six lots.
20 Delancey Street is a triple lot with a building labeled "*Eagle Amoury*" on the southwest corner of Block 420 South. A narrow strip of open space lies on the northern and eastern side of the lot.
26 Delancey Street has an irregular-shaped rectangular building on the front of the lot with an irregular-shaped open backyard.
28 Delancey Street has an irregular-shaped rectangular building on the front of the lot with an irregular-shaped open backyard. There is also an alleyway along the west lot line.
30 Delancey Street has a lot-wide, irregular-shaped, rectangular building on the front of the lot with an irregular-shaped open backyard.
32 Delancey Street has a lot-wide, square building on the front of the lot with open space to the rear of the lot.
34 Delancey Street has a lot-wide, square building that fills the lot.

Perris 1852:

On Rivington Street
Ten structures on nine lots.
19 Rivington Street has a lot-wide building at the front of the lot that has a reverse U-shape and an open backyard.
21 Rivington Street is virtually unchanged from Dripps 1852.
23 Rivington Street has a building at the front of the lot with an alleyway along the eastern lot line.

25 Rivington Street has a lot-wide building on an open deeper lot that may connect with *174 Chrystie Street.*
27-33 Rivington Street has seemingly identical buildings.
27-31 Rivington Street has equally deep open backyards.
33 Rivington Street's backyard is truncated on the southern end.
35 Rivington Street has a lot-wide building with two outbuildings near the rear of the lot.

On Chrystie Street
Nine structures on five lots.
176 Chrystie Street has added a lot-wide structure at the eastern end of the lot with an open are between the front and back buildings.
174 Chrystie Street has added a lot-wide structure at the eastern end of the lot with an open area between the front and back buildings.
172 Chrystie Street is a *"Lumber Yard"* and has small structure with a long, attached shed along the southern lot line in addition to a lot-wide, rectangular structure at the rear lot line. There is an alleyway along the northern lot line and an open area in the middle of the lot.
170 Chrystie Street is a "*Coal Yard*" with a passageway between two buildings that stand at the front of the lot. Most of the lot is open space.
168 Chrystie Street has a large building, labeled "*Bethesda Baptist Church & Public Primary School No. 4".* It is set back from the street and has a double staircase on the street as well as two side yards. There is a small building attached to the center of the rear of the building and it runs to the eastern lot line.

On Forsyth Street
Twenty-five structures on 12 lots.
Practically unchanged from Dripps 1852. Perris 1852 shows the irregular-rectangular buildings to be a series of various-sized extensions attached to the front buildings.

On Delancey Street
Seven structures on six lots.
Mostly unchanged from Dripps 1852. Perris 1852 shows the irregular-rectangular buildings to be a series of various-sized extensions attached to the front buildings. The changes include:
20 Delancey Street has a not-lot-deep, slim structure, set back from Delancey Street that fills the narrow open strip in the eastern lot line. A narrow strip of open space remains to the rear of the addition.
30 Delancey Street has a rectangular building on the front of the lot and a lot-wide, irregular-shaped, rectangular building at the rear of the lot with an open area between the buildings. There is an alleyway along the eastern lot line.

32 Delancey Street has a lot-wide, irregular-shaped, rectangular building on the front of the lot with open space to the rear of the lot.

Viele 1864/1865: *Block 420 South* appears as an open meadow. The nearest stream is to the northeast and approximately 2500 feet from the APE.

Dripps 1867: On Rivington Street

Ten structures on nine lots. Dripps 1867 may be a planning document, rather than an as-built document.

Relatively unchanged except for:

25 Rivington Street no longer connects with *176 Chrystie Street.*

On Chrystie Street

Ten structures on six lots.

176 Chrystie Street is unchanged from Perris 1852.

174 Chrystie Street is unchanged from Perris 1852

172 Chrystie Street has a lot-wide structure in the front of the lot as well as one structure along the eastern lot line, with open space in between.

170 Chrystie Street's lot is split and has two, lot-wide structures in the front of the lot as well as along the eastern lot line, with open space in between.

168 Chrystie Street's large building's footprint has changed. The building is no longer set back from the street. In plan view it is I-shaped with two open spaces or side yards a mid-point along the northern and southern lot lines. There is a narrow, lot-wide open space at the eastern lot line.

On Forsyth Street

Twenty-four structures on 12 lots.

Buildings and lots virtually unchanged from Dripps 1852, except for:

157 Forsyth Street's middle building is not present.

On Delancey Street

Seven structures on six lots.

Practically unchanged from Perris 1852. The changes include:

20 Delancey Street's addition is not in place.

30 Delancey Street's lot-wide, irregular-shaped, rectangular building at the rear of the lot has an extension forward along the western lot line, reducing the open area between the buildings. The alleyway remains.

Robinson 1885: On Rivington Street

Ten structures on nine lots. All are brick buildings.

19 Rivington Street's building covers the lot.

21 Rivington Street's building covers the lot except for an I-shape open space that lies between mid lot and the southern lot line.

23 Rivington Street's nearly covers the lot. There is a 10-foot open space at the rear of the lot. Alleyway is no longer present.

25 Rivington Street is unchanged from Dripps 1867.

27-33 Rivington Street seemingly identical buildings are unchanged from Dripps 1852.
27-29 Rivington Street has 40-foot deep open backyards.
31 Rivington Street has a J-shape open rear yard.
33-35 Rivington Street's buildings and backyards are unchanged from Dripps 1867.

On Chrystie Street
Nine structures on seven lots. The buildings are brick. Street addresses have changed.
176 Chrystie Street's rear building is absent, leaving a 20-foot deep, open space at the rear of the lot.
174 Chrystie Street's rear building is absent, leaving a 30-foot deep, open space at the rear of the lot.
172 Chrystie Street has a lot-wide structure in the front of the lot with a 30-foot deep, open area in the rear of the lot.
170-168 Chrystie Street's lot is split and has two, unequal, lot-wide structures in the front of the lot as well as two equally wide outbuildings along the eastern lot line, with open space in between.
166-160 Chrystie Street (was 168 Chrystie Street) houses "GRAMMAR SCHL.No.20". The large building's footprint is unchanged from 1867.
158 Chrystie Street is a carved out of the rear of three lots on the corner of Delancey and Chrystie Streets. It has a 25-foot deep, open backyard.

On Forsyth Street
Seventeen structures on 12 lots. All buildings at street face are brick, except for one stone building at 153 Forsyth Street.
159 Forsyth Street is unchanged from Dripps1852.
157 Forsyth Street is unchanged from Dripps 1852.
155 Forsyth Street has a lot-wide rectangular building with a 20-foot deep open area at the rear lot line.
153 Forsyth Street has a lot-wide, rectangular, stone building with a 30-foot deep open backyard.
151 Forsyth Street has a rectangular building at both the western and eastern ends of the lot with open space in between. The alleyway is no longer present.
149 Forsyth Street has a lot-wide, rectangular building at both the western and eastern ends of the lot with open space in between. The alleyway is no longer present.
147 Forsyth Street is unchanged from Dripps1852.
145 Forsyth Street has a lot-wide, rectangular building with a 40-foot deep open area to the rear o the building.
143-141 Forsyth Street is a double lot with two lot-wide rectangular buildings with a 30-foot deep open backyard. The alleyways are no longer present.

139 Forsyth Street has a lot-wide, rectangular building at both the western and eastern ends of the lot with open space in between. The alleyway is no longer present.
137 Forsyth Street has a lot-wide rectangular building with a 10-foot deep open space to the rear of the building.

On Delancey Street
Nine structures on eight lots. All the structures on Delancey Street are brick.
The changes include:
20 Delancey Street is divided into three lots, each with a 20-foot deep open area to the rear of a lot-wide, rectangular building.
26 Delancey Street has a lot-wide, rectangular building with a 15-foot deep open backyard.
28 Delancey Street's building's extension is not present.
30 Delancey Street's buildings' footprints have changed, but the alleyway remains.
32 Delancey Street's building's rear extension is absent.

Bromley 1897:

On Rivington Street
Ten structures on nine lots. Buildings' footprints and brick building material remain the same. There is additional information about the number of stories and the presence/absence of basements.
19 Rivington Street has a six-story building with no basement.
21 Rivington Street's building is three-stories high and has a basement.
23 Rivington Street's building has five stories and no basement.
25 Rivington Street's building has five stories and no basement.
27-31 Rivington Street has three, three-storied buildings, each with a basement.
33 Rivington Street has a four-story building with basement.
35 Rivington Street has a five-story building with a basement.

On Chrystie Street
Ten structures on eight lots. All are brick buildings. Footprints are unchanged.
176 Chrystie Street has six stories.
174 Chrystie Street has five stories.
172- 168 Chrystie Street all have five stories.
166-160 Chrystie Street (was 168 Chrystie Street) continue to house "GRAMMAR SCHL.No.20". The large building's footprint is unchanged from 1867. There is no label indicating the number of stories high the schoolhouse is.
158 Chrystie Street has five stories.

On Forsyth Street
Sixteen structures on 12 lots. All buildings at street face are brick. Buildings and lots are virtually unchanged from 1885, except for the notation about the number of stories and the presence of

basements. Since the footprints remain the same on most of the lots, it is assumed that these are basements beneath many of the buildings that date to at least 1852. There are only two lots that contain basements, 145 and 139 Forsyth Street.
159 Forsyth Street is unchanged from Dripps1852.
157 Forsyth Street has a five-story building at the front of the lot.
155 Forsyth Street has a six-story building at the front of the lot.
153 Forsyth Street has a five-story building.
151 Forsyth Street has a five-story building.
149 Forsyth Street has a five-story building.
147 Forsyth Street has a five-story building.
145 Forsyth Street has a five-story building with a basement.
143-141 Forsyth Street has a five-story building.
139 Forsyth Street has a five-story building.
137 Forsyth Street has a three-story building with a basement.

On Delancey Street
Eight structures on eight lots. There are footprint changes for the buildings at 28-30 Delancey Street; otherwise, the footprints remain the same. Only 30 Delancey Street has a basement.
The changes include:
20-24 Delancey Street has three, five-storied buildings.
26 Delancey Street's building has four stories.
28 Delancey Street has a lot-wide, rectangular building with five stories and a 10-foot deep open area in the rear.
30 Delancey Street has a dumb-bell tenement with five stories and a basement. There is a 10-foot deep open area in the rear.
32 Delancey Street's building fills the lot and is four stories high.
34 Delancey Street has a building with two stories.

Bromley 1911:

On Rivington Street
Five structures on five lots. A store is noted for every building.
19 Rivington Street has a six-story building with no basement on a double lot. The building is C-shaped to accommodate an airshaft. There is a one-story addition at the rear of the building, leaving a 10-foot square open spot in the southeast corner of the lot.
23 Rivington Street is unchanged from 1897.
25 Rivington Street is unchanged from 1897.
27-31 Rivington Street is a single lot with one, six-story building that has a 10-foot wide, L-shaped open space at the rear of the lot.
33-35 Rivington Street is a single lot with one, six-story building that fills the lot.

On Chrystie Street
Eight structures on six lots. All are brick buildings. All buildings but the school have stores.
Unchanged from 1897, except for:
168 Chrystie Street has one five-story building, replacing two five-story buildings at the front of the lot. The two, back lot buildings

have not changed footprints since 1885 and are each four-stories tall and have no basements.
160 Chrystie Street renamed *"PUBLIC SCHOOL No. 35"*.

On Forsyth Street
Fourteen structures on 10 lots. The label "S" for store appears on all the buildings.
Buildings and lots virtually unchanged from 1885 and 1897.
157 Forsyth Street's back building is four-stories high.
151-149 Forsyth Street's back buildings have four stories.
139 Forsyth Street's back building has five stories and has a very narrow 10-foot strip of open land at the western end of the lot.

On Delancey Street
Eight structures on eight lots. A store is noted for every building on Delancey Street.
The changes include:
20 Delancey Street has a one-story addition at the rear of the lot, thus the building covers the lot.
32 Delancey Street's lot is reconfigured to include the rear part of 137 Forsyth Street.
34 Delancey Street's lot is reconfigured to include the front part of 137 Forsyth Street. A six-story, brick building covers the lot on the southeast corner of Block 420 South.

Bromley 1916:

On Rivington Street
Five structures on five lots.
The lots are virtually unchanged except for:
27-29 Rivington Street has an airshaft midway along the eastern lot line.
31-35 Rivington Street has an airshaft midway along the western lot line.

On Chrystie Street
Eight structures on six lots.
Unchanged from 1897, except for:
160 Chrystie Street has four, one-story additions on the east side of the "arms" of the four-storied, I-shaped school building, thus reducing the open areas along the north, east, and south lot lines.

On Forsyth Street
Fourteen structures on 10 lots.
Buildings and lots virtually unchanged from 1885 and 1897, except for:
147 Forsyth Street has a five-story, dumb-bell, brick tenement that has a 10-foot deep strip at the rear of the lot.

On Delancey Street
Eight structures on eight lots.
Buildings and lots virtually unchanged except for:

28 Delancey Street has a five-story dumb-bell tenement with an airshaft mid-way along the western lot line. There is a 10-foot deep open area at the rear of the lot.

Bromley 1926: On Rivington Street
Unchanged from 1916.

On Chrystie Street
Seven buildings on five lots.
Buildings and lots are unchanged from 1916, except for:
158 Chrystie Street is incorporated into the Libby Hotel, a 12-story building with a store, at the southwest corner of Block 420 South.

On Forsyth Street
Fourteen structures on 10 lots.
Buildings and lots unchanged from 1916.

On Delancey Street
Five structures on five lots. The buildings and lots are virtually unchanged.
The change includes:
20-26 Delancey Street's "LIBBY HOTEL" is 12 stories high with stores. Its footprint covers the lot. No basement is noted, but there are three elevator shafts.

Bromley 1932: On Rivington Street
Unchanged from 1916 and 1926.

On Chrystie Street
Seven buildings on five lots.
Buildings and lots are unchanged from 1926.

On Forsyth Street
Fourteen structures on 10 lots.
Buildings and lots unchanged from 1916 and 1926.

On Delancey Street
Unchanged from 1926.

Bromley 1955: On Rivington, Chrystie, Forsyth, and Delancey Streets
The nine Rivington Street lots, the eight lots on Chrystie Street, the 12 lots on Forsyth Street, and the eight lots on Delancey Street are incorporated into the southern-block section of the Sara Delano Roosevelt Park north of Delancey Street. The Rivington Street roadbed and sidewalks are demapped and that land is also included in the park. Land for the park is purchased in 1929, and the public park constructed in 1934 (Alexander R. Brash: personal communication, December 5, 2001). In 1930 Chrystie Street is widened 25 feet on the east side, and Forsyth Street is widened 20 feet on the west side (City of New York, Final Damage Map.... 1930).

Bromley 1967: On Rivington, Chrystie, Forsyth, and Delancey Streets

Unchanged from 1955.

Bromley 1974: On Rivington, Chrystie, Forsyth, and Delancey Streets
Unchanged from 1955.

Sanborn 1984/1985: On Rivington, Chrystie, Forsyth, and Delancey Streets
Unchanged from 1955.

Sanborn 1990/1991: On Rivington, Chrystie, Forsyth, and Delancey Streets
Unchanged from 1955.

Sanborn 2001: On Rivington, Chrystie, Forsyth, and Delancey Streets
Unchanged from 1955.

Street Elevation Table

Block 420 street elevations over time are presented in the Second Avenue and Chrystie Street roadbed section of this appendix.

Tax and Directory Table

LOCATION	1808	1820	1834	1844	1858	1869	1876
BLOCK 420C Chrystie and Forsyth Streets between Rivington and Delancey Streets							
232 Chrystie Street	No reels	No reels	E. Warren	D. Winship	G. Peck	Est of Maydell	J. Fisher
230 Chrystie Street	No reels	No reels	H. Morrison	D. Winship	D. Winship	J. Home	J. Fisher
228 Chrystie Street	No reels	No reels	M. Devic	D. Winship	D. Winship	C. Francis	J. Fisher
226 Chrystie Street	No reels	No reels	K. Doch	D. Winship	D. Winship	C. Francis	J. Fisher
224 Chrystie Street	No reels	No reels	J. Lammers	C. Pitts	J. Weir	C. Francis	H. Kinzing
222 Chrystie Street	No reels	No reels	Widow Schwinn	Est of Dominick	M. Pascuets	J. Mulney	H. Kinzing
220 Chrystie Street	No reels	No reels	D. Bishop	Est of Dominick	L. Quincy	J. Cahler	M. Lawrence
218 Chrystie Street	No reels	No reels	R. Provost	Est of H. Sommervale	L. Quincy	J. Cahler	H. Drake
216 Chrystie Street	No reels	No reels	J. Horne	S. S. Baryy	J. Wall	J. Cahler	A. Hubbard
214 Chrystie Street	No reels	No reels	P.Conner	A. Briar	H. Morris	H. Morris	H. Moprris
South Side							
19 Rivington Street	No reels	No reels	J. Raymond	W. Taylor	W.B. Miles	H. Dominick	J. McCabe
21 Rivington Street	No reels	No reels	T. Segison	S. Williams	W.B. Miles	D. Lewis	G. Webber

23 Rivington Street	No reels	No reels	D. Clark	S. Williams	W.B. Miles	A. Gibson	R.McClay
25 Rivington Street	No reels	No reels	P. Collins	J. Farari	S. Jenner	J. Delgadio	G.E. Ward
27 Rivington Street	No reels	No reels	H. Harris	W. Flanders	Est of Appley	D. Biancomano	T. Liones
29 Rivington Street	No reels	No reels	J. Smith	Est of Morrison	M. Hunk	P. Sposito	W. Daton
31 Rivington Street	No reels	No reels	G. Morrill	J. Horn	I. Barker	B. Zerio	G. Topper
33 Rivington Street	No reels	No reels	M.H. Underhill	J. Horn	E. Mulberry	G. Ellrick	M. Monson
35 Rivington Street	No reels	No reels	T. Williams	J. Horn	E. Mulberry	E. Mulberry	E. Daley
159 Forsyth Street	No reels	No reels	J. Minuse	J. Jackson	Est of Ridaback	M. Lewis	C. Lawrence
157 Forsyth Street	No reels	No reels	J. Weir	J. Soundsbury	Est of Ridaback	M. Lewis	P. Bright
155 Forsyth Street	No reels	No reels	S. Saquett	J. Brinkley	J. Shrady	M. Lewis	D. Lennon
153 Forsyth Street	No reels	No reels	J. Loundsbury	V. Norris	J. Shrady	M. Lewis	D. Lennon
151 Forsyth Street	No reels	No reels	G.E. Folger	P. Aloisa	M.N. Fields	E. Rogers	D. Lennon
149 Forsyth Street	No reels	No reels	Mrs. Ennefs	Est. of Donelli	K. White	K. Wheeler	N. Lehigh
147 Forsyth Street	No reels	No reels	F. Baker	D. Lello	M. Dunsmore	C. Bennington	P. Brown
145 Forsyth Street	No reels	No reels	J. Reynolds	S.S. Berry	M. Walters	G. Hastings	R. Heights
143 Forsyth Street	No reels	No reels	T. Begison	S.S. Berry	D. Karydis	L.Leroy	H. Lockwood
141 Forsyth Street	No reels	No reels	D. Clark	J. Wood	E. Karydis	H. Livingston	A. Stagg
139 Forsyth Street	No reels	No reels	H. Harris	S. Allen	J. Amara	H. Livingston	A. Stagg
137 Forsyth Street	No reels	No reels	R. Roberts	A. Brooks	J. Amara	H. Livingston	Heir of Gradman
135 Forsyth Street	No reels	No reels	B. Giles	A. Brooks	D. Charles	B. Weaver	E. Phelan
20 Delancey Street	No reels	No reels	C. Anderson	H. Owens	P. Valentine	J. Rose	S. Beedle
22 Delancey Street	No reels	No reels	D. Wattles	H. Owens	W. Cooper	K. McCallister	W. Hall
24 Delancey Street	No reels	No reels	H. Dukes	H. Owens	W. Cooper	C. Lawson	W. Brooks
26 Delancey Street	No reels	No reels	J. Buckman	H. Owens	T. Monroe	H. Ford	W. Brooks
28 Delancey Street	No reels	No reels	J. Buckman	H. Gardner	J. Ruzo	D. Dibble	F. Rutherford
30 Delancey Street	No reels	No reels	A. Wright	G. Meade	J. Ruzo	D. Dibble	M. Rutherford
32 Delancey Street	No reels	No reels	K. Allen	S. Jones	M. Sansibrino	J. Beekman	V. Dilly
34 Delancey Street	No reels	No reels	J. Smith	J. Smith	J. Arruda	G. Thompson	W. Slain

36 Delancey Street	No reels	No reels	J. Smith	J. Smith	J. Arruda	H. Able	Widow Kippan

Precontact Sensitivity

The one soil boring for Block 420 South was taken beneath the sidewalk on the north side of Delancey Street and measured 30 feet of miscellaneous sand, gravel, and brick fill. This fill, as well as footings and basements beneath structures, which once stood within the APE, may have affected the potential for encountering precontact and contact material remains. However, this depends upon the depth of fill versus the depth of basements. If deep fill levels were added prior to 19th century intensive development, precontact and contact resources may be buried deep enough to have escaped disturbance. As is the case with the blocks north of East Houston Street, this section of the APE, Block 420 South, has only a moderate potential for cultural remains three to four feet beneath the base of the fill layers. However, there is no precontact period potential where the subway runs beneath Chrystie Street.

Historical Sensitivity

Chrystie and Forsyth Streets along Block 420 South were widened in 1930. Therefore, there is a possibility that early 19th century and onward historical archaeological features that were within the historical block may lie in the present roadbed and beneath the sidewalks as well as within the block itself. These roadbed resources are considered in *Section 4.5.7.1*, Documentary Assessment of APE, Second Avenue and Chrystie Street roadbeds. By and large, the buildings on Block 420 South fronted on the street and had little or no open front-yard space. Thus, there is little likelihood of encountering significant cultural remains beneath the widened Chrystie and Forsyth Streets. The exception may be the 1830s church's side yard on the east side of Chrystie Street, should it have served as a burying place and survived subsequent development of the lots by a hotel. The primary archaeological resource of concern here is the potential evidence from the development and redevelopment of the block for residential and commercial purposes, which may have left traces that are visible in the archaeological record. Such archaeological traces include shaft features like cisterns, wells, privies, and ash pits.. Additionally, between the 1850s and 1930, when the block was razed in preparation for the Sara Delano Roosevelt Park, first a church, then a church and public school combination, and finally a public school occupied 166-160 Chrystie Street. There may be pockets of undisturbed materials connected with the public school.

The one soil boring for Block 420 South was taken beneath the sidewalk on the north side of Delancey Street and measured 30 feet of miscellaneous sand, gravel and brick fill. Brick was the construction material of choice for the buildings on the block. Water was encountered at 27 feet below surface, suggesting that well shafts would have needed to be deep. A comparison of cartographic sources suggests that there is a limited possibility for archaeological materials to remain relatively intact within Block 420 South, with the exception of the possibility of the potentially deep well shafts. As the cartographic review treated the north, west, east, and south sides of Block 420 South in that order, so, too will the historical sensitivity section that follows.

On Rivington Street

There is a limited possibility for archaeological remains in one of the backyards of the nine lots and beneath the brick buildings without basements at 19-39 Rivington Street. The primary archaeological resources of concern here include the potential evidence from residential backyard shaft features, such as cisterns, wells, privies, and ash pits, and perhaps from a commercial site. Rivington Street was legally opened in 1795. Sewers were in place along Chrystie and Forsyth Streets in the 1860s and city water was available along these north/south streets between 1904 and 1911. Water was available one block west on Rivington Street in 1889. If the availability of city utilities moved uptown on cross streets through time as the WPA utility maps suggest, then the Rivington Street tenements had a sewer pipe running beneath the street after 1910 when Delancey Street had a sewer line.

The nine lots fronting Rivington Street were developed with brick multi-story buildings at least as early as 1836. There were at least two episodes of redevelopment of the tenements before they were torn down in the early 1930s. Nonetheless, the backyard of the tenement at 25 Rivington Street may hold relatively undisturbed evidence from the mid-19th century lumber yard and subsequent use of the property by the tenement dwellers and workers from at least 1885 to 1930. This is particularly true since it appears that city services were not available, much less tapped into or hooked up, for more than 60 years, that is, until the first decade of the 20th century. The existing wells would need to have been at least 27 feet deep and may lie truncated beneath the overburden of fill. There were at least two episodes of land-use changes for the lots before the development of the park, that is, tenement building and rebuilding. Additionally, some commercial space was converted to residential use. Thus, undisturbed archaeological resources may lie beneath the backyard of 25 Rivington Street that remained open from at least 1852 to 1930.

On Chrystie Street

There is a moderate possibility for archaeological remains in the backyards of three lots at 176 and 170-168 Chrystie Street. The primary archaeological resources of concern here include the potential evidence from residential backyard shaft features, such as cisterns, wells, privies, and ash pits. The eight lots were developed with brick multi-story buildings at least as early as 1852. On three lots there have been open backyard areas from at least the early 1850s until 1930 when the tenements were demolished in preparation for the Sara Delano Roosevelt Park. The large open areas at the rear of the buildings in the central section of the Chrystie Street side of the block have the potential for providing evidence about the daily activities of the people who lived and worked on the block. The back buildings at the rear of 170-168 Chrystie Street straddled the lot lines of 151-149 Forsyth Street. Even though sewers were available in 1867 and water in 1903 along this block of Chrystie Street, in all likelihood, cisterns, wells, and privies were still in use well after the construction of the sewer and water lines. Wells would have had to have been at least 27 feet deep, so a truncated section of the potential wells may lie beneath the fill noted in the soil boring on the south side of the block.

While the footprint changes for the public school (160-166 Chrystie Street) reduced the open areas around the building, there may be pockets of intact subsurface cultural remains having to do with schools. There is a growing body of archaeological work having to do with schools and school yards, and any information may contribute to a

further understanding about the policies and practices of public education (Gibb and Beisaw 2002; Schneiderman-Fox, et al 2001). Unfortunately, the side yard (on Chrystie Street) and the other side- and backyard of the 1830s-1840s church that stood on the southwest corner of the block was probably adversely affected by the construction of the Libby Hotel between 1916 and 1926. Popular opinion has it that there were several sub-basements beneath the hotel, so that there is only a very limited chance for intact remains from the southwest corner of the block even before the widening of the east side of Chrystie Street. Thus, before the conversion of a residential and commercial area into a park, there were only two episodes of land-use changes for the lots, that is, tenement building and rebuilding, other than the widening of the east side of Chrystie Street. There is a moderate possibility that intact archaeological resources may lie beneath the backyards on the east side of Chrystie Street between Stanton and Rivington Streets.

On Forsyth Street

There is a moderate to good possibility for archaeological remains in five open areas to the rear of buildings on Forsyth Street. The primary archaeological resources of concern here include the potential evidence from residential backyard shaft features, such as cisterns, wells, privies, and ash pits as well as backyard surfaces that may show traces of daily activities. The Forsyth Street lots were developed at least as early as 1836. Although a sewer ran beneath this section of Forsyth Street in 1868 and water was available in 1904, in all likelihood, for decades, the Forsyth Street dwellers and workers probably continued to use the cisterns, wells, and privies on their lots. The backyards that remained open areas include the mid-yards (common to both the front and back buildings), at 157, 151, 149 and 139 Forsyth Street and the backyards of 143 and 141 Forsyth Street. Of particular note are the four-story, brick back buildings at 151 and 149 Forsyth Street that straddled the lot line of 170 and 168 Chrystie Street. There was very little redevelopment of the tenements in the middle of the block before they were torn down in the early 1930s. In 1930 Forsyth Street was widened on the west side, and with no open front yards, there is little chance of encountering significant archaeological material beneath the sidewalk and present roadbed. Thus, the open mid-yards and backyards of the tenements with stores on the 159-137 block of Forsyth Street may hold relatively undisturbed evidence about the daily activities of the people who lived and worked on the block from at least 1852 to 1930.

On Delancey Street

There is a limited possibility for archaeological remains in two of the backyards of the eight lots on the Delancey Street side of Block 420 South. The primary archaeological resources of concern here include the potential evidence from residential backyard shaft features, such as cisterns, wells, privies, and ash pits. Soil boring data note that the water level is 27 feet below surface; thus, wells would need to have been deep, which means that truncated wells may be encountered below any fill on the block. Delancey Street was legally opened in 1795. Sewers were in place along Chrystie and Forsyth Streets in the 1860s. In 1910 Delancey Street had a sewer line. The eight lots on Delancey Street were developed at least as early as 1836. There were at least two episodes of redevelopment of the tenements before they were torn down in the early 1930s. Nonetheless, the 10-foot deep open area to the rear of 28 and 30 Delancey Street may hold relatively undisturbed evidence from the use of the property by the tenement dwellers and workers from at least 1836 to 1930. This is particularly true since it appears that city services were not available, much less likely to be connected to or hooked up to

the tenements, for more than 50 years, that is, until the end of the 19th century. It is possible that for almost 80 years the open areas in these two backyards served the block's dwellers and workers as a place for daily activities. Unfortunately, the construction of the 12-story Libby Hotel, some time between 1916 and 1926, probably had an adverse effect on any possible archaeological resources connected with the church that stood on the southwest corner during the 1830s and 1840s. There were at least two episodes of land-use changes for the lots before the development of the park, that is, tenement building and rebuilding. Undisturbed archaeological resources may lie beneath the 10-foot deep area to the rear of 28 and 30 Delancey Street.

4.5.7.2 Site File Search Results, NYCLPC, NYSOPRHP and NYSM

SITE FILE SEARCH RESULTS

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

~~Village~~ City 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 ~~21~~ 19

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
7248 X		~~2- A061.01.0014 D03~~	survey in the 1970's
		3- A061.01.0623 X D023	2nd found historic Remains.
		4- A061.01.06763 X	no other info was found.)
		~~5- A061.01.0001~~	
	209 Water St. South Street NR 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	
		A061.01.01286 X	
		A061.01.0541 X	
		A061.01.00542 X	
		A061.01.09531 X	

*According to Cynthia Blakemore @ SHPO

ATIONAL REGISTER E. GIBLE and LISTED ___ X ___ Eligible ___ ___ Listed ___ X ___ Building Inventory

uilding 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] William O. Hersey – 1963 Castle Clinton at the Battery

[redacted] Broad Street Financial Center Greenhouse January 1985

X

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

[redacted] Stone Street Historic District 1977, 8/1[illegible] NYC Landmarks Pres. Comm. Trachter

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

[redacted] 175 Water Street Block Geismar July 1983

[redacted] Schermerhorn Row Block. Kardon & Larrabee – Aug. 1991

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

[redacted] East River Roads – New York Harbor Collection Kardon & Larrabee October 1977

10 Sheridan Square – 1983 – Rutgers University

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

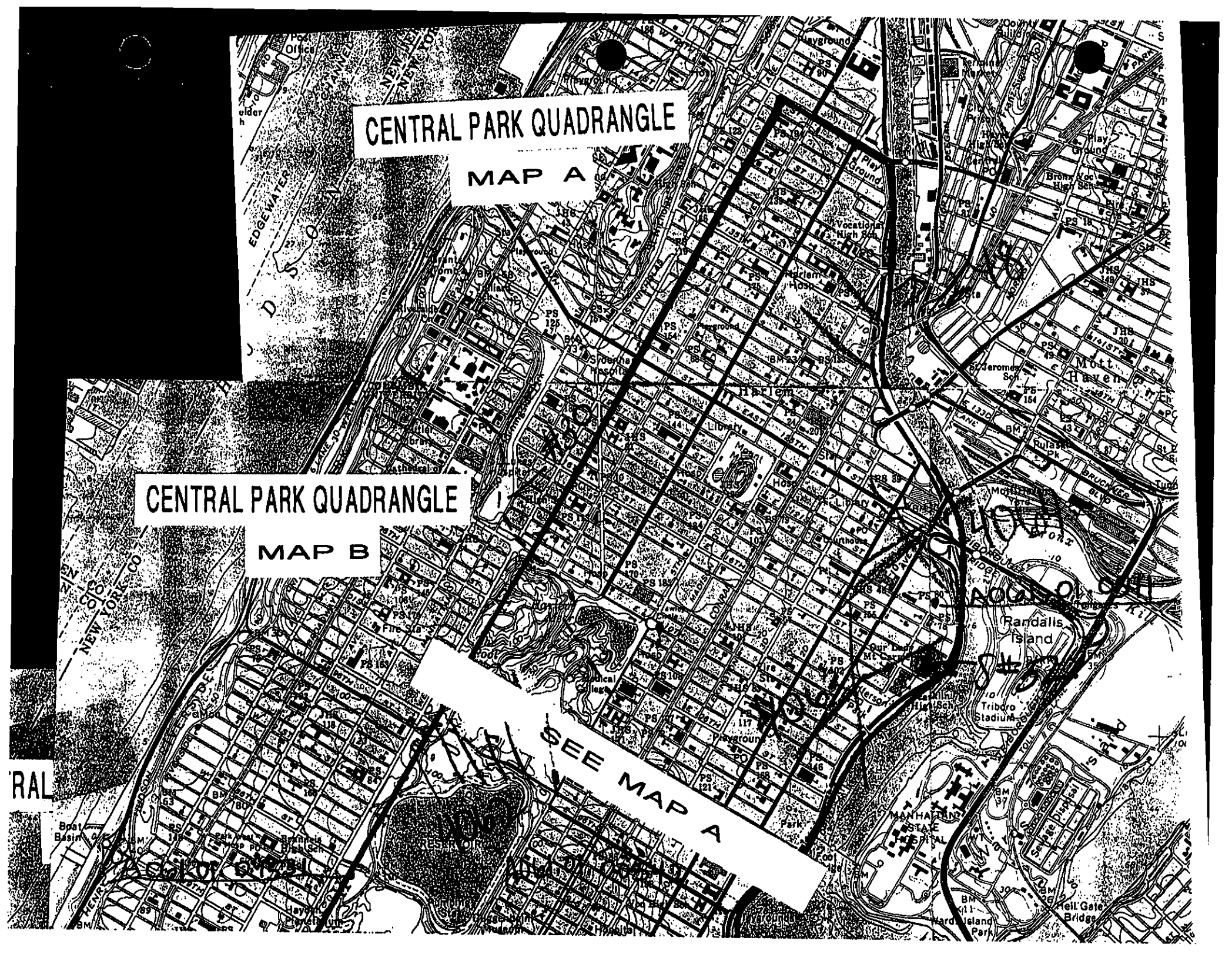
[redacted] 750 Sixth Ave. HPI – February 1998

[redacted] Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1989 / December 1989

[redacted] East River Plaza HPI Sept. 1998

[redacted] Stone Street Historic District NYC Landmark Pres. Comm. February 1998

7 Tel[illegible] Block – S. St. Seaport Historic District 1983


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A


SEE MAP C
S#27
S#25
Long Island City
Queens County Court House
Queens Borough Hall
Queensboro Bridge
Welfare Island
Rainey Park
Astoria Park
Triborough Bridge
Hell Gate Bridge
Randalls Island
Flushing Bay
Flushing River
Bowery Bay
Hallets Cove
Barretts Cove
Astoria
Ditmars Blvd
Broadway
Jackson Ave
Vernon Blvd
Queens Plaza
Grand Central Pkwy
Roosevelt Ave
Northern Blvd
Queens Blvd
Crescent St
21st St
31st St
Steinway St
Main St
Fordham University
Lincoln Center
Coliseum
Columbus Circle
Central Park
The Mall
The Lake
Reservoir
Metropolitan Museum of Art
Museum of Natural History
Carnegie Hall
Public Library
Main Library
Bryant Park
Herald Sq
Macy's
Pennsylvania Station
Madison Sq
Empire State Bldg
Chrysler Bldg
United Nations
Grand Central Station
Rockefeller Center
St Bartholomew's Ch
Roosevelt Hospital
St Luke's Hospital
Columbia Presbyterian Hospital
Sloan-Kettering Institute
Cornell Univ Medical College
Rockefeller Univ
Manhattan State Hospital
Correction Dept Hospital
Elmhurst Gen Hosp
St Rita's
Triborough Bridge
Pharmacy College
Fire Sta
Playground
Park
Library
Hospital
Health Center
Radio Tower (WLIB)
Flushing Meadow Park
Astoria Field
St George's Ch
Manhattan College
Parkchester
Pelham Bay Park
Throgs Neck Bridge
Whitestone Bridge
Bronx-Whitestone Bridge
Willis Ave Bridge
Third Ave Bridge
Madison Ave Bridge
Park Ave Bridge
Lexington Ave Bridge
Queensboro Bridge
Ed Koch Queensboro Bridge
Roosevelt Island
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American Museum of Natural History
Metropolitan Museum of Art
N Y Historical Society
PS 199
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Playground
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Roosevelt Hosp
Coliseum
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Park
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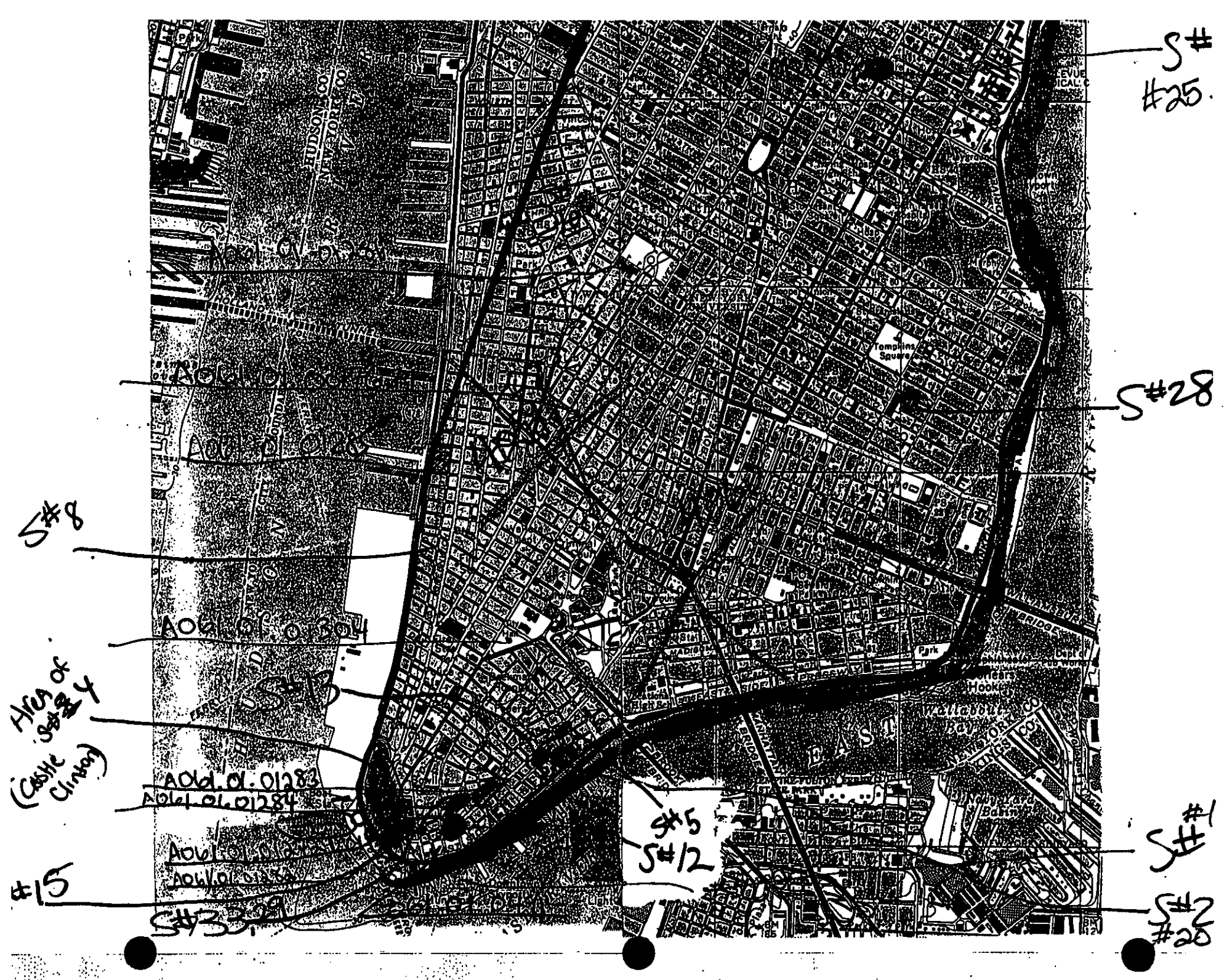
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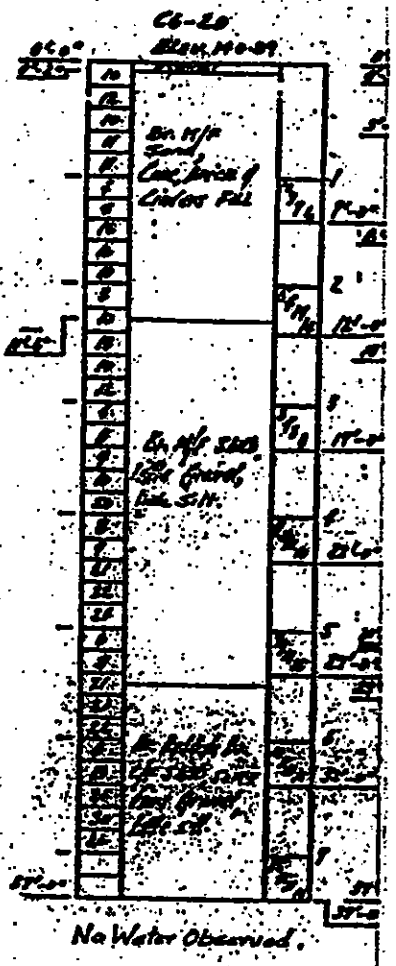
NEW YORK CO

4.5.7.3 Soil Boring Logs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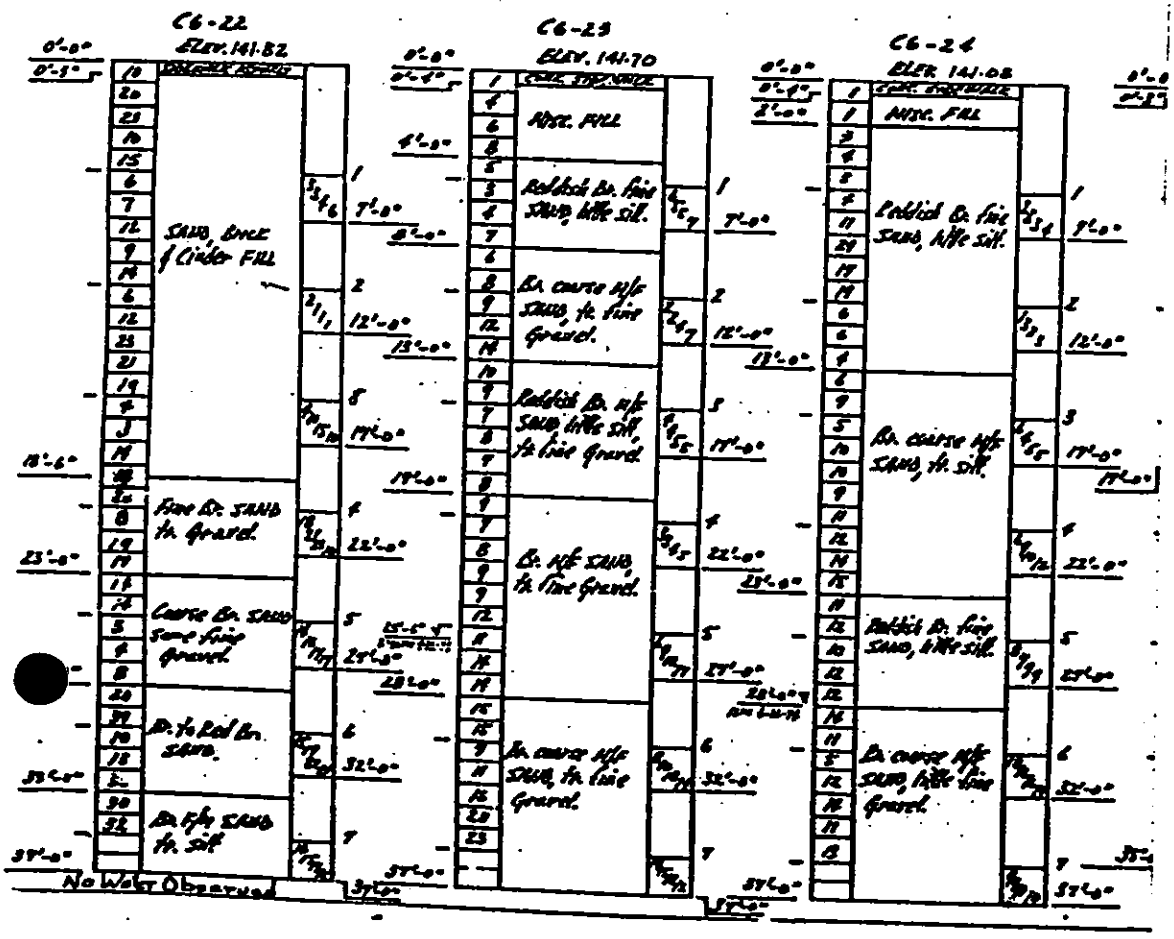

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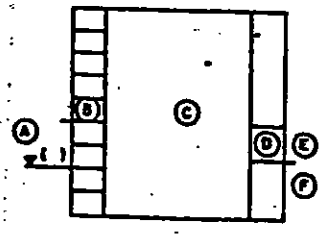


(A) WATER LEVEL ( ) HOURS AFTER COMPLETION.

(B) NUMBER OF BLOWS OF A 300 LB. HAMMER FALLING 18" REQUIRED TO DRIVE A 2½" DIA. CASING (UNLESS OTHERWISE NOTED) EACH 12".

(C) STRATA DESCRIPTION.

(D) NUMBER OF BLOWS OF A 140 LB. HAMMER (UNLESS OTHERWISE NOTED) FALLING 30" REQUIRED TO DRIVE A 2" SPLIT SPOON EACH 6".

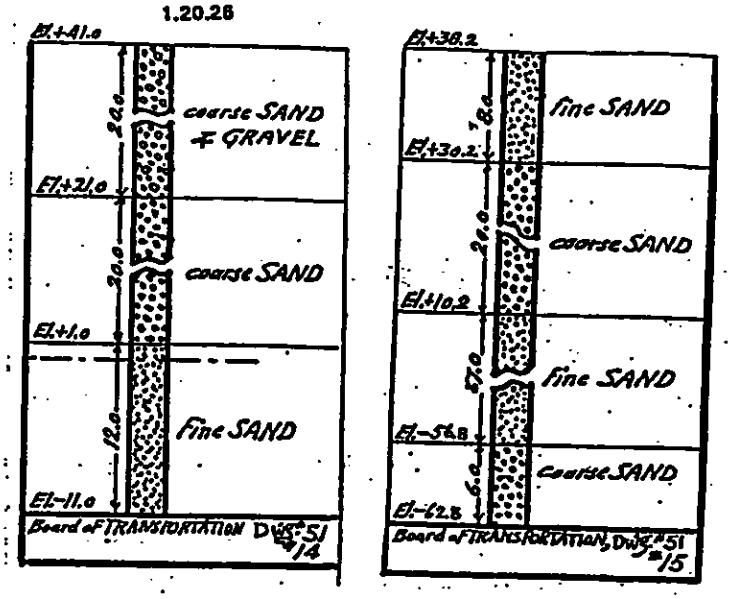
(E) SAMPLE NUMBER.

(F) DEPTH AT END OF SAMPLE DRIVE.

THIS IS TO CERTIFY THAT THIS DRAWING IS A COMPILATION OF INFORMATION CONTAINED, FROM THE PUBLISHED CODE.

Edwin D. Hastings

1.20.26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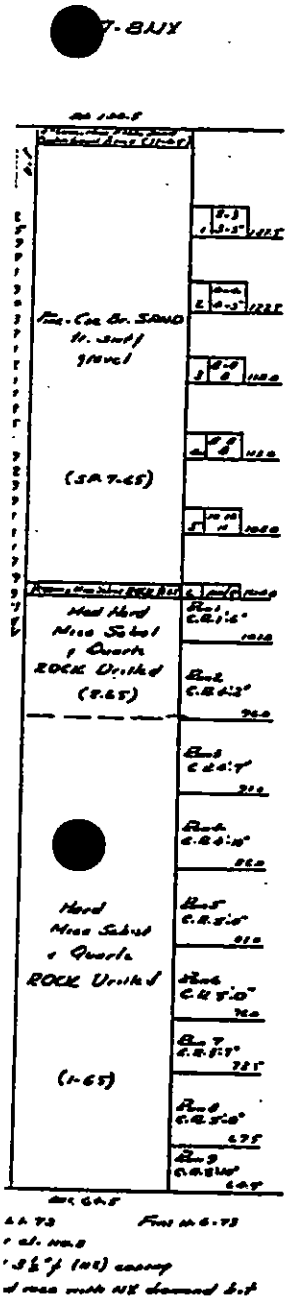

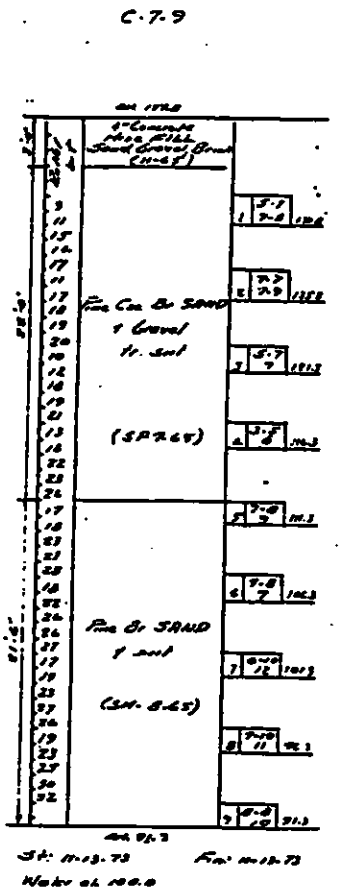

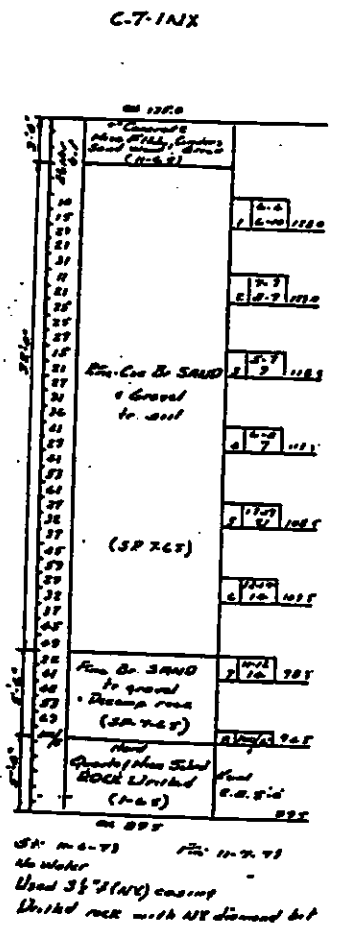

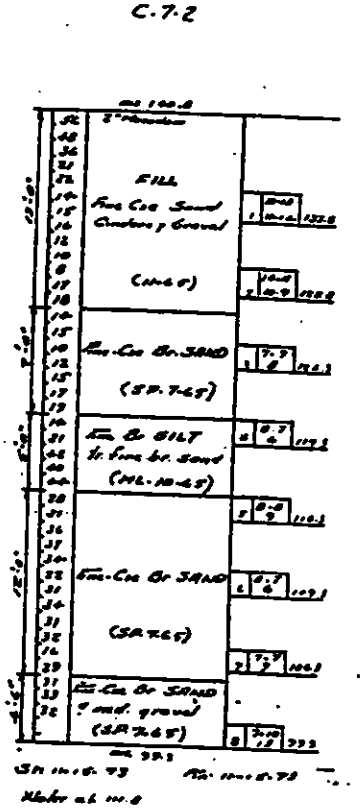



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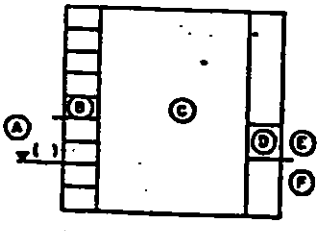

(A) WATER LEVEL ( ) HOURS AFTER COMPLETION.

(B) NUMBER OF BLOWS OF A 300 LB. HAMMER FALLING 18" REQUIRED TO DRIVE A 2½" DIA. CASING (UNLESS OTHERWISE NOTED) EACH 12".

(C) STRATA DESCRIPTION.

(D) NUMBER OF BLOWS OF A 140 LB. HAMMER (UNLESS OTHERWISE NOTED) FALLING 30" REQUIRED TO DRIVE A 2" SPLIT SPOON EACH 6".

(E) SAMPLE NUMBER.

(F) DEPTH AT END OF SAMPLE DRIVE.

Sheet 3 of 4

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TEST BORINGS FOR SECOND AVE. SUBWAY NEW YORK CITY TRANSIT SYSTEM ROUTE 132C SECTION 7
DE LEUW, CATHER & CO. ENGINEERS NEW YORK NEW YORK
SPRAGUE & HENWOOD INC. BORING CONTRACTOR HOBOKEN NEW JERSEY
SCALES: PLAN: 1"=40' SECTION: 1"=6' DATE: 12-24-73 DWN BY: RG CHKD BY:

4.5.7 Appendices

4.5.7.1 Documentary Assessment of APE

Second Avenue and Chrystie Street roadbeds

The cartographic history of the Second Avenue and Chrystie Street roadbeds from East 6th Street south to East Houston Street, and from East Houston Street south to Delancey Street is detailed below. Several blocks, which fall outside the APE, but could have potential resources, which extended into the APE, are discussed as part of this cartographic history. Separate histories for Blocks 457, 443, and 420 follow.

Cartographic History

Manatus 1639: The APE is depicted as fairly flat open space with decentralized, dispersed farms (bouweries).

Castello 1660: Area not included on map. Castello Plan's northern border is just north of Wall Street, approximately 9000' south of the area.

Miller 1695: APE is approximately 9000' north of northern boundary of Miller map.

Lyne-Bradford 1730: Area approximately 5000' north of northern boundary of Lyne-Bradford map.

Carwitham 1730: APE is approximately 5000' north of northern boundary of map.

Buchnerd 1735: The APE is about 5000' north of northern boundary of these plans.

Grim 1743: Area is just north of the northern boundary of the Grim Plan.

Maerschalck 1754: The APE is about 1500' north of the northern boundary of this plan.

Montresor 1766: The APE appears to be a patch-work quilt of bounded open fields, one with an orchard.
The "James Delancey" estate on the east side of the "Road to Albany and Boston" lies to the south and west of the APE. Several other residences with walled-in gardens front on the "Road to Albany and Boston," otherwise known as "Bowry Lane" (Ratzer 1766). The APE lies about 400-500' east of the Bowery Lane. First Street (later Chrystie Street), one block east of Bowery Lane, does not yet appear on the map. More residences face east than west onto Bowery Lane. However, the accuracy of this figure is questionable given that Augustyn and Cohen called it "John Montresor's flawed map" (1997:73).

Ratzer 1766/67: The northernmost boundary of the APE lies approximately 700' north of the northern boundary of the Ratzer Plan. A series of northwest to southeast running diagonal property lines appear on the Ratzer Plan and continue to be noted on modern maps. The northernmost diagonal line cuts through the southeastern corner of the block between East 6th Street and East 5th Street, and the southernmost diagonal line cuts through the southern one-third of

the block between East Houston Street on the north and Stanton Street on the south.

This southernmost diagonal line north of the Depeyster property is shown on the 2001 Sanborn as running through the project site just north of Stanton Street. This section of the APE falls just north and east of the "M. Depeyster" estate garden and residence complex that fronts on the east side of Bowery Lane. Measurements indicate that the APE is 400-500' east of "Bowry Lane," and this map shows it as open fields and orchards for the three structures, presumed to be residences, that lie close to the road on the east side of Bowery Lane. First Street (Chrystie Street) is not depicted.

British Headquarters 1782: The APE continues to be depicted as residential and agricultural. A series of structures, represented by red squares, lie along the east side of Bowery Lane, and several are scattered in the tree-studded fields to the east of the road. There are also several structures, east of Bowery Lane, which appear to be close to, but not within, this section of the APE. The landscape within the APE is fairly flat, with hills rising to the east and west. Lanes appear along the trapezoidal division lines discussed above. A stream runs roughly north and south, about a block east of the APE.

McComb 1789: The APE appears as undeveloped land with dotted lines outlining only the trapezoidal-shaped property boundaries.

Taylor-Roberts 1797: The APE, from roughly East 4th Street south, is included on the Taylor-Roberts Plan, but it is not shown as being subdivided into city blocks. Trapezoidal property boundaries differ somewhat from the 1766 Ratzer and 2001 Sanborn maps, as they appeared to be somewhat straightened out. What will become the eight blocks on either side of Second Avenue from East 4th Street south to East 1st Street appear as flat, tree dotted, open land divided diagonally (northwest to southeast) by property lines that front on the east side of Bowery Road. The north/south street grid terminates just north of "North Street" (East Houston Street) and just south of the trapezoidal-shaped properties. What will become East Houston Street was named "North Street" and ran between Bowery Road and the East River.

Chrystie Street, then 1st Street, was present. The "Negros BURYING GROUND" appears as a rectangular plot of land that lies on the west side of 1st Street mid-way between Stanton Street and Rivington Street, on what will eventually become Block 426. Both the block and the cemetery appear to lie directly west of the APE. There appear to be no other developments on the APE.

Bridges 1803/1807: The immediate area has been gridded. East Houston Street, then North Street, and Chrystie, then 1st Street, are both present. The configuration as well as the names of the streets (there are no avenues listed) north of East Houston Street differs from other maps, including the mapping Randel completed in 1820 in

conjunction with his manuscript farm maps. Randel's avenue and street placements, which are considered accurate, coincide with their current locations.

Randel 1820: This manuscript farm map shows Second Avenue and the cross streets in place, thus depicting the Commissioners' grid overlaid on the landscape that is shifting from agricultural and residential use to commercial, cemetery, and residential use. There are no structures in the roadbed of this section of the APE. The northern four blocks bounding the APE between East 6th Street and East 2nd Streets show no development in the APE. Topographically, Randel penciled in a gentle ridge that ran in a diagonal, northeast to southwest line, traversing the APE from just south of the Second Avenue and East 6th Street intersection to just south of the Second Avenue and East 5th Street intersection.

On Block 442, between East 1st Street and East Houston Street, the northern one-third of the block has no development on Second Avenue, but the southern two-thirds has four structures with some intervening open space. On that same block along the north side of North (East Houston) Street there is the "Cemetery of the 1st Baptist Church." Running from west to east, it occupies the mid-section of the block. Just west of and adjacent to the cemetery, the "First Baptist Church" also has property that is part of the open or undeveloped area in the northern one-third of the block, mentioned above.

Colton 1836: The general area of the APE is subdivided into city blocks and each block is shaded suggesting development. Second Avenue as well as surrounding streets (e.g. East 6th, East 5th, East 4th, etc.) continues to be noted. Houston Street and Chrystie Street names are in place. The general configuration of the blocks north of Houston Street and the street alignments are similar to their 2001 configuration. No structures or other features appear in the roadbed, and no specific features or structures are depicted within the APE between East 6th Street south to East 3rd Street.

On the east side of the APE, about half-way between East 3rd Street and East 2nd Street (now Block 458), sits a rectangular structure surrounded on three sides with a narrow strip of undeveloped land. It is labeled "Second Avenue" Presbyterian Church (Tanner 1836).

Along the APE between the north side of Houston Street and Delancey Street, Colton notes three areas that appear as cemeteries when compared to an 1820 map, another 1836 map, and an 1852 map (Randel; Tanner; Dripps). On the north side of "Houston" between Second Avenue and First Avenues (Block 442) is an unnamed, trapezoid-shaped open space that corresponds to the 1st Baptist Church Cemetery on the 1820 Randel farm map. On the south side of Houston Street between Chrystie Street on the west

and Eldridge Street on the east there are two rectangular open areas on the northern halves of their blocks (Blocks 420 and 422). The boundary lines of these two rectangles abut not only Houston Street, but also the east side of Chrystie Street as well as the west and east sides of Forsyth Street. On the Colton map, the open spaces appear to be either planted with shrubs or else dotted with gravestones. On the northwest corner of the eastern block there is a rectangular structure with the plantings or grave markers surrounding it.

Another 1836 map (Tanner) differs in some of the details concerning these two open areas. Tanner notes only a structure and no open area on what later becomes Block 420. The Tanner atlas map lists the structure on the western section of the block as the "Union" Baptist Church. Colton and Tanner also differ on the location of the structure on the eastern side of the block. While Colton places it in the northwest corner of the block surrounded by plants or gravestones, Tanner shows it in the northeast corner surrounded by open space and labels it "Mission" Reformed Dutch Church. The Dripps map labels each of the three areas that abut Houston Street, Chrystie Street, and Forsyth Street as "Cemeteries."

Dripps 1852: The following description of the 1852 Dripps map relies on the 2001 Sanborn maps' block-numbering system, reading west to east, beginning at East 6th Street on the north and continuing south to Delancey Street.

Five cemeteries either fall within or appear to abut the Second Avenue, Houston Street, Chrystie Street, and Forsyth Street corridor (Plates 3 and 5). The cemeteries in proximity or within the APE are on (current) Blocks 457, 442, 420, 422, and 426. Shaft Sites B and D fall on Block 457, while Shaft Site C falls on Block 443. Details from Dripps' depiction of each block are presented below or in the separate cartographic history for that block.

Block 442 lies between East 1st and East Houston Streets, east of Second Avenue. On the southern side of Block 442 fronting East Houston Street there is a green-shaded open space labeled "Cemetery" approximately in the middle third of the block.

Block 422 is bound on the west by Forsyth Street and on the east by Eldridge Street, and lies just south of East Houston Street east of the APE. Here, there is another green-shaded open space with a "Cemetery" label that reads "Ger. Ev. Miss. Ch." This cemetery occupies approximately the northern half of the block. A church is shown associated with the cemetery fronting East Houston Street, outside of the APE.

Block 426 lies west of Chrystie Street between Stanton and Rivington Streets. It appears to have a green-shaded 50' by 200' area marked "Cemetery" fronting Chrystie Street; it lies approximately 100' south of the northeast corner of the block.

This corresponds with the "Negros BURYING GROUND" noted on the 1797 Taylor-Roberts Plan.

Perris 1857-1862: The APE is virtually unchanged from Dripps 1852, but changes that do occur are to the locations of the cemeteries on Blocks 457, 442, and 426 (Plates 41, 40, 37, 33). Here, structures appear to occupy property that had previously been the locations of the three graveyards.

Block 442 shows a row of five-story tenement houses on the site of the cemetery noted on the 1852 map, fronting East Houston Street.

Block 426 shows an unlabeled building on the north half of what had been previously mapped as the cemetery (the "Negros BURYING GROUND" on the 1797 map). On the south half of the cemetery site was a "Soap & Candle Manufactory." Both buildings directly front the west side of Chrystie Street, just west of the APE.

At this time, Second Avenue is depicted as 90' wide, with structures flanking either side. Chrystie Street is 50' wide.

According to the labels on the maps, there is a mixed land use along the Second Avenue and Chrystie Street corridor and it includes, other than cemeteries, a schoolhouse, church, factories, a provisioner, and a slaughterhouse. Tenant houses are also present along the APE. Conversion of earlier three- and four-story one-family houses into use by two families per floor was already well in place before 1850; and by 1861 tenement houses constructed for multiple-family occupancy were the primary housing stock for the dwellings along the APE (Homberger 1994:110-111).

Viele 1864/1865: Viele depicts the APE as generally meadowland. The toe of a slope is just north of the Second Avenue and East 2nd Street intersection; the land begins to rise more sharply toward the corner of East 2nd Street and First Avenue, on the eastern part of Block 443. There are no streams noted within the APE, and the nearest runs diagonally southwest to northeast on the block bounded by First Avenue and Avenue A between East 7th and East 6th Streets, then running through Tompkins Square to the east.

Dripps 1867: Two more of the cemeteries along the APE appear to have succumbed to urban development.

Block 422 just east of the APE still shows a cemetery, although it has been reduced in size on its northwest corner. It lies around a church labeled "Ger. Luth. Ch." on the east side of Forsyth Street.

Horse or cable car tracks run along the center of Second Avenue and Chrystie Street.

Robinson 1885: *Block 422* no longer shows a cemetery present, and the "GER. EVAN. MISSION" is listed as occupying the building that had been labeled "Ger. Luth. Ch." in 1867 (Plate 8). Thus, the last of the five cemeteries along the APE was gone.

A horse or cable car line runs along the center of Second Avenue and Chrystie Street. Another runs along the middle of East

Houston Street. An elevated steam railroad line as well as a horse or cable car line runs along First Avenue, east and outside the APE, and crosses Houston Street. Along Second Avenue there are seven fire hydrants in the streetbed between East 6th and Houston Streets. There are five fire hydrants between Second and First Avenues along Houston Street, and ten in the streetbed of Chrystie Street between Houston and Rivington Streets.

Bromley 1897: A horse or cable car line runs along the center of Second Avenue and Chrystie Street as well as along the middle of Houston Street. Fire hydrants are noted on the sidewalks along Second Avenue and Chrystie and Houston Streets. The street elevations correspond exactly with the 1885 and 2001 elevations.

Bromley 1911: The APE is relatively unchanged from 1897 (Plates 24, 23, 19, 8).

Bromley 1916: The APE is virtually the same as 1897 and 1911.

Bromley 1926: The built environment is very similar to the 1916 Bromley (Plates 28, 24, 23, 19).

Bromley 1932: With a few exceptions, the built environment is very similar to the 1926 Bromley (Plates 28, 24, 23, 19). The southernmost section of Block 420 continues to have the Libby Hotel on the southwest corner.

Bromley 1955: *Block 442* has a subway station beneath the southern half of the block, presently the Second Avenue stop on the F line. The street-level land above the subway station and tracks is vacant.

Bromley 1967: Other than three episodes of the leveling of buildings and one street widening, there seem to be no changes between 1955 and 1967 (Plates 28, 24, 23, 19). East Houston Street is widened to 100', thus narrowing Block 442. The portion of Block 442 that was the Baptist cemetery has been encroached by not only the subway station beneath the block, but also by the widening of East Houston Street on the north side.

Sanborn 1984/1985: The APE is virtually the same as in 1974 (Plates 28, 24, 23, 19). On the eastern half of Block 442, what had been vacant land since some time between 1926 and 1932, is open space labeled "Park".

Sanborn 1990/1991: The APE is the same as the Sanborn 1984/85.

Sanborn 2001: The following city blocks fall directly within the APE (Plates 28, 24, 23, 19).

Block 442 During the 19th century a Baptist cemetery was located mid-block on the south side of Block 442. Also beneath the block on the south side is the subway tunnel for the IND F line (and V after December 16, 2001).

Houston Street Station and Tunnel. The northern border of the IND 6th Avenue line subway station runs beneath the sidewalk at the building line of Block 442 and west into the center of the southern terminus of Second Avenue. The southern border of the subway station runs beneath the median divider on East Houston Street and west into the center of the southern terminus of Second Avenue.

Street Elevation Table

Generally this section of the APE is fairly level, sloping upward to the south and east with no more than six feet difference among the elevation readings along the APE. The 1885 and 2001 elevations vary only by two-tenths of a foot, suggesting that the introduction of the subway beneath East Houston Street did not vary the streetbed elevations (Robinson 1885, Sanborn 2001). Street Elevations over time for both the roadbeds and shaft site blocks are presented in the table below.

Street Elevation	1885	1897	1911	1923	1926	1932	1981+	2001
Second at E. 6th	35.0	38.1	38.1	35.04	38.1	38.1	35.2	36.1
Second at E. 5th	34.5	34.7	34.7	34.92	34.7	34.7	35.1	34.7
Second at E. 4th	33.5	33.6	33.6	34.32	33.6	33.6	34.4	33.6
Second at E. 3rd	35.4	35.5	35.5	36.37	35.5	35.5	36.3	35.5
Second at E. 2nd	36.9	36.11	36.11	37.54	36.11	36.11	37.4	36.1
Second at E. 1st	37.0	37.4	37.4	38.34	37.4	37.4	38.3	37.4
Houston at Chrystie	40.9	40.11	40.11	40.35	40.11	40.11	41.2	40.1
Houston at Forsyth	38.7	38.9	38.9		38.9	38.9	37.9	38.9
Chrystie at Stanton	41.8	41.1	41.1		41.1	41.1	40.9	41.1
Chrystie at Rivington	41.7	41.9	41.9		41.9	41.9	40.9	41.8
Chrystie at Delancey		40.1	40.1		40.1	40.1	39.8	40.1

Legend:

- Measurements in feet
- Sources: Robinson 1885; Bromley 1897, 1911, 1926, 1932; City of New York Topographic Bureau 1923, 1953, n.d. (post 1981); Sanborn 2001.
- Randel (1820) street elevations for First Avenue: East 6th, 41.51; East 5th, 32.05; East 4th, 37.25; East 3rd, 38.16; East 2nd, 23.64; East 1st, 41.56. Randel noted elevations only on First and Third Avenues.

Block, Street, and Sidewalk Widths (in feet) between East Houston and Rivington Streets

Data Source	West side of Chrystie sidewalk	Chrystie Street	East side of Chrystie sidewalk	Block 420 between Chrystie and Forsyth	West side of Forsyth sidewalk	Forsyth Street	East side of Forsyth sidewalk
1820	n/a	50	n/a	200	n/a	50	n/a
1857/62	n/a	50	n/a	200	n/a	50	n/a
1926	13	25	12	200	12	25	13
1930	n/a	50	n/a	195.4	n/a	50	n/a
1953	12.5	68.75	18.75	125	18.75	43.75	12.5
n.d.	12	68.5	20	125.83	17	45+/-	12
2001	15	60	7.5+/-	127.5	7.5+/-	45	11.25

Notes:
- n/a = not available on map
- The northern part of Block 420 is where the Presbyterian church and cemetery were.
- There's a 1949 draft damage map for East Houston Street from Broadway to Essex Street, but it is unavailable (Borough Presidents Office, City of New York).

Precontact Sensitivity

The Second Avenue/Chrystie Street corridor that includes the 16-block area that abuts the Second Avenue Subway APE from East 6th Street to Delancey Street lies between 400 and 500' east of Bowery. Historically the Bowery was a roadway that may have also served as a pathway that precontact and contact period peoples traveled along the north/south axis of Manhattan. The area was relatively flat, with the closest stream running near First Avenue, one block east of the APE near East 6th Street. A more substantial fresh water source, the Collect, was located within about a mile southwest of this APE near what is now City Hall Park. Streams and marshes also ran near what is now Tompkins Park several blocks northeast of the northern end of this APE. While these were much closer, they were not as easily reached since their access would have involved going up a hill, along the top of the ridge, and then down the hill to get to the water (Manatus 1639; Montresor 1766; Ratzer 1766/67; British Headquarters Map 1782; Taylor-Roberts .1797, Figure 4.5-1; Bridge's Adaptation of the Commissioners' Plan 1811; Viele 1874).

North of East Houston Street

Prevailing archaeological predictive models of site location suggest that this APE has a moderate to high potential for precontact and contact period use. The closest stream was a little more than one block east of the northeast boundary of the APE, at the intersection of First Avenue and East 6th Street, about 750' from the APE (Viele1874). The area was probably fairly well-drained during much of the precontact period, as current soil borings report that the water table varies anywhere from 17.3' to 24' below surface (DeLeuw, Cather & Co.,1973; Raymond International, Inc., 1968, 1970s, 1974; WPA, ca. 1935; Warren George, Inc., 1972). The water table was deeper than the terminus of the test in only one soil boring (C7-1NX, taken on Block 460; Appendix 4.5.7.3). It should be noted that the precontact water table levels probably fluctuated through time, and that even in the historical period they varied. For example, the 20th century water table depths observed in soil borings are reportedly shallower than at least one noted in 1830 on Block 458, which showed water at 35' below grade (Trustees of the New York Marble Cemetery 1830; Brown 1999:vii).

It is also possible that the relatively level, sandy, dry area in this section of the APE that was considered a prime area for historical burials, may have also provided a good location for precontact and contact burials. While the sandy soils observed below fill in the soil borings may have been less than ideal for habitation, this is not to say that this section of the APE could not have been utilized in some capacity during the precontact period.

Archaeological sites in the Northeast tend to be encountered within three to four feet of the then living surface, unless they were deposited in an alluvial setting, such as along the banks of a larger river or area experiencing seasonal flooding. Since that is not the case

with this section of the APE, it should be anticipated that if precontact resources were ever deposited here, they would have been fairly shallowly buried beneath the precontact surface. Therefore, unless these resources are buried beneath historic landfill, which served to protect them, they are easily disturbed by the process of urbanization.

Soil boring data for the blocks north of East Houston Street on Second Avenue reveal undulating fill layers ranging from one foot to 19.3' in depth (DeLeuw, Cather & Co.,1973; Raymond International, Inc., 1968, 1970s, 1974; WPA, ca. 1935; Warren George, Inc., 1972). The deepest fill levels were reported near the northernmost blocks of this section of the APE; the fill extended almost as deep as the water table (Ibid.). This coincides with the precontact topography portrayed on a 19th century map, which shows this area at lower elevations (Viele 1874). Conversely, the fill is shallower in areas with a deeper water table (Ibid.). Beneath the fill levels are layers of fine and coarse sands as well as silt and gravel that are more than three to four feet thick. It is within the sands, silt, and gravel that underlie the fill, then, that there may the potential for precontact and contact archeological remains.

The soil borings also revealed that hard quartz and mica schist appeared in seven of the 12 soil borings taken north of East Houston Street, whereas there was no bedrock noted on the soil boring data taken from south of East Houston Street. This bedrock was found well below three to four feet of sands, silt, and gravel, the depth of which is generally understood to have potential for precontact and contact period cultural materials. Therefore, precontact sensitivity may lie below the fill, but above the bedrock.

Street elevations generally slope gently upward from north to south, but there is a small dip between East 4th and East 2nd Streets (Ibid.). Although the topography of this section of the APE has been fairly stable since at least the middle of the 18th century, both the sewer lines running beneath the center of the APE corridor as well as the other utility lines running outboard of the sewers could compromise any precontact period material remains where they extend beneath the fill (WPA 1937; Street Elevation Table). However, precontact potential may exist within the roadbeds beneath fill levels where utilities, and subway tunnels, are not present.

Since sidewalks within the APE tended to be created from roadbed areas, not from within blocks, and few buildings along this section of the APE have basements that might have extended beneath the sidewalks, there is a moderate potential for encountering precontact and contact period remains within the sidewalk area beneath the fill layer. The exception may be in the area of the historical cemeteries adjacent to the APE on Blocks 457 and 442, should these cemeteries have extended beneath the sidewalk, since burial excavations may have compromised precontact potential.

South of East Houston Street

Based on a review of the soil borings, the APE between East Houston Street south to Delancey Street has the potential for precontact resources beneath existing fill, except where the APE has been previously affected by the East Houston Street and Chrystie Street subway lines. The deep layers of sand which were present prior to historic development suggests that this area may have been well suited for precontact burials or other use, but not necessarily for long-term habitation. The area is excessively well-

drained, with either "no water" recorded on the boring logs, or water found between 25 to 33.5' below the surface. Two of the borings taken from this area had fill from the surface down to between 18.5 and 25.8' below grade (Soil Borings C6-22 and C6-16, Raymond International Inc., 1974).

Therefore, as was the case with the blocks north of East Houston Street, this section of the APE has a moderate potential for cultural remains three to four feet beneath the fill layers outside of the area of prior effect by the two subway lines. Bedrock was not encountered in any of the soil borings for this section of the APE.

Historical Sensitivity

Bowery Street continued to be an important link between the population center developing at the southern tip of Manhattan and village clusters to the north. Known as Bowry (sic) Lane in colonial times, the roadway was labeled on maps variously as the Road to Albany and the Road to Boston. This section of the APE would have been 400 to 500' from the rear of farm houses and estates that fronted the east side of Bowery Lane (Grim 1742-1744; Montresor 1766; Ratzer 1766/67; British Headquarters 1782; Taylor-Roberts 1797, Figure 4.5-1; Bridge's Adaptation of the Commissioner's Plan 1811). Early maps indicate that the study area was a patchwork of agricultural and tree-studded fields as parts of properties that had narrow frontage on the east side of Bowery Lane and ran diagonally northwest/southeast (Ratzer 1766/67). British encampments may have stood on the study area during the American Revolution, but their precise location would be difficult to place on the modern landscape due to later topographic changes (British Headquarters 1782; NYCLPC Historical Sensitivity Map-Lower East Side). The leveling of knolls and filling of low areas to create the relatively level landscape of today, as well as historic surface and subsurface development would probably have compromised evidence of military encampments, which tend to have low visibility in terms of archaeological resources. Soil boring data corroborate this.

Early in the nineteenth century, as Manhattan moved uptown and the Commissioners' grid was implemented, blocks and lots were built upon and avenues extended further north, while streets extended further west and east. In 1817 1st Street was renamed Chrystie Street, and in 1833 North Street became East Houston Street (Goodrich 1827; Augustyn and Cohen 1997:114-115). The APE both north of East Houston Street and south of it was beginning to be developed into city blocks and lots sometime after 1797, but certainly by the 1830s.

In the first three decades of the twentieth century, the built environment of the study area remained very much as it had been at the turn of the century. The notable exception was the subsurface changes, such as buried 12- and 20-inch pipes, so labeled on period insurance maps (Bromley 1897, 1911, 1916, 1926, 1932) for both the Chrystie Street/Second Avenue corridor and Houston Street. In some instances, though, brick buildings were razed and the lot(s) were left vacant. This is evident for the north side of East Houston Street, and was probably done in preparation for the construction of the subway line. On January 1, 1936, the subway along Houston and Essex Streets (connecting West 4th Street with Jay Street) opened, and a station was built at East Houston Street, extending under the southern portion of Block 442 (New York City Subway Resources 1995-2001).

Within the APE, streets were opened and/or officially regulated on the following dates:

- Second Avenue between East 6th and East Houston Streets began to be laid out in 1811 (Stokes 1926:1534); and was legally opened in 1815 (City of New York Topographic Bureau, n.d.; WPA 1937).
- Houston Street, laid out prior to 1797 (Stokes 1918:1006; Taylor-Roberts 1797), was legally opened in 1814 (WPA 1937). While it was originally named North Street (Stokes 1918:1006-1007), its named changed in 1833 (Ibid.).
- Forsyth Street was legally opened in 1760 (WPA 1937), and it was originally named 2nd Street (Stokes 1928:594). Its name was changed in 1817 (Stokes 1926:1591).
- Chrystie Street was legally opened in 1760 (WPA 1937). The section of Chrystie Street within the APE was present on a 1797 map (Taylor-Roberts 1797). It was originally named 1st Street (Stokes 1918:999), but its name was changed in 1817 (Stokes 1926:1591). In 1812 it only extended as far north as what was then North Street (now East Houston Street) (Elliot 1812).
- Stanton Street was legally opened in1795 (WPA 1937).
- Rivington Street was legally opened in 1795 (WPA 1937).
- Delancey Street was legally opened in1795 (WPA 1937).

It is particularly noticeable that Houston Street served as a divider, of sorts, between the colonial town of New York and the federal City of New York, in that the streets south of Houston, in the old town, do not exactly align with the Commissioners' street grid north of Houston. The junction of Chrystie Street and Second Avenue is a case in point.

According to a November 2001 engineering report, "the existing [subway] tunnels of the [lines] that cross the Nassau and Water [Streets] proposed alignments [of the APE] are believed to have shallow profiles (not deeper than 50' from the surface of the street) and to have been constructed by cut and cover methods" (SYSTRA 2001). The existing west/east subway station within the APE at Second Avenue and East Houston Street (IND F Line) that runs beneath East Houston Street, is an example of cut and cover construction (www.nycsubway.org). It is assumed that the F Line subway station at Second Avenue was built similarly to the Bowery/East Houston Street station. Outside the APE, one block west of the Second Avenue APE at Bowery and East Houston Street, there is a square/cut and cover subway tunnel with the base of the rails about 41.5' below street level (Claudia Cooney, personal communication, November 15, 2001). One block west of the Chrystie Street APE, at Bowery and Delancey Street, there is another square/cut and cover subway tunnel whose approximate base of the rail bed is 44' below grade (Ibid.).

Major effects to Chrystie Street occurred when part of the original Second Avenue proposal (the Chrystie Street connection) was built in 1967 (Cudahy 1988:132). According to New York City Subway Resources, "along Chrystie Street, provision was made to allow for the construction of a future Second Avenue Line. The Grand Street Station was built as a two track station with side platforms, but was designed for eventual expansion to a four track, two island platform station" (1995-2001). The construction of the Chrystie Street connection tunnel, built by cut-and-cover, would have affected any potential resources within its path (Taylor 2001:2). The aborted subway construction may have had further effects along Second Avenue since related utility relocation work

was reportedly conducted along the Avenue from East 2nd to East 9th Streets (New York City Subway Resources 1995-2001: Second Avenue Timeline).

In the 1960s, the APE was further changed with the construction of the Chrystie Street connector (which includes the Grand Street station) built by the MTA after unification. The connector served to link the Manhattan Bridge lines of the BMT with the Sixth Avenue lines of the IND, such that trains from Brooklyn gained access to all of the BMT and IND trunk lines in Manhattan (New York City Subway Resources 1995-2001). The connector, which runs beneath Chrystie Street and curves to the west beneath Block 427 where the Friend's Cemetery formerly stood, was built via cut-and-cover construction. Excavations affected any archaeological potential within its path.

The 1960s subway tunnel and equipment is not considered to be significant archaeologically. However, their construction and alterations to them undoubtedly compromised the integrity of potential archaeological resources in the East Houston Street and Chrystie Street roadbeds.

Besides the existing subway tunnel and station within the APE beneath East Houston Street, there is evidence for other public service and public utility subsurface activities beneath the APE's streetbed. The introduction of municipal services, which began as early as 1854 with the introduction of "Croton Water" on Second Avenue between 3rd and 4th Streets (Board of Aldermen 1857), is noted in the preceding cartographic histories. Sewer lines vary as much as nine feet in inverted elevation, lying about 15' beneath street level along the APE.[2] Above the sewer lines lie a variety of utility lines anywhere from 1.5' to 4.75' below street level (WPA 1937). In and of themselves, the utilities are not considered to be significant material remains, but their construction and alterations may have compromised the integrity of potential archaeological resources in the roadbed.

Cemeteries

While early residential, agricultural, and military sites have a low probability for subsurface remains along this section of the APE, cemetery sites are another matter. On mid-1830s maps, there were three enclosed gardens noted on blocks adjacent to or within the APE as well as three other rectangular-shaped areas within the same blocks (Colton 1836; Tanner 1836). An 1852 map showing cemeteries and development within and adjacent to the APE depicted eight cemeteries between East 3rd Street and Stanton Street, within a block on either side of the APE (Dripps 1852; Figure 4.5-3a and b). Several of the cemeteries were associated with adjacent churches. Of these eight cemeteries, five either stood within, or may have extended into, the APE (Block 457, 442, 420, 422, 426). The following discussion documents the potential sensitivity for grave shafts and or cemetery remains within the APE, from north to south. Cemeteries, which were clearly outside of the APE, are not discussed but the records of these four cemeteries provide contemporary evidence.

[2] The sewer depths are measured from an inverted elevation of 22.21' at the northern end of the APE at East 6th Street and Second Avenue [where street elevation is 36.1' in 2001], to 20.10' between East 4th and East 3rd Streets [where street elevation is 34.3 - 36.2'], to 29.83' between Stanton and Rivington Streets [where street elevation is 40.9]) (WPA 1937).

North of East Houston Street

Block 457: The Methodist Cemetery which stood on Block 457, between East 1st and 2nd Streets, west of Second Avenue (Dripps 1852), was the topic of an intensive documentary study completed by Parsons Engineering Science in August 2000. (Figure 4.5-3a and b) Details of their findings, which concluded that Lots 36, 27, 28 and 42 were potentially sensitive for grave features and/or human remains, are reported in the following Block 457 Historical Sensitivity section. For more details on this potential resource, see the Block 457 presentation below.

Block 442: Between East 1st and East Houston Streets, and Second and First Avenues was once the site of the Baptist Cemetery of the First Baptist Church, 1815-1851 (City Register, n.d.; Inskeep 2000:57). While the cemetery of the First Baptist Church was mapped as abutting the sidewalk on the north side of East Houston Street, with maps portraying its boundaries outside of the APE on Block 442, it may have extended beneath the sidewalk. The cemetery's inception date postdated a city ordinance (1836) rescinding the licenses for building under sidewalks and streets, suggesting that burials could have extended into the APE. However, even if burials did extend under the sidewalk, cut-and-cover excavations for the subway station at East Houston Street would have adversely affected any potential historical archaeological material within the APE.

South of East Houston Street

In 1828 a New York City guidebook noted that "there are three large burying grounds at North Street [East Houston Street] east of the Bowery, viz., one for the Friends (Quakers) [Block 427 west of the APE], one for the Dutch, and one for the Presbyterians...." (Goodrich 1828:420-421 in Greenwald 1933:7).

Block 420: The Presbyterian cemetery lay within the APE, between Chrystie and Forsyth Streets south of East Houston Street where Sara Delano Roosevelt Park now lies. The cemetery was in operation from 1803 to 1865 (Doggett 1851; City Register, n.d.; Greenwald 1933:18; Inskeep 2000:138). By 1867, the cemetery site had been sold, and the block was subdivided and developed (Dripps 1867; Figure 4.5-4). Although burials were reportedly reinterred, there is always the possibility, as is the case with most cemeteries, that not all bodies were removed.

The land for the Sara Delano Roosevelt Park, which now covers Block 420, was purchased in 1929, and the public park was constructed in 1934 between Chrystie and Forsyth Streets (Alexander R. Brash; personal communication, December 5, 2001). The original design and construction included creating the playing surface approximately six feet below existing grade. In conjunction with this, in 1930 Chrystie Street was widened on the east side and Forsyth Street on the west side, each by about 25'. In 1934 the park was completed (Topographic Bureau 1930; Alexander R. Brash, personal communication, December 5, 2001). Originally designed to have "depressed" surfaces for playground and wading pool areas, the park has recently been raised to street-level (Ibid).

The northern half of the Sara Delano Roosevelt Park block had served as the site of the Presbyterian cemetery during the first half of the 19th century. Where later basements did not affect the cemetery, there is the potential for grave shafts or cemetery remains from East Houston Street south to about Stanton Street.

Not only does Block 420 (the Park) encompass what was formerly the cemetery but also because both Chrystie and Forsyth Streets were widened over the former block, there is the potential for the cemetery to have existed within the APE beneath the adjacent sidewalks. The cemetery extended almost as far south as Stanton Street. For more details on this potential resource, see the Block 420 presentation below.

Block 422: The Dutch (or German Evangelical Mission) stood just east of Forsyth Street. The cemetery was in operation between 1796 and 1866, predating the 1823 restriction banning burials beneath sidewalks by at least 27 years (City Register, n.d.). It may be that burials extended out under the sidewalks, therefore the east side of Forsyth Street may be sensitive for burials between East Houston and Stanton Streets. Unfortunately, there is no soil boring data to study for the parts of the blocks on which the cemeteries stood (Blocks 420 and 422).

Block 426: The Negro Burying Ground/African, Protestant Episcopal, St. Philip's Cemetery, which was active from 1795 to 1852, was between Stanton and Rivington Streets, Chrystie and Bowery Streets (Doggett 1851; City Register, n.d.; Inskeep 2000:172). In 1795, after the closure in 1794 of the African Burial Ground near Duane Street and Broadway, the African Society asked the City of New York for, and was granted, property on the west side of Chrystie Street between Stanton and Rivington Streets for use as a new burial ground (Taylor-Roberts 1797, Figure 4.5-1; Inskeep 2000:172). The Negro Burying Ground/African, Protestant Episcopal, St. Philip's burial ground was in use until at least 1851 (Doggett 1851), and was replaced, in part, by a series of structures (Perris 1857-62). Late 19th century development of the former cemetery site within Block 426 reportedly included exhuming the remaining skeletal remains for reburial elsewhere (Inskeep 2000:109). Nevertheless, it may be that not all the human remains were exhumed and reinterred, and that burials extended beneath the sidewalk, as the cemetery predates the 1823 ordinance banning such practices by 28 years.

For example, at another site outside the APE by a half block, it was found that the Methodist cemetery on Block 443 may have missed some graves when that cemetery closed about 1851, although it was assumed that all the remains had been reinterred in Cypress Hills Cemetery (Inskeep 2000:172).

Soil boring data for the block on which the Negro Burying Ground/African, Protestant Episcopal, St. Philip's burial ground stood reports four feet of "misc. fill" overlaying a substrate made up of sands, a little silt, and some gravel (Boring C6-23, Raymond International, Inc., ca.1970s).

Discussion

Regardless of the boundaries of these cemeteries depicted on historic maps, it was not uncommon for indigents, servants, or people perceived of lesser importance to be buried

outside of the proper boundaries of a cemetery (Owsley, et al 1997:202). Furthermore, the accuracy of cemetery boundaries demarcated on historic maps is frequently imprecise (Ibid:203). The limits of a cemetery perceived by a cartographer may not necessarily coincide with the actual subsurface extent. These two factors alone suggest there is the possibility that cemeteries, which were mapped outside of the APE, may have actually extended into it.

Several 19th century ordinances concerning graveyards also had a bearing on the cemeteries along the APE, potentially increasing the likelihood for human remains to be encountered beneath the fill, which lies below grade. For a short period of time in 1809 churches were allowed to extend their cemeteries beneath sidewalks to alleviate the overcrowding conditions in the graveyards (Greenwald 1933:17). Four of the above five cemeteries (Block 457 Methodist; Block 420 Presbyterian; Block 422 German; Block 426 Negro/African) predate this 1809 allowance.

In 1820, after considering complaints against the "African burying ground in Chrystie Street" (Block 426), the City's Committee on Public Lands recommended "that no Corpse shall be left at any time, without a covering of earth at least two feet deep.... No Corpse, shall be deposited nearer the surface of the ground than four feet. Nor shall any person whose death was occasioned by any contagious or putrid fever be interred otherwise than in a single grave six feet deep" (Stokes 1926:1611). In 1823, the City Council passed an ordinance prohibiting any interments, either in vaults or graves, south of Grand Street under a penalty of $250.00 for each offense (Ruggles 1856:9). Some people who probably felt it was important to be buried in their church's cemetery for personal reasons, were willing to risk the penalty and paid the fees. The Presbyterian Church, then south of Grand Street, was one of the owners of the Presbyterian cemetery (Block 420) and it is probable that some of their parishioners were buried in the East Houston Street graveyard. By 1830 an ordinance was passed that forbade burials south of Canal Street, and by 1851 there was a ban on burials below 86th Street (Inskeep 2000:138). Furthermore, the state Rural Cemeteries Act of 1847 encouraged the development of suburban cemeteries (Jackson 1995:198).

In 1851 the New York City Common Council passed legislation banning all burials below 86th Street, and prohibiting the establishment of any new cemeteries within Manhattan. Encroachments by developers resulted in most of the study area's cemeteries succumbing to development by the end of the Civil War (Dripps 1867, Figure 4.5-4). All of the cemeteries were eventually sold to private parties, and relocated to the larger cemeteries established in Brooklyn and Queens. Where the former cemeteries lay, the land was typically subdivided into twenty-five foot wide lots with structures abutting the lot lines on three sides, and open yards left behind.

Horse or Cable Cars, Elevated Trains, and Trolley Lines

Horse or cable cars ran on Second Avenue and Chrystie Street 1867, allowing transportation to and from this area with greater ease (Dripps 1867, Figure 4.5-4). By 1885, in addition to the Second Avenue /Chrystie Street tracks, another set of horse or cable car tracks ran along the center of Houston Street (Robinson). Other examples of

civil engineering and public services, specifically subsurface ones such as fire hydrants, are noted along Chrystie, Houston, and East 2nd Streets (Robinson 1885).

Horse or cable cars ran along Second Avenue and Chrystie Street at least from 1867 to 1885 (Dripps, Robinson). The Second Avenue El was opened in 1879 and remained in place until 1942 (Stelter 1995:9). By 1899 Second Avenue had an electrified trolley line. As it was pointed out in Chapter 3, there may be a need to document subsurface features such as support structures for the earliest electrified trolleys should they be encountered in the APE. Other than that, in terms of the NYCLPC's study categories, transportation features probably have minimal research potential.

Twentieth-century land use around and within the APE continued the established late nineteenth-century pattern for a mixture of residential and ancillary commercial activities, as well as increasing public park areas as the cemeteries turned over their land for development and a subway line ran across the west/east main street.

Shaft Site B and D, Block 457

Shaft Sites B and D are tangential and cover what are now Lots 29, 32, 33, 34, and 38 on Block 457, just west of second Avenue between East 1st and 2nd Streets.

Cartographic History

The cartographic history of Block 457 has been researched and presented in a prior study (Parsons Engineering Science Inc., 2000). This earlier study noted when a cemetery appeared on the landscape and when residential structures commanded the street fronts. In order to avoid replication of a recent and thorough study, only specific cartographic details, noting the identified historic period resources, will be presented.

Randel 1820: *This manuscript farm map shows Second Avenue and the cross streets in place, thus depicting the Commissioners' grid overlaid on the landscape that is shifting from agricultural and residential use to commercial, cemetery, and residential use. At the northwest corner of the intersection of East 1st Street and Second Avenue is the "Methodist Cemetery" (Block 457) that faces both Second Avenue to the east and East 1st Street to the south. The cemetery occupies approximately one-half of the block that lies on the west side of Second Avenue and approximately one-half of the block that faces south onto East 1st Street. The boundaries of the cemetery appear to be outside of the APE.*

Dripps 1852: *Block 457* lies between East 2nd and East 1st Streets, west of Second Avenue. The northern half of the block is fully developed and has a label, "Iron Fy" presumably an Iron Foundry. A property boundary line runs diagonally northwest/southeast through the block and reflects the property line that appears as early as on the 1766 Ratzer Plan. An irregular-shaped, green-shaded trapezoidal area lies just south of the diagonal property line, covering the southern half of Block 457. This and is labeled the "Methdst.

Cemetery" and covers Shaft Sites B and D, abutting East 1st Street to the south.

Perris 1857-1862: The APE is virtually unchanged from Dripps 1852, but one change that did occur was to the location of the cemetery on Block 457. However, *Block 457* now has a row of buildings fronting Second Avenue that replaces what had previously been labeled as the Methodist Cemetery. These lie immediately south of the "Iron Foundry" which is still present on the north half of the block. All of these structures lie within the proposed location of Shaft Sites B and D.

Bromley 1897: *Block 457* (Shaft Sites B and D) shows basements beneath the four-story brick buildings in the area that had contained the Methodist Cemetery.

Bromley 1926: The built environment is very similar to the 1916 Bromley (Plates 28, 24, 23, 19).
Block 457 has two, 12-inch pipes that run adjacent to it beneath the streetbed of Second Avenue

Bromley 1967: Other than episodes of the leveling of buildings and street widening, there seem to be no changes between 1955 and 1967 (Plates 28, 24, 23, 19). A paste-over on Block 457 shows vacant land at the northeast corner of the block as well as on the western approximately two-thirds of the southeast quadrant of the block, the area of the Methodist cemetery.

Bromley 1974: The southeast quadrant of Block 457, the site of the Methodist cemetery, continues to be vacant.

Sanborn 2001: *Block 457* currently has a street-level parking lot at the northeast and southeast corners of Block 457 over Lot 38, which encompasses most of Shaft Sites B and D. The southeast quadrant of the block is where the Methodist Cemetery was located during the first half of the 19th century. There appear to be no basements beneath buildings on Lots 29 through 33 on Block 457, although there are stores noted on Lots 29 and 32.

Street Elevation Table

Block 457 street elevations over time are presented in the Second Avenue and Chrystie Street roadbed section of this appendix.

Tax and Directory Tables

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 457 Second Ave. Between East 2nd Street and East 1st Street								

33 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	John Vanhorn, Boot Maker	Not for this Yr.	Not for this Yr.	McKinley & Smith
31 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	Mckinley & Smith, Ironfounds *Robert McKinley *J.V Smith	McKinley & Smith	McKinley & Smith	E.M. Bacon
29 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	Joseph Alder, Hotel	E.M. Bacon	E.M. Bacon	T. Weber
27 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	Vacant Lot	J.W Edwards	Kasyeh Fremmerer	J.W Edwards
25 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	Vacant Lot	J.W Edwards	J.W Edwards	J.W Edwards
23 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	Vacant Lot	J.W Edwards	J.W Edwards	J.W Edwards
21 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	Vacant Lot	J.W Edwards	J.W Edwards	Herman
19 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	Vacant Lot	J.W Edwards	J.W Edwards	Herman
17 Second Avenue	No Reels	No Reels	No Reels	No Street #'s	Vacant Lot	Jermah Pui	J.W Edwards	J. Frier

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 457 East 1st Street between Bowery and Second Avenue								
12 East 1st Street	No Reels	No Reels	No Reels	Not for this Yr.	Elias Deforest	Elias Deforest	James Brother	C.P Way
14 East 1st Street	No Reels	No Reels	No Reels	Not for this Yr.	Vacant Lot	J.W Edwards	J.W Edwards	Not for this Yr.
16 East 1st Street	No Reels	No Reels	No Reels	Not for this Yr.	Vacant Lot	J.W Edwards	J.W Edwards	Not for this Yr.
18 East 1st Street	No Reels	No Reels	No Reels	Not for this Yr.	Vacant Lot	J.W Edwards	J.W Edwards	J. Tier
20 East 1st Street	No Reels	No Reels	No Reels	Not for this Yr.	Vacant Lot	J.W Edwards	J.W Edwards	J. Tier
22 East 1st Street	No Reels	No Reels	No Reels	Not for this Yr.	Not in Directory	J.W Edwards	Theodore Taylor	J. Tier
24 East 1st Street	No Reels	No Reels	No Reels	Not for this Yr.	Not in Directory	J.W Edwards	J. Tier	J. Tier
26 East 1st Street	No Reels	No Reels	No Reels	Not for this Yr.	Vacant Lot	Not for this Yr.	Not for this Yr.	Not for this Yr.

Precontact Sensitivity

Based on topographic maps and comparative site location data, the Block 457 APE has a moderate potential for precontact period resources. The closest stream was about six blocks north of this block. The area was probably fairly level, dry sandy land, which may not have been ideal for habitation but could have served for other uses.

Precontact sites in the New York area typically encounter archaeological resources within three to four feet of the then living surface. Since sidewalks tended to be created from roadbed areas, not from within blocks, and few buildings along this section of the APE have basements that might have extended beneath the sidewalks, there is a moderate potential for encountering precontact and contact period remains within four feet of the base of the fill layer, which is about ten feet deep about one block to the south (Boring 1.25.2, WPA 1937). However this APE has experienced extensive subsurface disturbance first when it served as a cemetery, and later when historic development covered most of it. A previously completed archaeological assessment of this APE undertaken by Parsons Engineering (2000) concluded that there was no sensitivity for precontact resources due to the extensive historical development. Therefore, this APE has no precontact sensitivity.

Historical Sensitivity

There are three types of historic resources represented by the study of Block 457: domestic/residential, industrial, and cemetery. The earlier, detailed study on this block identified specific resources (Parsons 2000); these were confirmed by the current research.

Historic dwellings were constructed within the APE sometime between 1852 and 1857-62 (Dripps 1852; Perris 1857-62). As discussed in Chapter 3, dwellings, along with their associated outbuildings and yards, have the potential to contain resources which may furnish information about past lifeways, urban/suburban residential settlement patterns, socioeconomic status, class distinctions, ethnicity, and consumer choice issues. Such archaeological resources could be preserved in privies, cisterns, or wells, which in the days before the construction of municipal services - namely sewers and a public water supply - were an inevitable part of daily life. Before these services were provided by the municipality, these shafts, in addition to their official function, were convenient repositories for refuse, providing a valuable time capsule of stratified deposits for the modern archaeologist.

Once both water and sewer service was provided by the municipal authorities - approximately ca.1852 in this APE neighborhood - privies, wells and cisterns, no longer required for their original purposes, were quickly filled with refuse and abandoned, providing valuable time capsules of stratified deposits for the modern archaeologist. These shaft features frequently provide a wealth of domestic remains, including animal bone, seeds, glass, metal, stone, ceramics, and sometimes leather, cloth, wood and even paper. By analyzing such artifacts, archaeologists can learn much about the diet, activities, and customs of the site's former inhabitants and attempt to combine this "consumer choice" data with what the documentary record tells us about their ethnicity, socioeconomic status, gender, environment, etc. After the 18th century and the period of dispersed homesteads and estates, this section of the APE was divided into blocks by the 1830s. Maps show some development, including the presence of churches. Therefore, there is the potential for wells and privies to date from the early 19th century. The deposition of cultural materials into these shaft features could date from the early 19th century when the features were constructed, until the time they were no longer used for refuse disposal in the late 19th to early 20th century.

North of East Houston Street, between East 6th Street and East Houston Street, the water table varied as much as 53.7', ranging in depth from 17.3' below grade to 71' below grade. Although there are no soil borings for Block 457, a boring taken four blocks north of it measured the water table at 17.3' below grade (Boring C7-3NX, DeLeuw, Cather & Co., 1973). The water table was reported at 71' below grade on the east side of Second Avenue just across the avenue from Block 457 (Boring 1.25.22, WPA 1935). In 1830, one block to the north, the water table was measured at 35' below grade, and burial vaults there in this area were still dry in 2000 (Trustees of the New York Marble Cemetery 1830, Brown 1999:vii; Kelley 2000). Thus, on Block 457 potential shaft features, such as wells, would probably extend at least 17.3' below grade, and may be as much as 71' below street level, the depth of the water table.

Although there was a sewer line in place along the northern half of Block 457 in 1852, along East 1st Street in 1890, and a water main on East 1st Street in 1909 (WPA 1937), wells, privies and cisterns were known to be continually used even when these public utilities were available. There may be at least a 30-year time period before public services were made available to the mid-19th century occupants of Block 457. While side yard features were nonexistent because of the build out of the lots, there is a likelihood of encountering backyard shaft features. The earlier detailed study of the individual historic lots on Block 457 (Parsons Engineering 2000) identified historic Lot 24 as particularly sensitive for domestic/residential remains. Lot 24, now subsumed in the consolidated Lot 1, was originally in the northwest corner of the block. By 1917, the 23'-wide Lot 24 structure had become the entrance building to the Kessler Theatre.

According to the directory and tax records, the Iron Foundry at 31 Second Avenue was in place by 1851. It was under the ownership of McKinley and Smith for approximately 20 years. This small shop pre-dates the municipal services, introduced in this area in 1852, since it was listed in an 1851 city directory and mapped as fully developed within the next year. Sewers were not immediately available with the first deliveries of water services. A steady supply of water was critical to foundry operations. Therefore, the foundry remains, which would be substantial but relatively shallow, could very possibly have been augmented by deep shaft deposits.

The Methodist Cemetery, which stood on Block 457, between East 1st and 2nd Streets, west of Second Avenue (Dripps 1852, Figure 4.5-3a and b), was the topic of an intensive documentary study completed by Parsons Engineering Science in August 2000. As part of the proposed Cooper Square Urban Renewal Area, Block 457 was studied for historic archaeological potential. The Methodist Cemetery, which once stood on the block, was documented on the "north side of 1st Street beginning 25' east of Extra Place [which bisects the block] through the corner of 2nd Avenue" (Parsons Engineering Science 2000:23). As cartographic research found for the Second Avenue Subway project, they also cited that no pre-1852 maps could be found depicting this cemetery (Tanner 1836; Colton 1836; Dripps 1852). However, deed research confirmed its presence from about 1837 through 1854 (Parsons Engineering Science 2000:27). The property containing historic Lots 32 through 43 was sold by the Corporation of the Methodist Episcopalian

Church in April 1855 to a private party (Ibid.), concluding that the cemetery was in existence from about 1837 through 1854. Despite the fact that documents were cited detailing the reinterment of bodies to Cypress Hills Cemetery between 1854 and 1856, the authors of the 2000 study concluded that there was still the possibility that burials, or remnants of such, were left behind (Ibid.:38). Specifically, Lots 36, 27, 28 and 42 were flagged as potentially sensitive for grave features and/or human remains (Ibid.:43).

With no soil borings available from directly within Block 457, it is not possible to determine the extent of any fill layer. Nonetheless, a soil boring (C7-9) taken on the East side of Second Avenue near East 3rd Street, within one-half block of the Methodist cemetery, has a reported fill layer of three feet (DeLeuw, Cather & Co., 1973). Furthermore, the solid marble vaults of the New York Marble Cemetery on the interior of Block 458 one block to the north were placed ten feet below ground (Trustees of the New York Marble Cemetery 1830; Brown 1999:vii). Thus, if there were a relatively shallow layer of fill below grade, or none at all, there is a possibility for encountering subsurface remains from the Methodist cemetery to a depth of at least 13' below existing grade within the block. It is unlikely that the cemetery actually extended out into the active streetbed.

Block 443

Shaft Site C lies on Block 443, covering all of Lot 1. This includes 24, 22, and 20 Second Avenue and 26, 28, 30, and 32 East 1st Street.

Cartographic History

The cartographic history of Block 443 is presented below.

Manatus 1639:	Block 443 area is depicted as fairly flat open space with decentralized, dispersed farms (bouweries).
Castello 1660:	APE not included on map. Castello Plan's northern border is just north of Wall Street, approximately 9000 feet south of the area.
Miller 1695:	Block 443 area is approximately 9000 feet north of northern boundary of Miller map.
Lyne 1730:	APE approximately 5000 feet north of northern boundary of Lyne-Bradford map.
Carwitham 1730:	Block 443 area is approximately 5000 feet north of northern boundary of Carwitham map.
Buchnerd1735:	The APE is north of northern boundary of these plans.
Grim 1743:	Block 443 is just north of the northern boundary of the Grim Plan.
Maerschalck 1754:	APE is approximately 1500 feet north of the northern boundary of this plan.
Montresor 1766:	APE appears to be a patch-work quilt of bounded open fields, one with an orchard. Early title history notes that Block 443 is included in the Philip Minthorne farm as early as 1711 (City Register).
Ratzer 1766/67:	Early title history indicates that Block 443 is part of the parcel within the Philip Minthorne farm that was passed to Nicholas and Margaret Romaine in 1765 (City Register). The Minthorne farm

was divided up (1765-1818), and the 18th century and 19th century property lines appear on Sanborn 2001. These diagonal lines (northwest to southeast) help create trapezoidal-shaped properties. One of the diagonal lines forms the northern boundary of Lot 1, Block 443, the location of the proposed site for Shaft Site C (Sanborn 2001).

What becomes Block 443 lies 400-500 feet east of "Bowry Lane" and appears as open fields and orchards at the rear of a structure, presumed to be a residence, that lies close to the road on the east side of Bowery Lane.

British Headquarters 1782: Block 443 area continues to be depicted as residential and agricultural. Landscape is fairly flat, with hills rising to the east and west. Lane appears along the diagonal division line that forms the northern boundary of what becomes Lot 1. A stream runs roughly north and south, probably just east of Lot 1 (Sanborn 2001). Several structures, represented by red squares, east of the east side of Bowery Lane, appear to be close to, but not within Lot 1 on Block 443, 24-16 Second Avenue and 28-32 East 1st Street.

McComb 1789: Block 443 area appears as undeveloped land with dotted lines outlining only the trapezoidal-shaped properties created by the diagonal property lines.

Taylor-Roberts 1797: Block 443 area appears as flat, tree dotted, open land. The north/south street grid terminates just north of "North Street" (East Houston Street) and just south of the trapezoidal-shaped properties, including what becomes Lot 1 on Block 443 (Sanborn 2001).

Bridges 1803/1807: What becomes Lot 1 on Block 443 continues to be flat, open space dotted with trees on the Bridges 1803/1807 map. The configuration as well as the names of the streets (there are no avenues listed) north of North Street differ from other maps and do not agree with the mapping Randel did in 1820 in conjunction with his manuscript farm maps. Randel's avenue and street placements agree with later 19th and 20th century locations.

Randel 1820: Both cross streets, East 2nd and East 1st Streets, and both avenues, Second and First Avenues, are in place. There are two buildings and open space on what becomes Lot 1. On the eastern boundary of what becomes Block 443, Lot 1, Randel depicts what appears to be a 25-foot wide residence with attached outbuilding that runs the full depth of the property, abutting the northern boundary line of what becomes Lot 1. The structures lie on the north side of East 1st Street. Except for the structures, there is only open space on this irregular-rectangular property on the southwest corner of Block 443. Randel penned the name "Peter Crawbuck" in the open space.

Colton 1836: What becomes Block 443 is bounded by Second and First Avenues and East 2nd and East 1st Streets. Block 443 is shaded, indicating development.

Tanner 1836: Block 443 is shaded, indicating development.

Mitchell 1846: Block 443 appears unchanged from Colton 1836 and Tanner 1836.

Dripps 1852: What becomes Lot 1 on Block 443 is fully developed, indicated by shading. From north to south and west to east, the following structures stood within the APE on what became Lot 1. There are either ten or seven structures on Lot 1.

24 through 20 Second Avenue: Three structures lie on the east side of Second Avenue. There appears to be a structure at the rear of each of the two northernmost structures on Second Avenue, but they could be extensions of buildings on East 1st Street. Open space that can be reached by an alleyway on East 1st Street lies between the front and rear structures on the Second Avenue side.

26 through 32 East 1st Street: Four structures lie on the north side of East 1st Street; the easternmost one (that may actually be a building with a rear extension) at 32 East 1st Street, runs the full depth from the northern lot line to East 1st Street. It is uncertain as to whether the two structures noted at the rear of the Second Avenue side might not be, instead, attached outbuildings for the buildings at 30 and 32 East 1st Street. There are two alleyways on East 1st Street. The western one, immediately west of 30 East 1st Street, leads to the structures at the rear of the Second Avenue lots (that may actually be expansions at the rear of 30 East 1st Street). The eastern alley, just east of 32 East 1st Street, lies along the eastern boundary of what becomes Lot 1 and opens up to vacant space on the northern half of the alleyway.

Perris 1853: There are probably nine structures on what becomes Lot 1. Both configuration and numbers of the buildings vary between Dripps 1852 and Perris 1853.

24 through 20 Second Avenue: There are three brick structures on what becomes 24-20 Second Avenue, at the rear of which are open areas. Only 24 Second Avenue's footprint remains the same as shown in 1852. The corner building appears to be fronting on East 1st Street, rather than on Second Avenue, thus there are five frame structures between 26 and 32 East 1st Street.

26 through 32 East 1st Street: The footprints of the three frame buildings at 26 and 28 East 1st Street cover the land. There appear to be no open areas, either on the sides or to the rear of the buildings. The frame buildings at 30 and 32 East 1st Street appear to have rear extensions that abut the northern boundary of Lot 1. The northernmost extension onto the frame building at 30 East 1st Street is brick. There continue to be two alleyways, one just west of 30 East 1st Street; the other, just east of 32 East 1st Street, and they open up to vacant areas adjacent to sides of the buildings at 30 and 32 East 1st Street.

Perris 1857-1862: On what becomes Lot 1 there appear to be 13 buildings, four of which have rear-attached structures.

24 through 20 Second Avenue: While there remain four building lots between 24 and 20 Second Avenue, there appear to be further

changes to both the numbers and configurations of the structures at those addresses. 24 Second Avenue appears to be open space. 22 Second Avenue has removed a brick structure along the southern boundary line, creating a narrow passage way to three brick structures at the rear of the lot. The building at 20 Second Avenue has a frame extension to the rear of the brick building, thus reducing the open area at the rear of the lot. There are four brick structures abutting the rear of the buildings on Second Avenue, so that the open areas at the rear are now covered with structures. The variability between the Dripps 1852 and Perris 1853 could be seen as differences between map makers. On the other hand, the two versions of the Perris maps suggest that there is some redevelopment along the Second Avenue side between 1853 and 1862.

26 through 32 East 1st Street: To a lesser extent, the five frame structures between 26 and 32 East 1st Street exhibit changes in their footprints, particularly the building between 28 and 30 East 1st Street. There appears to continue to be an open area to the rear of 28 East 1st Street. There are changes to the footprints of the rear extensions of the buildings at 30 and 32 East 1st Street, yet there remains some open space to the west of 30 and to the east of 32 East 1st Street. The alleyways west of 30 East 1st Street and east of 32 East 1st Street may be closed off about 25 feet north of East 1st Street.

Viele 1864/1865: The APE for Shaft Site C appears as an open meadow. The nearest stream is approximately seven blocks from the APE.

Dripps 1867: On what becomes Lot 1 there appear to be seven buildings, all of which are denoted by the same shading, making understanding construction material difficult.

24 through 20 Second Avenue: The footprint of the building at 24 Second Avenue covers the entire lot. The building on the northern half of 22 to 20 Second Avenue fills the lot. The rear yard on the southern half of 22 to 20 Second Avenue is open with a structure on Second Avenue that may be part of the building at 22 Second Avenue.

26 through 32 East 1st Street: Three structures occupy 26 through 28 East 1st Street. The corner building's footprint covers the lot. What is presumed to be 28 East 1st Street has two abutting structures on the street. The western building fills the lot, while the eastern one has a shallow open rear yard. 30 and 32 East 1st Street remain similar to Perris 1853.

Robinson 1885: There are two buildings on what becomes Lot 1.

24 through 20 Second Avenue: There is one iron building labeled "FOURTH DISTRICT COURT" occupying the southwest corner of Block 443 replacing two structures and small rear yard that stood there on Second Avenue in 1867. The iron building extends

onto the north side of East 1st Street. There is no open area on any side of the building.

26 through 32 East 1st Street: 26 through 30 East 1st Street are subsumed into the iron district court building at 24 through 20 Second Avenue. There is a brick building at 32 East 1st Street with an open rear yard. There are no alleyways.

Bromley 1897: There are two buildings on what becomes Lot 1.

24 through 20 Second Avenue: The one iron and brick building that faces both Second Avenue and East 1st Street is labeled as the "FLORENCE BUILDING," and has four stories and a basement. There is no open space surrounding the building.

26 through 32 East 1st Street: 26 through 30 East 1st Street are part of the Florence Building. The brick building at 32 East 1st Street has 5 stories and no basement. There is a brick extension at the western rear of the brick building, leaving a small open area in the northeast corner of the lot.

Bromley 1911: Except for the addition of two stories as well as stores to the Florence Building at 24 through 20 Second Avenue, what becomes Lot 1 is unchanged from 1897. There is no basement label for the six-story Florence Building.

Bromley 1916: There continues to be two buildings with some slight changes on what becomes Lot 1.

24 through 20 Second Avenue: The six-story Florence Building has a label that indicates stores, but no basement. "4th DIST. COURT" lies on the East 1st Street side of the Florence Building.

32 East 1st Street: The five-story brick building at 32 East 1st Street has reconfigured its footprint, creating an irregular rectangular open area at the rear of the lot. It is also labeled as having a store.

Bromley 1926: There continues to be two buildings with a change in function for the building on Second Avenue on what becomes Lot 1.

24 through 20 Second Avenue: The six-story, iron-clad brick building with a store is labeled "TURKISH BATHS" stands on the southwest corner of Block 443.

32 East 1st Street: Unchanged from 1916.

Bromley 1932: The APE is unchanged from 1926.

Bromley 1955: The APE is unchanged from 1926. The six-story all-brick Turkish Baths at 24 through 20 Second Avenue continues to be situated on the southwest corner of the block and is named the "2ND AVE. BATHS". There is no label indicating a basement beneath 24 through 20 Second Avenue.

Bromley 1967: There is one building on Lot 1.

24 through 20 Second Avenue and 32 East 1st Street: A paste-over indicates that the 2nd Avenue Baths on Second Avenue and brick building on East 1st Street were demolished some time between 1955 and 1967. In their place is a one-story brick structure set back about 75 feet from Second Avenue. It is labeled "GAS STA.".

Bromley 1974: The APE is unchanged from 1967.

Sanborn 1984/1985: The APE is unchanged from 1967, except that there is a one-story building on East 1st Street to the rear of the gas station building against the eastern boundary of Lot 1.

Sanborn 1990/1991: The APE is unchanged from 1984/1985.

Sanborn 2001: There are two buildings and a canopy on piers over the gas pump area on Lot 1. The only change is the canopy.

24 through 20 Second Avenue and 32 East 1st Street: The gas pump area lies about 20 feet east of Second Avenue. An Exxon gas station's one-story building sits approximately 60 feet east of Second Avenue on Block 443's Lot 1. There is a one-story building on East 1st Street to the rear of the gas station building.

Street Elevation Table

Block 443 street elevations over time are presented in the Second Avenue and Chrystie Street roadbed section of this appendix.

Tax and Directory Table

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 443: 2nd Ave. between East 2nd St. and East 1st St.								
24 Second Ave	No Reels	No Reels	No Reels	No street numbers [copies *made*]	Refused	Frederick Johnson	Jeremiah Tier	J. Tier
(22)	No Reels	No Reels	No Reels	No street numbers [copies made]	Charles Myer, *barber*	Jeremiah Tier	Not for this yr.	J. Tier
20 Second Ave.	No Reels	No Reels	No Reels	No street numbers [copies made]	Joe Hayman, Bootmaker	Jeremiah Tier	Jeremiah Tier	J. Tier
(18)	No Reels	No Reels	No Reels	No street numbers [copies made]	20 Charles Bhode, *grocer*	Jeremiah Tier	Jeremiah Tier	Jeremiah Tier
(16)	No Reels	No Reels	No Reels	No street numbers [copies made]	John Miller	Not for this yr.	Not for this yr.	Not for this yr.
Block 443: East 1st Street between Second Ave. and First Ave.								

(28)	No Reels	No Reels	No Reels	Not for this yr.	Charles Bohde,*grocer*	Not for this yr.	Not for this yr.	Not for this yr.
30 East 1st Street	No Reels	No Reels	No Reels	Jeremiah Tier	George Jarvis, *sexton*	Jeremiah Tier	Jeremiah Tier	Jeremiah Tier
32 East 1st Street	No Reels	No Reels	No Reels	Est. of J. K or H?	T.W.Shull Charles Dusenberry	Mrs. Francis Hill	Jeremiah Tier	Jeremiah Tier

Note: No Reels for 17th Ward prior to 1837

Precontact Sensitivity

Although Block 443 is in an area which may have once been sensitive for precontact period resources, the extensive historical development probably disturbed the original precontact living surface. A series of buildings with basements, and then the installation of buried fuel tanks for the gas station probably disturbed any precontact sensitive levels.

Historical Sensitivity

While this block was shaded by 1836, and by 1852 there were numerous buildings within the APE, over the next century, the lot experienced numerous development episodes, culminating in the construction of a gas station.

Map research suggests that Shaft Site C was first developed in the 19th century between 1820 and 1836. By 1852 at least six structures stood on the site, but by 1885 it had been redeveloped with the construction of the Fourth District Court. This building was later replaced by a structure housing Turkish Baths. This type of facility would have maintained a series of small rooms, each with a separate function, e.g. steam shower, hot water shower or cool water shower. The Baths were in turn replaced by a gas station. The installation of gasoline fuel tanks most likely affected earlier resources, particularly those that were not deeply buried, e.g., the Baths piping system.

A comparison of cartographic sources suggests that what is now consolidated Lot 1 within the APE may have retained historic resource integrity where two former alleys stood at East 1st Street, and where there were vacant pens at the rear of narrow alleys. Beneath the 20th century one-story gas station building and the one-story building on the eastern side of 30 and 32 East 1st Street there may be intact evidence from the earlier alleyways with their open areas to the north as well as from potential shaft features that may lie beneath the passageways. Beneath the mid-19th century structures there may be evidence from the Peter Crawbuck complex (a presumed residence and either barn or factory) drawn on the Randel 1820 farm map (Figure 4.5-2). The tax evaluation data and the directory from 1851 did not provide more data on the earliest known occupant, Crawbuck, or the subsequent owners. Perhaps Jeremiah Tier was a landlord of considerable holdings on this block in the mid-19th century, including 30 and 32 East 1st Street.

The lack of soil borings taken within the lot makes it impossible to assess subsurface conditions, so it is assumed there is still the possibility that early, deeply buried 19th century homelot features, although probably truncated, are still present. Residential wells are a well-documented resource category for understanding a site's former inhabitants by combining "consumer choice" data with what the documentary record tells us about their ethnicity, socioeconomic status, gender, environment, etc. The APE of Block 443 at 30 and 32 East 1st Street is conservatively assumed to be sensitive for historic period resources relating to its 19th century occupation.

Block 420, Sara Delano Roosevelt Park

Several different alignments are under consideration for the APE from East Houston Street south to Delancey Street. Thus, the APE is conservatively defined to include the area on the south side of East Houston Street from the west side of Chrystie Street to the east side of Forsyth Street, from building line to building line. The APE continues south down to the north side of Delancey Street, encompassing both the Chrystie and Forsyth Street roadbeds and the Sara Delano Roosevelt Park that lies between these two streets. What is now the park north of Delancey Street was formerly three city blocks bisected by Stanton and Rivington Streets, which were demapped and the roadbed land included in the park.

Block 420 on the Sanborn 2001 map is the consolidation of three city blocks and two cross streets. The 2001 cross-street boundaries for Block 420 are from the south side of East Houston Street on the north to the north side of Delancey Street on the south, including the demapped Stanton and Rivington Streets. In 2001 the western boundary of Block 420 is Chrystie Street, and the eastern boundary is Forsyth Street.

Before 1934, when the Sara Delano Roosevelt Park replaced three blocks of tenements, the northernmost block (Block 422 West) was bounded by East Houston Street on the north, Chrystie Street on the west, Forsyth Street on the east, and Stanton Street on the south. The middle block (Block 421) was bounded by Stanton Street on the north, Chrystie Street on the west, Forsyth Street on the east, and Rivington Street on the south. The southernmost block (Block 420) was bounded by Rivington Street on the north, Chrystie Street on the west, Forsyth Street on the east, and Delancey Street on the south.

Cartographic History

For this cartographic history of the northernmost three blocks of the Sara Delano Roosevelt Park, what has become Block 420 is divided into Block 420 North, 420 Middle, and 420 South. Each block is presented separately.

Block 420 North

The cartographic history for Block 420 North is considered in four parts.

- North side: East Houston Street: from Chrystie Street, east side, on the west to Forsyth Street, west side, along East Houston Street, south side. The north side of Block 420 North includes eight lots: Lots 10-17, at the street addresses 119-133 East Houston Street.

- West side: Chrystie Street: Chrystie Street, east side, between East Houston Street on the north and Stanton Street on the south. The west side of Block 420 North includes nine lots: Lots 9-1, at the street addresses 230-214 Chrystie Street.
- East side: Forsyth Street: Forsyth Street, west side, between East Houston Street on the north and Stanton Street on the south. The east side of Block 420 North includes 11 lots: 18-28, at the street addresses 219-197 Forsyth Street.
- South side: Chrystie Street, east side, on the west to Forsyth Street, west side, on the east along Stanton Street, north side. The south side of Block 420 North includes seven lots: Lots 37-30, at 28-40 Stanton Street.

Manatus 1639:	Block 420 North area is depicted as fairly flat open space with decentralized, dispersed farms (bouweries).
Castello 1660:	Area not included on map. Castello Plan's northern border is just north of Wall Street, approximately 9000 feet south of the area.
Miller 1695:	Block 420 North area is approximately 9000 feet north of northern boundary of Miller map.
Lyne-Bradford 1730:	Area approximately 5000 feet north of northern boundary of Lyne-Bradford map.
Carwitham 1730:	Block 420 North area is approximately 5000 feet north of northern boundary of map.
Mrs. Buchnerd's Plan 1735:	Area is approximately 5000 feet north of northern boundary of these plans.
Grim 1743:	Block 420 North is just north of the northern boundary of the Grim Plan.
Maerschalck 1754:	Area is approximately 1500 feet north of the northern boundary of this plan.
Montresor 1766:	Area appears to be a patch-work quilt of bounded open fields, one with an orchard.
Ratzer 1766/67:	The southernmost northwest/southeast diagonal line north of the Depeyster orchard depicted on the Ratzer 1766 shows up on the 2001 Sanborn as running through the project block just north of Stanton Street. Area is just north and east of the "M. Depeyster" estate garden and residence complex that fronts on the east side of Bowery Lane. APE still lies 400-500 feet east of "Bowry Lane" and appears as open fields and orchards for the three structures, presumed to be residences, that lie close to the road on the east side of Bowery Lane. 1st Street (Chrystie Street) is not depicted. Based on Augustyn and Cohen, area is shown in greater detail on Ratzen(r) Plan than on the Ratzer Map (1766-1767).
British Headquarters 1782:	Block 420 North area continues to be depicted as residential and agricultural. Landscape is fairly flat, with hills rising to the east and west. The several red squares, indicating structures, east of the east side of Bowry Lane, appear to be close to, but not within Block 420 North.

McComb 1789: Block 420 North area appears as undeveloped land through which diagonal property lines are drawn. The bent diagonal line on the 1789 map probably corresponds to the diagonal line on the Sanborn 2001 that lies south of the East Houston Street lots, but within the project block. Early title history in 1787 indicates that this northernmost section of Block 420 is part of the forfeited estates for which Pierre Van Cortlandt is the grantee (City Register). The following year Pierre Van Cortlandt appears as grantor of the East Houston Street lots. Abraham Beekman is the grantee (Ibid.).

Taylor-Roberts 1797: Block 420 North area appears as flat, tree dotted, open land. The north/south street grid terminates just north of "North Street" (East Houston Street). Chrystie Street is in place as 1st Street; Forsyth Street, as 2nd Street. Stanton Street is in place.

Bridges 1803/1807: What become the East Houston Street lots on Block 420 North continues to be flat, open space, but without trees, on the Bridges 1803/1807 map. Early title history indicates that the Trustees of the First Presbyterian Church in the City of New York were the grantee for these lots in 1807 (City Register).

Colton 1836: What becomes Block 420 North is bounded by East Houston Street on the north; Chrystie Street on the west; Forsyth Street on the east; and Stanton Street on the south.

On East Houston Street
Lots appear as open land with symbols that probably indicate gravestones.

On Chrystie Street
Lots on northern half appear as open land with symbols that probably indicate gravestones.
Lots on southern half are shaded, indicating development.

On Forsyth Street
Lots on northern half appear as open land with symbols that probably indicate gravestones.
Lots on southern half are shaded, indicating development.

On Stanton Street
Lots are shaded, indicating development. Dark rectangle, presumably a church with open space around it, near the southeast corner of the block.

Tanner 1836: On East Houston Street
Lots are shaded, indicating development. A structure, labeled "Union" Baptist [Church], sits on the northeast corner of the block.

On Chrystie, Forsyth, and Stanton Streets
Lots are shaded, indicating development.

Mitchell 1846: Unchanged from Tanner 1836.

Dripps 1852: On East Houston Street

119-125 East Houston Street is part of the "*Cemetery*" that lies on the northern three-quarters of the block. [1851 reverse directory lists these lots as "(vacant lots)".]
129-131 East Houston Street is Labeled "2nd Assot. Pres. [Church] and set back from East Houston Street sits a church building. [1851 reverse directory lists "Associate Presbyt'n church" at this address.]

On Chrystie Street
230-214 Chrystie Street is part of the "*Cemetery*" that lies on the northern three-quarters of the block.

On Forsyth Street
219-197 Forsyth Street is part of the "*Cemetery*" that lies on the northern three-quarters of the block.

On Stanton Street
Nine structures on seven lots.
28 Stanton Street has one structure along the front lot line; another smaller one at the rear lot line, with an open area in between.
30, 32, and 34 Stanton Street has one structure on each lot with an open area in the rear.
36 Stanton Street is the address for the "*Bapt. Ch.*" that lies against the rear lot line and has a narrow band of open space along both the western and eastern sides. There is a narrow open space along the street face. This is a double lot.
38 Stanton Street has a L-shaped structure at the front of the lot with another smaller structure at the rear lot line. There is open space in between the two structures.
40 Stanton Street has a J-shaped structure at the front of the lot with open space at the rear of the lot.

Perris 1853:

On East Houston Street
Four structures on seven lots.
119-125 East Houston Street is part of the "*First Presbyterian Church Cemetery*".
129 East Houston Street has a double-lot structure with party wall and 10-foot deep open backyard.
131 East Houston Street has a building with 10-foot deep open backyard with small structure near southeast corner of lot.
133 East Houston Street's building fills the lot with no open backyard.

On Chrystie Street
No structures.
230-214 Chrystie Street is part of the "*First Presbyterian Church Cemetery*".

On Forsyth Street
One structure on five of the eleven lots on Forsyth Street.

Transfers of Forsyth Street lots from the various churches' trustees to individuals begin in 1852 (City Register). Some of the northern lots (Lots 18, 20, and 22) are transferred first; the others follow chronologically from north to south (Ibid.). By 1866 the grantors of the Forsyth Street lots are all individuals (Ibid.).
219 Forsyth Street's building's footprint covers the entire lot.
217-215 Forsyth Street's building on double lot has a 10-foot deep open backyard.
213 Forsyth Street's building's footprint covers the entire lot.
211-201 Forsyth Street is part of "*Presbyterian Cemeteries*".
199 Forsyth Street's building's footprint covers rear 40 percent of the lot with the remaining area open in front of the structure.
197 Forsyth Street's building's footprint covers rear 40 percent of the lot with the remaining area open in front of the structure.

On Stanton Street
Nine structures on seven lots.
28 Stanton Street is unchanged from 1852.
30, 32, and 34 Stanton Street are unchanged from 1852.
36 Stanton Street's "*Bapt. Ch.*" lies near the rear lot line and has a narrow band of open space along both the western and eastern sides. There is a narrow open space along the street face.
38 Stanton Street is unchanged from 1852.
40 Stanton Street is unchanged from 1852.

Perris 1857-1862:

On East Houston Street
Four structures on seven lots.
119-125 East Houston Street is part of "*Presbyterian Cemeteries*".
129 East Houston has a building similar to 1853 with 10-foot wide rear addition that connects to "Cracker Bakery" at 219 Forsyth Street. Open backyard for eastern section of lot.
131 East Houston Street is unchanged from 1853.
133 East Houston Street has a building with a 10-foot deep open backyard.

On Chrystie Street
230-214 Chrystie Street is part of "*Presbyterian Cemeteries*".

On Forsyth Street
Six of the 11 lots developed.
219 Forsyth Street is labeled "Cracker Bakery". The building covers the entire lot and is connected to an extension at the rear of the building at 129 East Houston Street.
217 Forsyth Street's single building covers single lot with 10-foot deep open backyard.
215 Forsyth Street's single building covers single lot with 10-foot deep open backyard.
213 Forsyth Street's building's footprint is reduced, creating a 15-foot wide open space on the street front. This may allow access to a structure that lies 70 west of Forsyth Street. The footprints of the

two additions to the rear of the northern 10 feet of the northern building cover the lot.
211-201 Forsyth Street is part of "*Presbyterian Cemeteries*".
199 Forsyth Street's building's footprint covers rear 40 percent of the lot with the remaining area open in front of the structure.
197 Forsyth Street's building's footprint covers rear 40 percent of the lot with the remaining area open in front of the structure.

On Stanton Street
Nine structures on seven lots.
28 Stanton Street is unchanged from 1852.
30, 32, and 34 Stanton Street are unchanged from 1852.
36 Stanton Street is unchanged from 1852.
38 Stanton Street is unchanged from 1852.
40 Stanton Street is unchanged from 1852.

Viele 1864/1865: *Block 420 North* appears as an open meadow. The nearest stream is to the northeast and approximately 2000 feet from the APE.

Dripps 1867: On East Houston Street
Nine structures on the seven East Houston Street lots. In 1866 the 123-127 East Houston Street lots are part of a transfer of property from the Corporation of the Presbyterian Church in Rutgers Street to William S. Wright (City Register).
119 East Houston Street, northwest corner lot, has three structures that fill the lot and front on the east side of Chrystie Street. There are neither alleyways between nor basements beneath any of the buildings on the East Houston Street side of Block 420 North.
119-125 East Houston Street buildings fill the lots.
129 East Houston Street has a structure and an approximately 20-foot deep open backyard.
131 East Houston Street has a building and an approximately 10-foot deep open backyard.
133 East Houston Street has a building and an approximately 10-foot deep open backyard.

On Chrystie Street
Ten structures on ten Chrystie Street lots. In 1866 the 230-214 Chrystie Street lots are part of a transfer of property from the Corporation of the Presbyterian Church in Rutgers Street to William S. Wright (City Register).
230-214 Chrystie Street's ten structures cover the front two-thirds of their lots and have an open backyards. There are no alleyways. The Dripps 1867 may show a proposed ten-lot development. From 1885 on there are nine lots on the Chrystie Street side of Block 420 North.

On Forsyth Street
One building on each of the 11 lots. Shading denotes development on each of Forsyth Street lots. In 1866 the last of the church-owned lots are transferred to individuals (City Register). There are no

alleyways. Dripps 1867 may represent a proposed development plan.
219 Forsyth Street's building's footprint covers the approximately 60 percent of the front part of the lot with open space in backyard.
217 Forsyth Street's building's footprint covers the approximately 40 percent of the front part of the lot with open space in the back yard. There is an attached addition at the rear on the northern part of the structure.
215 Forsyth Street's building's footprint covers the approximately 40 percent of the front part of the lot with open space in the back yard.
213 Forsyth Street's building's footprint covers the approximately 40 percent of the front part of the lot with open space in the back yard.
211-201 Forsyth Street has identical structures at the street face with open areas that occupy about half of the backyards.
199-197 Forsyth Street appears the same as Perris 1857-1862 except that it is drawn as a double lot with two structures side-by-side at the rear of the lot. Building footprints cover the rear 40 percent of the lot with the remaining area open in front of the structures.

On Stanton Street
Nine structures on seven lots.
28 Stanton Street is unchanged from 1852.
30, 32, and 34 Stanton Street are unchanged from 1852.
36 Stanton Street is unchanged from 1853.
38 Stanton Street is unchanged from 1852.
40 Stanton Street is unchanged from 1852.

Robinson 1885:

On East Houston Street
Eight brick structures on the eight East Houston Street lots.
119 East Houston Street's brick building fills lot.
121 East Houston Street's brick building has 20-foot deep open backyard.
123-127 East Houston Street brick buildings have 20-foot deep open backyards.
129 East Houston Street's brick building fills lot.
131-133 East Houston Street brick buildings have 10-foot deep open backyards.

On Chrystie Street
Nine brick structures on the nine Chrystie Street lots.
230-214 Chrystie Street has a brick building with a 20-foot deep open backyard on each lot. Lots are labeled A-I.

On Forsyth Street
Ten brick structures and one wood stable on the 11 Forsyth Street lots.

219 Forsyth Street has a brick building footprint that covers entire lot.
217 Forsyth Street has a brick building footprint that covers the front part of the lot with the remaining area a 20-foot deep open backyard.
215 Forsyth Street has a brick building footprint that covers the front part of the lot with the remaining area a 20-foot deep open backyard.
213 Forsyth Street has a brick building footprint that covers entire lot.
209 Forsyth Street has a wood stable that fills the lot and connects with brick and wood complex "*Geo. & Valentine Fischer BRASS FOUNDRY AND IRON CORNICE WORKS*" in the interior of the block. The complex is approximately 412 feet long, north to south, and 112 feet wide, running the length of and at the rear of 219-199 Forsyth Street and also along a small portion of the rear lot line of 197 Forsyth Street.
207-199 Forsyth Street has seemingly identical brick buildings at the front of these five lots, each with a 15-foot deep open space in the backyard. Lots at 203 and 201 Forsyth Street may be marginally wider than the other three lots.
197 Forsyth Street has a brick building at the street face, with an L-shaped open backyard that varies between being 10- and 20-feet deep.

On Stanton Street
Nine structures on seven lots.
28 Stanton Street has a brick building whose footprint fills the lot..
30, 32, and 34 Stanton Street have brick buildings that are unchanged from 1852.
36 Stanton Street's footprint of the brick building is labeled "*U.S. ILLUMINATING CO.*" and covers the double lot.
38 Stanton Street has a brick rectangular building with open area in rear.
40 Stanton Street has a brick rectangular building with open area in rear.

Bromley 1897:

On East Houston Street
Eight brick structures on the eight East Houston Street lots.
119 East Houston Street's six-story brick building fills lot.
121 East Houston Street's six-story brick building has 20-foot deep open backyard.
123-127 East Houston Street six-story brick buildings have 20-foot deep open backyards.
129 East Houston Street's four-story brick building fills lot.
131 East Houston Street's four-story brick building has 10-foot deep open backyard.
133 East Houston Street's four-story building has 10-foot deep open backyard.

On Chrystie Street
Nine brick structures on the nine Chrystie Street lots.
230-214 Chrystie Street has a six-story brick building with a 20-foot deep open backyard on each lot. The exception is the extension to the rear of and attached to the northern half of the building on Lot 7 at 226 Chrystie Street, thus halving the open area on that lot.

On Forsyth Street
Ten brick structures and one wood and brick complex on the 11 Forsyth Street lots.
219 Forsyth Street has a four-story brick building whose footprint covers entire lot.
217 Forsyth Street has a four-story brick building with basement that covers the front part of the lot with the remaining area a 20-foot deep open backyard.
215 Forsyth Street's four-story brick building has a footprint that covers the front part of the lot with the remaining area a 20-foot deep open backyard.
213 Forsyth Street has three-story brick building whose footprint covers entire lot.
211-209 Forsyth Street has a wood structure that fills the narrow lot and connects with a brick (three- and one-story) and wood complex in the interior of the block. The complex is approximately 412 feet long, north to south, and 112 feet wide, running the length of and at the rear of 219-199 Forsyth Street.
207-199 Forsyth Street has seemingly identical five-story brick buildings with basements at the front of these five lots, each with a 15-foot deep open space in the backyard. The variation is only in the widths of the lots.
197 Forsyth Street has a five-story brick building with basement at the street face, with less than an 18-foot deep open backyard.

On Stanton Street
Eight structures on eight lots.
28 Stanton Street's footprint of 4½ story brick building with basement fills the lot.
30 and 32 Stanton Street has a four-story brick building with basement and 60-foot deep open rear yard on each lot.
34 Stanton Street has a four-story brick building with basement and 20-foot deep open backyard.
36 and 36½ Stanton Street are separate lots, rather than a double lot. One, six-story dumb bell brick tenement with no basement and a 15-foot deep open space are on each lot.
38 Stanton Street has a five-story brick rectangular building with basement and 20-foot deep open area in rear.
40 Stanton Street has a five-story brick rectangular building with no basement and a 20-foot open area in rear.

Bromley 1911:

On East Houston Street
Eight brick structures on the eight East Houston Street lots. Unchanged from 1897.

On Chrystie Street
Unchanged from 1897.

On Forsyth Street
Ten buildings on 10 Forsyth Street lots. The street numbering changes on the northern part of the block. Gone is the brick and wood foundry complex. Wider, deeper, and taller buildings are located on the former industrial site.
219 Forsyth Street's footprint unchanged from 1897. Label for store added.
213 Forsyth Street (formerly 217 Forsyth Street) has a wider and deeper six-story brick building with basement covers the front part of the lot with the remaining area a 10-foot deep open backyard. The six-story building with basement overlies the foundry site
211 Forsyth Street has a wider and deeper six-story brick building with a basement that covers the front part of the lot with the remaining area covered by a 10-foot deep open backyard. The six-story building with basement overlies the foundry site.
209 Forsyth Street has a wider and deeper seven-story brick tenement, with no basement, that wraps around behind 207 and 205 Forsyth Street. There is a narrow 10-foot wide air way/passageway at south end of building. A 10-foot open strip is at rear lot line. Building with no basement overlies the foundry site.
207-201 Forsyth Street is unchanged from Bromley 1897.
199 Forsyth Street's footprint is nearly the mirror image of 209 Forsyth Avenue and wraps around 203-201 Forsyth Street. Tenement has six stories with a basement and a narrow air way/passageway at north and south end of building. A 10-foot open strip is at the rear lot line. The tenement with basement overlies the foundry site.
197 Forsyth Street's footprint is virtually unchanged from 1897. The remaining area is open in front of the structures.

On Stanton Street
Seven structures on seven lots. Lot widths have changed for the two lots on the southwest corner of the block. All buildings have stores.
28 Stanton Street has a seven-story brick building with store and no basement and 10-foot deep open space at rear lot line.
32 Stanton Street has a seven-story brick building with store and no basement and 20-foot deep open rear yard.
34 Stanton Street is unchanged from 1897.

36 and 36½ Stanton Street is probably unchanged from 1897. A 1911 map shows rectangular buildings with no airshafts. Both 1897 and 1916 maps show dumb-bell airshafts.
38 Stanton Street is unchanged from 1897.
40 Stanton Street is unchanged from 1897 except for the elimination of the one-story wood attached structure on the Forsyth Street side of the block.

Bromley 1916:

On East Houston Street
Eight brick structures on the eight East Houston Street lots. Only change from 1897 and 1911 is the addition of a label denoting stores for each of the buildings.

On Chrystie Street
Unchanged from 1897. The extension attached to the rear of *226 Chrystie Street* has a one-story extension attached to the rear of the building.

On Forsyth Street
Ten buildings on 10 Forsyth Street lots.
219 Forsyth Street's footprint unchanged from 1897.
213 Forsyth Street has a six-story dumb-bell brick tenement with basement and store. A 15-foot deep open space at rear lot line.
211 Forsyth Street has a six-story dumb-bell brick tenement with basement and store. A 15-foot deep open space is at the rear lot line.
209 Forsyth Street has a seven-story brick tenement with no basement that wraps around behind 207 and 205 Forsyth Street. Store is at street level. Four airshafts are added: one each on the northern and southern sides of the tenement; two others in the wrap around to the rear of 207-205 Forsyth Street. Narrow 10-foot wide air way/passageway is at southern end of tenement. There is a 10-foot deep open strip at rear lot line.
207-201 Forsyth Street is unchanged from Bromley 1897 except for a label indicating a store for each building.
199 Forsyth Street's footprint is nearly the mirror image of 209 Forsyth Avenue and wraps around 203-201 Forsyth Street. Brick tenement has seven stories and no basement. A store is at street level. There are four airshafts: one at northern end, another at southern end; two others in wrap around to the rear of 203-201 Forsyth Street. A narrow air way/passageway is at north end of building, and a 10-foot open strip is at rear lot line. The tenement with no basement overlies the foundry site.
197 Forsyth Street's footprint is virtually unchanged from 1897.

On Stanton Street
Seven structures on seven lots. All buildings have stores.

28 Stanton Street is unchanged from 1911 except for rear addition for western half of open space. Two airshafts added within the building and on the eastern side of the tenement.
32 Stanton Street is unchanged from 1911 except for addition of four airshafts: two within the tenement and two along western and eastern exteriors.
34 Stanton Street is unchanged from 1897 except for a narrowing of the open backyard.
36 and 36½ Stanton Street are probably unchanged from 1897. 1911 map shows rectangular buildings with no airshafts. Both 1897 and 1916 maps show dumb-bell airshafts.
38 Stanton Street is unchanged from 1897.
40 Stanton Street is unchanged from 1897 except for the addition of the one-story brick attached structure on the Forsyth Street side of the block.

Bromley 1926: On East Houston, Chrystie, Forsyth, and Stanton Streets
Unchanged from 1916.

Bromley 1932: On East Houston, Chrystie, Forsyth, and Stanton Streets
Unchanged from 1916 and 1926.

Bromley 1955: On East Houston, Chrystie, Forsyth, and Stanton Streets
The eight East Houston Street lots, the nine lots on Chrystie Street, the 11 lots on Forsyth Street, and the seven lots on Stanton Street are incorporated into the northernmost section of the Sara Delano Roosevelt Park. Land for the park was purchased in 1929, and the public park constructed in 1934 (Alexander R. Brash: personal communication, December 5, 2001). In 1930 Chrystie Street was widened 25 feet on the east side, and Forsyth Street was widened 20 feet on the west side (City of New York, Final Damage Map, 1930).

Bromley 1967: On East Houston, Chrystie, Forsyth, and Stanton Streets
Unchanged from 1955.

Bromley 1974: On East Houston, Chrystie, Forsyth, and Stanton Streets
Unchanged from 1955.

Sanborn 1984/1985: On East Houston, Chrystie, Forsyth, and Stanton Streets
Unchanged from 1955.

Sanborn 1990/1991: On East Houston, Chrystie, Forsyth, and Stanton Streets
Unchanged from 1955.

Sanborn 2001: On East Houston, Chrystie, Forsyth, and Stanton Streets
Unchanged from 1955.

Street Elevation Table

Block 420 street elevations over time are presented in the Second Avenue and Chrystie Street roadbed section of this appendix.

Tax and Directory Table

LOCATION	1808	1820	1834	1844	1858	1869	1876
BLOCK 420A Chrystie and Forsyth Streets between Stanton and East Houston Streets							
180 Chrystie Street	No record	No record	H. Rosenbaum	H. Rosenbaum	C. Washburn	C. Noe	D. Brown
178 Chrystie Street	No record	No record	J. Miller	C. Boyler	W. Stillwell	Mrs. Baker	T. Dolgan
176 Chrystie Street	No record	No record	H. Balls	M. Tice	C. Meday	J. Pieper	J. Pieper
174 Chrystie Street	No record	No record	T. Williams	J. Targer	M. Quackenlofs	W. Mathew	D. Lewis
172 Chrystie Street	No record	No record	J. Eagan	S. Bouten	M. Quackenlofs	G. Wegh	J.J. Donohue
170 Chrystie Street	No record	No record	J. Schort	P.Parks	N. Gregory	J. Wayden	H.J. Webster
168 Chrystie Street	No record	No record	D. Brown	D. Brown	N. Gregory	J. Wayden	J. Wayden
P.S. 20	No record	No record	Ward School	Ward School	Ward School	Ward School	Ward School
158 Chrystie Street	No record	No record	L. Reed	J. Innes	E. Legerdson	E. Legerdson	C. Murray
219 Forsyth Street	No reels	No reels	J. Heathington	M. Wack	H. Cordis		
217 Forsyth Street	No reels	No reels	J. Heathington	M. Wack	E.F. Ridaback		
215 Forsyth Street	No reels	No reels	M. Wickham	F. Burghard	E.F. Ridaback		
213 Forsyth Street	No reels	No reels	P. Techman	M. Pieper	M. Pieper		
209 Forsyth Street	No reels	No reels	M. Wickham	M. Lyons	W. Mathews		
207 Forsyth Street	No reels	No reels	R. Burttett	I. Frolick	W. Taft		
205 Forsyth Street	No reels	No reels	M. Wickham	K. Kuhn	A. Walsh		
203 Forsyth Street	No reels	No reels	W. Cook	J. Schrady	J. Shrady		
201 Forsyth Street	No reels	No reels	D. Vanarsdale	F. Cook	J. Shrady		
199 Forsyth Street	No reels	No reels	D. Vanarsdale	J. Fossey	J. Shrady		
197 Forsyth Street	No reels	No reels	E. Davis	R. Fields	R. Fields		

195 Forsyth Street	No reels	No reels	D. Vanarsdale	R. Fields	R. Fields		
North Side							
28 Stanton Street	No reels	G. Halsey		W.M. Rosenbaum	F. Geisenheimer	E. Valentine	
30 Stanton Street	No reels	M. Truman		D. Brown	P. McMinomy	E. Valentine	
32 Stanton Street	No reels	M. Truman		H. Ackers	A.H. Webster	E. Valentine	
34 Stanton Street	No reels	G. Mumford		M. Leod	J. Flemmer		
36 Stanton Street	No reels	G. Mumford		P. Halsey	J. Flemmer		
38 Stanton Street	No reels	G. Mumford		S. Molt	D.L. Brown		
40 Stanton Street	No reels	G. Mumford		L. Fink	P. Lorillard		
119 East Houston Street	No reels	No reels	D. Robols	H. Collins	No reels		
121 East Houston Street	No reels	No reels	No record	W. Reynolds	No reels		
123 East Houston Street	No reels	No reels	No record	A.M. Baker	No reels		
125 East Houston Street	No reels	No reels	No record	I. Showman	No reels		
129 East Houston Street	No reels	No reels	No record	I. Showman	No reels		
131 East Houston Street	No reels	No reels	C. Osborne	J. Huntington	H. Donnelly		
133 East Houston Street	No reels	No reels	M. Banks	C. Osborne	W. Reynolds		

Precontact Sensitivity

In the absence of soil borings, there is no record available concerning the subsurface disturbance for these lots. Basements beneath structures, which once stood within the APE, may have affected the potential for encountering precontact and contact material remains. However, this depends upon the depth of fill versus the depth of basements. If deep fill levels were added prior to 19th century intensive development, precontact and contact resources may be buried deep enough to have escaped disturbance. As is the case with the blocks north of East Houston Street, this section of the APE, Block 420 North, has only a moderate potential for cultural remains three to four feet beneath the base of

the fill layers that include "misc. fill" as well as red and brown sands, both coarse and fine, with little silt. However, there is no precontact period potential where the subway runs beneath Chrystie and East Houston Streets.

Historical Sensitivity

Chrystie and Forsyth Streets along Block 420 North were widened in 1930. Therefore, there is a possibility that early 19th century and onward historical archaeological features that were within the historical block may lie in the present roadbed and beneath the sidewalks as well as within the block itself. These roadbed resources are considered above; see *Section 4.5.71*, Second Avenue and Chrystie Street roadbeds.

The primary archaeological resource of concern here is the potential evidence from the cemetery that occupied the northern three-quarters of Block 420 North during the first half of the 19th century. As noted above, the early title history indicates that the Trustees of the First Presbyterian Church in the City of New York were the grantee for these lots in 1807 (City Register). Therefore, the Presbyterian Cemetery on Block 420 between Chrystie and Forsyth Streets predated the 1823 ordinance banning vaults and graves south of Grand Street. There could be burials for some of those Presbyterians whose church was a grantee of the East Houston Street property. At the time, the Brick Presbyterian Church was located at Beekman Street, located south of Grand Street, and there were probably some parishioners who either complied with the ordinance or else did not want to pay the fine (Ruggles 1856:9; Inskeep 2000:25, 137-138). Therefore, they may have utilized the Block 420 cemetery. This suggests that there could be burials from a 25-year span surrounding the Presbyterian church that stood on the south side of East Houston Street within Block 420. Even if some bodies were reinterred at a later date, there is always the possibility that unmarked burials were left *in situ.*

The widening of the east side of Chrystie Street and the west side of Forsyth Street in 1930 may have incorporated sections of the graveyard into what are now the sidewalks on the east side of Chrystie Street and the west side of Forsyth Street, within the APE. Therefore, the sidewalks along either side of the Park at the northern end of Block 420 are potentially sensitive for burials for at least ten to 12' below grade (a conservative estimate of the depth of burial vaults).

Within the northern end of Block 420 Sara Delano Roosevelt Park once had a sunken play area, but this was then raised (Alex R. Brash, personal communication, December 5, 2001). While the "sunken" play area probably affected at least six feet of the original ground surface, its creation did not necessarily eradicate the potential for burials related to the church. Therefore, there is still the potential for encountering historical archaeological remains from the Presbyterian Cemetery to a depth of at least 16' below grade (a conservative estimate of six feet of fill plus an additional ten feet for deep vaults).

Like the Methodist cemetery on Block 457, the Presbyterian cemetery that was once on the site of Sara Delano Roosevelt Park, Block 420, was sold and redeveloped some time between 1852 and 1867 (Dripps 1852:5 of 10; Dripps 1867:7; City Register, n.d.). (Figure 4.5-3a and b; Figure 4.5-4) At that time, the block was subdivided and the 25-foot lots were developed fully to their widths along the East Houston, Chrystie, and

Forsyth Street sides. Open backyards were left behind the multi-storied, brick tenements (Dripps 1867:7; Robinson 1885:8; Figure 4.5-4). These backyards have the potential for containing such shaft features as wells, cisterns, ash pits, and privies.

Even though both Chrystie and Forsyth Streets had sewer lines in place in 1867, and presumably a water main was installed around the same time, wells, privies, and cisterns were frequently in use after these utilities were available (WPA 1937). Although there is the possibility that the tenement owners hooked up to the sewer as soon as the public service became available, there is always the possibility that they did not. If wells were present on the back of these lots, they would have been fairly deep, based on the depth of the water table reported on late 20th century soil boring logs. There are no soil borings available from within the northern part of the Sara Delano Roosevelt Park on Block 420, but one taken on the west side of Chrystie Street at the intersection of Stanton Street reports that water was encountered at 28' below street level (C6-24 Raymond International, Inc., ca. 1970s). At 37' below grade, there was no water encountered in either of the borings on the east side of Chrystie within the Park near the intersection with Rivington Street (Borings C6-22 and C6-20, Raymond International, Inc., ca. 1970s). Thus, it is reasonable to assume that if shaft features, such as wells, are present, they would have had to have been dug at least, if not more than, 37' below street level, and that the northern end of Sara Delano Roosevelt Park on Block 420 and its surrounding sidewalks may contain such historical archaeological features.

Subsequent development and redevelopment of the block for residential, industrial, and commercial purposes also may have left traces that are visible in the archaeological record. Archaeological traces from domestic/residential properties could include shaft features like cisterns, wells, privies, and ash pits.

As the cartographic review treated the north, west, east, and south sides of Block 420 North in that order, so, too will the historical sensitivity section that follows.

On East Houston Street
The eight lots were developed with brick multi-story buildings between 1853 and 1885. The footprints of the buildings remained relatively unchanged until 1930, when they were demolished to make way for Sara Delano Roosevelt Park, and the 25 x 10 foot backyard of 131 East Houston Street appears to have remained an open space for approximately 80 years, except for a small, freestanding structure shown on an 1853 map (Perris). No basements are noted on the maps. Thus, there were only two episodes of land-use changes for the lots, that is, tenement building and street widening. Relatively undisturbed archaeological resources may lie beneath one backyard and the sidewalks as well as beneath the buildings on East Houston Street.

On Chrystie Street
The nine lots were developed with brick multi-story buildings between 1867 and 1885. Although a sewer line ran beneath the roadbed along this block of Chrystie Street in 1867 and a water main was in place in 1903, in all likelihood, cisterns, wells, privies, and ash pits were part of the daily life for decades for the dwellers and workers on the block. The footprints of the buildings remained virtually unchanged until 1930, and all but one backyard appear to have remained an open space for more than 60 years. The southern half of the ninth backyard remained an open space. No basements are noted on the maps.

Thus, after the cemetery period, there were only two episodes of land-use changes for the lots, that is, tenement building and street widening. Relatively undisturbed archaeological resources may lie beneath nine backyards and the sidewalk as well as beneath the buildings at 230-214 Chrystie Street.

On Forsyth Street
The ten lots were historically developed with brick multi-story buildings between 1867 and 1885. Although a sewer line ran beneath the roadbed along this block of Forsyth Street in 1868 and a water main was in place in 1904, in all likelihood, cisterns, wells, privies, and ash pits were part of the daily life for decades for the dwellers and workers on the block.

By 1885, there was a brass foundry and iron cornice works at the rear of the backyards of the brick tenements facing Forsyth Street, which stood on Block 420 north of Stanton Street (Robinson 1885:8). It occupied the central portion of the block, and by 1911 there was a change in the buildings' footprints (Bromley 1897:8; Bromley 1911:8). Thus, there were more than 15 years of industrial activity on the interior section of this Block 420. Potentially, there are archaeological remains from this industrial site.

There were at least two episodes of redevelopment of the tenements before they were torn down in the early 1930s, which may have obliterated any evidence of the foundry site. Nonetheless, the narrow backyards at the rear of the tenements with stores at 207-201 Forsyth Street may hold relatively undisturbed evidence from the cemetery period as well as from at least 1885 to 1930. Also, beneath the sidewalk on the west side of Forsyth Street there may the potential for cemetery remains that may have survived the widening of Forsyth Street. Thus, after the cemetery period, there were three episodes of land-use changes for the lots, that is, tenement building, rebuilding, and renovating, and street widening. Undisturbed archaeological resources may lie beneath four backyards and the sidewalk on the west side of Forsyth Street between East Houston Street and Stanton Street.

On Stanton Street
The Stanton Street lots are south of the 19th century cemetery. Stanton Street was legally opened in1795. Sewers were in place along Chrystie and Forsyth Streets in the 1860s and city water was available along these north/south streets between 1904 and 1911. If the availability of city utilities moved uptown on cross streets through time as the WPA utility maps suggest, then Stanton Street tenements had a sewer pipe running beneath the street after 1910 when Delancey Street had a sewer line. Stanton Street had a water main in 1906. The seven lots were initially developed with brick multi-story buildings at least as early as 1836. There were at least two episodes of redevelopment of the tenements before they were torn down in the early 1930s, which may have obliterated any evidence of the industrial site. Nonetheless, the narrow backyard at the rear of the tenement at 38 Stanton Street may hold relatively undisturbed evidence from at least 1836 on, particularly since it appears that city services were not available, much less tapped into or hooked up, for more than 60 years, that is, until the first decade of the 20th century. Thus, there were three episodes of land-use changes for the lots before the development of the park, that is, tenement building, rebuilding, and renovating. Undisturbed archaeological resources may lie beneath the backyard that remained open from at least 1867 to 1930 as

well as in areas beneath the tenements that had footings and foundations, but no basements.

In the absence of soil borings, there is no record available concerning the subsurface disturbance for Block 420 North. Nonetheless, a comparison of cartographic sources suggests that there is a moderate to limited possibility for archaeological materials to remain relatively intact within Block 420 North.

Block 420 (Middle)

Cartographic History

The Cartographic History for Block 420 Middle is considered in four parts:

- North side: Chrystie Street, east side, on the west to Forsyth Street, west side, on the east along Stanton Street, south side. The north side of Block 420 Middle includes eight lots: Lots 13-21, at the street addresses 27-39 Stanton Street.
- West side: Chrystie Street, east side, between Stanton Street on the north and Rivington Street on the south. The west side of Block 420 Middle includes eight lots: Lots 12-1, at the street addresses 200-182 Chrystie Street.
- East side: Forsyth Street, west side, between Stanton Street on the north and Rivington Street on the south. The east side of Block 420 Middle includes 12 lots: Lots 23-34, at the street addresses 187-169 Forsyth Street.
- South side: Chrystie Street, east side, on the west to Forsyth Street, west side, on the east along Rivington Street, north side. The south side of Block 420 Middle includes eight lots: Lots 42-35, at street addresses 20-34 Rivington Street.

Manatus 1639:	Block 420 Middle area is depicted as fairly flat open space with decentralized, dispersed farms (bouweries).
Castello 1660:	Area not included on map. Castello Plan's northern border is just north of Wall Street, approximately 9000 feet south of the area.
Miller 1695:	Block 420 Middle area is approximately 9000 feet north of northern boundary of Miller map.
Lyne-Bradford 1730:	Area approximately 5000 feet north of northern boundary of Lyne-Bradford map.
Carwitham 1730:	Block 420 Middle area is approximately 5000 feet north of northern boundary of map.
Mrs. Buchnerd's Plan 1735:	Area is approximately 5000 feet north of northern boundary of these plans.
Grim 1743:	Block 420 Middle is just north of the northern boundary of the Grim Plan.
Maerschalck 1754:	Area is approximately 1500 feet north of the northern boundary of this plan.
Montresor 1766:	Area appears to be a patch-work quilt of bounded open fields, one with an orchard.
Ratzer 1766/67:	The southernmost northwest/southeast diagonal line north of the Depeyster orchard depicted on the Ratzen(r) 1766 shows up on the

2001 Sanborn as running through the project block just north of Stanton Street. Area is just north and east of the "M. Depeyster" estate garden and residence complex that fronts on the east side of Bowery Lane. APE still lies 400-500 feet east of "Bowry Lane" and appears as open fields and orchards for the three structures, presumed to be residences, that lie close to the road on the east side of Bowery Lane. 1st Street (Chrystie Street) is not depicted. Based on Augustyn and Cohen, area is shown in greater detail on the Ratzen(r) Plan than on the Ratzer Map (1766-1767).

British Headquarters 1782: Block 420 Middle area continues to be depicted as residential and agricultural. Landscape is fairly flat, with hills rising to the east and west. The several red squares, which could indicate structures, east of the east side of Bowry Lane, appear to be close to, but not within Block 420 North.

McComb 1789: Block 420 Middle area appears as undeveloped land through which diagonal property lines are drawn. The bent diagonal line on the 1789 map probably corresponds to the diagonal line on the Sanborn 2001 that lies south of the East Houston Street lots, but within the project block. Early title history in 1787 indicates that this northernmost section of Block 420 is part of the forfeited estates for which Pierre Van Cortlandt is the grantee (City Register). The following year Pierre Van Cortlandt appears as grantor of the East Houston Street lots. Abraham Beekman is the grantee (Ibid.).

Taylor-Roberts 1797: Block 420 Middle area appears as flat, tree dotted, open land. The north/south street grid terminates just north of "North Street" (East Houston Street). Chrystie Street is in place as 1st Street; Forsyth Street, as 2nd Street. Stanton Street and Rivington Streets are in place.

Bridges 1803/1807: Block 420 Middle is bounded Stanton Street on the north, 1st (Chrystie) Street on the west, Second (Forsyth) Street on the east, and Rivington Street on the south. The block is shaded, indicating some sort of development.

Colton 1836: Block 420 Middle is shaded, indicating development. The Chrystie and Forsyth street names replace 1st and 2nd Street names.

Tanner 1836: Unchanged from Colton 1836.

Mitchell 1846: Unchanged from Colton 1836 and Tanner 1836.

Dripps 1852: On Stanton Street

Eleven structures on eight lots.

25 Stanton Street has one L-shaped structure along the front lot line with an open area to the rear.

27 Stanton Street has one mirror-image L-shaped structure with an open area in the rear.

29 Stanton Street has one rectangular structure with extension in rear and open area to the rear. There may be a very narrow passage way on west side of lot.

31 Stanton Street has one rectangular structure at the front of the lot with an open area to the rear.

33 Stanton Street has a footprint of a structure that covers the lot.
35 Stanton Street has a rectangular structure set back on the lot with open space on three sides.
37 Stanton Street has two rectangular structures along the western lot line. Front structure flush with street. Back structure near rear lot line. There is a passageway along eastern lot line and the open space to the rear of each structure.
39 Stanton Street has two structures that run full width of lot. Front structure is flush with the street; rear, against the rear lot line. There is open space between structures.

On Chrystie Street
Thirteen structures on 11 lots. All lots are 100 feet deep. There is only one alleyway or passage way, at 184 Chrystie Street.
198 Chrystie Street has a L-shaped building flush with the street and a square; lot-wide building against rear lot line, with open space between the structures.
196 ½ -186 Chrystie Street's rectangular building occupies the front half of each of the eight lots with open space to the rear.
184 Chrystie Street's rectangular building is set back from the street. A narrow, attached structure extends to the rear lot line. There is passage way along southern half of lot, the full depth of the lot.
182 Chrystie Street has a lot-wide rectangular building flush with the street with L-shaped building occupying the southern half of the rear half of the lot. There is a narrow open area along the north side of the rear structure.

On Forsyth Street
Thirteen structures on 12 lots.
187 Forsyth Street has a lot-wide rectangular structure with open backyard.
185-175 Forsyth Street's eight lots have identical lot-wide rectangular structures with approximately 60-foot deep open backyards.
173 Forsyth Street has a J-shaped structure with open space to the south and west of the "extension".
171 Forsyth Street has an irregular-shape structure runs the full depth of the lot on the northern half of the lot with "extension" mid-way along the southern side of the structure, leaving two, small separated open spaces on southern side of lot.
169 Forsyth Street has a lot-wide rectangular structure on a 50-foot deep lot with 20-foot deep open backyard.

On Rivington Street
Twelve structures on eight lots. With the exception of the easternmost lot, which is 75 feet deep, all other seven lots are 100 feet deep.

20 Rivington Street has a lot-wide, rectangular structure along the front lot line with an open area at the rear of the lot.
22 Rivington Street has a lot-wide, rectangular structure along the front lot line with an open area at the rear of the lot.
24 Rivington Street has a lot-wide, rectangular structure along street with open space between it and lot-wide structure at northern lot line.
26 Rivington Street has a lot-wide, rectangular structure along street with open space between it and lot-wide structure at northern lot line.
28 Rivington Street has a lot-wide L-shaped structure along street with open space between it and lot-wide structure at northern lot line.
30 Rivington Street has a lot-wide, rectangular structure along the front lot line with an open area at the rear of the lot.
32 Rivington Street has a lot-wide, rectangular structure along street with open space between it and lot-wide structure near the rear of the lot. Open space between back structure and northern lot line.
34 Rivington Street has a lot-wide, rectangular structure along the front lot line with an open area at the rear of the lot.

Perris 1853:

On Stanton Street
Twelve structures on eight lots.
25 Stanton Street has one L-shaped structure along the front lot line with an open area to the rear. A narrow structure runs full lot width along rear lot line.
Stanton Street is unchanged from 1852 except the narrow passageway appears on the east side of this lot, not on the 29 Stanton Street lot.
29 Stanton Street has one rectangular structure with an open area to the rear. There is no narrow passage way on west side of lot.
31 Stanton Street is unchanged from 1852.
33 Stanton Street has three nearly square structures are flush with the street and have open backyards. Lot is enlarged to the south.
35 Stanton Street has a full-lot width rectangular structure flush with the street with open backyard. It appears to be two buildings with a party wall.
37 Stanton Street has two rectangular structures along the western lot line. Front structure is flush with street. Back structure is near rear lot line. There is a passageway along eastern lot line and open space to the rear of each structure. Very similar to 1852, the footprints are slightly changed.
39 Stanton Street's lot is halved in depth. Nearly square structure is full-lot wide and has open backyard.

On Chrystie Street
Thirteen structures on 11 lots.
Buildings and lots are virtually unchanged from 1852, except for:
198 Chrystie Street's narrow passage way along southern lot line.

184 Chrystie Street has a reduction of depth of lot.
182 Chrystie Street's footprint is unchanged from 1852. There is a passage way to the rear building along the northern lot line.

On Forsyth Street
Fourteen structures on 12 lots.
Buildings and lots are virtually unchanged from 1852, except for:
173 Forsyth Street has an outbuilding added to the west along northern lot line, with open space on three sides.
171 Forsyth Street's front structure is reconfigured allowing a passageway along southern lot line to lot-wide structure against the western lot line. There is an open space between structures.

On Rivington Street
Fifteen structures on eight lots.
20 Rivington Street has a lot-wide, rectangular structure along the street with open space between it and lot-wide structure at northern lot line.
22 Rivington Street has a lot-wide, rectangular structure along street with open space between it and lot-wide structure at northern lot line.
24 Rivington Street has a rectangular structure along street with open space between it and lot-wide structure at northern lot line. There is an addition to the rear of the front building and an alleyway along western lot line to the open area between front and back buildings.
26 Rivington Street has a rectangular structure along street with open space between it and lot-wide structure at northern lot line. There is an addition to the rear of the front building and an alleyway along western lot line to the open area between front and back buildings.
28 Rivington Street has a L-shaped structure along street with open space between it and lot-wide structure at northern lot line. There is an addition to the rear of the front building and an alleyway along western lot line to the open area between front and back buildings.
30 Rivington Street has a rectangular structure along street with open space between it and lot-wide structure at northern lot line. There is an addition to the rear of the front building and an alleyway along western lot line to the open area between front and back buildings.
32 Rivington Street has a lot-wide, rectangular structure along street with a L-shaped addition to the rear and open space at the northern end of the lot.
34 Rivington Street has a lot-wide, rectangular structure along the front lot line with an open area at the rear of the lot as well as a small square structure at northeast corner of the lot.

Perris 1857-1862: On Stanton Street
Thirteen structures on eight lots.

25 Stanton Street is unchanged from 1853.
27 Stanton Street is unchanged from 1853.
29 Stanton Street is unchanged from 1853.
31Stanton Street is unchanged from 1852.
33 Stanton Street is nearly unchanged from 1853. Open space has "*Coal Yard*" label, with and "*Office*" in one of the structures flush with Stanton Street. The lot's southern addition is covered by a structure.
35 Stanton Street is unchanged from 1853.
37 Stanton Street is unchanged from 1853.

On Chrystie Street
Thirteen structures on 11 lots.
Buildings and lots are virtually unchanged from 1852, except for:
198 Chrystie Street has a lot-wide, rectangular building flush with the street with passage way along the northern lot line. There is a square, lot-wide building against rear lot line, with open space between the structures. The footprint of front building resembles the 196½-186 Chrystie Street footprints.
182 Chrystie Street has a lot-wide rectangular building flush with the street with L-shaped building occupying the southern half of the rear half of the lot. There is a passage way along the north side of the front structure. There is an open area on three sides of the rear structure.

On Forsyth Street
Fourteen structures on 12 lots.
Buildings and lots are virtually unchanged from 1853.

On Rivington Street
Fifteen structures on eight lots.
Buildings and lots are virtually unchanged from 1853.

Viele 1864/1865:

Block 420 Middle appears as an open meadow. The nearest stream is to the northeast and approximately 2500 feet from the APE.

Dripps 1867:

On Stanton Street
Ten structures on nine lots.
Nearly unchanged except for:
25 Stanton Street's rear structure is absent.
33 Stanton Street has a passageway that appears along the west side of the double lot (a change from 1857-1862) giving access to the coal yard. The three structures at the front of the lot on the 1857 map appear to be one building in 1867. Structure on the southern addition to the lot is extended to the west.

On Chrystie Street
Twelve structures on 11 lots.
Buildings and lots are virtually unchanged from 1852, except for:
198 Chrystie Street's rear building is absent.

On Forsyth Street
Fourteen structures on 12 lots.
Buildings and lots virtually unchanged from 1853, except for:
187 Forsyth Street has a square lot-wide structure on western lot line with open space between the front and back buildings.
173 Forsyth Street's two buildings are reconfigured allowing more open space between structures.
171 Forsyth Street's structure reconfigured connecting front and back buildings, still allowing a passageway along southern lot line to lot-wide structure against the western lot line.

On Rivington Street
Fourteen structures on eight lots.
20 Rivington Street is unchanged from 1853.
22 Rivington Street's back building is not present, enlarging open space for the northern half of the lot.
24-32 Rivington Street is unchanged from 1853.
34 Rivington Street's small square structure at northeast corner of the lot is no longer present.

Robinson 1885:

On Stanton Street
Nine structures on nine lots. The passageway at 37 Stanton Street is the only one for the north side of this block.
25 Stanton Street has a brick building that fills the lot.
27 Stanton Street has a rectangular brick building with narrow backyard.
29 Stanton Street has a rectangular stone building with open backyard.
31 Stanton Street has a rectangular stone building with open backyard.
33 Stanton Street has a rectangular stone building nearly fills the western half of the double lot and has a narrow open backyard. The eastern half of the lot has a brick building that is half-lot wide and has a 50-foot deep open area to the rear of the building.
35 Stanton Street has a rectangular brick building that is lot-wide and has a 20-foot deep open area at the rear of the lot.
37 Stanton Street's front structure and passageway are in same location they have been since 1852. Structure is labeled as being wood. The lot is reduced in depth by 20 feet.
39 Stanton Street has a brick building that nearly fills the lot. There is only a sliver of open space to the rear of the structure.

On Chrystie Street
Fifteen structures on 12 lots. Most buildings are brick. There are wood structures at 198, 184, and 182 Chrystie Street. Buildings and lots are practically unchanged from 1852, except for:
200 Chrystie Street has a lot carved out of rear portion of two lots on the south side of Stanton Street. There is a lot-wide rectangular brick building with a five-foot open space at the rear of the lot. The lot depth is 50 feet. All other lots are 100 feet deep.

198 Chrystie Street has a wood rear building present. No passageway is noted.
184 Chrystie Street's two buildings are wood. There is a reconfigured back building.
182 Chrystie Street's rear building is wood and reconfigured. No passageway is noted.

On Forsyth Street
Thirteen structures on 12 lots. All buildings at street face are brick. There is one wood outbuilding.
Buildings and lots virtually unchanged from 1853, except for:
187 Forsyth Street's rear section of lot becomes part of Stanton Street, south side, lots. A lot-wide, brick building fills the lot.
173 Forsyth Street has a change in the footprint of the front, lot-wide brick building. There is a wood outbuilding at rear lot line with open space between buildings.
171 Forsyth Street has a change in footprint of now, lot-wide brick building. There is no passageway, but there is an open backyard.

On Rivington Street
Twelve structures on eight lots. All but one wood structure at 28 Rivington Street are brick.
20 Rivington Street is unchanged from 1853.
22 Rivington Street's footprint of lot-wide, rectangular, brick structure along street is lengthened, leaving a smaller open space at rear of lot.
24 Rivington Street has a lot-wide, rectangular, brick structure along street with open space between it and lot-wide structure at northern lot line. Alleyway is no longer present.
26 Rivington Street has a lot-wide, rectangular, brick structure along street with open space in the backyard. Addition, alleyway, and back building are no longer present.
28 Rivington Street has a L-shaped, wood structure along street with open space between it and lot-wide, brick structure at northern lot line. There continues to be an alleyway along western lot line to the open area between front and back buildings.
30 Rivington Street has a L-shaped, brick structure along street with open space between it and lot-wide, brick structure at northern lot line. There continues to be an alleyway along western lot line to the open area between front and back buildings.
32 Rivington Street's footprint change for lot-wide, rectangular structure along street reduces the open space at the northern end of the lot.
34 Rivington Street has a lot-wide, rectangular brick structure that covers the lot.

Bromley 1897:

On Stanton Street
Eight structures on eight lots.
25 Stanton Street is unchanged from 1885. Five stories with no basement.

27 Stanton Street is unchanged from 1885. Five stories with no basement.
29 Stanton Street has a five-story stone-face brick building with about a 35-foot deep open backyard.
31 Stanton Street has a five-story stone-face brick building with about a 25-foot deep open backyard. There is a small attached structure on southeast corner of building.
33 Stanton Street has a five-story brick dumb-bell tenement with basement and 30-foot deep open backyard.
35 Stanton Street has a five-story brick building that is lot-wide and has a 25-foot deep open area at the rear of the lot.
37 Stanton Street's front structure and passageway are in same location that they were in since 1852. Label indicates there is a four story brick-front wood building with basement. The lot is reduced in depth by 20 feet.
39 Stanton Street's five-story brick building nearly fills the lot. There is only a sliver of open space to the rear of the structure.

On Chrystie Street
Fourteen structures on 12 lots. Only the 200 Chrystie Street lot is 50 feet deep. All others are 100 feet deep. There is only one alleyway or passage way, at 184 Chrystie Street.
200 Chrystie Street has a five-story, lot-wide brick building with about an 18-foot deep open area at rear of lot.
198 Chrystie Street has a five-story, lot-wide building flush with the street and a three-story, lot-wide building against rear lot line, with open space between the structures.
196 ½-186 Chrystie Street has three-story, lot-wide brick buildings with basements that occupy the front half of each of the eight lots with approximately 60-feet deep open spaces to the rear. There is a six-story back building at 192 Chrystie Street with about 18 feet of open space between the buildings.
184 Chrystie Street has a five-story, lot-wide brick building with basement and 25-foot deep open backyard.
182 Chrystie Street has a five-story, lot-wide brick building with basement flush with the street with a three-story wood building with basement occupying the rear portion of the lot. There is a 25-foot deep open area between the buildings.

On Forsyth Street
Thirteen structures on 12 lots. All buildings at street face are brick. There is one wood outbuilding. Buildings on all lots but one (169 Forsyth Street) have basements.
Buildings and lots are virtually unchanged from 1885, except for the notation about the number of stories and the presence of basements. Since the footprints remain the same on most of the lots, it is assumed that these are basements beneath many of the buildings that date to at least 1852.
187 Forsyth Street has a five-story brick building with basement.

185 ½ -175 Forsyth Street has a three-story brick building with basement.
173 Forsyth Street has a five-story brick building with basement. There is a wood three-story outbuilding with basement.
171 Forsyth Street has a five-story brick building with basement.
169 Forsyth Street has a five-story brick building with no basement.

On Rivington Street
Ten structures on eight lots.
20 Rivington Street is unchanged from 1853. Front building is three-stories high with no basement; back building, four-stories high with no basement.
22 Rivington Street has a six-story, lot-wide, brick, dumb-bell tenement with no basement and a 10-foot deep open rear yard.
24 Rivington Street's footprints are unchanged from 1885. Front building is five-stories high with no basement; back building, three-stories high with basement.
26 Rivington Street is unchanged from 1885. The building has five-stories.
28 Rivington Street has a lot-wide, four-story, brick stable nearly fills the lot.
30 Rivington Street has a six-story, lot-wide, brick, dumb-bell tenement with no basement and a 10-foot deep open rear yard.
32 Rivington Street is unchanged from 1885.
34 Rivington Street is unchanged from 1885.

Bromley 1911:

On Stanton Street
Eight structures on eight lots. A store is noted for every building.
25 Stanton Street is unchanged from 1885. Building has five stories with no basement.
27 Stanton Street is unchanged from 1885. Building has five stories with no basement.
29 Stanton Street is unchanged from 1897.
31 Stanton Street is unchanged from 1897 except that the small attached structure on southeast corner of building is absent.
33 Stanton Street is unchanged from 1897.
35 Stanton Street is unchanged from 1897.
37 Stanton Street has a six-story, lot-wide, brick building with no basement and approximately an 18-foot deep open backyard.
39 Stanton Street is unchanged from 1897.

On Chrystie Street
Eleven structures on nine lots.
200 Chrystie Street is unchanged from 1897. Label indicates a store.
198 Chrystie Street is unchanged from 1897. Label indicates a store.
196 ½ Chrystie Street is unchanged from 1897.

196 Chrystie Street has a L-shaped six-story brick tenement with store that covers most of the lot. There is an airshaft along southern lot line.
192-190 ½ Chrystie Street has a six-story, double-lot-wide brick tenement with store. There are airshafts along northern and southern lot lines. There is about a10-foot open strip at the rear of the tenement.
188-186 Chrystie Street is unchanged from 1897.
184 Chrystie Street is unchanged from 1897.
182 Chrystie Street is unchanged from 1897. The label indicates a store.

On Forsyth Street
Thirteen structures on 12 lots.
Buildings and lots unchanged from 1885 and 1897.

On Rivington Street
Nine structures on eight lots. A store noted for every building but the stable at 28 Rivington Street.
Buildings and lots are virtually unchanged, except for:
20 Rivington Street's six-story, brick building with store but no basement fills the lot.
22 Rivington Street has a six-story, brick building with store but no basement that replaces the dumb-bell tenement. This may be a draftsman's mistake. There continues to be a 10-foot deep open space in the rear.

Bromley 1916:

On Stanton Street
Eight structures on eight lots. The lots are virtually unchanged except for:
37 Stanton Street's six-story, lot-wide, brick building with no basement and approximately an 18-foot deep open backyard has become a dub-bell tenement with airshafts along the western and eastern sides of the building.

On Chrystie Street
Ten buildings on eight lots.
200 Chrystie Street is unchanged from 1897. The label indicates a store.
198 Chrystie Street is unchanged from 1897. The label indicates a store.
196 ½ Chrystie Street is unchanged from 1897.
196/194 Chrystie Street is unchanged from 1911.
192-190 ½ Chrystie Street is unchanged from 1911.
188-186 Chrystie Street becomes a double lot with the label "SETTLEMENT HOUSE". Footprint unchanged since 1897. Rear yard is about 60-feet deep.
184 Chrystie Street has a five-story brick dumb-bell tenement with basement and store. There is a 20-foot open space at rear of building.

182 Chrystie Street is unchanged from 1897. The label indicates a store.

On Forsyth Street
Thirteen structures on 12 lots.
Buildings and lots unchanged from 1885, 1897, and 1911, except for the labeling for stores. Stores appear at nine addresses: 187, 183-175, and 171-169 Forsyth Street.

On Rivington Street
Nine structures on eight lots.
Buildings and lots virtually unchanged except for:
22 Rivington Street's dumb-bell tenement reappears.

Bromley 1926:

On Stanton Street
Unchanged from 1916.

On Chrystie Street
Eleven buildings on eight lots.
Buildings and lots are unchanged from 1916, except for:
188-186 Chrystie Street has a two-story brick building with basement and one-story rear addition that nearly fills the open space to the rear of the Settlement House.

On Forsyth Street
Ten structures on nine lots.
185-179 ½ Forsyth Street has the only change from 1885-1916. It is a "THEATRE" that occupies four lots and replaces four, three-story brick buildings with basements.

On Rivington Street
Unchanged from 1916.

Bromley 1932:

On Stanton Street
Unchanged from 1916 and 1926.

On Chrystie Street
Eleven buildings on eight lots. Buildings and lots are unchanged from 1916, except for:
188-186 Chrystie Street has a two-story brick building with basement and one-story rear addition that nearly fills the open space to the rear of the Settlement House.

On Forsyth Street
Ten structures on nine lots.
185 ½ Forsyth Street has the only change from 1926. It is now a fully developed lot. A two-story brick storage building with no basement replaces a three-story brick building with no basement and open backyard.

On Rivington Street

Unchanged from 1916 and 1926.

Bromley 1955: On Stanton, Chrystie, Forsyth, and Rivington Streets
The eight Stanton Street lots, the eight lots on Chrystie Street, the 12 lots on Forsyth Street, and the eight lots on Rivington Street are incorporated into the middle-block section of the Sara Delano Roosevelt Park north of Delancey Street. The Stanton Street roadbed and sidewalks are demapped and that land is also included in the park. Land for the park is purchased in 1929, and the public park constructed in 1934 (Alexander R. Brash: personal communication, December 5, 2001). The park has a comfort station and the girls' playground in a depressed area, very similar to the 2001 Sanborn. In 1930 Chrystie Street is widened 25 feet on the east side, and Forsyth Street is widened 20 feet on the west side (City of New York, Final Damage Map.... 1930).

Bromley 1967: On Stanton, Chrystie, Forsyth, and Rivington Streets
Unchanged from 1955.

Bromley 1974: On Stanton, Chrystie, Forsyth, and Rivington Streets
Unchanged from 1955.

Sanborn 1984/1985: On Stanton, Chrystie, Forsyth, and Rivington Streets
Unchanged from 1955.

Sanborn 1990/1991: On Stanton, Chrystie, Forsyth, and Rivington Streets
Unchanged from 1955.

Sanborn 2001: On Stanton, Chrystie, Forsyth, and Rivington Streets
Unchanged from 1955.

Street Elevation Table

Block 420 street elevations over time are presented in the Second Avenue and Chrystie Street roadbed section of this appendix.

Tax and Directory Table

LOCATION	1808	1820	1834	1844	1858	1869	1876
BLOCK 420 Chrystie Street between Stanton and Rivington Streets							
200 Chrystie Street	No reels	No reels	No record	W. Taylor	J.B. Simpson	J.B. Simpson	J. Wilken
198 Chrystie Street	No reels	No reels	T. Parrase	A. Williams	J.B. Simpson	J.B. Simpson	H. Mums
196 ½ Chrystie Street	No reels	No reels	No record	A. Williams	C. Stickney	G. Lars	J. Hau
196 Chrystie Street	No reels	No reels	No record	J.McAfree	L. Baldwin	J. Dickenson	W. Cummings
194 Chrystie Street	No reels	No reels	M. Huges	W. Flanders	J. Horn	D. Brown	A. Jewell
192 Chrystie Street	No reels	No reels	No record	E. Harris0on	J. Horn	D. Brown	P. Anchers

190 ½ Chrystie Street	No reels	No reels	E. Clark	G. Nora	J. Horn	J. Horn	J. Quincy
190 Chrystie Street	No reels	No reels	No reels	G. Nora	J. Horn	J. Horn	M. Tinler
188 ½ Chrystie Street	No reels	No reels	J. Huns	G. Nora	T.W. Dick	A. Walker	W. Thomson
188 Chrystie Street	No reels	No reels	J.M. clark	G. Nora	W. Simpson	J. Fleming	J. Kingsley
186 Chrystie Street	No reels	No reels	N. Wook	C. Brock	P.Lorrillard	J. Flemming	M. Sutton
184 Chrystie Street	No reels	No reels	No record	C. Brock	W. Thorne	D. Bruno	F. Smith
182 Chrystie Street	No reels	No reels	No record	C. Brock	P. Gasner	O.Lorrillard	O. Lorrillard
180 Chrystie Street	No reels	No reels	No record	B. Maverick	W. Taylor	M.M. Rosenbaum	H. Parks
South Side							
23 Stanton Street	No reels	No reels	No record	M. Hunter	R. Riker	M. Frank	E. Valtier
25 Stanton Street	No reels	No reels	No record	M. Willett	R. Riker	J. Miller	E. Valtier
27 Stanton Street	No reels	No reels	J. Smith	C. Garner	H. Beckford	C. Anderson	J. Drake
29 Stanton Street	No reels	No reels	J. Smith	A. connor	S. Smith	H. Balls	J. Drake
31 Stanton Street	No reels	No reels	R. Smith	N. Tood	B. Edmond	R. Giles	E. Hubard
33 Stanton Street	No reels	No reels	J. Morris	M. Whitney	C. Plimpton	T. Williams	T. Krag
35 Stanton Street	No reels	No reels	J. Smith	M.N. Whaley	J. Devlin	G. Morgan	W. Miles
37 Stanton Street	No reels	No reels	Widow Miller	J. Hastings	C. Beekman	C. Beekman	W. Miles
39 Stanton Street	No reels	No reels	J. Munsen	F. Jarois	S. Reynolds	S. Reynolds	S. Reynolds
North Side							
20 Rivington Street	No reels	No reels	S. Cardwell	M. Agden	J. Jarvis	W. Ruick	C. Cushman
22 Rivington Street	No reels	No reels	J. Dockman	W. Cullender	L. Burling	L. Burling	E. Springer
24 Rivington Street	No reels	No reels	S. Martin	J. Linderman	E. Lafhue	L. Burling	R. Kotulski
26 Rivington Street	No reels	No reels	W. Durbran	S. Brush	H. Gregory	J. Had,ey	E. Clark
28 Rivington Street	No reels	No reels	T. Valentine	M. Herren	H. Gregory	J. Loundsey	M. Kirsche
30 Rivington Street	No reels	No reels	Heir of W. Smith	P. Berton	Est of Stillwell	H. Wics	S. Kirsche
32 Rivington Street	No reels	No reels	S. McOduck	L. Ricks	C. Washburn	A. Blue	M. Walters
34 Rivington Street	No reels	No reels	T. Huntington	C. Jordan	E. Farming	E. Farming	A. Hinckley

189 Forsyth Street	No reels	No reels	No record	J. Bings	A. Norris	F. Kennedy	M.M. Quackman
187 Forsyth Street	No reels	No reels	J. Smith	J Brown	J. Brown	K. White	H. Dominick
185 Forsyth Street	No reels	No reels	P. Landlord	J. Brown	S.S. Berry	h. Brades	M. Walters
183 Forsyth Street	No reels	No reels	P. Landlord	H. Broom	B. Allen	M. Wack	A. Saunders
181 Forsyth Street	No reels	No reels	W. Mook	G. Cake	C. Kerl	m. Wack	K. Santry
??? Forsyth Street	No reels	No reels	No record	B. Andrews	W. Crooming	J. Papers	M. Dunsmore
179 Forsyth Street	No reel	No reels	J. Huns	D. Stillwell	N. Stoddard	W. Mathews	C. Giancoplaus
177 Forsyth Street	No reels	No reels	W. Frier	J. Thorne	B. Andrew	G. Wegh	C. Flamm
175 Forsyth Street	No reels	No reels	WidowWisher-field	E. Richards	J. Brinkley	G. Perryman	C. Osborne
173 Forsyth Street	No reels	No reels	W. Mook	D. Winship	J. Soundsberry	J. Shrady	B. Noreen
171 Forsyth Street	No reels	No reels	T. Jeremiah	D. Winship	J. Jackson	J. Shrady	M. Carlos
169 Forsyth Street	No reels	No reels	No record	P. Connor	S. Pitts	J. Mayden	J. Mayden
167 Forsyth Street	No reels	No reels	No record	S. Pitts	S. Pitts	K. Fisher	A. Alder

Precontact Sensitivity

In the absence of soil borings, there is no record available concerning the subsurface disturbance for these lots. Basements beneath structures, which once stood within the APE, may have affected the potential for encountering precontact and contact material remains. However, this depends upon the depth of fill versus the depth of basements. If deep fill levels were added prior to 19th century intensive development, precontact and contact resources may be buried deep enough to have escaped disturbance. As is the case with the blocks north of East Houston Street, this section of the APE, Block 420 North, has only a moderate potential for cultural remains three to four feet beneath the base of the fill layers that include "misc. fill" as well as red and brown sands, both coarse and fine, with little silt. However, there is no precontact period potential where the subway runs beneath Chrystie Street.

Historical Sensitivity

Chrystie and Forsyth Streets along Block 420 Middle were widened in 1930. Therefore, there is a possibility that early 19th century and onward historical archaeological features that were within the historical block may lie in the present roadbed and beneath the sidewalks as well as within the block itself. These roadbed resources are considered in this appendix for the Second Avenue and Chrystie Street roadbeds. The primary archaeological resource of concern here is the potential evidence during the development

and redevelopment of the block for residential, industrial, and commercial purposes, which may have left traces that are visible in the archaeological record. Such archaeological traces include shaft features like cisterns, wells, privies, and ash pits.

The middle section of the Sara Delano Roosevelt Park lies on Block 420 within the APE. After Chrystie and Forsyth Streets were widened in 1930, the park was constructed in 1934 replacing a block of brick multi-storied buildings with very few basements and some open backyards. Until recently, the park contained depressed areas. The sunken areas were constructed so that the playing and wading areas were six feet below grade. The original intention was to minimize the ambient street noise and provide a safe and quiet place to play and rest (Alexander R. Brash, personal communication, December 5, 2001). More recently, concern for other safety issues led to reconfiguring the play areas so that they are presently at street level. Thus, approximately six feet of modern fill lies on top of what had been the 1934 surface. For this study, the recreational park is considered in terms of its effect on previous cultural resources rather than as one of the NYCLPC's topics for further research given its modern date.

Soil borings conducted in the southern section of Block 420 Middle noted sand/brick/cinder fill to 18' below grade in one location and brown, fine-medium sand mixed with concrete/cinder fill to 12' below grade in the second location. Both tests reported "no water observed" when the boring was terminated at 37' below grade. This lack of water at such a depth indicates the depth that historic wells had to be drilled. This increases the likelihood that deeply buried truncated wells could be associated with this section of the APE. As the cartographic review treated the north, west, east, and south sides of Block 420 Middle in that order, so, too will the historical sensitivity section that follows.

On Stanton Street

The Stanton Street lots are south of the 19th century cemetery. There is a very limited possibility for archaeological remains in one of the backyards of the eight lots and beneath the brick buildings without basements. The primary archaeological resources of concern here include the potential evidence from residential backyard shaft features, such as cisterns, wells, privies, and ash pits, and perhaps from a commercial site. Stanton Street was legally opened in1795. Sewers were in place along Chrystie and Forsyth Streets in the 1860s and city water was available along these north/south streets between 1904 and 1911. If the availability of city utilities moved uptown on cross streets through time as the WPA utility maps suggest, then Stanton Street tenements had a sewer pipe running beneath the street after 1910 when Delancey Street had a sewer line. Stanton Street had a water main in 1906. The eight lots were initially developed with brick multi-story buildings at least as early as 1836. There were at least two episodes of redevelopment of the tenements before they were torn down in the early 1930s, which may have obliterated any evidence from the commercial site. Nonetheless, the backyard of the tenement at 33 Stanton Street may hold relatively undisturbed evidence from the mid-19th century coal yard and subsequent use of the property by the tenement dwellers and workers from at least 1885 to 1930. This is particularly true since it appears that city services were not available, much less tapped into or hooked up, for more than 60 years, that is, until the first decade of the 20th century. It is also marginally possible that there may be material evidence beneath the passageway along the east side of 37 Stanton Street. For almost 50 years it was an open area before it was redeveloped as a tenement

with a basement. There were at least two episodes of land-use changes for the lots before the development of the park, that is, tenement building and rebuilding. Additionally, some commercial space was converted to residential use. Thus, undisturbed archaeological resources may lie beneath the backyard of 33 Stanton Street that remained open from at least 1852 to 1930 as well as the more limited possibility of intact resources in areas beneath the multi-storied tenements that had footings and foundations, but no basements.

On Chrystie Street

There is a moderate possibility for archaeological remains in the backyards of two lots at 198 and 196 ½ Chrystie Street. The primary archaeological resources of concern here include the potential evidence from residential backyard shaft features, such as cisterns, wells, privies, and ash pits. The eight lots were developed with brick multi-story buildings at least as early as 1852. On two lots there have been open backyard areas from at least the early 1850s until 1930 when the tenements were demolished in preparation for the Sara Delano Roosevelt Park. The large open areas at the rear of the buildings in the central section of the Chrystie Street side of the block have the potential for providing evidence about the daily activities of the people who lived and worked on the block. Even though sewers were available in 1867 and water in 1903 along this block of Chrystie Street, in all likelihood, cisterns, wells, and privies were still in use well after the construction of the sewer and water lines. Unfortunately, a two-story brick building with basement was built in the open area to the rear of the settlement house, probably having an adverse effect on potentially significant remains of educational and recreational activities there. Thus, before the conversion of a residential and commercial area into a park, there were only two episodes of land-use changes for the lots, that is, tenement building and rebuilding, other than the widening of the east side of Chrystie Street. Relatively undisturbed archaeological resources may lie beneath the backyards, buildings, and sidewalk on the east side of Chrystie Street between Stanton and Rivington Streets.

On Forsyth Street

There is a moderate to good possibility for archaeological remains in three of the twelve backyards, beneath the brick buildings without basements, and beneath the sidewalk on the west side of Forsyth Street. The primary archaeological resources of concern here include the potential evidence from residential backyard shaft features, such as cisterns, wells, privies, and ash pits as well as backyard surfaces that may show traces of daily activities. The twelve lots were developed with brick multi-story buildings at least as early as 1852. Although a sewer ran beneath this section of Forsyth Street in 1868 and water was available in 1904, in all likelihood, for decades, the Forsyth Street dwellers and workers probably continued to use the cisterns, wells, and privies on their lots. There was very little redevelopment of the tenements in the middle of the block before they were torn down in the early 1930s. Thus, the 60-foot deep, open backyards of the tenements with stores at 179-175 Forsyth Street may hold relatively undisturbed evidence about the daily activities of the people who lived and worked on the block from at least 1852 to 1930. In 1930 Forsyth Street was widened on the west side, so that there also may be some evidence about daily life beneath the sidewalk.

On Rivington Street

There is a limited possibility for archaeological remains in two of the backyards of the eight lots and beneath the brick buildings with no basements. The primary archaeological resources of concern here include the potential evidence from residential backyard shaft features, such as cisterns, wells, privies, and ash pits, and perhaps from a commercial site. Rivington Street was legally opened in 1795. Sewers were in place along Chrystie and Forsyth Streets in the 1860s and city water was available along Rivington Street in 1889. If the availability of city utilities moved uptown on cross streets through time as the WPA utility maps suggest, then Rivington Street had a sewer pipe running beneath the street after 1910 when Delancey Street had a sewer line. The eight lots on Rivington Street were initially developed with brick multi-story buildings at least as early as 1836. There were at least two episodes of redevelopment of the tenements before they were torn down in the early 1930s. Nonetheless, the mid-yard at 24 Rivington Street and the backyard at 32 Rivington Street may hold relatively undisturbed evidence from the use of the property by the tenement dwellers and workers from at least 1836 to 1930. This is particularly true since it appears that city services were not available, much less likely to be connected to or hooked up to the tenements, for more than 50 years, that is, until the end of the 19th century. It is possible that for almost 80 years the open areas in the mid- and backyards served the block's dwellers and workers as a place for daily activities. It is also marginally possible that there may be material evidence beneath the four alleyways at 24-32 Rivington Street, which were in place at least during the 1850s and 1860s. Cisterns have been known to be placed beneath alleyways. There were at least two episodes of land-use changes for the lots before the development of the park, that is, tenement building and rebuilding. Undisturbed archaeological resources may lie beneath the mid yard of 24 Rivington Street and the backyard of 32 Rivington Street that remained open from at least 1852 to 1930 as well as in areas beneath the tenements that had footings and foundations, but no basements.

Block 420 (South)

Cartographic History

The Cartographic History for Block 420 South is considered in four parts:

- North side: Chrystie Street, east side, on the west to Forsyth Street, west side, on the east along Rivington Street, south side. The north side of Block 420 South includes nine lots: Lots 11-19, at the street addresses 19-35 Rivington Street.
- West side: Chrystie Street, east side, between Rivington Street on the north and Delancey Street on the south. The west side of Block 420 South includes eight lots: Lots 10-1, at the street addresses 176-156 Chrystie Street.
- East side: Forsyth Street, west side, between Rivington Street on the north and Delancey Street on the south. The east side of Block 420 South includes 12 lots: Lots 20-31, at the street addresses 159-137 Forsyth Street.
- South side: Chrystie Street, east side, on the west to Forsyth Street, west side, on the east along Delancey Street, north side. The south side of Block 420 South includes eight lots: Lots 39-32, at street addresses 20-34 Delancey Street.

Manatus 1639:	Block 420 South area is depicted as fairly flat open space with decentralized, dispersed farms (bouweries).
Castello 1660:	Area not included on map. Castello Plan's northern border is just north of Wall Street, approximately 9000 feet south of the area.
Miller 1695:	Block 420 South area is approximately 9000 feet north of northern boundary of Miller map.
Lyne-Bradford 1730:	Area approximately 5000 feet north of northern boundary of Lyne-Bradford map.
Carwitham 1730:	Block 420 South area is approximately 5000 feet north of northern boundary of map.
Mrs. Buchnerd's Plan 1735:	Area is approximately 5000 feet north of northern boundary of these plans.
Grim 1743:	Block 420 South is just north of the northern boundary of the Grim Plan.
Maerschalck 1754:	Area is approximately 1500 feet north of the northern boundary of this plan.
Montresor 1766:	Area appears to be a patch-work quilt of bounded open fields, one with an orchard.
Ratzen(r)/Ratzer 1766/67:	The southernmost northwest/southeast diagonal line north of the Depeyster orchard depicted on the Ratzen(r) 1766 shows up on the 2001 Sanborn as running through the project block just north of Stanton Street, which is two blocks north of Block 420 South. Area is just north and east of the "M. Depeyster" estate garden and residence complex that fronts on the east side of Bowery Lane. APE still lies 400-500 feet east of "Bowry Lane" and appears as open fields and orchards for the three structures, presumed to be residences, that lie close to the road on the east side of Bowery Lane. First Street (Chrystie Street) is not depicted. Based on Augustyn and Cohen, area is shown in greater detail on Ratzen than on Ratzer (1766-1767).
British Headquarters 1782:	Block 420 South area continues to be depicted as residential and agricultural. Landscape is fairly flat, with hills rising to the east and west. The several red squares, which could indicate structures, east of the east side of Bowry Lane, appear to be close to, but not within Block 420 South.
McComb 1789:	Block 420 South area appears as undeveloped land through which diagonal property lines are drawn. The bent diagonal line on the 1789 map probably corresponds to the diagonal line on the Sanborn 2001 that lies south of the East Houston Street lots, two blocks north of this section of the APE.
Taylor-Roberts 1797:	Block 420 South area appears as flat, tree dotted, open land. The north/south street grid terminates just north of "North Street" (East Houston Street). Chrystie Street is in place as First Street; Forsyth Street, as Second Street. Rivington and Delancey Streets are in place.

Bridges 1803/1807: Block 420 South is bounded by Rivington Street on the north, First (Chrystie) Street on the west, Second (Forsyth) Street on the east, and Delancey Street on the south. The block is shaded, indicating some sort of development.

Colton 1836: Block 420 South is shaded, indicating development. The Chrystie and Forsyth street names replace First and Second Street names. Church and churchyard on Delancey Street is the only specified development on the block.

On Delancey Street

20 Delancey Street, at the southwest corner of the block, contains a black rectangle with surrounding open space on three sides.

Tanner 1836: Differs from Colton 1836 only in that there is no churchyard and the church is labeled "Bethel [Baptist]".

Mitchell 1846: Unchanged from Colton Tanner 1836.

Dripps 1852:

On Rivington Street

Ten structures on nine lots.

19-39 Rivington Street lots have a lot-wide structures with open backyards.

25 Rivington Street's building and lot are deeper than the other lots on Rivington Street.

39 Rivington Street has an outbuilding in the southeast corner of the lot.

On Chrystie Street

Five structures on five lots.

176 Chrystie Street has a lot-wide structure with open rear yard.

174 Chrystie Street has a lot-wide structure with open rear yard.

172 Chrystie Street has an open front portion of the lot with a lot-wide, rectangular structure at the rear lot line.

170 Chrystie Street has a rectangular building in the northwest corner of the lot surrounded by large open yard. It appears to be a double lot.

168 Chrystie Street has a large church building, labeled "*Bethenta Bapt. Ch.*", with a churchyard on four sides. The church is set back slightly from Chrystie Street. It appears to be four lots wide.

On Forsyth Street

Twenty-five structures on 12 lots.

159 Forsyth Street has a lot-wide rectangular building on the front of the lot with open space to the rear of the lot.

157 Forsyth Street has a lot-wide rectangular building on the front of the lot with open space to the rear of the lot.

155 Forsyth Street has a lot-wide rectangular building at both the western and eastern ends of the lot with open space in between.

153 Forsyth Street has a lot-wide rectangular building at both the western and eastern ends of the lot with open space in between. In the open space there is a structure along the north lot line that has an alleyway on the south side.

151 Forsyth Street has a rectangular building at both the western and eastern ends of the lot with open space in between. There is an alleyway along the south side running the full depth of the lot.
149 Forsyth Street has an L-shaped building along the south lot line at the front of the lot and a lot-wide building at the rear lot line with an alleyway along the north lot line. There is an open space between the two buildings.
147 Forsyth Street has an irregular-rectangular shaped building at the front of the lot with a lot-wide rectangular building at the rear lot line. Along the south lot line there is an alleyway as well as an open area between the two buildings.
145 Forsyth Street has an irregular-rectangular shaped building that runs the full depth of the lot. Along the south lot line there is an alleyway that runs the full depth of the lot.
143-141 Forsyth Street is a double lot with two irregular-shaped rectangular buildings in the front of the lot with an alleyway between them opening to an open space in between the front buildings and two buildings that are lot-wide and lie at the rear lot line. There is also an alleyway along the southern lot line.
139 Forsyth Street has an L-shaped rectangular building in front with an alleyway on the northern side running back to an open space between the front building and a lot-wide building at the western lot boundary.
137 Forsyth Street has a lot-wide rectangular building at both the western and eastern ends of the lot with open space in between.

On Delancey Street
Six structures on six lots.
20 Delancey Street is a triple lot with a building labeled "*Eagle Amoury*" on the southwest corner of Block 420 South. A narrow strip of open space lies on the northern and eastern side of the lot.
26 Delancey Street has an irregular-shaped rectangular building on the front of the lot with an irregular-shaped open backyard.
28 Delancey Street has an irregular-shaped rectangular building on the front of the lot with an irregular-shaped open backyard. There is also an alleyway along the west lot line.
30 Delancey Street has a lot-wide, irregular-shaped, rectangular building on the front of the lot with an irregular-shaped open backyard.
32 Delancey Street has a lot-wide, square building on the front of the lot with open space to the rear of the lot.
34 Delancey Street has a lot-wide, square building that fills the lot.

Perris 1852:

On Rivington Street
Ten structures on nine lots.
19 Rivington Street has a lot-wide building at the front of the lot that has a reverse U-shape and an open backyard.
21 Rivington Street is virtually unchanged from Dripps 1852.
23 Rivington Street has a building at the front of the lot with an alleyway along the eastern lot line.

25 Rivington Street has a lot-wide building on an open deeper lot that may connect with *174 Chrystie Street*.
27-33 Rivington Street has seemingly identical buildings.
27-31 Rivington Street has equally deep open backyards.
33 Rivington Street's backyard is truncated on the southern end.
35 Rivington Street has a lot-wide building with two outbuildings near the rear of the lot.

On Chrystie Street
Nine structures on five lots.
176 Chrystie Street has added a lot-wide structure at the eastern end of the lot with an open are between the front and back buildings.
174 Chrystie Street has added a lot-wide structure at the eastern end of the lot with an open area between the front and back buildings.
172 Chrystie Street is a *"Lumber Yard"* and has small structure with a long, attached shed along the southern lot line in addition to a lot-wide, rectangular structure at the rear lot line. There is an alleyway along the northern lot line and an open area in the middle of the lot.
170 Chrystie Street is a "*Coal Yard*" with a passageway between two buildings that stand at the front of the lot. Most of the lot is open space.
168 Chrystie Street has a large building, labeled "*Bethesda Baptist Church & Public Primary School No. 4*". It is set back from the street and has a double staircase on the street as well as two side yards. There is a small building attached to the center of the rear of the building and it runs to the eastern lot line.

On Forsyth Street
Twenty-five structures on 12 lots.
Practically unchanged from Dripps 1852. Perris 1852 shows the irregular-rectangular buildings to be a series of various-sized extensions attached to the front buildings.

On Delancey Street
Seven structures on six lots.
Mostly unchanged from Dripps 1852. Perris 1852 shows the irregular-rectangular buildings to be a series of various-sized extensions attached to the front buildings. The changes include:
20 Delancey Street has a not-lot-deep, slim structure, set back from Delancey Street that fills the narrow open strip in the eastern lot line. A narrow strip of open space remains to the rear of the addition.
30 Delancey Street has a rectangular building on the front of the lot and a lot-wide, irregular-shaped, rectangular building at the rear of the lot with an open area between the buildings. There is an alleyway along the eastern lot line.

32 Delancey Street has a lot-wide, irregular-shaped, rectangular building on the front of the lot with open space to the rear of the lot.

Viele 1864/1865: *Block 420 South* appears as an open meadow. The nearest stream is to the northeast and approximately 2500 feet from the APE.

Dripps 1867: On Rivington Street

Ten structures on nine lots. Dripps 1867 may be a planning document, rather than an as-built document.

Relatively unchanged except for:

25 Rivington Street no longer connects with *176 Chrystie Street.*

On Chrystie Street

Ten structures on six lots.

176 Chrystie Street is unchanged from Perris 1852.

174 Chrystie Street is unchanged from Perris 1852

172 Chrystie Street has a lot-wide structure in the front of the lot as well as one structure along the eastern lot line, with open space in between.

170 Chrystie Street's lot is split and has two, lot-wide structures in the front of the lot as well as along the eastern lot line, with open space in between.

168 Chrystie Street's large building's footprint has changed. The building is no longer set back from the street. In plan view it is I-shaped with two open spaces or side yards a mid-point along the northern and southern lot lines. There is a narrow, lot-wide open space at the eastern lot line.

On Forsyth Street

Twenty-four structures on 12 lots.

Buildings and lots virtually unchanged from Dripps 1852, except for:

157 Forsyth Street's middle building is not present.

On Delancey Street

Seven structures on six lots.

Practically unchanged from Perris 1852. The changes include:

20 Delancey Street's addition is not in place.

30 Delancey Street's lot-wide, irregular-shaped, rectangular building at the rear of the lot has an extension forward along the western lot line, reducing the open area between the buildings. The alleyway remains.

Robinson 1885: On Rivington Street

Ten structures on nine lots. All are brick buildings.

19 Rivington Street's building covers the lot.

21 Rivington Street's building covers the lot except for an I-shape open space that lies between mid lot and the southern lot line.

23 Rivington Street's nearly covers the lot. There is a 10-foot open space at the rear of the lot. Alleyway is no longer present.

25 Rivington Street is unchanged from Dripps 1867.

27-33 Rivington Street seemingly identical buildings are unchanged from Dripps 1852.
27-29 Rivington Street has 40-foot deep open backyards.
31 Rivington Street has a J-shape open rear yard.
33-35 Rivington Street's buildings and backyards are unchanged from Dripps 1867.

On Chrystie Street
Nine structures on seven lots. The buildings are brick. Street addresses have changed.
176 Chrystie Street's rear building is absent, leaving a 20-foot deep, open space at the rear of the lot.
174 Chrystie Street's rear building is absent, leaving a 30-foot deep, open space at the rear of the lot.
172 Chrystie Street has a lot-wide structure in the front of the lot with a 30-foot deep, open area in the rear of the lot.
170-168 Chrystie Street's lot is split and has two, unequal, lot-wide structures in the front of the lot as well as two equally wide outbuildings along the eastern lot line, with open space in between.
166-160 Chrystie Street (was 168 Chrystie Street) houses "GRAMMAR SCHL.No.20". The large building's footprint is unchanged from 1867.
158 Chrystie Street is a carved out of the rear of three lots on the corner of Delancey and Chrystie Streets. It has a 25-foot deep, open backyard.

On Forsyth Street
Seventeen structures on 12 lots. All buildings at street face are brick, except for one stone building at 153 Forsyth Street.
159 Forsyth Street is unchanged from Dripps1852.
157 Forsyth Street is unchanged from Dripps 1852.
155 Forsyth Street has a lot-wide rectangular building with a 20-foot deep open area at the rear lot line.
153 Forsyth Street has a lot-wide, rectangular, stone building with a 30-foot deep open backyard.
151 Forsyth Street has a rectangular building at both the western and eastern ends of the lot with open space in between. The alleyway is no longer present.
149 Forsyth Street has a lot-wide, rectangular building at both the western and eastern ends of the lot with open space in between. The alleyway is no longer present.
147 Forsyth Street is unchanged from Dripps1852.
145 Forsyth Street has a lot-wide, rectangular building with a 40-foot deep open area to the rear o the building.
143-141 Forsyth Street is a double lot with two lot-wide rectangular buildings with a 30-foot deep open backyard. The alleyways are no longer present.

139 Forsyth Street has a lot-wide, rectangular building at both the western and eastern ends of the lot with open space in between. The alleyway is no longer present.
137 Forsyth Street has a lot-wide rectangular building with a 10-foot deep open space to the rear of the building.

On Delancey Street
Nine structures on eight lots. All the structures on Delancey Street are brick.
The changes include:
20 Delancey Street is divided into three lots, each with a 20-foot deep open area to the rear of a lot-wide, rectangular building.
26 Delancey Street has a lot-wide, rectangular building with a 15-foot deep open backyard.
28 Delancey Street's building's extension is not present.
30 Delancey Street's buildings' footprints have changed, but the alleyway remains.
32 Delancey Street's building's rear extension is absent.

Bromley 1897:

On Rivington Street
Ten structures on nine lots. Buildings' footprints and brick building material remain the same. There is additional information about the number of stories and the presence/absence of basements.
19 Rivington Street has a six-story building with no basement.
21 Rivington Street's building is three-stories high and has a basement.
23 Rivington Street's building has five stories and no basement.
25 Rivington Street's building has five stories and no basement.
27-31 Rivington Street has three, three-storied buildings, each with a basement.
33 Rivington Street has a four-story building with basement.
35 Rivington Street has a five-story building with a basement.

On Chrystie Street
Ten structures on eight lots. All are brick buildings. Footprints are unchanged.
176 Chrystie Street has six stories.
174 Chrystie Street has five stories.
172- 168 Chrystie Street all have five stories.
166-160 Chrystie Street (was 168 Chrystie Street) continue to house "GRAMMAR SCHL.No.20". The large building's footprint is unchanged from 1867. There is no label indicating the number of stories high the schoolhouse is.
158 Chrystie Street has five stories.

On Forsyth Street
Sixteen structures on 12 lots. All buildings at street face are brick. Buildings and lots are virtually unchanged from 1885, except for the notation about the number of stories and the presence of

basements. Since the footprints remain the same on most of the lots, it is assumed that these are basements beneath many of the buildings that date to at least 1852. There are only two lots that contain basements, 145 and 139 Forsyth Street.
159 Forsyth Street is unchanged from Dripps1852.
157 Forsyth Street has a five-story building at the front of the lot.
155 Forsyth Street has a six-story building at the front of the lot.
153 Forsyth Street has a five-story building.
151 Forsyth Street has a five-story building.
149 Forsyth Street has a five-story building.
147 Forsyth Street has a five-story building.
145 Forsyth Street has a five-story building with a basement.
143-141 Forsyth Street has a five-story building.
139 Forsyth Street has a five-story building.
137 Forsyth Street has a three-story building with a basement.

On Delancey Street
Eight structures on eight lots. There are footprint changes for the buildings at 28-30 Delancey Street; otherwise, the footprints remain the same. Only 30 Delancey Street has a basement.
The changes include:
20-24 Delancey Street has three, five-storied buildings.
26 Delancey Street's building has four stories.
28 Delancey Street has a lot-wide, rectangular building with five stories and a 10-foot deep open area in the rear.
30 Delancey Street has a dumb-bell tenement with five stories and a basement. There is a 10-foot deep open area in the rear.
32 Delancey Street's building fills the lot and is four stories high.
34 Delancey Street has a building with two stories.

Bromley 1911:

On Rivington Street
Five structures on five lots. A store is noted for every building.
19 Rivington Street has a six-story building with no basement on a double lot. The building is C-shaped to accommodate an airshaft. There is a one-story addition at the rear of the building, leaving a 10-foot square open spot in the southeast corner of the lot.
23 Rivington Street is unchanged from 1897.
25 Rivington Street is unchanged from 1897.
27-31 Rivington Street is a single lot with one, six-story building that has a 10-foot wide, L-shaped open space at the rear of the lot.
33-35 Rivington Street is a single lot with one, six-story building that fills the lot.

On Chrystie Street
Eight structures on six lots. All are brick buildings. All buildings but the school have stores.
Unchanged from 1897, except for:
168 Chrystie Street has one five-story building, replacing two five-story buildings at the front of the lot. The two, back lot buildings

have not changed footprints since 1885 and are each four-stories tall and have no basements.
160 Chrystie Street renamed *"PUBLIC SCHOOL No. 35"*.

On Forsyth Street
Fourteen structures on 10 lots. The label "S" for store appears on all the buildings.
Buildings and lots virtually unchanged from 1885 and 1897.
157 Forsyth Street's back building is four-stories high.
151-149 Forsyth Street's back buildings have four stories.
139 Forsyth Street's back building has five stories and has a very narrow 10-foot strip of open land at the western end of the lot.

On Delancey Street
Eight structures on eight lots. A store is noted for every building on Delancey Street.
The changes include:
20 Delancey Street has a one-story addition at the rear of the lot, thus the building covers the lot.
32 Delancey Street's lot is reconfigured to include the rear part of 137 Forsyth Street.
34 Delancey Street's lot is reconfigured to include the front part of 137 Forsyth Street. A six-story, brick building covers the lot on the southeast corner of Block 420 South.

Bromley 1916:

On Rivington Street
Five structures on five lots.
The lots are virtually unchanged except for:
27-29 Rivington Street has an airshaft midway along the eastern lot line.
31-35 Rivington Street has an airshaft midway along the western lot line.

On Chrystie Street
Eight structures on six lots.
Unchanged from 1897, except for:
160 Chrystie Street has four, one-story additions on the east side of the "arms" of the four-storied, I-shaped school building, thus reducing the open areas along the north, east, and south lot lines.

On Forsyth Street
Fourteen structures on 10 lots.
Buildings and lots virtually unchanged from 1885 and 1897, except for:
147 Forsyth Street has a five-story, dumb-bell, brick tenement that has a 10-foot deep strip at the rear of the lot.

On Delancey Street
Eight structures on eight lots.
Buildings and lots virtually unchanged except for:

28 Delancey Street has a five-story dumb-bell tenement with an airshaft mid-way along the western lot line. There is a 10-foot deep open area at the rear of the lot.

Bromley 1926: On Rivington Street
Unchanged from 1916.

On Chrystie Street
Seven buildings on five lots.
Buildings and lots are unchanged from 1916, except for:
158 Chrystie Street is incorporated into the Libby Hotel, a 12-story building with a store, at the southwest corner of Block 420 South.

On Forsyth Street
Fourteen structures on 10 lots.
Buildings and lots unchanged from 1916.

On Delancey Street
Five structures on five lots. The buildings and lots are virtually unchanged.
The change includes:
20-26 Delancey Street's "LIBBY HOTEL" is 12 stories high with stores. Its footprint covers the lot. No basement is noted, but there are three elevator shafts.

Bromley 1932: On Rivington Street
Unchanged from 1916 and 1926.

On Chrystie Street
Seven buildings on five lots.
Buildings and lots are unchanged from 1926.

On Forsyth Street
Fourteen structures on 10 lots.
Buildings and lots unchanged from 1916 and 1926.

On Delancey Street
Unchanged from 1926.

Bromley 1955: On Rivington, Chrystie, Forsyth, and Delancey Streets
The nine Rivington Street lots, the eight lots on Chrystie Street, the 12 lots on Forsyth Street, and the eight lots on Delancey Street are incorporated into the southern-block section of the Sara Delano Roosevelt Park north of Delancey Street. The Rivington Street roadbed and sidewalks are demapped and that land is also included in the park. Land for the park is purchased in 1929, and the public park constructed in 1934 (Alexander R. Brash: personal communication, December 5, 2001). In 1930 Chrystie Street is widened 25 feet on the east side, and Forsyth Street is widened 20 feet on the west side (City of New York, Final Damage Map.... 1930).

Bromley 1967: On Rivington, Chrystie, Forsyth, and Delancey Streets

Unchanged from 1955.

Bromley 1974: On Rivington, Chrystie, Forsyth, and Delancey Streets
Unchanged from 1955.

Sanborn 1984/1985: On Rivington, Chrystie, Forsyth, and Delancey Streets
Unchanged from 1955.

Sanborn 1990/1991: On Rivington, Chrystie, Forsyth, and Delancey Streets
Unchanged from 1955.

Sanborn 2001: On Rivington, Chrystie, Forsyth, and Delancey Streets
Unchanged from 1955.

Street Elevation Table

Block 420 street elevations over time are presented in the Second Avenue and Chrystie Street roadbed section of this appendix.

Tax and Directory Table

LOCATION	1808	1820	1834	1844	1858	1869	1876
BLOCK 420C Chrystie and Forsyth Streets between Rivington and Delancey Streets							
232 Chrystie Street	No reels	No reels	E. Warren	D. Winship	G. Peck	Est of Maydell	J. Fisher
230 Chrystie Street	No reels	No reels	H. Morrison	D. Winship	D. Winship	J. Home	J. Fisher
228 Chrystie Street	No reels	No reels	M. Devic	D. Winship	D. Winship	C. Francis	J. Fisher
226 Chrystie Street	No reels	No reels	K. Doch	D. Winship	D. Winship	C. Francis	J. Fisher
224 Chrystie Street	No reels	No reels	J. Lammers	C. Pitts	J. Weir	C. Francis	H. Kinzing
222 Chrystie Street	No reels	No reels	Widow Schwinn	Est of Dominick	M. Pascuets	J. Mulney	H. Kinzing
220 Chrystie Street	No reels	No reels	D. Bishop	Est of Dominick	L. Quincy	J. Cahler	M. Lawrence
218 Chrystie Street	No reels	No reels	R. Provost	Est of H. Sommervale	L. Quincy	J. Cahler	H. Drake
216 Chrystie Street	No reels	No reels	J. Horne	S. S. Baryy	J. Wall	J. Cahler	A. Hubbard
214 Chrystie Street	No reels	No reels	P.Conner	A. Briar	H. Morris	H. Morris	H. Moprris
South Side							
19 Rivington Street	No reels	No reels	J. Raymond	W. Taylor	W.B. Miles	H. Dominick	J. McCabe
21 Rivington Street	No reels	No reels	T. Segison	S. Williams	W.B. Miles	D. Lewis	G. Webber

23 Rivington Street	No reels	No reels	D. Clark	S. Williams	W.B. Miles	A. Gibson	R.McClay
25 Rivington Street	No reels	No reels	P. Collins	J. Farari	S. Jenner	J. Delgadio	G.E. Ward
27 Rivington Street	No reels	No reels	H. Harris	W. Flanders	Est of Appley	D. Biancomano	T. Liones
29 Rivington Street	No reels	No reels	J. Smith	Est of Morrison	M. Hunk	P. Sposito	W. Daton
31 Rivington Street	No reels	No reels	G. Morrill	J. Horn	I. Barker	B. Zerio	G. Topper
33 Rivington Street	No reels	No reels	M.H. Underhill	J. Horn	E. Mulberry	G. Ellrick	M. Monson
35 Rivington Street	No reels	No reels	T. Williams	J. Horn	E. Mulberry	E. Mulberry	E. Daley
159 Forsyth Street	No reels	No reels	J. Minuse	J. Jackson	Est of Ridaback	M. Lewis	C. Lawrence
157 Forsyth Street	No reels	No reels	J. Weir	J. Soundsbury	Est of Ridaback	M. Lewis	P. Bright
155 Forsyth Street	No reels	No reels	S. Saquett	J. Brinkley	J. Shrady	M. Lewis	D. Lennon
153 Forsyth Street	No reels	No reels	J. Loundsbury	V. Norris	J. Shrady	M. Lewis	D. Lennon
151 Forsyth Street	No reels	No reels	G.E. Folger	P. Aloisa	M.N. Fields	E. Rogers	D. Lennon
149 Forsyth Street	No reels	No reels	Mrs. Ennefs	Est. of Donelli	K. White	K. Wheeler	N. Lehigh
147 Forsyth Street	No reels	No reels	F. Baker	D. Lello	M. Dunsmore	C. Bennington	P. Brown
145 Forsyth Street	No reels	No reels	J. Reynolds	S.S. Berry	M. Walters	G. Hastings	R. Heights
143 Forsyth Street	No reels	No reels	T. Begison	S.S. Berry	D. Karydis	L.Leroy	H. Lockwood
141 Forsyth Street	No reels	No reels	D. Clark	J. Wood	E. Karydis	H. Livingston	A. Stagg
139 Forsyth Street	No reels	No reels	H. Harris	S. Allen	J. Amara	H. Livingston	A. Stagg
137 Forsyth Street	No reels	No reels	R. Roberts	A. Brooks	J. Amara	H. Livingston	Heir of Gradman
135 Forsyth Street	No reels	No reels	B. Giles	A. Brooks	D. Charles	B. Weaver	E. Phelan
20 Delancey Street	No reels	No reels	C. Anderson	H. Owens	P. Valentine	J. Rose	S. Beedle
22 Delancey Street	No reels	No reels	D. Wattles	H. Owens	W. Cooper	K. McCallister	W. Hall
24 Delancey Street	No reels	No reels	H. Dukes	H. Owens	W. Cooper	C. Lawson	W. Brooks
26 Delancey Street	No reels	No reels	J. Buckman	H. Owens	T. Monroe	H. Ford	W. Brooks
28 Delancey Street	No reels	No reels	J. Buckman	H. Gardner	J. Ruzo	D. Dibble	F. Rutherford
30 Delancey Street	No reels	No reels	A. Wright	G. Meade	J. Ruzo	D. Dibble	M. Rutherford
32 Delancey Street	No reels	No reels	K. Allen	S. Jones	M. Sansibrino	J. Beekman	V. Dilly
34 Delancey Street	No reels	No reels	J. Smith	J. Smith	J. Arruda	G. Thompson	W. Slain

36 Delancey Street	No reels	No reels	J. Smith	J. Smith	J. Arruda	H. Able	Widow Kippan

Precontact Sensitivity

The one soil boring for Block 420 South was taken beneath the sidewalk on the north side of Delancey Street and measured 30 feet of miscellaneous sand, gravel, and brick fill. This fill, as well as footings and basements beneath structures, which once stood within the APE, may have affected the potential for encountering precontact and contact material remains. However, this depends upon the depth of fill versus the depth of basements. If deep fill levels were added prior to 19th century intensive development, precontact and contact resources may be buried deep enough to have escaped disturbance. As is the case with the blocks north of East Houston Street, this section of the APE, Block 420 South, has only a moderate potential for cultural remains three to four feet beneath the base of the fill layers. However, there is no precontact period potential where the subway runs beneath Chrystie Street.

Historical Sensitivity

Chrystie and Forsyth Streets along Block 420 South were widened in 1930. Therefore, there is a possibility that early 19th century and onward historical archaeological features that were within the historical block may lie in the present roadbed and beneath the sidewalks as well as within the block itself. These roadbed resources are considered in *Section 4.5.7.1*, Documentary Assessment of APE, Second Avenue and Chrystie Street roadbeds. By and large, the buildings on Block 420 South fronted on the street and had little or no open front-yard space. Thus, there is little likelihood of encountering significant cultural remains beneath the widened Chrystie and Forsyth Streets. The exception may be the 1830s church's side yard on the east side of Chrystie Street, should it have served as a burying place and survived subsequent development of the lots by a hotel. The primary archaeological resource of concern here is the potential evidence from the development and redevelopment of the block for residential and commercial purposes, which may have left traces that are visible in the archaeological record. Such archaeological traces include shaft features like cisterns, wells, privies, and ash pits.. Additionally, between the 1850s and 1930, when the block was razed in preparation for the Sara Delano Roosevelt Park, first a church, then a church and public school combination, and finally a public school occupied 166-160 Chrystie Street. There may be pockets of undisturbed materials connected with the public school.

The one soil boring for Block 420 South was taken beneath the sidewalk on the north side of Delancey Street and measured 30 feet of miscellaneous sand, gravel and brick fill. Brick was the construction material of choice for the buildings on the block. Water was encountered at 27 feet below surface, suggesting that well shafts would have needed to be deep. A comparison of cartographic sources suggests that there is a limited possibility for archaeological materials to remain relatively intact within Block 420 South, with the exception of the possibility of the potentially deep well shafts. As the cartographic review treated the north, west, east, and south sides of Block 420 South in that order, so, too will the historical sensitivity section that follows.

On Rivington Street

There is a limited possibility for archaeological remains in one of the backyards of the nine lots and beneath the brick buildings without basements at 19-39 Rivington Street. The primary archaeological resources of concern here include the potential evidence from residential backyard shaft features, such as cisterns, wells, privies, and ash pits, and perhaps from a commercial site. Rivington Street was legally opened in 1795. Sewers were in place along Chrystie and Forsyth Streets in the 1860s and city water was available along these north/south streets between 1904 and 1911. Water was available one block west on Rivington Street in 1889. If the availability of city utilities moved uptown on cross streets through time as the WPA utility maps suggest, then the Rivington Street tenements had a sewer pipe running beneath the street after 1910 when Delancey Street had a sewer line.

The nine lots fronting Rivington Street were developed with brick multi-story buildings at least as early as 1836. There were at least two episodes of redevelopment of the tenements before they were torn down in the early 1930s. Nonetheless, the backyard of the tenement at 25 Rivington Street may hold relatively undisturbed evidence from the mid-19th century lumber yard and subsequent use of the property by the tenement dwellers and workers from at least 1885 to 1930. This is particularly true since it appears that city services were not available, much less tapped into or hooked up, for more than 60 years, that is, until the first decade of the 20th century. The existing wells would need to have been at least 27 feet deep and may lie truncated beneath the overburden of fill. There were at least two episodes of land-use changes for the lots before the development of the park, that is, tenement building and rebuilding. Additionally, some commercial space was converted to residential use. Thus, undisturbed archaeological resources may lie beneath the backyard of 25 Rivington Street that remained open from at least 1852 to 1930.

On Chrystie Street

There is a moderate possibility for archaeological remains in the backyards of three lots at 176 and 170-168 Chrystie Street. The primary archaeological resources of concern here include the potential evidence from residential backyard shaft features, such as cisterns, wells, privies, and ash pits. The eight lots were developed with brick multi-story buildings at least as early as 1852. On three lots there have been open backyard areas from at least the early 1850s until 1930 when the tenements were demolished in preparation for the Sara Delano Roosevelt Park. The large open areas at the rear of the buildings in the central section of the Chrystie Street side of the block have the potential for providing evidence about the daily activities of the people who lived and worked on the block. The back buildings at the rear of 170-168 Chrystie Street straddled the lot lines of 151-149 Forsyth Street. Even though sewers were available in 1867 and water in 1903 along this block of Chrystie Street, in all likelihood, cisterns, wells, and privies were still in use well after the construction of the sewer and water lines. Wells would have had to have been at least 27 feet deep, so a truncated section of the potential wells may lie beneath the fill noted in the soil boring on the south side of the block.

While the footprint changes for the public school (160-166 Chrystie Street) reduced the open areas around the building, there may be pockets of intact subsurface cultural remains having to do with schools. There is a growing body of archaeological work having to do with schools and school yards, and any information may contribute to a

further understanding about the policies and practices of public education (Gibb and Beisaw 2002; Schneiderman-Fox, et al 2001). Unfortunately, the side yard (on Chrystie Street) and the other side- and backyard of the 1830s-1840s church that stood on the southwest corner of the block was probably adversely affected by the construction of the Libby Hotel between 1916 and 1926. Popular opinion has it that there were several sub-basements beneath the hotel, so that there is only a very limited chance for intact remains from the southwest corner of the block even before the widening of the east side of Chrystie Street. Thus, before the conversion of a residential and commercial area into a park, there were only two episodes of land-use changes for the lots, that is, tenement building and rebuilding, other than the widening of the east side of Chrystie Street. There is a moderate possibility that intact archaeological resources may lie beneath the backyards on the east side of Chrystie Street between Stanton and Rivington Streets.

On Forsyth Street

There is a moderate to good possibility for archaeological remains in five open areas to the rear of buildings on Forsyth Street. The primary archaeological resources of concern here include the potential evidence from residential backyard shaft features, such as cisterns, wells, privies, and ash pits as well as backyard surfaces that may show traces of daily activities. The Forsyth Street lots were developed at least as early as 1836. Although a sewer ran beneath this section of Forsyth Street in 1868 and water was available in 1904, in all likelihood, for decades, the Forsyth Street dwellers and workers probably continued to use the cisterns, wells, and privies on their lots. The backyards that remained open areas include the mid-yards (common to both the front and back buildings), at 157, 151, 149 and 139 Forsyth Street and the backyards of 143 and 141 Forsyth Street. Of particular note are the four-story, brick back buildings at 151 and 149 Forsyth Street that straddled the lot line of 170 and 168 Chrystie Street. There was very little redevelopment of the tenements in the middle of the block before they were torn down in the early 1930s. In 1930 Forsyth Street was widened on the west side, and with no open front yards, there is little chance of encountering significant archaeological material beneath the sidewalk and present roadbed. Thus, the open mid-yards and backyards of the tenements with stores on the 159-137 block of Forsyth Street may hold relatively undisturbed evidence about the daily activities of the people who lived and worked on the block from at least 1852 to 1930.

On Delancey Street

There is a limited possibility for archaeological remains in two of the backyards of the eight lots on the Delancey Street side of Block 420 South. The primary archaeological resources of concern here include the potential evidence from residential backyard shaft features, such as cisterns, wells, privies, and ash pits. Soil boring data note that the water level is 27 feet below surface; thus, wells would need to have been deep, which means that truncated wells may be encountered below any fill on the block. Delancey Street was legally opened in 1795. Sewers were in place along Chrystie and Forsyth Streets in the 1860s. In 1910 Delancey Street had a sewer line. The eight lots on Delancey Street were developed at least as early as 1836. There were at least two episodes of redevelopment of the tenements before they were torn down in the early 1930s. Nonetheless, the 10-foot deep open area to the rear of 28 and 30 Delancey Street may hold relatively undisturbed evidence from the use of the property by the tenement dwellers and workers from at least 1836 to 1930. This is particularly true since it appears that city services were not available, much less likely to be connected to or hooked up to

the tenements, for more than 50 years, that is, until the end of the 19th century. It is possible that for almost 80 years the open areas in these two backyards served the block's dwellers and workers as a place for daily activities. Unfortunately, the construction of the 12-story Libby Hotel, some time between 1916 and 1926, probably had an adverse effect on any possible archaeological resources connected with the church that stood on the southwest corner during the 1830s and 1840s. There were at least two episodes of land-use changes for the lots before the development of the park, that is, tenement building and rebuilding. Undisturbed archaeological resources may lie beneath the 10-foot deep area to the rear of 28 and 30 Delancey Street.

4.5.7.2 Site File Search Results, NYCLPC, NYSOPRHP and NYSM

SITE FILE SEARCH RESULTS

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

~~Village~~ City 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

4059 X
4060 X
4061 X
4062 X
4063 X
4064 X
4278 X

*Missing

209 Water St. South Street Seaport HP

*Missing

* 576 Broom St. Historic Site

*According to Cynthia Blakemore @ SHPO

SHPO # Sites 24 19

A061.01.0491 —	#30 = British Line
A061.01.01282 X	#31
A061.01.01272 X 2014	
A061.01.01284 X	(note: #30 + #31 —
A061.01.01283 X	the only info from SHPO
1 - A061.01.1271 X	was that NYAC did a
~~2 - A061.01.0044 003~~	survey in the 1970's
3 - A061.01.0623 X 2013	2nd found historic Remains.
4 - A061.01.06763 X	no other info was found.)
~~5 - A061.01.0001~~	
6 - A061.01.00604 X	NYAC = New York
A061.01.01304 X	Archeological Council.
A061.01.01285 X	
A061.01.07671 —	
A061.01.09530 X	
A061.01.01286 X	
A061.01.0541 X	
A061.01.00542 X	
A061.01.09531 X	

ATIONAL REGISTER ELIGIBLE and LISTED ___ X ___ Eligible ___ ___ Listed ___ ___ Building Inventory

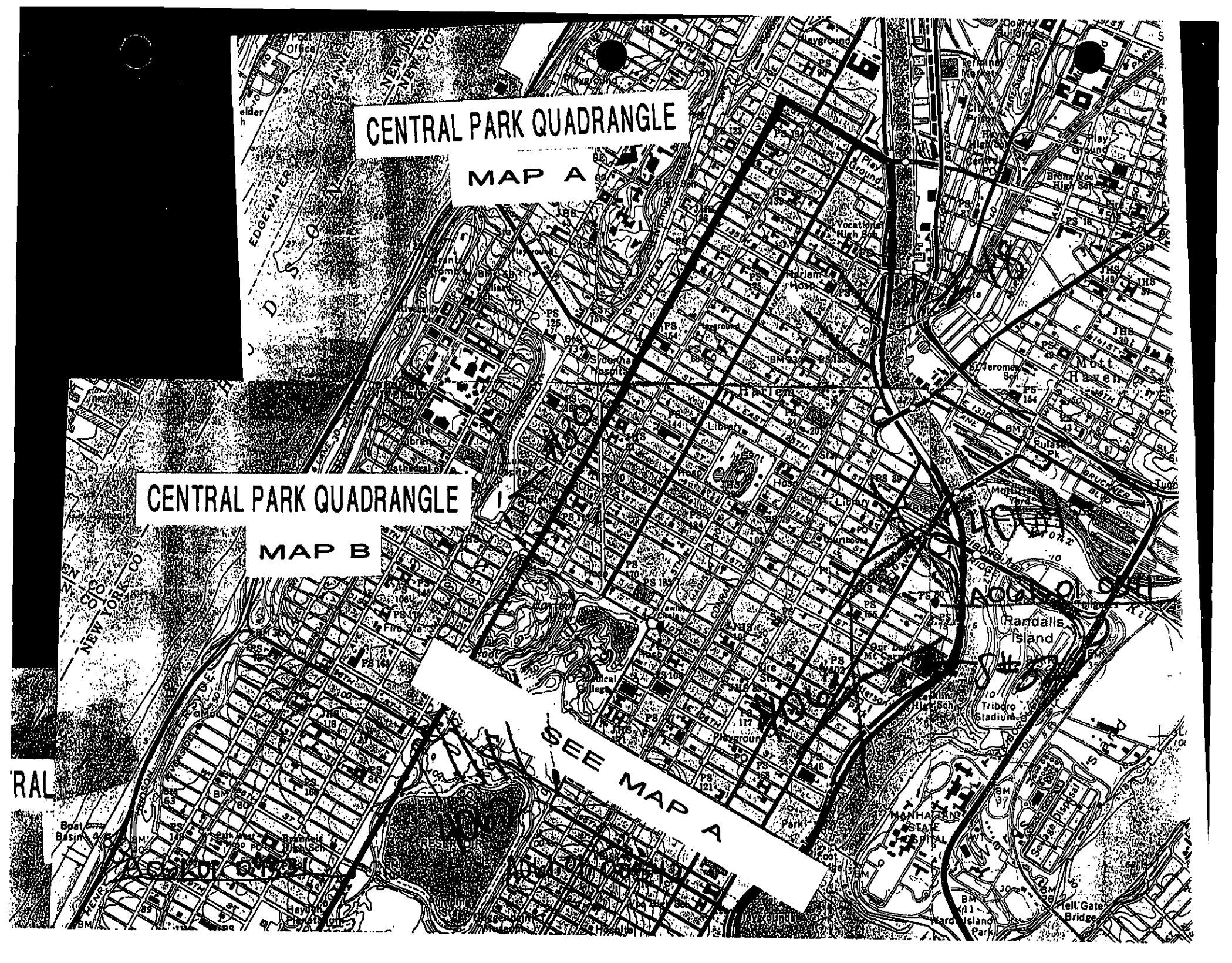
ilding Inventory #	NR Status	Form Copied	Property Description	Roads Checked
06101.000604	NRL	✓	South Street Seaport Historic District 209 Water Street	

EVIOUS SURVEYS <17 previous surveys w/in Radius>

8 Westside Highway Program - 1983
William D. Hersey - 1963 Castle Clinton at the Battery
Broad Street Financial Center Greenhouse January 1985
X
64th Pearl Street Fill Landfill Arnold Pickman & Nan Rothschild May 1981
Stone Street Historic District 1977, 8/03 Nye Landmarks Pres. Comm. Tracker
9 Barclays Bank Site - 100 Water St. Berger - 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block. Kardon & Larrabee - July 1981

209 Water St. - Schuyler - ? Date
East River Road - New York Harbor Collection Kardon & Larrabee October 1977
10 Sheridan Square - 1983 - Rutgers University
Lower Eastside Service Center - Louis Berger - Jan '98
750 Sixth Ave. HPI February 1998
Baruch College Campus - Historic Conservation & Interpretation Inc. - Jan. 1981 / December 1989
East River Plaza HPI Sept. 1998
Stone Street Historic District NYC Landmark Pres. Comm. February 1998

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


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A
Harlem
Randalls Island
Triboro Stadium
Hell Gate Bridge
Mott Haven
Post Office
Playground
Vocational High Sch
Library
Fire Sta
Park
Boat Basin
Reservoir
Hospital
Fire Station
Playgrounds
Manhattan State Hospital
Sewage Disposal
Ward Island Park
Planetarium
Museum
Courthouse
Our Lady Mt Carmel
Bronx Voc High Sch
Jerome Sch
Pulaski Pk
Mott Haven Yard
Bruckner Blvd
Bridge
Tunnel
Tower
Tanks
Stadium
Pool
Tennis Courts
Playground
Fire Station
Hospital
Library
Park
Reservoir
Boat Basin


SEE MAP C
S#27
S#25
1000
0
DEPTH CURVES
SHORELINE SHO
4 FEET I
THIS MAP CO
FOR SALE BY
FOLDER DESCRIBING


CENTRAL
WEST NEW YORK
NEW YORK CITY BOUNDARY
LINCOLN TUNNEL
BROOKLYN-BATTERY TUNNEL 4.2 MI.
N.J. TURNPIKE 4.4 MI.
200 000 FEET (N. Y.)
SEE MAP C
NEW JERSEY
NEW YORK
Castle Point
Boat Basin
Playground
Fire Sta
Pharmacy
College
Roosevelt Hospital
Coliseum
Columbus Circle
Carnegie Hall
Library
Main Library
Times Square
Herald Sq
Penn Station
Madison Sq Garden
Empire State Bldg
Greeley Square
Park
Tunnel
Pier
Ferry
Terminal
Subway
Bus Terminal
Post Office
Hospital
Museum
Planetarium
Historical Society
Metropolitan Museum of Art
The Lake
The Mall
Reservoir
Boathouse
Pool
Rink
Arena
Stadium
Ball Field
Tennis Courts
Handball Courts
Basketball Courts
Swimming Pool
Bridle Path
Bicycle Path
Footbridge
Overpass
Underpass
Ramp
Toll Booth
Gas Station
Garage
Parking Area
Church
Synagogue
Cemetery
Golf Course
Golf Driving Range
Golf Practice Green
Golf Tee
Golf Fairway
Golf Green
Golf Bunker
Golf Water Hazard
Golf Rough
Golf Out of Bounds
Golf Cart Path
Golf Clubhouse
Golf Pro Shop
Golf Locker Room
Golf Restaurant
Golf Snack Bar
Golf Parking Area
Golf Entrance
Golf Exit
Golf Tunnel
Golf Underpass
Golf Overpass
Golf Footbridge
Golf Bridle Path
Golf Bicycle Path
Golf Toll Booth
Golf Gas Station
Golf Garage
Golf Parking Area
Golf Church
Golf Synagogue
Golf Cemetery
Golf Course
Golf Driving Range
Golf Practice Green
Golf Tee
Golf Fairway
Golf Green
Golf Bunker
Golf Water Hazard
Golf Rough
Golf Out of Bounds
Golf Cart Path
Golf Clubhouse
Golf Pro Shop
Golf Locker Room
Golf Restaurant
Golf Snack Bar
Golf Parking Area
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Golf Exit
Golf Tunnel
Golf Underpass
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Golf Footbridge
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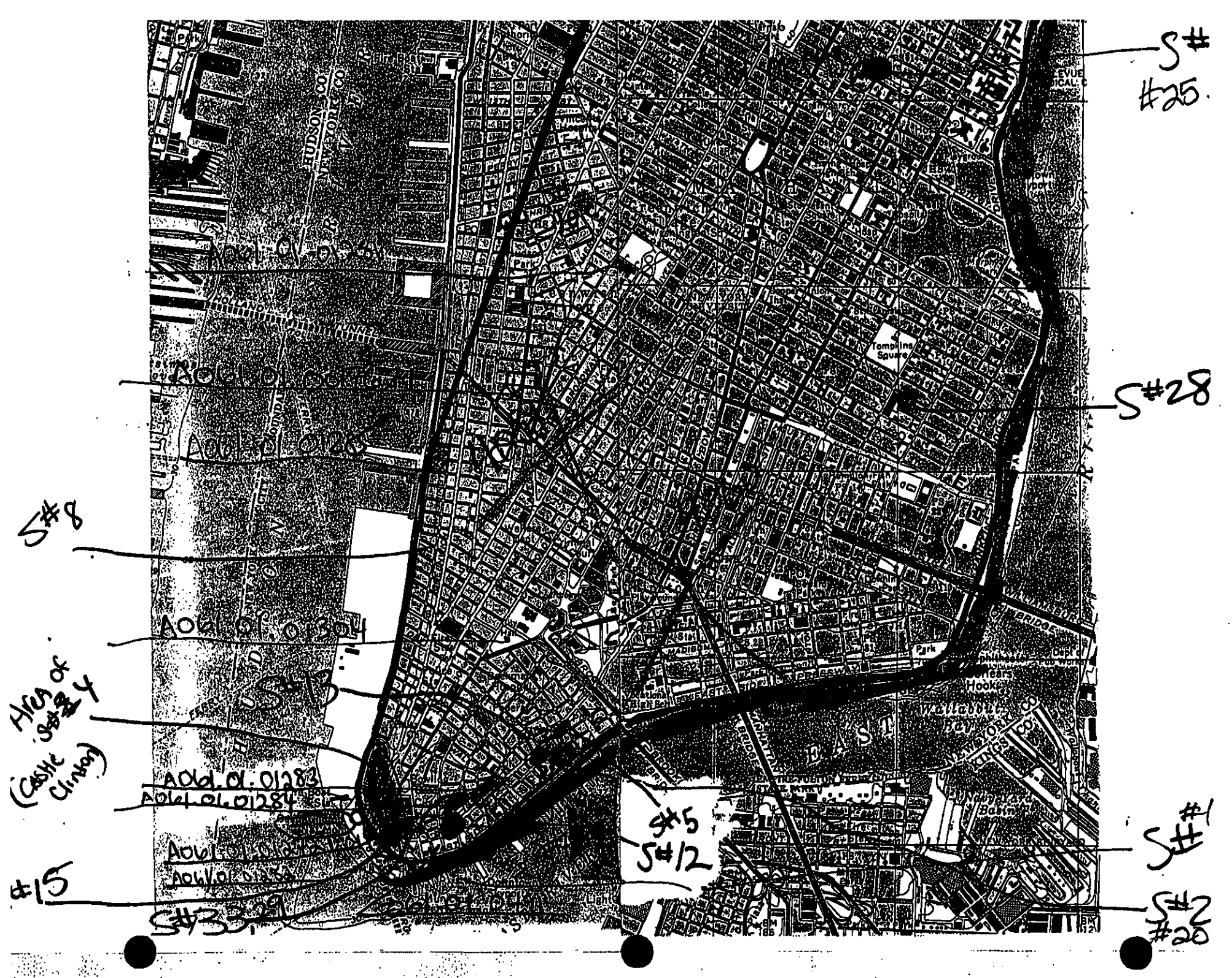
Golf Garage
Golf Parking Area
Golf Church
Golf Synagogue
Golf Cemetery

S#27


S#
#25
S#28
S#8
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S#13
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(Castle Clinton)
A061.01.01283
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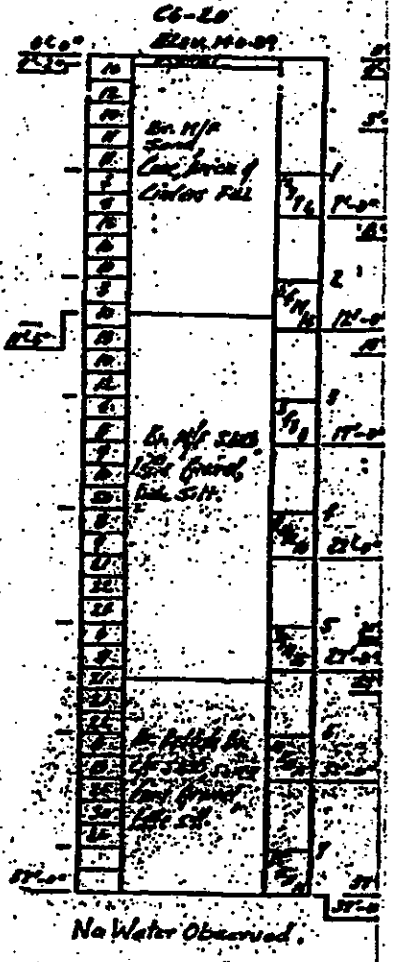
S#5
S#12
S#1
#15
S#2
#20
Tompkins Square
Wallabout Bay
EAST
HUDSON CO
NEW YORK CO

4.5.7.3 Soil Boring Logs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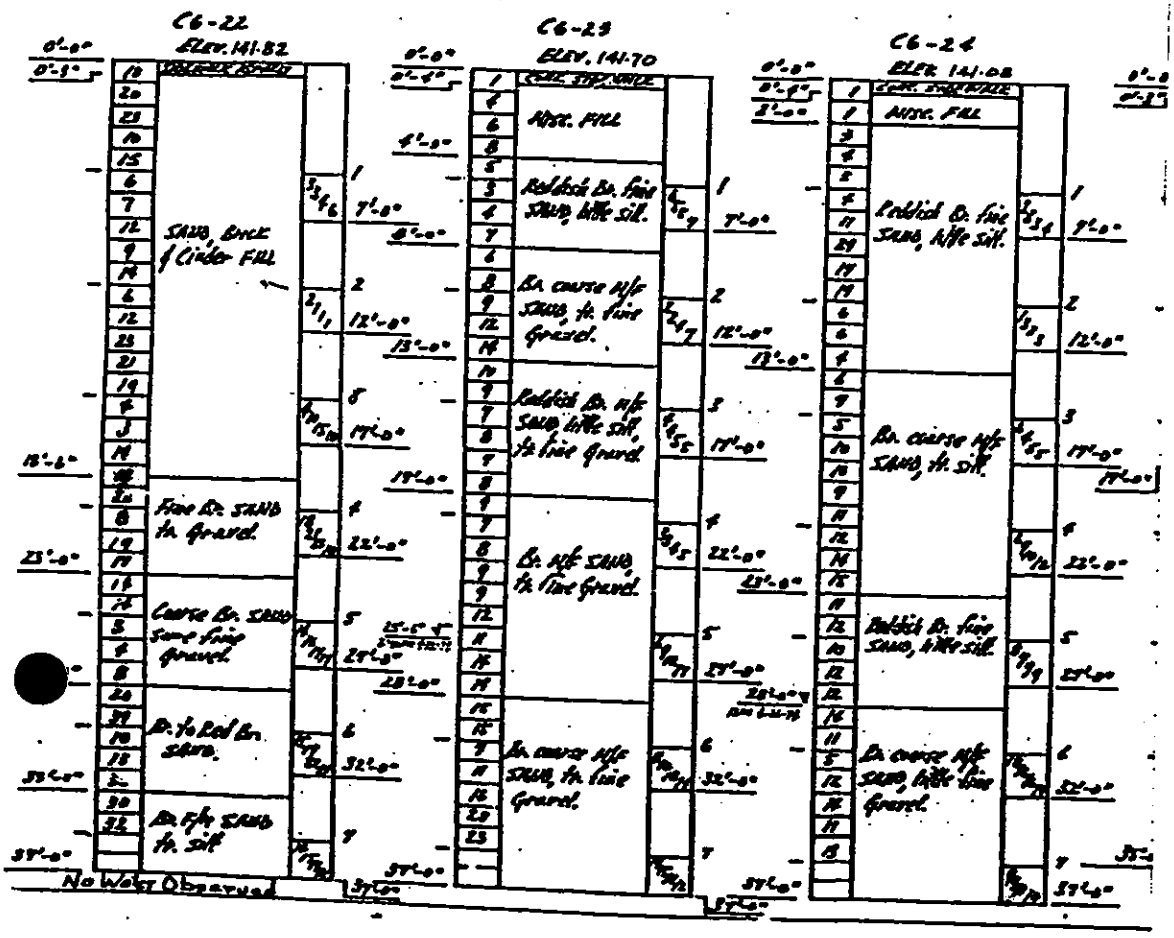
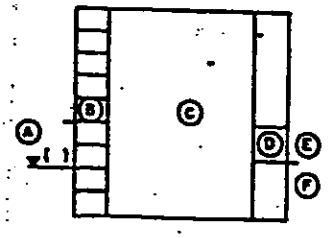


LEGEND



(A) WATER LEVEL ( ) HOURS AFTER COMPLETION.

(B) NUMBER OF BLOWS OF A 300 LB. HAMMER FALLING 18" REQUIRED TO DRIVE A 2½" DIA. CASING (UNLESS OTHERWISE NOTED) EACH 12".

(C) STRATA DESCRIPTION.

(D) NUMBER OF BLOWS OF A 140 LB. HAMMER (UNLESS OTHERWISE NOTED) FALLING 30" REQUIRED TO DRIVE A 2" SPLIT SPOON EACH 6".

(E) SAMPLE NUMBER.

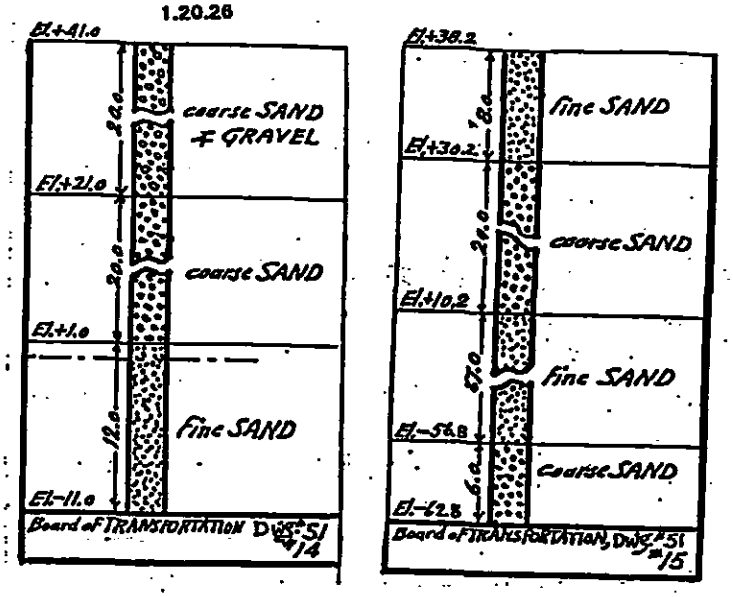
(F) DEPTH AT END OF SAMPLE DRIVE.

THIS IS TO CERTIFY THAT THIS DRAWING IS A COMPILATION OF INFORMATION OBTAINED FROM THE FIELD BORING LOGS.

LICENSED PROFESSIONAL ENGINEER JULIUS D. EASTMAN

FOR OFFICE RECORD

1.20.26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El.+21.0
20.0
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El.-11.0
Board of TRANSPORTATION Dwg. #51 #14
El.+38.2
8.0
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El.+30.2
24.0
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El.+10.2
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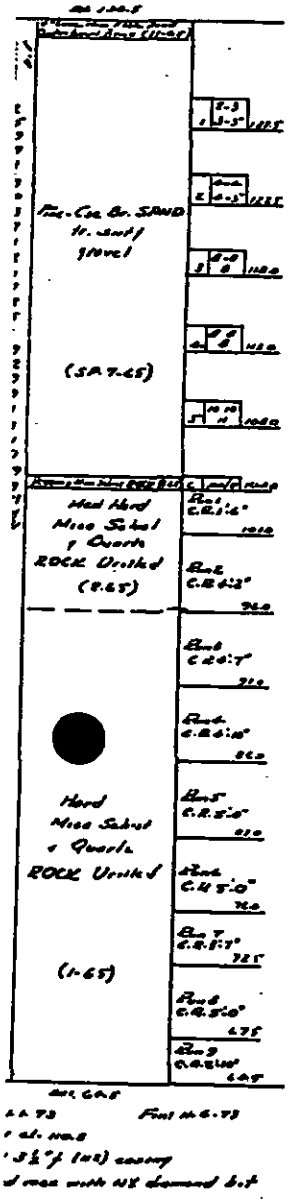
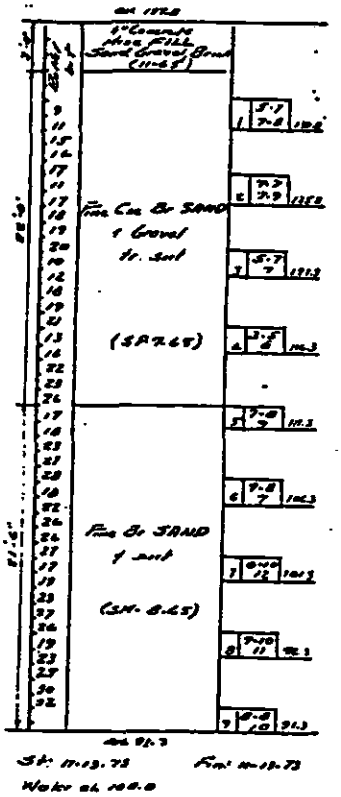
Board of TRANSPORTATION, Dwg. #51 #15

C-7-8NX



C-7-9



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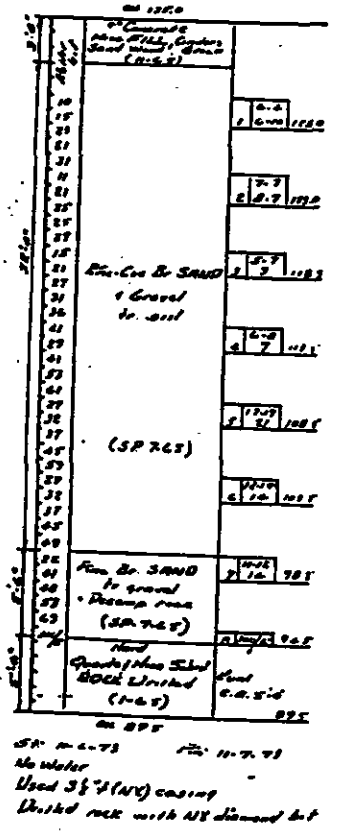
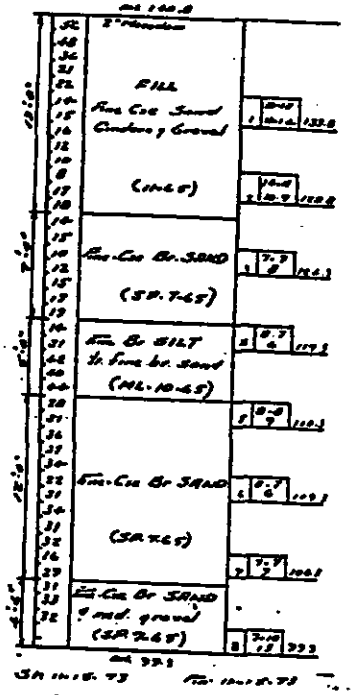
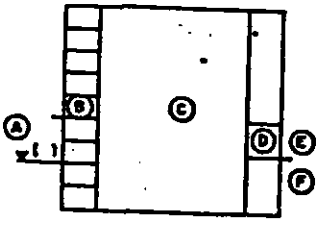


C-7-2



LEGEND



(A) WATER LEVEL ( ) HOURS AFTER COMPLETION.

(B) NUMBER OF BLOWS OF A 300 LB. HAMMER FALLING 18" REQUIRED TO DRIVE A 2½" DIA. CASING (UNLESS OTHERWISENOTED) EACH 12".

(C) STRATA DESCRIPTION.

(D) NUMBER OF BLOWS OF A 140 LB. HAMMER (UNLESS OTHERWISE NOTED) FALLING 30" REQUIRED TO DRIVE A 2" SPLIT SPOON EACH 6".

(E) SAMPLE NUMBER.

(F) DEPTH AT END OF SAMPLE DRIVE.

Sheet 3 of 4

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TEST BORINGS
FOR
SECOND AVE. SUBWAY
NEW YORK CITY TRANSIT SYSTEM
ROUTE 132 C SECTION 7

DE LEUW, CATHER & CO.
ENGINEERS
NEW YORK NEW YORK

SPRAGUE & HENWOOD INC.
BORING CONTRACTOR
HOBOKEN NEW JERSEY

SCALES: PLANS 1"=40' SECTIONS 1"=5'
DATE: 12-26-73
DRAWN BY: MC
CHKD BY:

4.6 FORSYTH STREET OPTION, DELANCEY TO CANAL STREETS, INCLUDING SARA DELANO ROOSEVELT PARK

4.6.1 Study Area Description

This APE includes the area of Sara Delano Roosevelt Park and the Forsyth Street roadbed and its sidewalks for the south side of Delancey Street to the south side of Canal Street. The APE for Sara Delano Roosevelt Park consists of four former separate blocks that were razed and consolidated in the 1930's for construction of Sara Delano Roosevelt Park. At that time, Broome Street and Hester Street were closed to through traffic and Chrystie Street was widened by 30 feet to the east, defining the western boundary of Sara Delano Roosevelt Park. Forsyth Street was widened by approximately 20 feet to the west, defining the eastern boundary of Sara Delano Roosevelt Park. The Sara Delano Roosevelt Park APE presently includes Blocks 419, 418, 302 north and 302 south (Figure 4.6-1). Until the 1970s, the northern section of Block 302 was designated as Block 305 and will heretofore be referred to as such. The APE also includes the Grand Street roadbed between Block 419 and former Block 305 (now Block 302 north) and the Canal Street roadbed and its sidewalks between Forsyth and Chrystie Streets.

4.6.2 Existing Conditions

4.6.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

No previously inventoried precontact sites were noted in proximity to the APE. However, a habitation site called "Schepmoes" was recorded at about East 10th Street and Second Avenue in association with a Native American trail (Grumet 1981). The area of the APE is also located in the immediate vicinity of an area of land called "Werpoes" by Native Americans, as recorded in a land patent from 1651 (Stokes 1928: 72). Therefore, it is possible that habitation or other sites were located in the vicinity of the APE.

Archaeological Potential

The APE is located on relatively flat meadowland with no hills immediately nearby, and a freshwater source was located 1,600 feet from the southernmost part of the APE (Figure 4.6-2). The area would have been habitable, yet other riverine and estuarine environments located outside of the APE held more advantageous precontact resources, which included areas where hunting, fishing and collecting of shellfish would have occurred. Additionally, surrounding outcrops and hills located beyond the area of the APE would have provided better shelter or protection for local inhabitants and may have been more likely habitation areas than the area of the APE itself. However, the lack of identified potential resources in the area of the APE does not preclude the existence of precontact era archaeological remains.

Soil borings indicate that the APE contains a layer of fill ranging between 10 to 22 feet beneath the surface, largely ranging from 14 to 15 feet below grade, that either represents

building demolition debris or added fill introduced in the mid-19th century (see Appendix 4.6.7.2). If this level is introduced fill, it could have protected the precontact surface from later intrusions, except for where deep shafts may have been excavated, such as 19th century wells. Subsurface precontact resources such as middens (trash heaps) could have substantial depth (up to perhaps 5'), and so there exists the possibility of encountering such resources. The likelihood of encountering any surface remains--for example, habitation sites--is low, given post-contact disturbances from the 17th century onward. Nineteenth century development may not have disturbed the potential precontact surface, given the depth of the fill layer. Overall, sensitivity for precontact resources is moderate for the park, Forsyth, Grand, and Canal Streets, and potential resources may lie below the fill between about 11 to 27' below grade. Areas of sensitivity by block are listed below.

Block 419 and the adjacent Forsyth and Broome Street roadbeds was open, flat, meadowland in precontact times and was located about 2,500 feet from a fresh water source (Viele 1865). Currently it is covered by approximately 15 feet of fill (see Appendix 4.6.7.3). The area was farmed during the 17th and 18th centuries, and later the area was developed during the 19th century. Farming practices would have created about a foot of disturbance to the precontact surface, but if 15 feet of fill were later added, this would have protected the precontact area from any further disturbance. The only exception would be potential wells which may have penetrated the fill, as the water table was recorded at 27 feet below the surface; wells from any era would have to be at least as deep. The area is thus moderately sensitive for precontact remains from about 16 to 21 feet below grade.

Block 418 and the adjacent Forsyth and Grand Street roadbeds was also open, relatively flat meadowland in precontact times and was about 2,200 feet to the northeast of a fresh water source (Viele 1865). There is currently approximately 14 to 15 feet of fill below the surface, but the fill level deepens to 22 feet near the intersection of Chrystie and Grand Streets. The area was farmed in the 17th and 18th centuries. Farming would have created a plow zone of about a foot in depth that would have minimally disturbed the precontact surface. At the end of the 18th century, British fortifications were built over the block that included a wall and small fort; these would also have affected the area. The area was then developed during the 19th century. If fill levels represent added material, then it may have served to protect precontact surfaces from disturbance during the 19th and 20th centuries. Water levels have been recorded as deep as 33 feet below grade in the area, so it is possible that historic era wells would have extended into the potential precontact surface, but this would have been in limited areas. Therefore, this block is low to moderately sensitive for precontact remains between about 15 and 20 feet below grade in general, and from about 23 to 28 feet below grade at the corner of Chrystie and Grand Streets.

Former Block 305 (now Block 302 north) and the adjacent Forsyth and Hester Street roadbeds was open, gently sloping meadowland prior to historical development and was relatively close to a fresh water source, located about 1,800 feet southwest of the APE (Viele 1865). The block is currently covered by about 14 to 22 feet of fill, the deepest fill layers occurring near Chrystie and Grand Streets. The area was farmed in the 17th and 18th centuries. Farming would have created a plow zone extending about a foot deep that would have minimally disturbed the precontact surface. The area was subsequently developed

during the 19th century, and it is possible that added fill may have protected deeply buried precontact levels from later disturbance. However, historic era wells may have affected precontact levels, as the water level is currently recorded at about 33 feet below grade. Effects may have also extended below fill in the area of Lot 6, where the 19th through 20th century structure on the lot is shown with a sub-cellar as well as a basement, which would have affected levels below the fill, potentially eliminating precontact archaeological sensitivity in this location. Therefore, the area is moderately sensitive for precontact remains between about 15 to 20 feet below grade in general and between about 23 to 28 feet below grade at the corner of Chrystie and Grand Streets.

Block 302 (now Block 302 south) and the adjacent Forsyth and Canal Street roadbeds was open, relatively flat meadowland in precontact times and was close to a fresh water source, located about 1,600 feet southwest of the APE (Viele 1865). Currently, it is covered by an average of about 18 feet of fill, ranging between 15 to 20 feet in depth across the block. A historic plow zone around a foot deep may have minimally disturbed the precontact surface. The area was then developed during the 19th century. It is possible that added fill would have protected precontact levels from subsequent disturbance. One exception would be in the areas of Lots 21 and 22, where the 19th-20th century structures on the lots are shown with sub-cellars as well as basements that may have extended below fill levels, potentially eliminating precontact archaeological sensitivity in this location. Also, where historic era wells may have been sunk, these could have affected the precontact living surface, since they were probably as deep as the water table, which is currently reported at 33 feet below grade. Therefore, the area is moderately sensitive for precontact remains between about 19 and 24 feet below grade.

4.6.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

The site file search reported one historic feature in or near the APE: an 18th century fortification shown on British Headquarters maps within the APE (1782, 1797; Appendix 4.6.7.2). Furthermore, the British Headquarters map shows a fortification wall with an attached fort or garrison on its south side just north of Grand Street between Chrystie and Forsyth Streets on Block 418 in the APE (Ibid.). No other potential historic sites were reported in or near the APE.

Archaeological Potential

Documentary research found that the APE is potentially sensitive for 18th and 19th century resources related to fortifications, dwellings, and churches. Furthermore, there is a remote possibility of the APEs sensitivity for burials. Specific details of archaeological potential are described for each block below.

Block 419 and the adjacent Forsyth and Broome Street roadbeds were farmed during the 17th and 18th centuries, first under the Dutch, and then as part of the Delancey Farm. In the 18th century a structure is shown on several historic period maps, two of which place the structure

within the APE (Grim 1744; Ratzer 1767). This structure appears to be small, possibly an outbuilding associated with the Delancey Farm, as it is consistently recorded on maps that show the farm and it is aligned off of an access road that defines the southern boundary of some of the Delancey farmlands (Figure 4.6-2). Maps portray it at the approximate intersection of Forsyth Street and Broome Street, possibly up to 150 feet north of the intersection within the Forsyth roadbed (Grim 1744; Ratzer 1767). While the outbuilding (or perhaps barn or separate residence) is undocumented, Stokes records the following information about the main Delancey residence, located just north of the APE at Chrystie and Delancey Streets on Block 425. The Delancey residence was erected by May Bickley prior to 1724 and purchased by Delancey from Dr. Brune Bickley in 1733 (Stokes 1918: 949). The residence is said to have been in "ruinous condition" in 1791, and demolished by 1799 (Ibid.). This would support the contention that the structure shown within the APE in 1744 and 1767 is also associated with the Delancey farm since it is no longer shown on maps post-dating 1799. Therefore, the entire block and adjacent Forsyth and Broome Street roadbeds are moderately sensitive for 17th and/or 18th century Delancey farm buildings or features beneath the fill from about 15 to 27 feet below grade, the depth of the water table, particularly near the intersection of Forsyth and Broome Streets and north about 150 feet along Forsyth Street.

In the 19th century, the block was lotted and developed. In this area, sewer lines were installed by 1868, and water lines were available by at least 1842 (Endicott 1842). Structures predating these utilities would have relied upon wells, cisterns, and privies. There is the potential for 19th century resources, specifically wells, cisterns or privies, to exist in yard areas that were open until the construction of the park in the 1930s. Small open yard areas were present in back of Lots 2-4, 8, 9, 26, 28-32 and 34-37. Therefore, Block 419 and th4e west side of Forsyth Street are moderately sensitive for possible 19th century subsurface remains in the former open yard areas detailed above which would now be located from the surface down to at least 27 feet below the surface, the depth of the water table, and possibly deeper.

Block 418 and the adjacent Forsyth and Grand Street roadbeds was also farmed during the 17th and 18th centuries before the streets were laid out; first under the Dutch, and then as part of the Delancey Farm. At the end of the 18th century, British fortifications were constructed just north of Grand Street that included a wall and a small fort adjoined to its south side, directly between Chrystie and Forsyth Streets (British Headquarters Map 1782, 1797). While these fortifications were razed by the 19th century, subsequent development may have included adding fill, which may have protected earlier deposits. If the fill, which is reported as extending from the surface down to about 14 feet below grade, represents the addition of strata, then early resources may have been protected from 19th and 20th century development. However, some potential 19th century features, such as deep wells, cisterns or privies, could have extended below the fill, affecting discrete sections of potentially sensitive levels. Therefore, the entire block and adjacent Forsyth and Grand Street roadbeds are potentially sensitive for 17th or 18th century remains below the fill from about 14 to 27 or 33 feet below grade, the depth of the water table, and the southern two thirds of the block is also highly sensitive for 18th century remains of fortifications at a similar depth.

In the 19th century, the block was subdivided into individual building lots. In this area, sewer lines were installed by 1868, and water lines were available by at least 1842 (Endicott 1842). Structures predating these utilities would have relied upon wells, cisterns, and privies. On many of these lots, small open yard areas remained undeveloped behind and/or adjacent to residential and/or commercial structures. Specifically, open yards stood vacant on the interior ends of Lots 1-6, 8-12, 16-21 and 23-26. These lots are sensitive for potential 19th century shaft features from the surface down to the water table within Block 418 and in the western side of Forsyth Street, which was reported between about 27 to 33 feet below grade, and possibly deeper.

There is also the minimal potential for historic period burials on what were formerly Lots 6-10 and the back of Lot 5, particularly on Lots 5 and 6. These lots comprised the St. Stephen's Episcopal Church yard during the first half of the 19th century, and individuals were reportedly buried in vaults within the church. However, records have shown that the main cemetery associated St. Stephen's Church was located outside of the APE, at then 1st Street between First and Second Avenues, and the church vault burials and cemetery remains were moved to a cemetery in Brooklyn (Inskeep 2000). While there are no records indicating that burials occurred on the church property outside of the vaults beneath the structure, there is the remote possibility that some individuals were buried within the yard area. Therefore, Lots 5-10 of the APE on Block 418 are potentially sensitive for these historic resources from the surface down to about six feet below the fill, which extends between about 14 and 15 feet below grade.

Former Block 305 (now Block 302 north) and the adjacent Forsyth and Hester Street roadbeds were also farmland during the 17th and 18th centuries, under the Dutch, and then as part of the Delancey Farm. Subsequently, after the adjacent streets were laid out and the block was subdivided, it was heavily developed in the 19th century. In this area, sewer lines were installed by 1868, and water lines were available by 1842 (Endicott 1842). Structures predating these utilities would have relied upon wells, cisterns, and privies. Boring logs report between 14 and 22 feet of fill below grade in the streetbed. If fill represents added strata, it may have served to protect earlier resources as 19th and 20th century development would most likely have not penetrated below the fill layer. However, it is likely that the structure on Lot 6, which had a sub-cellar as well as a basement, could have disturbed levels below the fill. There is also the potential for 19th century resources, such as wells, cisterns or privies, to exist where yards were left undeveloped until the construction of the park in the 1930s. Small open yard areas were present on the interior ends of Lots 1, 3-13, 17 and 23-32.

In sum, the block is moderately sensitive for 17th or 18th century unmapped farm-related resources which potentially lie beneath 14 feet of fill to a depth of 33 feet below grade. The block and west side of Forsyth Street is also moderately sensitive for potential 19th century shaft features which could extend from the surface down to the water table, which was reported at about 33 feet below grade, and possibly deeper.

Block 302 (now Block 302 south) and the adjacent Forsyth and Canal Street roadbeds were farmland during the 17th and 18th centuries, under the Dutch, and then as part of the Delancey

Farm. Subsequently the block was lotted and developed in the early 19th century. In this area, sewer lines were installed by 1868, and water lines were available by at least 1842 (Endicott 1842). Structures predating these utilities would have relied upon wells, cisterns, and privies. Currently, boring logs report between 15 to 20 feet of fill below grade on the block. If fill represents added material, then 19th and 20th century development may not have affected potentially sensitive strata below the fill layer, except for in the area of Lots 21 and 22, where the structures had sub-cellars as well as basements which could have been deeper than the fill. There is the possibility that 19th century shaft features, such as wells, cisterns or privies, could exist in yard areas that were open until the construction of the park in the 1930s. Small open yard areas were present in back of former Lots 1, 3-5, 8, 18, 19 and 21-30.

Therefore, Block 302 is moderately sensitive for unmapped 17th or 18th century farm-related resources which may lie beneath 15 feet of fill to a depth of 33 feet below grade. The block and west side of Forsyth Street are also moderately sensitive for 19th century shaft features from the surface down to about 33 feet below grade, the depth of the water table, in the former open yard areas mentioned above. Wells from the 19th century would have probably extended to the water level, recorded to be about 33 feet below the surface, and possibly deeper.

4.6.3 Summary of Archaeological Potential

The entire APE, consisting of Sara Delano Roosevelt Park, Forsyth, Grand, and Canal Streets, is considered to be moderately sensitive for precontact resources at a depth of about 15' to 24' below the surface. There is also the potential for 17th and 18th century resources throughout the APE (except on Forsyth Street between Grand and Canal Streets and on Canal Street between Chrystie and Forsyth Streets) below the fill which ranges in depth between about 14 and 23 feet below grade, and possibly deeper, depending on the depth of possible wells. Sara Delano Roosevelt Park and the west side of Forsyth Street are also moderately sensitive for shaft features associated with mid-19th century dwellings from the surface down to about 33' below grade or deeper where former blocks were developed. Each block is summarized individually below.

Block 419 and the adjacent Forsyth Street roadbed are considered moderately sensitive for precontact remains between about 16 and 21 feet below grade. They are moderately sensitive for 17th and 18th century remains commencing at an estimated depth of 15 feet below grade to approximately 27 feet below grade, and in particular, an 18th century structure associated with the Delancey Farm could be located near or just north of the intersection of Forsyth and Broome Streets. The block and west side of Forsyth Street are also moderately sensitive for 19th century shaft features from the surface down to about 27' below grade in areas of former open yards prior to the construction of the park located in the rear areas of Lots 2-4, 8, 9, 26, 28-32 and 34-37.

Block 418 and the adjacent Forsyth and Grand Street roadbeds are considered moderately sensitive for precontact remains between about 15 and 20 feet below grade. They are also moderately sensitive for 17th and 18th century remains between 14 and 27 or 33 feet below

grade, and highly sensitive for late 18th century fortifications north of Grand Street. The block and west side of Forsyth Street are also moderately sensitive for 19th century remains from the surface and below, particularly for shaft features such as wells, privies and cisterns in areas of former open yards located in the rear areas of Lots 1-6, 8-12, 16-21 and 23-26. Historic wells could extend from the surface down to 33 feet below grade and possibly deeper. The block is also minimally sensitive for unrecorded burials on Lots 5-10, the area of the former St. Stephen's Episcopal Church, from the surface down to 19 or 20 feet below grade.

Former Block 305 (now Block 302 north) and the adjacent Forsyth Street roadbed are moderately sensitive for precontact remains between about 15 and 20 feet below grade. Block 305 is also moderately sensitive for 17th and 18th century remains from about 14 to 33 feet below grade. The block and west side of Forsyth Street are also moderately sensitive for 19th century remains from the surface down to about 33 feet below grade, particularly for shaft features such as wells, privies and cisterns in areas of former open yards located in the rear areas of Lots 1, 3-13, 17 and 23-32. Historic wells could extend to 33 feet below grade, and possibly deeper.

Block 302 (now Block 302 south) and the surrounding Forsyth and Canal Street roadbeds are moderately sensitive for precontact remains between about 19 and 24 feet below grade. Block 302 is also moderately sensitive for 17th and 18th century remains between about 15 to 33 feet below grade. The block and west side of Forsyth Street are also moderately sensitive for 19th century remains from the surface down to about 33 feet below grade, particularly for shaft features such as wells, privies and cisterns in areas of former open yards located in the rear areas of Lots 1, 3-13, 17 and 23-32. Historic wells could reach depths of 33 feet or deeper.

4.6.4 Proposed Project Effects

Sara Delano Roosevelt Park, Forsyth, Grand and Canal Streets within the APE have the potential for precontact resources at a depth of between about 15 and 24 feet below grade. Under the Shallow Chrystie Option (SYSTRA Drawing CR-04, March 8, 2002), cut and cover excavations on Chrystie Street would affect potential resources in some areas of this APE, since cut and cover work would extend east into Sara Delano Roosevelt Park, Grand and Canal Streets. Under the Forsyth Street Option (SYSTRA Drawing CT-04, March 1, 2002), mining through soil is proposed in Sara Delano Roosevelt Park, Forsyth Street between Hester and Canal Streets, and on Canal Street between Forsyth and Chrystie Streets to build the subway tunnel. This work would occur at a depth of about 70 to 85 feet below grade, and would have no effect on potential precontact resources, since potential precontact resources are located at depths shallower than 30 feet below grade. However, if ventilation shafts or pedestrian access entails excavations from the street down to the tunnel, potential precontact resources in these discrete locations may be affected. Therefore, should project plans change, potential effects on archaeological resources would be reassessed. If adverse effects to potential resources are identified, additional archaeological investigations, including the review of boring logs, additional documentary research, and subsurface testing, will be warranted, as described below under "Recommendations."

Cut and cover construction to build the Grand Street Station on Forsyth Street between Delancey and Hester Streets at a depth of 0 to 85 feet below grade would also affect potential precontact resources in Forsyth Street and in the eastern end of Sara Delano Roosevelt Park. In addition, construction of the Grand Street Station on Forsyth Street would involve cut and cover work to reconstruct the existing Grand Street Station on Chrystie Street as well as a below grade connection in Sara Delano Roosevelt Park between the proposed Forsyth Street Station and the Chrystie Street Station, potentially affecting precontact resources on Chrystie Street and in the western and middle portions of Sara Delano Roosevelt Park.

Much of Sara Delano Roosevelt Park and the adjacent Forsyth, Grand, and Canal Street roadbeds are also potentially sensitive for 17th or 18th century farm related resources at a depth of approximately 14 to 27 or 33 feet below grade and for 19th century residential and commercial features that may extend from the surface down to about 33 feet below grade. Lots 5-10 of Block 418 are also sensitive for historic burials associated with St. Stephen's Episcopal Church from the surface down to approximately 19 to 20 feet below grade. There would be effects on potential precontact resources under the Shallow Chrystie Option in Sara Delano Roosevelt Park and Grand and Canal Streets. Under the Forsyth Street Option, mining through soil in Sara Delano Roosevelt Park, Forsyth Street between Hester and Canal Streets, and on Canal Street between Forsyth and Chrystie Streets at a depth of about 70 to 85 feet below grade would have no effect on potential historic-period resources since resources are anticipated at much shallower depths. However, if ventilation shafts or pedestrian access entails excavations from the street down to the tunnel, potential historical resources in these discrete locations may be affected. Therefore, should project plans change, potential effects on archaeological resources would be reassessed. If adverse effects to potential resources are identified, additional archaeological investigations, including the review of boring logs, additional documentary research, and subsurface testing, will be warranted, as described below under "Recommendations." Cut and cover construction to build the Grand Street Station on Forsyth Street between Delancey and Hester Streets would affect potential historic-period resources from the surface down to approximately 33 feet below grade in Forsyth Street and in Sara Delano Roosevelt Park. Reconstruction of the Grand Street Station on Chrystie Street and construction of a below grade connection in Sara Delano Roosevelt Park would also affect potential resources on Chrystie Street and in Sara Delano Roosevelt Park.

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.

4.6.5 Recommendations

It is possible that the APE was occupied or otherwise used by Native Americans during the precontact period. The APE was occupied during the historic period. There is a moderate likelihood that precontact resources, if they were present, still exist underneath the fill that covers the APE. Additionally there is a moderate to high likelihood that 17th to 19th century historic remains exist in that same area, and a moderate likelihood that 19th century remains exist in, and below, the fill itself.

Although the likelihood that precontact resources would have survived the 19th and 20th century development of this part 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 below grade. Prior effects also varied in depth. There is also the possibility for encountering 17th to 19th century historic remains in the APE. The possibility that *in situ* precontact, contact period, and historic resources may exist in this part of Manhattan dictates further investigation of subsurface conditions. While the probability of finding intact, significant precontact resources eligible for inclusion on the National Register of Historic Places is remote, the scant possibility should be corroborated by evidence from additional soil borings. 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] They would also serve to help identify the presence of markers typically associated with a precontact presence. The absence of definitive signs of a Native American presence, and/or the presence of a habitable living surface buried beneath the fill would suggest that no potential remains. Soil borings would also allow archaeologists to better determine the potential depth of historical period resources. Because one section of the APE (Block 418, Lots 5-10) is potentially sensitive for burial shafts, soil borings are not recommended for that area. Test borings will have to be conducted in abutting areas.

Following the review of soil borings, some sites 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 prepared in consultation with SHPO. It is expected that the

[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.

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, their horizontal and vertical extent, site integrity, and their 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 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.

For areas sensitive for human remains, additional documentary research will be undertaken to establish, if possible, interment and reinterment data, and the horizontal and vertical extent of the burials. After this is completed, potential effects will be reassessed as construction plans become refined. In the event that avoidance of the resource is not possible, then field verification will be undertaken to establish the presence/absence of burials, utilizing a field research plan created in coordination with SHPO and LPC. Unless complete site disturbance can be established with absolute certainty, additional measures may be necessary at the time of construction to ensure that undocumented burials are not disturbed. This could entail monitoring by a physical anthropologist during the construction phase. The Programmatic Agreement for the project will specify the protocol and treatment of any human remains in the event that any such remains are encountered during field investigations or project construction will be developed and in place prior to such work.

4.6.6 Figures and Photographs

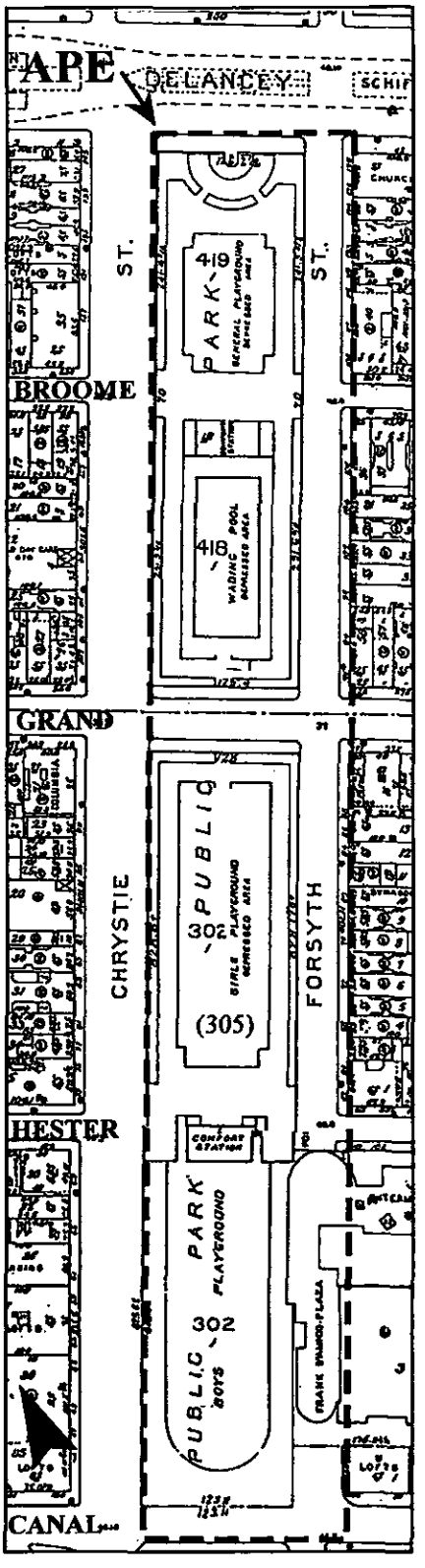


FIGURE 4.6-1

Insurance Maps.

Sara Delano Roosevelt Park and Forsyth Street APE, including former Blocks 419, 418, 305 and 302. Sanborn 2001.

Approximate Scale: ½ inch = 120 feet

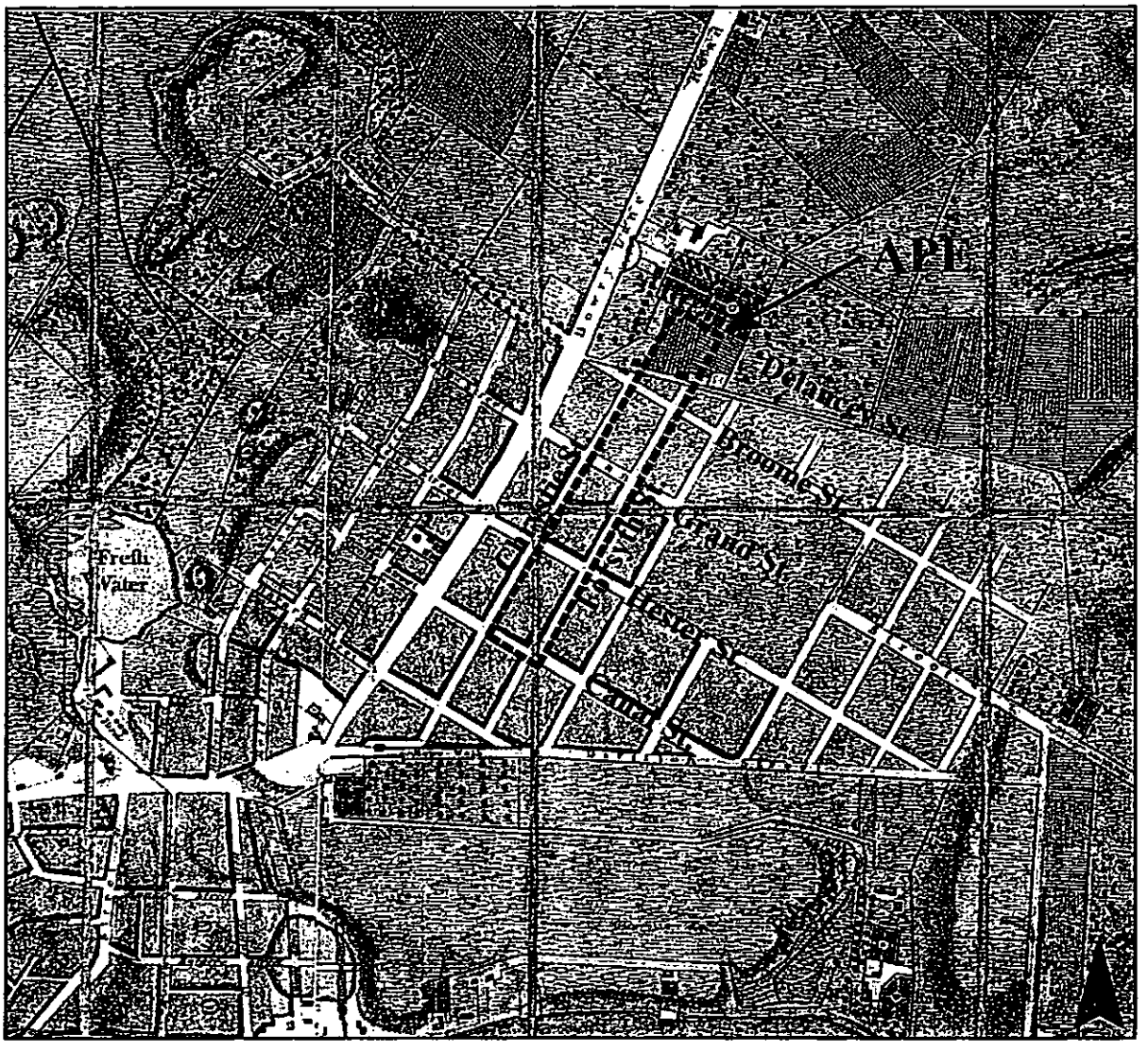


FIGURE 4.6-2

Plan of the City of New York. Sara Delano Roosevelt Park APE. Ratzer 1766/67.

No Scale.

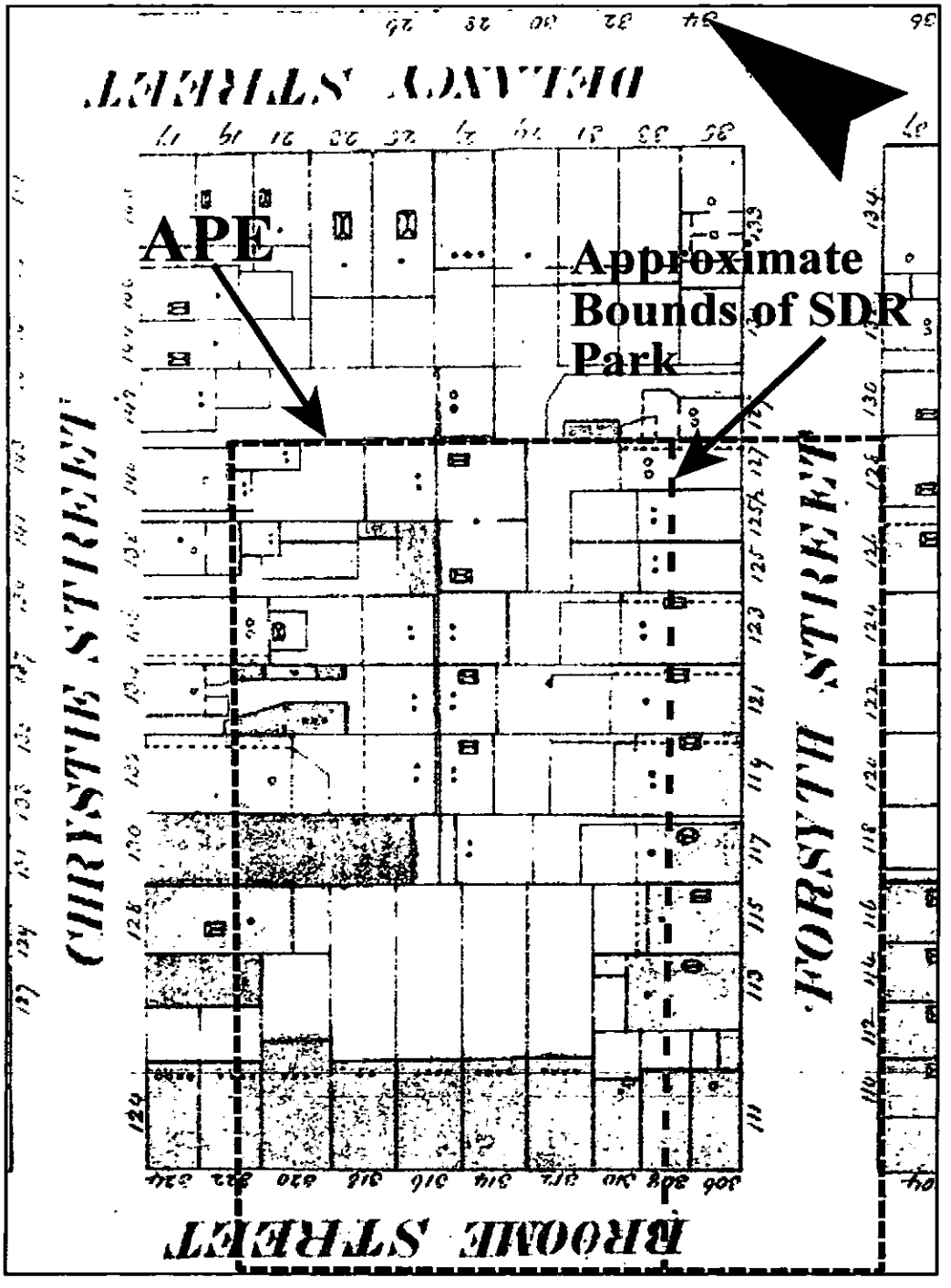


FIGURE 4.6-3

Maps of the City of New-York. Block 419. Perris 1857-62.

Approximate Scale: ½ inch = 30 feet

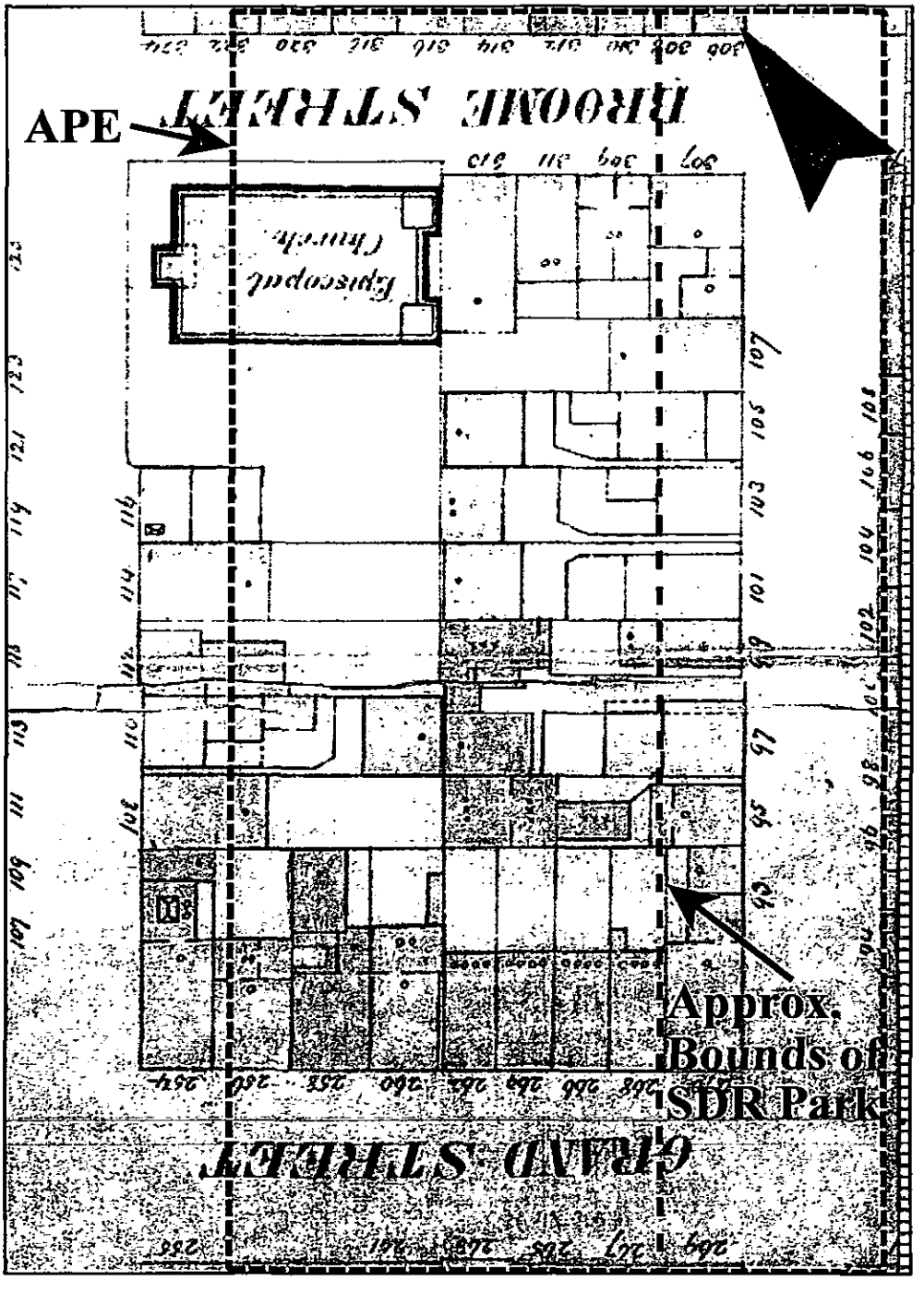


FIGURE 4.6-4

Maps of the City of New-York. Block 418. Perris 1857-62.

Approximate Scale: ½ inch = 30 feet

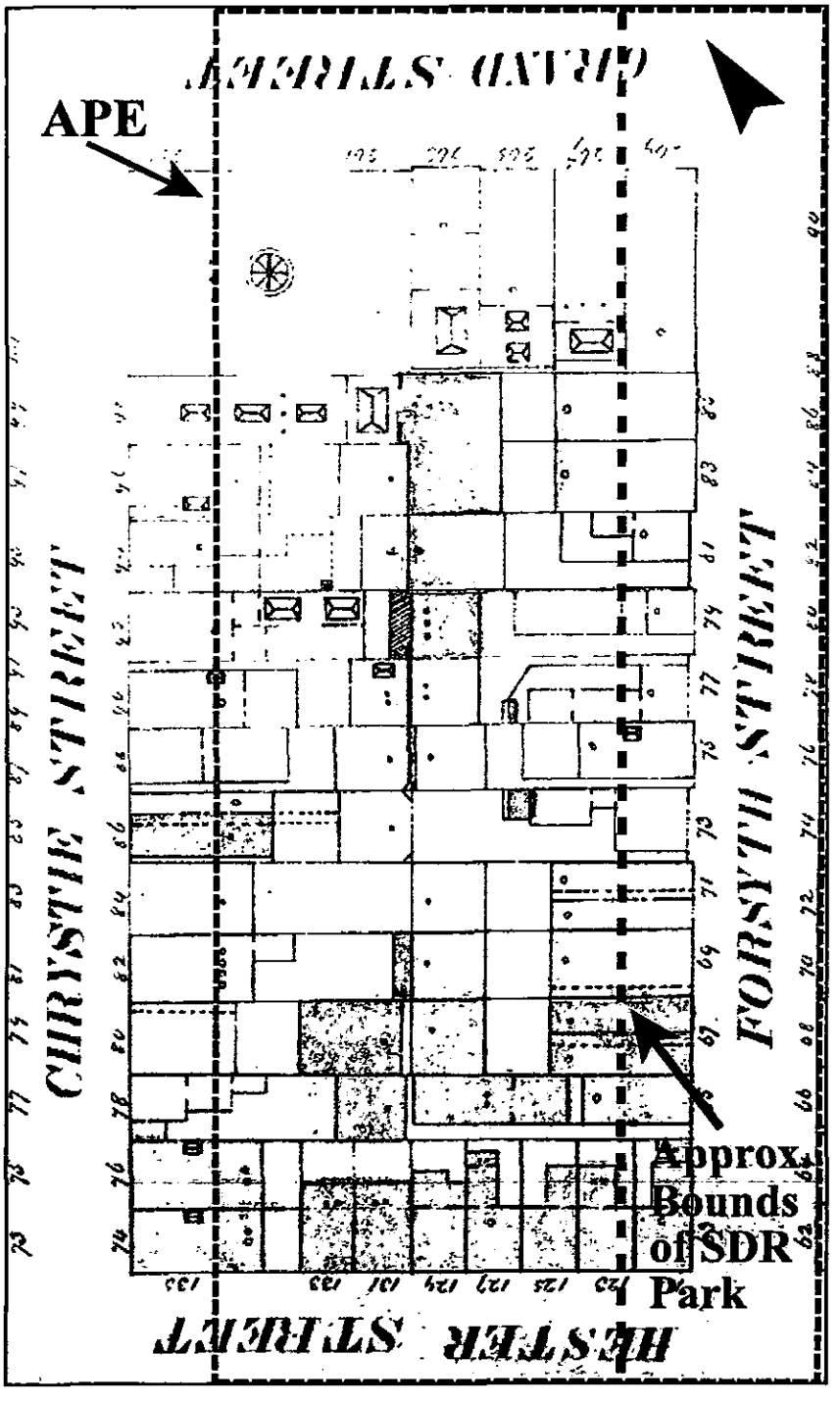


FIGURE 4.6-5

Maps of the City of New-York. Block 305. Perris 1857-62.

Approximate Scale: ½ inch = 40 feet

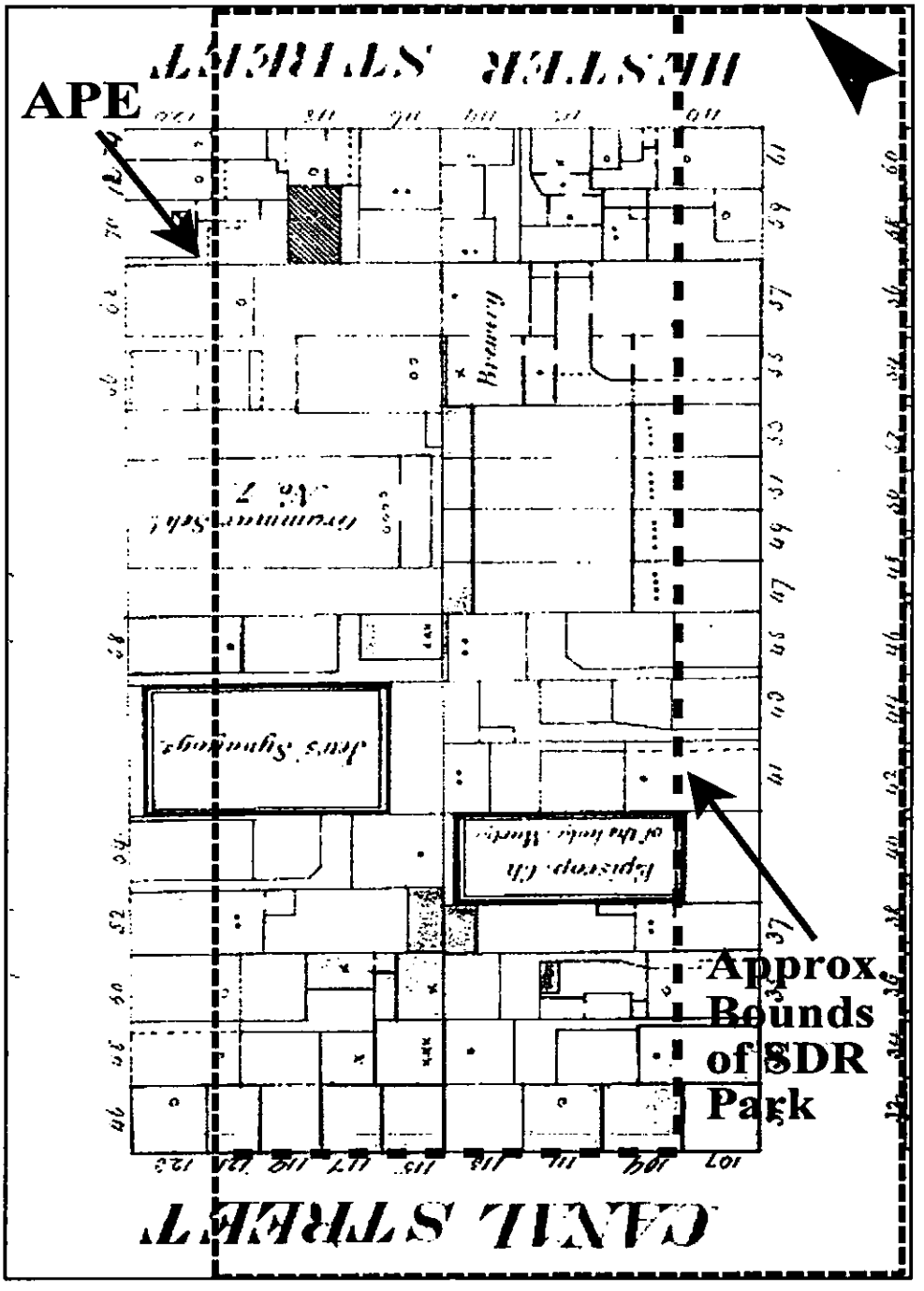


FIGURE 4.6-6

Maps of the City of New-York. Block 302. Perris 1857-62.

Approximate Scale: ½ inch = 40 feet

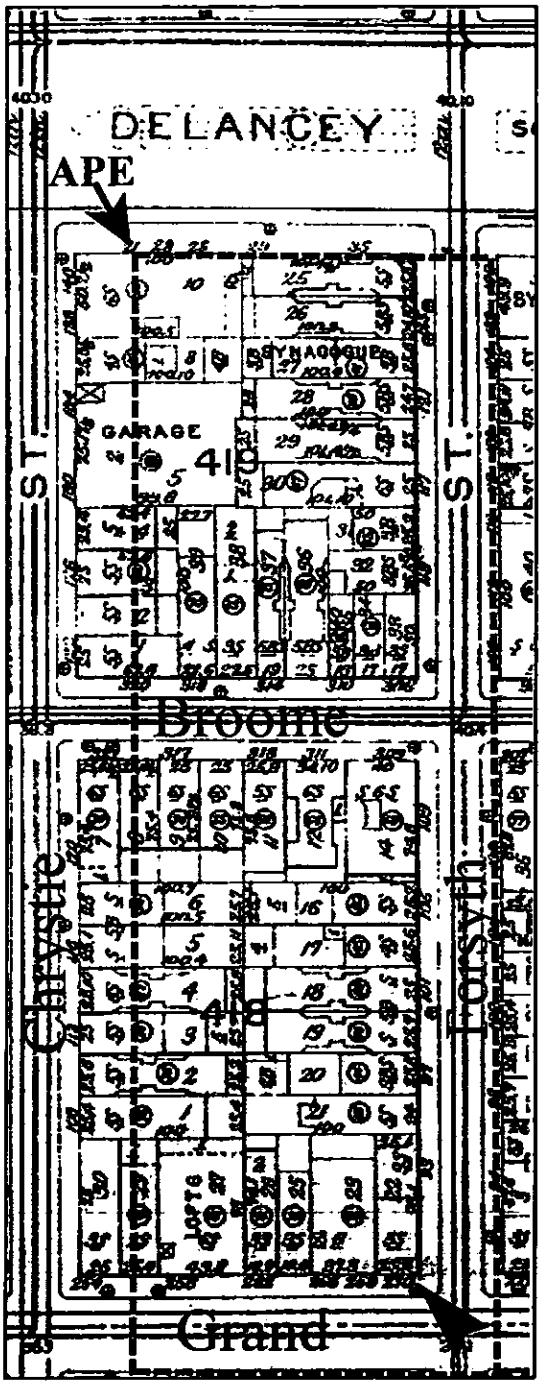


FIGURE 4.6-7

Atlas of the City of New-York, Borough of Manhattan.
Blocks 419 and 418. Bromley 1925.

Approximate Scale: ½ inch = 60 feet

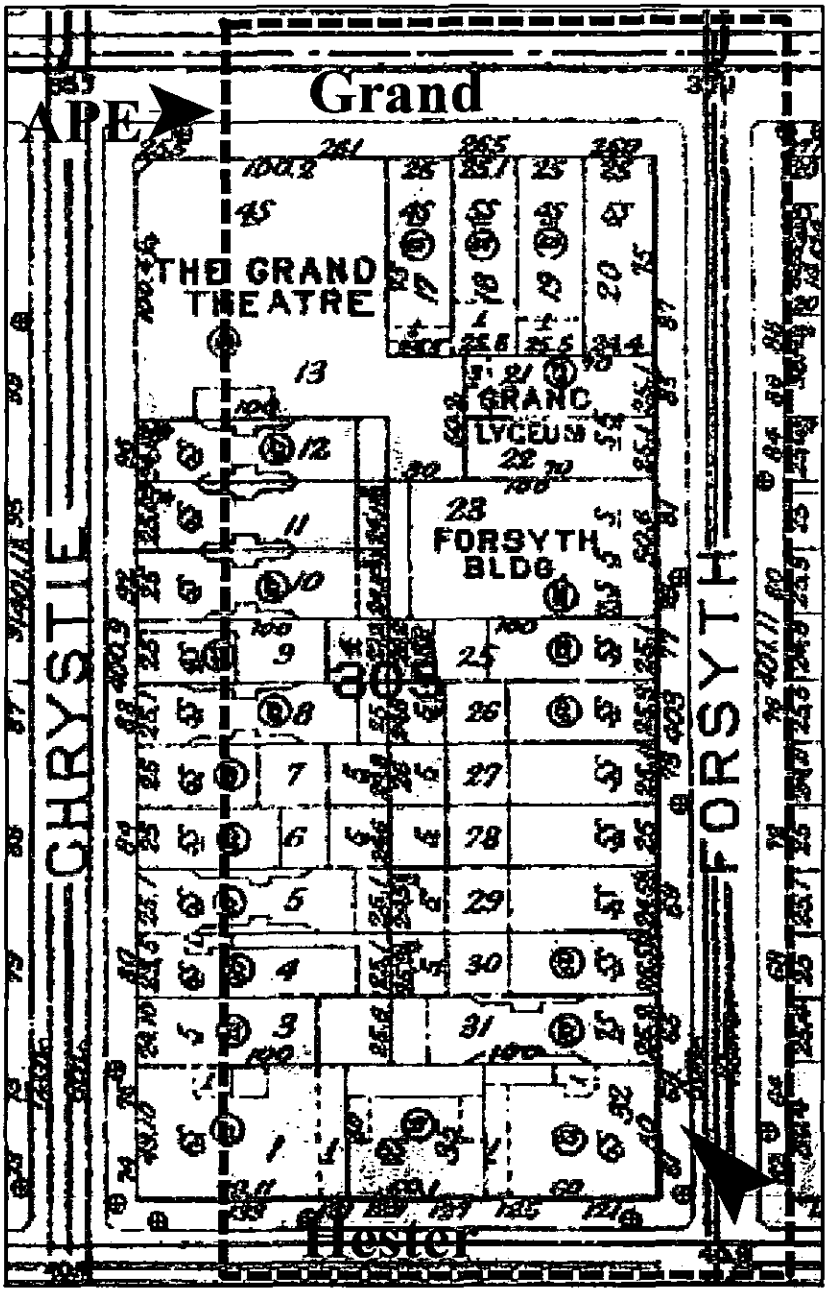


FIGURE 4.6-8

Atlas of the City of New-York, Borough of Manhattan.
Block 305. Bromley 1925.

Approximate Scale: ½ inch = 35 feet

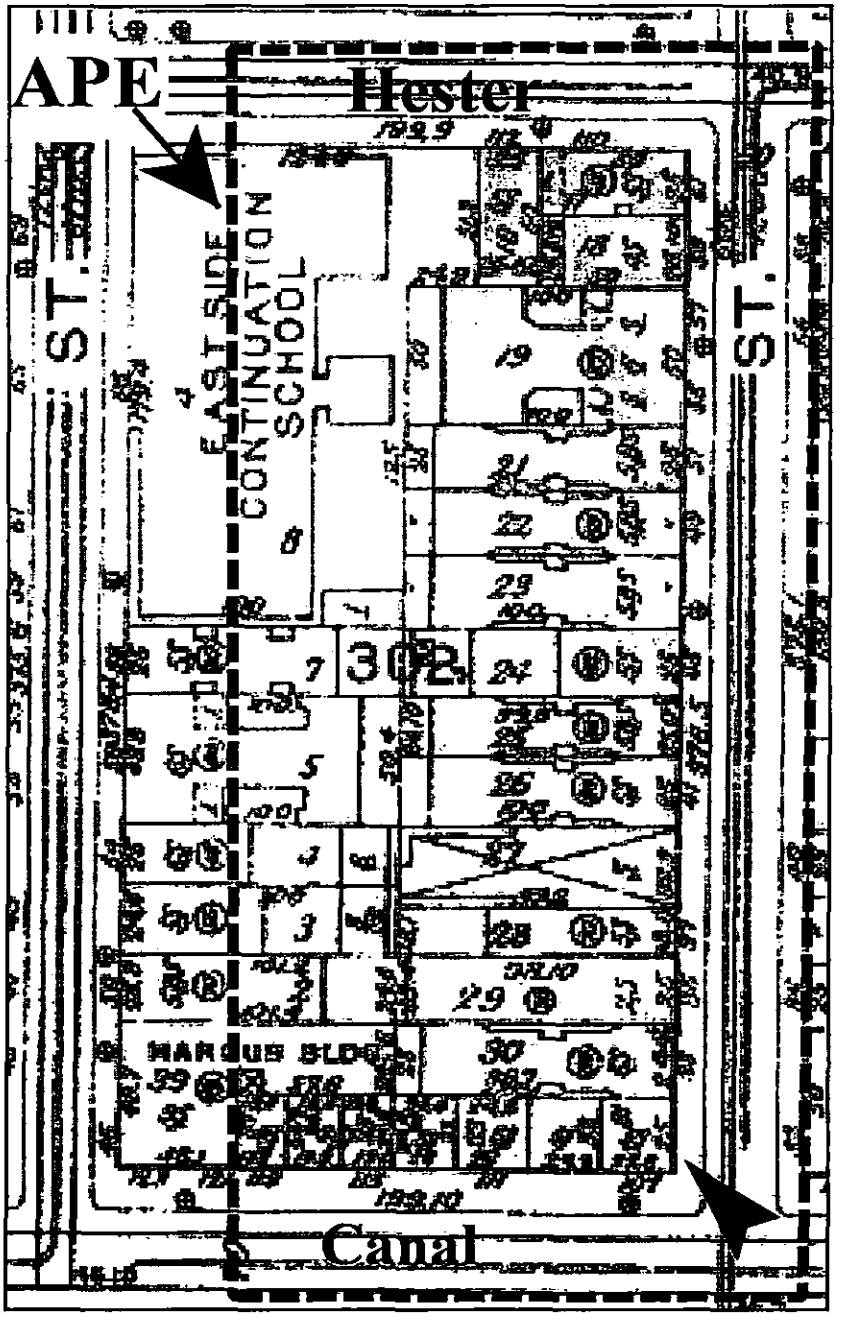


FIGURE 4.6-9

Atlas of the City of New-York, Borough of Manhattan.
Block 302. Bromley 1925.

Approximate Scale: ½ inch = 35 feet

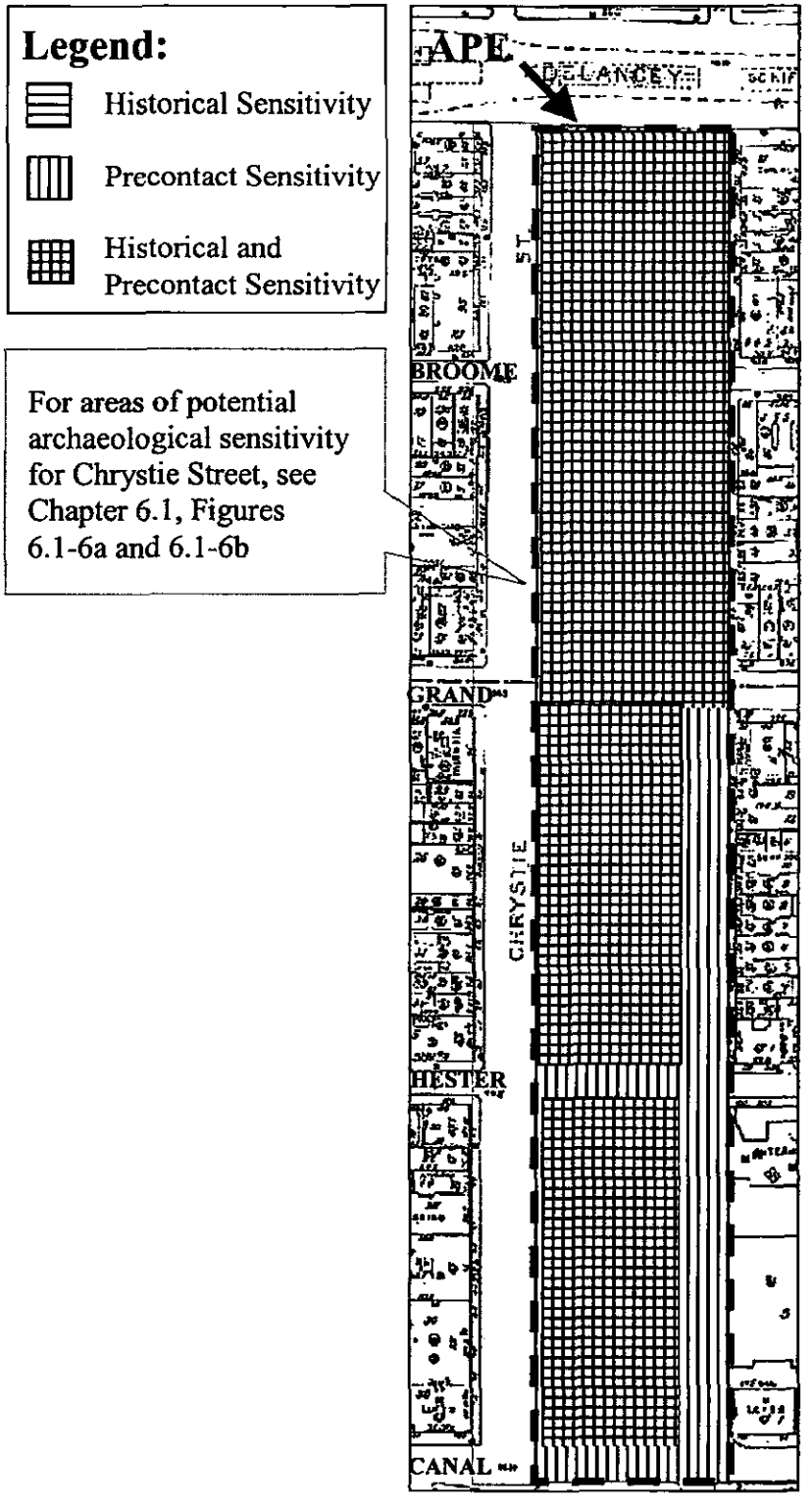


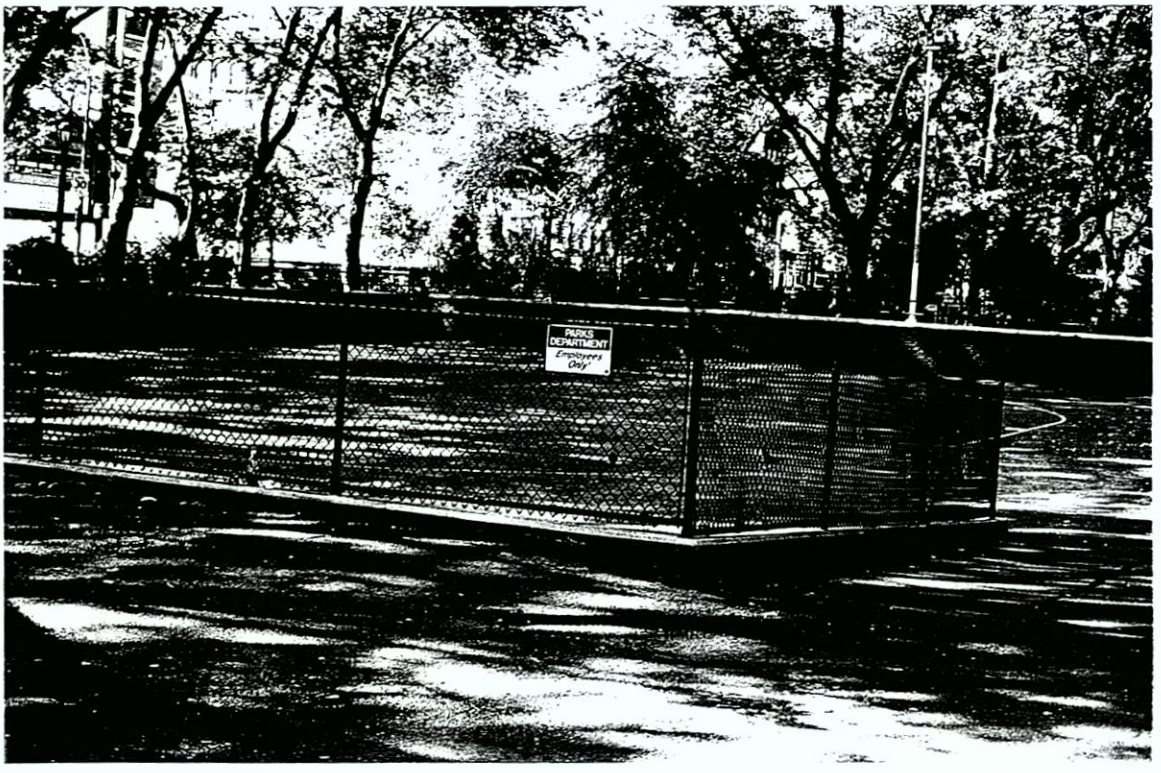
FIGURE 4.6-10

Area of Potential Archaeological Sensitivity. Forsyth Street and Sara Delano Roosevelt Park between Delancey and Canal Streets. Sanborn 2001.

Approximate Scale: ½ inch = 120 feet



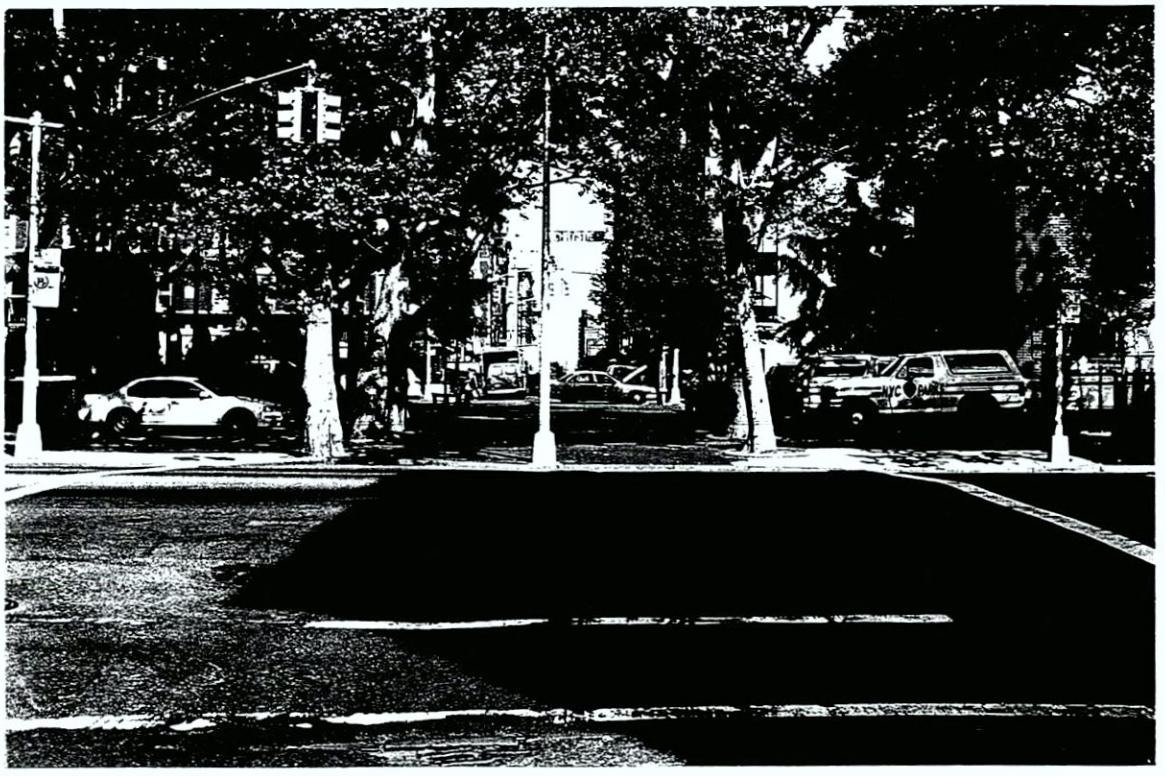
Photograph 4.6-1: Sara Delano Roosevelt Park, historic Block 419. From the northeast corner of Chrystie and Delancey Street, facing southeast.



Photograph 4.6-2: Sara Delano Roosevelt Park, historic Block 419. From the northwest corner of Forsyth and Broome Streets, facing northwest toward sunken ball court.



Photograph 4.6-3: Sara Delano Roosevelt Park, historic Block 418. From the northwest corner of Forsyth and Broome Streets, facing southwest.



Photograph 4.6-4: Broome Street between historic Blocks 419 and 418. From the northwest corner of Chrystie and Broome Streets, facing east.



Photograph 4.6-5: Sara Delano Roosevelt Park, historic Block 418. From the southwest corner of Grand and Chrystie Streets, facing northeast.



Photograph 4.6-6 Sara Delano Roosevelt Park, historic Block 418. From the southeast corner of Grand and Forsyth Street facing northwest.



Photograph 4.6-7: Grand Street between Chrystie and Forsyth Streets. Note two subway entrances on north side of Grand Street. Facing northwest.



Photograph 4.6-8: Sara Delano Roosevelt Park, historic Block 305. From the northeast corner of Grand and Chrystie Streets, facing south.



Photograph 4.6-9: Hester Street between Chrystie and Forsyth Streets. From Chrystie Street, facing east.



Photograph 4.6-10: Sara Delano Roosevelt Park, historic Block 302. From the northeast corner of Forsyth and Hester Streets, facing southwest.



Photograph 4.6-11: Sara Delano Roosevelt Park, historic Block 302. From Forsyth and Canal Streets, facing north.



Photograph 4.6-12: Sara Delano Roosevelt Park, historic Block 302. From the southeast corner of Canal and Forsyth Streets, facing northwest.

4.6.7 Appendices

4.6.7.1 Documentary Assessment of APE

Block 419:

The Sara Delano Roosevelt Park APE includes the western portion of Block 419, bounded by Delancey Street to the north, Forsyth Street to the east, Chrystie Street to the west, and Block 418 of Sara Delano Roosevelt Park to the south (the block to the east, outside the APE and bounded by Delancey, Broome, Forsyth and Eldridge Streets is also denoted as Block 419)(Figure 4.6-1). Included in the APE is the former Broome Street roadbed at the southern end of the block, which is present on either side of the block but does not pass through the park. Broome Street was a through-way before the block was re-developed as a park in 1930. The Forsyth Street roadbed and its sidewalks between Delancey and Broome Streets are also included in the APE. Block 419 as originally developed contained 57 lots; however, when Delancey Street was widened in the beginning of the 20th century, the northern 100 feet of the block were razed. The former lots that are part of the current APE include Lots 25-29, the east of Lots 1-10, and the extreme south side of Lot 24. All of the lots facing Chrystie Street (Lots 1-10) were truncated by approximately 30 feet on the west side when Chrystie Street was widened during the construction of the park (see Section 6.1). All of the lots facing Forsyth Street (Lots 25-33) were truncated by approximately 20 feet on the east side when Forsyth Street was widened during construction of the park.

Cartographic History:

Grim Plan 1744: The APE appears to be in farmlands, possibly orchards associated with the residence of "J. Delancy's Farm" located outside of the APE to the northwest. An outbuilding is shown on the plan that, if the plan is precise, would have been located approximately at the current location of Forsyth Street at or slightly north of Broome Street, in the Forsyth Street roadbed. The structure is rectangular and is associated with another outbuilding to the northeast which appears to be outside of the APE. Both structures are accessed from a lateral road running east off of the old Bowery Road to Boston, which is the current location of Bowery. This access road is in the approximate location of Broome Street today. Other than fences shown along the roads, there are no other structures 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 south.

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) and 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.

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), Judith's Street (later Grand Street) and Hester's (sic) 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 Forsyth Street (unlabeled), but no road is shown in the location of Broome Street east of Bowery. There is a road shown along the south side of the Delancey farm estate that appears to be in the approximate location of Delancey Street. 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. There are no structures indicated within the APE.

Ratzer 1767: Figure 4.6-2. Bowry Lane (sic) is shown, as are Chrystie Street, Forsyth Street, and Broome Street (the last three 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. Just north of Broome Street on Forsyth Street is an outbuilding that appears to fall within the APE, located in the southeast corner of a field. If the map is proportionally correct, the structure's current location would be around 150' north of Broome Street in the Forsyth Street roadbed. This may be the same structure shown in a similar location on the Grim Plan (1744). 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 west.

British Headquarters Map 1782: 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 Street and Forsyth Street. 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, possibly just east of Forsyth Street 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), Second Street (later Forsyth Street), and Bayard's Lane (later Broome Street). Delancey Street is not shown in any form, although 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 just outside of the APE. Other structures associated with the Delancey Farm that fell within the APE on previous maps are no longer indicated (Grim

1744; Ratzer 1767). Overall, the area north of Broome Street is shown undeveloped.

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 west of the APE. A small fort is located between the current locations of Broome Street and Delancey Street that may fall within the APE in the Forsyth Street roadbed, but also may be just east of the APE. There is one structure shown at the southwest corner of Forsyth Street and Broome Street.

Taylor Roberts 1797: First Street (later Chrystie Street), Second Street (later Forsyth Street), Delancey Street 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, Second (Forsyth) Street, Delancey Street and Broom (sic) Street are shown. A structure in the southwest corner of the block is labeled St. Stephen's Church. This is likely in error, as the church is shown one block south on all maps and atlases other than this (e.g. Commissioner's Plan 1811; Hooker 1829; Colton 1836; Dripps 1852). The Collect Pond is not shown on this map.

Commissioner's Plan 1811: This plan is similar to Bridges except Broome Street is depicted with its current spelling.

Hooker 1829: All modern street spellings are used on this map: Chrystie Street, Forsyth Street, Delancey Street and Broome Street.

Colton 1836: This map is similar to Hooker 1829.

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

Bradford 1838: 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 block fully developed. A total of 57 structures are shown. Within the APE, 29 structures face the street while 12 are located on the interior of the block. All structures that face Delancey Street will be razed when the street is widened to make way for the Centre Street subway loop and do not fall within the APE. Within the APE, most lots on Broome Street have large yards behind structures. Most lots on Chrystie Street and Forsyth Street have yards separating street-facing from structures on the interior of the block.

Colton 1856: No structures are shown on this map, but a transportation line is shown running along Chrystie Street, outside of the APE.

Perris 1857-62: Figure 4.6-3. This is the first depiction of lots with street numbers and structural details. No lot numbers are given here. Details are listed below with street numbers as shown, with lot numbers from Bromley 1897 in parentheses:

129 Forsyth Street (24) Less than a one foot wide strip along the southern side of the lot is included in the APE. Along the south side a brick commercial building faces the street, with a small wood frame structure behind it, and a second outbuilding behind the wood frame structure. A small yard is present at the back.
127 Forsyth Street (25) This lot shows a brick commercial building with a large L-shaped yard behind it leading to a large conjoined brick structure that spans Lots 25 and 26.
125 ½ Forsyth Street (25 and 26) This brick structure spans two lots with a yard behind it.
125 Forsyth Street (26) This brick structure is equal to that on 125 ½ Forsyth.
123 Forsyth Street (27) This lot has a brick structure in front with a medium-sized yard behind it and another brick structure at the back.
121 Forsyth Street (28) This lot has the same structures as Lot 27.
119 Forsyth Street (29) This lot has the same structures as Lot 27, but with an additional narrow wood frame structure at the back of the main structure.
117 Forsyth Street (30) This lot has a brick structure with an alleyway along the north side leading into an open yard and a small brick structure at the back of the lot. The yard takes up more than half of the lot.
115 Forsyth Street (31) This truncated lot has a brick structure taking up two thirds of the lot with a small wood frame structure against the back of the building and a small yard.
113 Forsyth Street (32) This lot is the same size as Lot 31, with a slightly larger brick structure and a wood frame structure taking up the northwest corner of the lot. There is also a small yard.
111 Forsyth Street/306 Broome Street (33) This lot has a commercial brick building at the corner and a wood frame structure on Forsyth Street with a small yard in the northwest corner of the lot.
308 Broome Street (34) This small lot has a brick structure with a smaller yard.
310 Broome Street (35) This lot has the same layout as Lot 34.
312 Broome Street (36) This long lot has a brick structure that takes up less than half of the lot with a large open yard in back.
314 Broome Street (37) This lot has the same layout as Lot 36.
316 Broome Street (38) This lot has the same layout as Lot 36.
318 Broome Street (39) This lot has the same layout as Lot 36.
320 Broome Street (1, 2 and 3) This lot is not as deep as Lots 36-39, and has a brick structure slightly larger than those on the lots just mentioned. A yard takes up less than half of the lot.
322 Broome Street (1 and 2) This small lot has a brick structure and a smaller yard in back.
324 Broome Street/124 Chrystie Street (1 and 2) This lot has a commercial brick structure and smaller yard.

140 Chrystie Street (10) This lot has several structures: a wood frame structure faces the street with an alleyway passing along the south side to an interior yard. Two brick structures abut the back of the wood frame building and another brick structure is located at the back of the lot.

138 Chrystie Street (9) This lot also has several structures: a commercial wood frame structure faces the street with an alley passing along the south to a smaller interior yard. Smaller structures abut one another along the north edge of the lot behind the wood frame structure, including a small brick building, a narrow frame structure, a narrow outbuilding and another outbuilding at the back of the lot.

136 Chrystie Street (8) This lot has a commercial brick structure facing the street with a smaller attached brick structure behind it. A small yard separates this structure from a brick building at the back of the lot.

134 Chrystie Street (7) This lot has many structures, beginning with a commercial wood frame structure facing the street. A narrow alleyway along the south side of the lot leads to two smaller attached wood structures at the back of the main structure. Along the north side of the back of the lot are three small outbuildings, the middle of which is coded as "special hazard." A larger, irregularly shaped building along the south side of the lot is also coded "special hazard." At the back of the lot is a larger brick building. Yard space is constricted due to the many structures.

132 Chrystie Street (6) This lot has a large commercial brick building with a yard separating it from a smaller brick structure at the back.

130 Chrystie Street (5) This lot is entirely covered by structures, most of which is labeled "special hazard." while the very back of the lot is plain brick.

128 Chrystie Street (4) This smaller lot has a brick structure and small yard in back.

126 Chrystie Street (3) This very small lot is entirely covered by a structure coded as "special hazard."

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

Vielé 1865: This topographic map shows the APE to lie within relatively flat meadowlands. Sewer pipes are shown on Delancey Street, Broome Street and Forsyth Street. The Collect Pond is depicted on this map.

Delancey Farm Map 1865: This map shown proposed block and lot divisions; while blocks are consistent with prior and subsequent depictions, lots depicted here are not representative of development shown on other maps and atlases. There are no structures indicated within the APE; however, a notable building, namely the "Residence of Jas. Delancey, Esq., Governor of the Province" is shown in the southeast corner of Block 425, at the corner of Delancey Street and Chrystie Street. This is consistent with much earlier maps showing the area as Delancey's Farm (e.g. Grim

1744; Ratzer 1767), and thus lends support to the assertion that early structures noted within the area of this APE are probably outbuildings associated with this farm.

Vielé 1874: This map is similar to Vielé 1865.

Bromley 1879: This atlas shows schematized lots with alternative numbers. No structures of note are shown within the APE, but transportation lines are shown on Forsyth Street as well as on Chrystie Street (outside of the APE). Additionally, a fire hydrant is indicated at the west corner of Forsyth Street at or just above Broome Street.

Robinson 1885: This map does not have quite the detail as Perris 1857, and uses the same lot numbers as Bromley 1879. There is one fire hydrant shown in front of 127 Forsyth Street and one shown in front of 316 Broome Street, but the fire hydrant indicated on Bromley (1879) at the corner of Forsyth Street and Broome Street is not shown. Transportation lines are shown on Forsyth Street within the APE and on Chrystie Street just outside of this APE.

Differences or additional details about the lots or structures are listed below, with lot numbers in parentheses.

129 Forsyth Street (24) The lot is shown with a stone-faced structure covering around three quarters of the lot.

119 Forsyth Street (29) The narrow wood frame structure at the back of the main structure shown on Perris (1857) is not indicated. This is likely due to the lack of detail on this atlas.

115 and 113 Forsyth Street (31 and 32) Again, the smaller wood frame structures are not depicted here.

111 Forsyth Street/306 Broome Street (33) This lot is now shown with a brick structure covering its entirety.

320, 322 and 324 Broome Street/122 and 124 Chrystie Street (1 and 2) What were formerly three structures facing Broome Street are now two structures facing onto Chrystie Street (122 Chrystie Street did not previously exist). 122 and 124 Chrystie Street correspond to modern Lots 1 and 2.

140 and 138 Chrystie Street (10 and 9) These lots are depicted with many structures on the Perris (1857) map, but are now shown simplified, and the main structures that were shown as wood frame are now shown as brick.

134 Chrystie Street (7) This lot is now shown entirely covered by a stable.

130 Chrystie Street (5) This lot is now shown entirely covered by a brick building that is mostly a stable.

128 and 126 Chrystie Street (4 and 3) These lots are shown as equal in size as 124 Chrystie Street (Lot 2), with equally small brick structures and very small back yards.

Robinson 1893: Hydrants are shown in front of 127 Forsyth Street, at the corner of Forsyth Street and Broome Street, and in front of 316 Broome Street.

Few changes have occurred in the lots, they are noted below with lots in parentheses:
127 and 125 Forsyth Street (25 and 26) Where there used to be three street-facing structures, now there are two brick structures covering the entire lots.
121 and 119 Forsyth Street (28 and 29) These lots are now entirely covered by brick structures.
134 Chrystie Street (7) The back end of the wood frame stable is now shown to be brick.

Sanborn 1894: This map includes specific information about each lot, including use of structure and number of stories. Fire hydrant locations are the same as noted on Robinson 1893. Six inch pipes are depicted on Forsyth Street and on Broome Street, each of which is 50 feet wide.
Details or changes about specific lots are listed below with street numbers as shown, with lot numbers from Bromley 1897 in parentheses:
129 Forsyth Street (24) The commercial/residential structure has five stories.
127 Forsyth Street (25) The residential structure on this lot has five stories and a small yard in back.
125 Forsyth Street (26) This lot has the same configuration as Lot 25.
123 Forsyth Street (27) The front of the lot has a three story mixed commercial/residential structure and the back structure also has three stories. There is no open yard space.
121 Forsyth Street (28) This lot has the same layout as Lot 25.
119 Forsyth Street (29) This lot has the same layout as Lot 25.
117 Forsyth Street (30) The two residential structures on the lot have three stories each.
115 Forsyth Street (31) The structure on this lot has three stories.
113 Forsyth Street (32) The commercial/residential structure facing the street has three stories, while a small structure in back along the north side of the lot has one story.
111 Forsyth Street/306 Broome Street (33) There are two small buildings at 111 Forsyth Street, one facing the street with two stories, and the other behind it with one story. Both of these structures are interconnected with each other and to the structure below at the corner of Forsyth and Broome Streets, which is a mixed commercial/ residential structure of three stories. There is no open yard space on this lot.
308 Broome Street (34) The three story building on this lot is classified as a dwelling of first-class construction.
310 Broome Street (35) The three story residential structure on this lot has a small yard in back with a small one story structure in the southwest corner of the yard that abuts the main structure.
312 Broome Street (36) This lot has the same layout as Lot 25.
314 Broome Street (37) This lot has the same layout as Lot 25.

316 Broome Street (38) This lot has a three story commercial/ residential structure at the front of the lot that connects to three smaller structures in back, one is three stories and the other two are one story each.

318 Broome Street (39) Two connected four story commercial/ residential structures occupy this lot.

320 Broome Street/122 and 122 ½ Chrystie Street (1) This lot is entirely covered by a five story commercial/residential structure.

140 Chrystie Street (10) This complex lot has a variety of structures, including a three story commercial/residential structure in front with a one story structure attached to the back, a small yard, and a three story residential structure in back.

138 Chrystie Street (9) Two four story commercial/residential structures then a one story structure occupy the front of the lot, with a smaller five story residential structure in back behind a small yard.

136 Chrystie Street (8) The four story structure at the front of the lot is labeled "Mission &c." Two one story structures are attached to it. A four story residential structure occupies the back of the lot, with a small yard.

134 Chrystie Street (7) The lot is entirely covered by a stable which is largely one story, while the back of the lot has two stories.

132 Chrystie Street (6) A five story residential/commercial structure occupies the front of the lot while a four story residential structure is located at the back of the lot. What may be a covered walkway connects the two buildings through the middle of a small yard.

130 Chrystie Street (5) This lot is largely covered by a commercial two story structure of first-class construction, with a small two story section in the very back that is wood frame.

128 Chrystie Street (4) A five story residential structure occupies most of the lot.

126 Chrystie Street (3) A five story commercial/residential structure occupies most of the lot.

124 Chrystie Street (2) A five story commercial/residential structure occupies most of the lot.

Bromley 1897: The block appears the same as depicted on previous maps and atlases (Sanborn 1894; Robinson 1893). Additionally, transportation lines and pipes are indicated on Broome Street and Forsyth Street. While this atlas is less detailed about some aspects of the structures on individual lots, basements are shown for the first time.

Basements are indicated for structures on all lots on Forsyth Street within the APE except Lot 24 (129 Forsyth Street) and all lots on Broome Street except for Lot 1 (320 Broome Street/122 Chrystie Street). No structures on Chrystie Street are shown with basements. In sum, the lots with basements include Lots 25-39.

There is no indication of a 122 ½ Chrystie Street in existence as shown previously.

Sanborn 1905: Delancey Street has been widened by 100 feet, truncating the block to the current boundaries of the APE. Additional details and changes to lots are described below, with lot numbers in parentheses.

129 Forsyth Street (24) This map does not indicate that any portion of this lot remains (although see later Bromley atlases).

123 Forsyth Street (27) The front structure is indicated as a synagogue. The back structure is indicated as exclusively residential, with three stories and a basement.

119 Forsyth Street (29) A 'Job Printer' occupies the basement of this structure.

117 Forsyth Street (30) This lot is now covered by a commercial/ residential six story structure.

111 Forsyth Street/306 Broome Street (33) None of the structures on this lot are indicated with basements.

312 Broome Street (36) The structure houses a "Chinese Laundry."

316 Broome Street (38) There is now a one story structure at the back of the lot indicated as a "Hall."

320 Broome Street/122 Chrystie Street (1) This lot is shown with a basement, labeled "Drugs."

136 Chrystie Street (8) The four story structure at the front of the lot is labeled "Mission." The four story residential structure in back is shown with a basement.

134 Chrystie Street (7) The stable is labeled "Wagon House."

132 Chrystie Street (6) Two small one story structures flank either side of the walkway connecting the front structure with the back structure. The back residence is shown with a basement.

130 Chrystie Street (5) This structure is labeled "Boarding" and is shown with a basement.

128 Chrystie Street (4) This residential structure is shown with a basement.

Bromley 1911: The lots on this atlas are unchanged from Bromley 1897, although the configuration of the block has changed to reflect the widening of Delancey Street, cutting into the APE. New street numbers are shown on Delancey Street, including 21 and 25 Delancey Street (associated with the north side of Lot 10). Changes are noted below, lot numbers in parentheses:

129 Forsyth Street (24) A very small strip along the north side of Lot 25 is erroneously labeled Lot 26; it should be Lot 24.

123 Forsyth Street (27) The lot now is indicated with a three story structure with a basement in front, a yard, and a three story structure in back. The structure previously identified as a synagogue is not labeled.

140 and 138 Chrystie Street/21 and 25 Delancey Street (9 and 10, now 10) What used to be two structures is now one six story brick structure with a small square yard located along the south side of the combined lot.

Hyde 1913: This atlas shows different details compared with previous maps and atlases. On the south side of Delancey Street, the sidewalk is shown about 20 feet wide; on the west side of Forsyth Street, the sidewalk is 10 feet wide, on the east side of Forsyth Street, the sidewalk is 15 feet wide; on Broome Street, the sidewalks are 15 feet wide. Along Forsyth Street, one railway line is indicated as owned by the "Met. St. Ry. Co." Sewer lines, 4' x 2'8" brick, are indicated on the east side of Forsyth Street and the south side of Broome Street. Additionally, 12" water mains are shown on the west side of Forsyth Street and 12" and 6" water mains are shown on the north side of Broome Street. No street numbers are given along Delancey Street. Details and changes on specific lots are noted below, lot numbers in parentheses:

129 Forsyth Street (24) The dimensions of the remainder of this lot are indicated as 0.6 1/4' at the west side and 0.10 1/8' at the east side.

127 Forsyth Street (25) This structure is indicated with a central stoop facing the street.

125 Forsyth Street (26) This structure is indicated with a central stoop facing the street.

123 Forsyth Street (27) The front structure is indicated with only two stories, a central stoop facing the street. The back structure is indicated with four stories.

121 Forsyth Street (28) This structure is indicated with a central stoop facing the street.

119 Forsyth Street (29) This structure is indicated with a central stoop facing the street.

115 Forsyth Street (31) The structure has a stoop on the north side facing the street.

113 Forsyth Street (32) This structure has a stoop on the north side facing the street.

111 Forsyth Street/306 Broome Street (33) This structure is indicated as a "Saloon or a Hotel with Liquor License." No basements are indicated.

308 Broome Street (34) There is a stoop on the west side of the structure facing the street. No basement is indicated.

310 Broome Street (35) There is a stoop on the west side of the structure facing the street. No basement is indicated.

312 Broome Street (36) This structure is indicated with a central stoop facing the street.

314 Broome Street (37) This structure is indicated with a stoop on the west side facing the street.

316 Broome Street (38) The front structure is a "Saloon or a Hotel with Liquor License" with a stoop on the west side facing the street. In back, the wood frame structure in indicated as a "Shed or Old Building."

318 Broome Street (39) This structure is shown with a stoop on the west side facing the street.

138 (formerly also 140) Chrystie Street (10, formerly also 9) This lot is largely covered by a six story structure with three smaller sections that are one story.
134 Chrystie Street (7) This lot is still covered mostly by a one story wood frame building.
130 Chrystie Street (5) This lot is still covered largely by a two story structure indicated as a stable, with a small wood frame section in back.
128 Chrystie Street (4) This residential structure has a central stoop facing the street, outside of the APE.

Bromley 1916: The APE on this atlas is very similar to Bromley 1911 and Hyde 1913. Fire hydrants are found in the following locations: two in front of Lot 26 (125 Forsyth Street), one in front of Lot 33 (306 Broome Street/111 Forsyth Street), and one in front of Lot 38 (316 Broome Street). Differences in the lots are noted below, with lot numbers in parentheses:
123 Forsyth Street (27) The entire lot is again labeled as a synagogue. The back structure is shown with a basement.
308 Broome Street (34) This structure is indicated with a basement.
310 Broome Street (35) This structure is indicated with a basement.
316 Broome Street (38) The back structure has two stories. There is no open yard space on the lot.
136 Chrystie Street (8) The back structure has a basement.
132 Chrystie Street (6) The back structure has a basement.

Sanborn 1922: This map is too dark to discern much detail about the lots within the APE themselves, which are similar in layout to Bromley 1916. An additional high-pressure fire hydrant is located on the east side of Forsyth Street near Broome Street. A 6" water pipe and a 12" high-pressure water pipe are shown on Forsyth Street, and a 12" water pipe and a 20" high-pressure water pipe are shown on Broome Street. Additional street addresses are given along Delancey Street and are indicated below:
37, 35, 33, 31, 29 and 27 Delancey Street/129 and 127 Forsyth Street (24 and 25) There is no structure associated with the remaining former Lot 24 (129 Forsyth Street). 37, 35, 33, 31 and 29 Delancey Street are associated with the one structure on Lot 25, which is also 127 Forsyth Street. A new small structure now takes up the back of the lot, which is labeled 27 Delancey Street.

Bromley 1925: Figure 4.6-7. This is the last atlas described here showing the block prior to preparations for the construction of the Sara Delano Roosevelt Park. Lot details, specifically remaining open yard spaces are described below, with lot numbers in parentheses:
129 Forsyth Street (24) No structures are present on the remainder of the lot and Delancey Street addresses are associated with Lot 25 to the south.

29 and 35 Delancey Street/127 Forsyth Street (25) 29 Delancey Street is associated with a one story structure that takes up the back of Lot 25, while a larger structure takes up the rest of Lot 25. Airshafts are located on the north and south sides of the building
125 Forsyth Street (26) There is still a small yard at the very back of this structure which also has airshafts on the north and south sides of the building.
123 Forsyth Street (27) This lot still houses a synagogue with a yard in between the front and back structures.
121 Forsyth Street (28) A small yard is still present at the back of the lot, as well as airshafts along the north and south sides of the structure.
119 Forsyth Street (29) A small yard is present in back and airshafts along the north and south sides of the structure.
117 Forsyth Street (30) A yard is present in back as well as a small enclosed yard on the south side.
115 Forsyth Street (31) A small yard is present in back.
113 Forsyth Street (32) A very small yard is present in the southwest corner.
111 Forsyth Street/306 Broome Street (33) No yard space is present.
308 Broome Street (34) A small back yard is present.
310 Broome Street (35) A small back yard is present.
312 Broome Street (36) A small back yard is present as well as airshafts along the east and west sides of the structure.
314 Broome Street (37) A small back yard is present as well as an airshaft along the east side of the structure.
316 Broome Street (38) No yard space is present.
318 Broome Street (39) A medium-small yard is present
320 Broome Street/122 Chrystie Street (1) No yard space is present
140 and 138 Chrystie Street/25, 23 and 21 Delancey Street (10) There is only a small yard space along the south side.
136 Chrystie Street (8) A small yard space is present between the front and back structures.
130, 132 and 134 Chrystie Street (5, once also 6 and 7) This lot is now covered entirely by a two story brick garage. Of the structures that once occupied this lot, only the smaller building in the back of Lot 6 had a basement. Lot 6 (132 Chrystie Street) used to have open yard between its front and back structures and Lot 7 (134 Chrystie Street) never had structures with basements.
128 Chrystie Street (4) This lot has a small yard in back. The structure on this lot has never been shown with a basement.
126 Chrystie Street (3) This lot has a small yard in back.
124 Chrystie Street (2) This lot has a small yard in back.

Bromley 1930: The block is shown completely cleared of all development. Broome Street still appears to be present along the south side of the block. A rectangle is defined in the middle of the block with the following dimensions:

Delancey Street, 126.2 1/2.
Forsyth Street, 241.5 3/8.
Chrystie Street, 241.4 5/8.
Broome Street, 126.5 7/8.

Bromley 1934: The block has now been redeveloped as the Sarah (sic) Delano Roosevelt Park. Broome Street is no longer a thoroughfare, as the park crosses Broome Street to the south. The park is 160 feet wide east-west. Chrystie Street is shown approximately 30 feet wider than previously, this 30 feet cutting into Block 419, former Lots 1-10. Forsyth Street is shown approximately 20 feet wider than previously, this 20 feet cutting into Block 419, Lots 25-33. In the center of the former block, one edge bordering the former location of Broome Street, a large rectangular section is labeled "General Playground, Depressed Area." This would include interior areas of former Lots 1-7 and 28-39. The area is 160 feet north-south by 100 feet east-west. What appears to be a semi-circular walkway is indicated at the north end of the block, facing onto a 20 foot wide sidewalk on Delancey Street. Seventy foot wide entrances to the park are located on the east and west sides of the park where Broome Street once crossed. There is no longer a sidewalk shown on the west side of Forsyth Street.

Sanborn 1951: The area is labeled "Sara D. Roosevelt Parkway." No further details are given about the area of the APE within Block 419. Two fire hydrants are shown on the west side of Forsyth Street near Delancey Street while another is shown on the east side of Forsyth Street near Broome Street.

Bromley 1967: The APE is depicted here the same as on Bromley 1934, except the area is labeled "Public Park."

Bromley 1974: The APE is the same as shown on Bromley 1967. Additionally, dimensions are given: Delancey Street 126.2 1/2', Forsyth Street 241.5 3/8', and Chrystie Street 241.4 5/8'. The dimensions along Forsyth and Chrystie Streets extend from Delancey Street to the entrances to the park at Broome Street, which are measured at 70 feet each.

Sanborn 2001: Figure 4.6-1. The APE is the same as depicted on Bromley 1974.

Street Elevation Table:

Data Source	Delancey Street and Forsyth Street	Broome Street and Forsyth Street	Delancey Street and Chrystie Street	Broome Street and Chrystie Street
1865 Vielé	40'	40'	41'	38'
1885 Robinson	40.8'	40.8'	40.9'	38.2'
1897-1974 Bromley	40.1'	40.4'	40.1'	38.3'
2001 Sanborn	40.1'	40.4'	40.1'	38.3'

Tax and Directory Table:

Note: Lot numbers are shown in parentheses after the street address.

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 419: Chrystie, Delancey, Forsyth, and Broome Streets								
127 Forsyth Street (25) (Second St. in 1808)	no info.	James Rosevelt	John Scott	Henry Ketcham	Sylvanus Warren, provisions	Francis O. Connor	Fredk. Mook	Frank. ? Mook
125 ½ Forsyth Street (25 and 26) (Second St. in 1808)	no info.	Richard Varick	no info.	Henry Ketcham	no info.	Francis O. Connor	Fredk. Mook	Frank. ? Mook
125 Forsyth Street (26) (Second St. in 1808)	no info.	Henry King	Henry King	Henry Ketcham, Francis B. O. Conor pencilled on side	F. C. Guinand, cutte,r W.B. Harris, car man, Samuel Gautier, boarding	Francis O. Connor	Fredk. Mook	Frank. ? Mook
123 Forsyth Street (27) (Second St. in 1808)	no info.	Davis	Peter Davis	Trimble	David Trimbley, carpenter, Charles Francis, sadler, Joseph Cambell, hatter, — — Wade, shoemaker REAR Nathaniel Brown (col'd), porter, Isaiha Hodge (col'd), porter, Henry Johnson (col'd), porter, George Smith (col'd), porter, James Hamilton (col'd), watr	S. R. & C. W. Trembly	S. R. & C. W. Tremble	S. R. & C. W. Trimble
121 Forsyth Street (28) (Second St. in 1808)	no info.	Alby Perry	Morris Hicks	Peter B. Knapp	George Richards, hatter, B.W. Patterson, butcher,	C. Walker	C. Walker	C. Walker

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
					H. A. Bennett, Mary Ganmyer, dressmaker, Nicholas Bellow, Manuel, Gibbs, paper carrier, Jacob Wasner, car man REAR Theodore Sangee, cases, Joseph Kehl, musician, Joseph Huber, tailor			
119 Forsyth Street (29) (Second St. in 1808)	no info.	Robert Allen	James Heathingto n	Est. Jas. Hethingto n	Huson Langstroth, carpenter REAR Emeline McClusky, Indress, William Bushe, cutter David Jones, machinist, Wolfgang Heid, musician	William Langstraw	Wm. Langstraw	William Longstraw
117 Forsyth Street (30) (Second St. in 1808)	no info.	James Rosevelt	Abner White	Peter Asten	George Tappen, jr. locksmith, James Haggett, locksmith, C. W. Lovejoy, dry goods REAR Joseph Priest, printer, Susan E. Priest, nurse, Mary Barmore	Peter Aston	Peter Aston	Peter Asten
115 Forsyth Street (31) (Second St. in 1808)	no info.	Thom. Lathen, unfinished	Wm. Fox	Est. Jacob Apley	Edward Storey, porterhouse	Est. of Jacob Appley	Est. Jacob Appleby	Est. Jacob Appleby
113 Forsyth Street (32) (Second St. in 1808)	no info.	George P. Powell	James Heathingto n	Peter Asten	Julia Hall, boarding	Peter Aston	Peter Aston	Peter Asten
111 Forsyth Street/ 306 Broome Street	no info.	no info.	no info.	no info.	no info.	no info.	no info.	no info.

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
(33) (Forsyth Street was Second Street in 1808)								
308 Broome Street (34)	no info.	James Hetherington, Boyne, Reid Henry Brown (owner/occupant of a ½ lot)	James Heathington	Henry Clauson (308 Broome Street) Est. Jas Hethering ton pencilled on side John Hoff (308 ½ Broome Street)	Henry Clausen, grocer (308 Broome Street) F. P. Ryan, physician, James Whitehorn, artist, Ferdinand Settenfelt (308 ½ Broome Street)	Henry Clauson (308 Broome Street) Richard Sands (308 ½ Broome Street)	F. Heumer (308 Broome Street) Mr. Nichols (308 ½ Broome Street)	T. Huner (308 Broome Street) Carl. Nichols (308 ½ Broome Street)
310 Broome Street (35)	no info.	Elizabeth Hawk	James Heathington	Priscilla Bradford, S. S. Brainard, juror	Ann Sands	Richard Sands	Mr. Nichols	Carl Nichols
312 Broome Street (36)	no info.	Thompson & Gaines	Mark Wickham	Est. Isaac Wigham	Jane Haviland	Mary L. Whigham	Mary L. Whigham	Mary L. Whigham crossed out, replaced with Charles E. Oswald
314 Broome Street (37)	no info.	John Harmony	Paul Techman	Doctor Anderson, Saml. P. Howe, juror	A. A. Gould	Samuel Holmes	Geo. R. Kigiman (crossed out), trustee	L. H. Hibner
316 Broome Street (38)	no info.	George Shaffer	Mary Wickham, Richard Bartlett	Est. James Wigham	William Paul, Michael McCormick	William Pane	Geo. Schultz	W. E. Burkhart
318 Broome Street (39)	no info.	Wool Howard	Mary Wickham, Wm. Cook	Est. James Wigham	Eliza P. Dodge	Mrs. E. P. Dodge	Annie Mahon	Annie Mahon
320 Broome Street (1, 2 and 3)	no info.	John H. Cornell	Doctor Vanarsdale	Peter Van Arsdale	Peter Van Arsdale, physician	Peter Van Arsdale	Peter Van Arsdale	no info.
322 Broome Street (1 and 2)	no info.	Rose	Doctor Vanarsdale, Doctor Davis	Peter Van Arsdale	H. W. Williams, physician	Peter Van Arsdale	Peter Van Arsdale	no info.
324 Broome Street/ 124 and 122 Chrystie Street (1 and 2) (Chrystie St. was First St. in 1808)	no info.	William Arment (Chrystie Street)	Doctor Vanarsdale (324 Broome Street)	Peter Van Arsdale (324 Broome Street)	J. M. Burnett, drugs (324 Broome Street) Ellen S. Kelly (124 Chrystie Street)	Peter Van Arsdale (324 Broome Street)	Peter Van Arsdale (324 Broome Street)	W. B. Parsons (124 and 122 Chrystie Street)
140 Chrystie	no info.	Henry	Daniel	Charles	James Scott,	Charles	Nathaniel	N. Wash-

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
Street (10) (First Street in 1808)		Wickes	Clark	Washburn	bootmaker, Albert Elliot (col'd), brdng	Washburn	Washburn	burne
138 Chrystie Street (9) (First Street in 1808)	no info.	Richard Varick	Peter D. Collins	William Brown	Fanny Weldon (col'd), Sarah Browne	Mr. Brown	Geo. Dotzert	Cha. P. Weise
136 Chrystie Street (8) (First St. in 1808)	no info.	Richard Varick	Henry Harris	S. R. & G. W. Trembly	S. R. & G. W. Tremley, tin roofers	S. R. & G. Trembly	John Dimon	John Diamond
134 Chrystie Street (7)	no info.	Joseph Smith, unfinished	Joseph Smith	Edward Latham	Mary Reilley, candies, Edward Lathan (col'd), carpenter, Jane Demenus	Edward Latham	E. Latham	E. Latham
132 Chrystie Street (6) (First St. in 1808)	no info.	Charles Carle Thomas Rop	George A. Morril	Peter Van Arsdale	Edward McManus, grocer	E. M. Fanning	Mr. Fanning	Mr. Fanning
130 Chrystie Street (5) (First St. in 1808)	no info.	Richard Varick, John Harmony pencilled on side	M. H. Underhill	Moses Cammute	stables	William Cogswell	Wm. Cogswell	Wm. Cogswell
128 Chrystie Street (4) (First St. in 1808)	no info.	S. Kidmon & Harrifs	T. Williams	John Bromberger	William Miley, bookbinder Ellen Kadell, tailoress	Edward Brown	Ed. Brown	Edward Brown
126 Chrystie Street (3) (First St. in 1808)	no info.	Susanah Brown	no info.	no info.	stables	no info.	no info.	W. B. Parsons

Note: No lots on Delancey Street from the 19th century are included in the present APE. For the 1808 tax assessment records, there are few or no ward, lot or street addresses provided, neither are owners/occupants from the 1820 records mentioned on the same streets in the 1808 records. Thus in 1808, the lots may have been under entirely different ownership or occupancy, exempt from taxes, or vacant.

Precontact Sensitivity:

The area of Block 419 (including the former Broome Street roadbed) and the adjacent Forsyth Street roadbed was open, flat meadowland in precontact times and was about 2,500 feet from a fresh water source (Viele 1865). The area would have been suitable for habitation or use; although there is no prior evidence for sites in the immediate vicinity of the APE. A habitation site called "Schepmoes" was recorded about 14 blocks north of the APE at approximately East 10th Street and Second Avenue in association with a Native American trail (Grumet 1981). Additionally, the area is 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.

Post-contact activities have occurred that would have likely disturbed precontact remains. This includes farming, which occurred during the 17th century under the Dutch West India Company and during the 18th century when the area was James Delancey's farm (Stokes 1928; Grim 1744; Delancey Farm Map 1865). Plowing would not have disturbed more than about one foot beneath the surface. An outbuilding associated with the Delancey Farm appears to be located within the APE, under the Forsyth Street roadbed just north of Broome Street (Figure 4.6-2, Ratzer 1767), foundations or cellars of which or associated subsurface features such as wells, cisterns or privies would have disturbed the precontact surface. Any potentially existing precontact archaeological resources are more likely to be subsurface features such as storage pits, or trash pits, commonly called middens.

Soil Boring C6-14 (Raymond International Inc., 1974) indicates that the precontact surface in general may be located under at least 15 feet of fill. In all likelihood this fill episode is associated with the development that occurred during the first half of the 19th century when the block was first defined and occupied. If fill was added, then the majority of 19th and 20th century development may not have affected the precontact surface, as even structures with basements may not have affected levels below the fill. However, the water table has been observed as deep as 27 feet below the surface (see Appendix 4.6.7.3), and so 19th century wells could have extended that deep, or deeper, potentially disturbing buried precontact levels. Numerous structures had open yards throughout the 19th century, where such wells may have been located. The APE is thus considered to be moderately sensitive for precontact remains below the fill, between about 16 and 21 feet below grade.

Historical Sensitivity:

This APE falls within farmlands associated with the Bouwery parcels administered by the Dutch West India Company during the 17th century (Stokes 1918). In particular, most of the APE falls within Bouwery No. 4, within 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 1645.

During the 18th century, the entire parcel became part of James Delancey's Farm (Figure 4.6-2, Ratzer 1767; Grim 1744; Delancey Farm Map 1865; Stokes 1918). The "Residence of Jas. DeLancey, Esq., Governor of the Province" is shown in the southeast corner of Block 425, at the corner of Delancey Street and Chrystie Street, outside of the APE to the north (Delancey Farm Map 1865; Stokes 1918). The DeLancey residence was erected by May Bickley prior to 1724 and purchased by DeLancey from Dr. Brune Bickley in 1733 (Stokes 1918: 949).

The Grim and Ratzer maps (1744; 1767, Figure 4.6-2) indicate a structure associated with the Delancey Farm that appears to be located within the Forsyth Street roadbed in proximity to Broome Street. On the Grim map, it appears to be located close to, if not at, the current location of Broome Street, while on Ratzer the structure appears to be around 150 feet north of Broome Street (Ibid.). Both portray it as located on the north side of an access road that angles off of Bowery and heads northeast of the current orientation of Broome Street. It is

not clear what the function of this structure was, as it was about 200 feet away from the main Delancey residence. It could be another residence or it could be a farm-related structure such as a barn. If it were a residence, there would likely be associated wells, cisterns or a privy. It is possible that the structure had a cellar. Given the location of the structure relative to the road, if these features still exist, they would most likely be located to the north, east or west of the structure, and thus possibly within the APE.

The residence of James Delancey (outside of the APE) was demolished by 1799 (Stokes 1918: 949), and Lower Manhattan up to and including the APE was fully gridded by 1797 (Taylor Roberts). Maps do not show specific development on the block prior to 1852, when the block is shown fully developed with 41 structures shown within the APE, but the fact that the block was shaded on earlier maps suggests that development predates this (Dripps 1852). Property assessments dating from 1820 indicate that the area was occupied from at least that time onwards (see tax table, above). Nineteenth century occupancy of the block is mixed, including a few professionals as well as proprietors, skilled workers, and laborers (see 1851 Directory information, tax table, above). Many structures also had stores on their first floors (Figure 4.6-3, Perris 1857-62; Sanborn 1894). The 1865 Viele map shows that sewers were available by the mid-19th century, and it is likely that at least some landowners could afford to tap into this public utility. However, for those who could not, wells and privies were viable options during the 19th century and it is likely that some existed in the open yard spaces, which are detailed below.

By the beginning of the 20th century, Delancey Street was widened 100 feet to the south, defining the present northern boundary of the APE (Sanborn 1905). Then between 1925 and 1930 the block was cleared of all structures, and it was re-developed as the Sara Delano Roosevelt Public Park by 1935 (Bromley). While Delancey Street was maintained as a thoroughfare, Broome Street was closed by the park between Forsyth and Chrystie Streets. Chrystie Street was widened by about 30 feet to the east, defining the west boundary of the park and this APE. Forsyth Street was widened by about 20 feet to the west, defining the east boundary of the park. Entrances to the park are located off of Delancey Street between Chrystie and Forsyth Street as well as on Chrystie and Forsyth Streets where Broome Street intersects them on either side. The center of the park was initially indicated as a 'Depressed Area', which probably does not exceed the depth of pre-development fill discussed below (Bromley 1934).

Soil Boring C6-14 (Raymond International Inc., 1974) indicates that the precontact surface may be located beneath 15 feet of fill, which is probably associated with the development that occurred during the first half of the 19th century when the block was first defined and occupied. However, the water table has been observed as deep as 27 feet below the surface (see Appendix 4.6.7.3), so 19th century wells may have penetrated through the fill to at least that depth.

Along Forsyth Street, two transportation lines were once present, and one was part of the 'Met. St. Ry. Co.' railway. These would not have affected the APE. Sewer lines, 4' x 2'8" brick, were depicted on the east side of Forsyth Street and the south side of Broome Street (Hyde 1913). A WPA Subsurface Conditions Map (Map No. 85, 1937) details clusters of

utilities under both Forsyth and Broome Streets. The utilities under both streets include electricity ducts, gas and water pipes and postal cables, all of which are located five feet or less beneath the surface of the roadbed and were not located under the sidewalk at the time. The sewer line is shown in the middle of the street and is considerably deeper, located 10 feet below the surface on Forsyth Street and 15 feet below the surface on Broome Street. The utilities do not appear to have affected the pre-fill surface.

Ultimately, many lots had small open yard areas prior to the construction of the park. Larger yards were present on Lots 27 (123 Forsyth Street) and Lot 39 (318 Broome Street), while smaller yards were present on 125, 121, 119, 117, 115, and 113 Forsyth Street (Lots 26, 28, 29, 30, 31 and 32); 308, 310, 312 and 314 Broome Street (Lots 34, 35, 36 and 37); and 138, 136, 128, 126 and 124 Chrystie Street (Lots 9, 8, 4, 3 and 2). Structures on Lots 25, 26, 28, 29, 36 and 37 also had narrow airshafts along the sides of the buildings which may have afforded open areas on the ground (Bromley 1925; Sanborn 1905). Any of these areas have the potential to hold shaft features such as wells or privies from the 19th century or earlier. These potential 19th century features would have extended through the fill layer, while earlier remains would probably be located beneath the fill.

Additionally, some lots never had structures with basements, all of which are located on Chrystie Street. These areas include the entire area of Lots 10 and 9 at 140 and 128 Chrystie Street, the front of Lot 8 at 136 Chrystie Street (a structure previously located at the back of this lot had a basement), Lot 7 at 134 Chrystie Street, the front of Lot 6 at 132 Chrystie Street (the back structure had a basement), and Lot 3 at 126 Chrystie Street (Sanborn 1905). These areas are less likely to have disturbed any possible earlier shaft features from the 17th or 18th centuries, even though these remains may have been protected by the later addition of fill.

In sum, the APE including Block 419 and the surrounding Forsyth and Broome Street roadbeds, is moderately sensitive for pre-19th century historic remains in its entirety, given that the pre-19th century surface may be protected by 15 feet of fill, which would only have been affected by 19th and 20th century intrusions such as wells (only a 19th century intrusion) or particularly deep basements. There is particular sensitivity near the corner of Forsyth and Broome Streets for a structure from the 18th century associated with the Delancey Farm. For 19th century features such as wells or privies, the APE is moderately sensitive in former open yard areas on Lots 2-4, 8, 9, 26, 28-32, and 34-37.

Block 418:

The Sara Delano Roosevelt Park APE includes the western portion of Block 418, bounded by Broome Street, which defined the block to the north prior to 1930, Forsyth Street to the east, Chrystie Street to the west, and Grand Street to the south (the block to the east, not included in the APE and bounded by Broome, Grand, Forsyth, and Eldridge Streets, is also denoted as Block 418) (Figure 4.6-1). The Forsyth Street roadbed between Broome and Grand Streets is included in the APE. Broome Street was once a throughway but currently does not pass through the park. The former area of Broome Street is discussed along with Block 419 in the preceding section. The block as originally developed contained 30 lots (Bromley 1897), although former Lots six through ten and part of Lot five were property of St. Stephen's Church throughout most of the 19th century (e.g. Perris 1857-62; Figure 4.6-4). All of the lots facing Chrystie Street (Lots 1-7 and 30) were truncated by approximately 30 feet on the west side when Chrystie Street was widened during the construction of the park. It is thus likely that most, if not all, of former Lots 7 and 30 are not included in this section of the APE, as they would lie under the current Chrystie Street roadbed (outside of this APE but discussed in Chapter 6.1). All of the lots facing Forsyth Street (Lots 14-22) were truncated by approximately 20 feet on the east side when Forsyth Street was widened during construction of the park. This APE also includes the area of the Grand Street roadbed between Forsyth and Chrystie Streets.

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. A lateral road in the approximate location of Broome Street today runs east off of the old Bowery Road to Boston, which is the current location of Bowery. Other than fences shown along the roads, there are no other 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 St. Stephen's Street (later Broome Street) and 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 Forsyth 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. North of this road appear to be ploughed fields, the land south of this road appears to be vacant. There are no structures indicated within the APE. Just west of Bowery, Broome Street ends at a large hill.

Ratzer 1767: Figure 4.6-2. Bowry Lane (sic) is shown, as are Chrystie Street, Forsyth Street, Broome Street (unlabeled) and Grand Street (labeled). There are no structures indicated on the area of Block 418, which appears to be vacant farmland. One block east of Grand Street, outside of the APE, is a two-block by two-block area labeled "Great Square."

British Headquarters Map 1782: 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 Street and Forsyth Street, again just north of Grand Street. The street that angles off of Broome Street from Bowery is indicated, but not Broome Street itself (see Ratzer 1767). Within the APE, the area north of the palisade is not shown with any development.

Directory Plan 1789: Nearly all of the streets surrounding the APE are now labeled, including First Street (later Chrystie Street), Second Street (later Forsyth Street), Bayard's Lane (later Broome Street), and Eagle Street (later Grand Street). The area of the APE is not shown with any specific structures but is indicated as developed.

British Headquarters Map 1797: This map is very similar to the earlier 1782 British Headquarters Map. A fortification wall is located within 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. Broome Street itself is not indicated on this map and there is no other development shown on this map other than the fortifications.

Taylor Roberts 1797: First Street (later Chrystie Street), Second Street (later Forsyth Street), Bullock Street (later Broome Street) and Grand Street are shown. There is one structure indicated within this section of the APE, at the northwest corner of Chrystie and Broome Streets. The freshwater pond is still present about ten blocks southwest of the APE.

Bridges 1807: First (Chrystie) Street, Second (Forsyth) Street, Broom (sic) Street and Grand Street are shown. A structure labeled St. Stephen's Church is shown in the southwest corner of the block to the north. This is likely in error, as the church is shown on the northwest corner of this block on all maps and atlases other than this (e.g. Commissioner's Plan 1811; Hooker 1829; Colton 1836; Dripps 1852). 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. A large structure in the northwest corner of Block 418 is labeled St. Stephen's do., probably indicating diocese. It is probably significant that Broome Street was known as St. Stephen's Street in 1855 (Maerschalck).

Hooker 1829: All modern street spellings are used on this map: Chrystie Street, Forsyth Street, Broome Street and Hester Street. St. Stephen's Church

is shown as a large structure at the corner of Broome and Chrystie Streets.

Colton 1836: This map is similar to Hooker 1829.

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

Bradford 1838: 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 block fully developed. A total of 39 structures are shown. Within the APE, three structures comprise St. Stephen's Church, which is indicated as Episcopalian. An additional 27 structures face the street while nine more are located on the interior of the block. Most interior structures are on lots that face Chrystie Street or Forsyth Street. Most lots have medium-sized yards. St. Stephen's Church has as much open area as buildings, mostly located south of the cathedral on Chrystie Street.

Colton 1856: St. Stephen's Church is shown on this map, as well as a transportation line. running along Chrystie Street (outside of the APE) and a transportation line on Grand Street (within the APE).

Perris 1857-62: Figure 4.6-4. This is the first depiction of lots with street numbers and structural details. No lot numbers are given here. Details are listed below with street numbers as shown, with lot numbers from Bromley 1897 in parentheses:

307 Broome Street (14) This lot is shown with three connected frame structures facing both Broome Street and Forsyth Street, two of which are commercial. A smaller L-shaped yard is present in the southwest corner of the lot.

309 Broome Street (13) This lot has four inter-connected structures: two small brick structures side by side in front and two larger frame structures side by side in back. A yard is present and the buildings are coded as commercial.

311 Broome Street (12) This lot has a commercial brick structure with a small yard in back.

313 Broome Street (11) This lot is entirely covered by a brick structure

315-321 Broome Street/118 Chrystie Street (6-10) [plus back half of 116 Chrystie Street (5)] These lots are the property of an Episcopal Church (indicated as St. Stephen's on earlier maps and atlases). The cathedral is located in the area of Lots 7-10, not quite extending to the edges of the block. The area of Lot 6 and the back of Lot 5 are shown as open areas. The area of 321 Broome Street (Lot 7) is outside of the APE).

107 Forsyth Street (15) This lot has a brick structure facing the street while the back half of the lot is open yard.

105 Forsyth Street (16) This lot has two frame structures, the first of which is set back from the street by around ten feet. An alleyway passes along the southern side of the lot to a small yard space and a brick building at the back of the lot.

103 Forsyth Street (17) This lot is configured similarly to 105 Forsyth Street, except that the first frame structure fronts directly onto the street.

101 Forsyth Street (18) This lot has a frame structure fronting onto the street, an alleyway along the north side of the lot leading to a medium yard, and a brick building at the back of the lot.

99 Forsyth Street (19) This lot has a frame structure in the northeast corner of the lot with a smaller brick structure adjoining it in back. An alleyway along the south appears to be shared with 97 Forsyth Street. At the back of the lot behind a small yard are several adjoining structures indicated as frame structures housing "special hazards."

97 Forsyth Street (20) This lot has two adjoining frame structures in front and appears to share an alleyway with 99 Forsyth Street to the north. A small yard separates the front structures from a brick structure at the back labeled "special hazards."

95 Forsyth Street (21) Two adjoining commercial frame structures face the front of the lot and an alleyway along the north side leads back to three frame structures housing "special hazards." There is little open yard space.

93 Forsyth Street (22) This small area houses two frame structures, one of which is commercial, the other adjoins a similar frame structure at 270 Grand Street. A small yard is present west of this address.

270 Grand Street (22) This address houses a commercial frame structure that adjoins one of the structures at 93 Forsyth Street.

268 Grand Street (23) This lot houses a commercial brick structure with a small frame structure in back and a yard.

266 Grand Street (24) A commercial brick structure occupies the front half of this lot and a yard is present in the back half.

264 Grand Street (25) A commercial brick structure occupies the front half of this lot and a yard is present in the back half.

262 Grand Street (26) A commercial brick structure occupies the front half of this lot and a yard is present in the back half.

260 Grand Street (27) This lot has a commercial frame structure facing the street with a very narrow alleyway along the east side. A commercial brick structure adjoins the frame structure, and another small frame structure is located along the east side of the back of the lot. A small yard is present.

258 Grand Street (28) This lot is largely covered by structures labeled "special hazards." The front structure is frame while the back structures are brick. A small yard occupies the northeast corner of the lot.

256 Grand Street (29) A commercial frame structure occupies the front of the lot, with two smaller brick structures adjoining behind. A medium yard is present at the back of the lot.

254 Grand Street (30) This lot is outside of the APE.

116 Chrystie Street (front half) (5) This "half lot" has a frame structure at the front and open yard behind it. The rest of Lot five is part of St. Stephen's Church.

114 Chrystie Street (4) This lot has a brick structure in the front half, and open yard in the back half.

112 Chrystie Street (3) Two frame structures occupy the front half of the lot, with an alleyway on the north side leading to open yard in the back.

110 Chrystie Street (2) Four adjoining frame structures occupy the front of this lot, with an L-shaped yard separating them front a brick structure at the back.

108 Chrystie Street (1) This lot has a brick structure in the front, with a yard that takes up over half of the back of the lot.

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

Vielé 1865: This topographic map shows the APE to lie within relatively flat meadowlands. Sewer pipes are shown on Broome Street, Forsyth Street, and Grand Street. The Collect Pond is depicted on this map.

Delancey Farm Map 1865: This map shown proposed block and lot divisions; while blocks are consistent with prior and subsequent depictions, lots depicted here are not representative of development shown on other maps and atlases. There are no structures indicated within the APE.

Vielé 1874: This map is similar to Vielé 1865.

Bromley 1879: This atlas shows schematized lots with alternative numbers. No structures of note are shown within the APE, and specifically St. Stephen's Church is not indicated. A transportation line is shown on Forsyth Street, two on Grand Street, and one on Chrystie Street (outside of the APE). Additionally, a fire hydrant is indicated at the corner of Forsyth Street and Grand Street.

Robinson 1885: This map does not have quite the detail as Perris 1857, and uses the same lot numbers as Bromley 1879. Fire hydrants are shown in front of 101 Forsyth Street, 270 Grand Street and 260 Grand Street. Transportation lines are the same as shown on Bromley 1879.

Differences or additional details about the lots or structures are listed below, with lot numbers in parentheses.

307 Broome Street (14) This lot is shown entirely covered by frame structures.

313 Broome Street (11) This lot is shown with a yard behind the brick structure.

315, 317, 319 and 321 Broome Street (7, 8, 9 and 10) These four lots were once the location of the cathedral of St. Stephen's Episcopal Church; now there are brick structures occupying the front of each lot with a smaller yard in back of each. 321 Broome Street is outside of the APE.

105 Forsyth Street (16) The front structure is shown to be brick.

103 Forsyth Street (17) The front structure is shown to be brick.

99 Forsyth Street (19) This lot is shown almost entirely covered by a brick structure, with a narrow yard along the southwest side.
95 Forsyth Street (21) This lot is shown with a brick structure covering more than half of the lot with a yard in back.
93 Forsyth Street (22) This small area is shown covered by a brick structure.
262 Grand Street (26) The brick structure covering most of this lot is labeled "A. Jewell, Confectioner."
258 Grand Street (28) This lot is almost entirely covered by structures.
256 Grand Street (29) This lot is entirely covered by structures.
254 Grand Street (30) This lot (outside of the APE) is labeled "John Wilkins, Grocer."
118 Chrystie Street (6) This lot was once part of the property of St. Stephen's Church; now it houses a brick structure on the front half and an open yard in back.
116 Chrystie Street (5) The back half of this lot was once part of the property of St. Stephen's Church; now the front half of the lot has a brick structure and an open yard is present in back.
112 Chrystie Street (3) A brick structure is now present at the front of the back, with a yard separating it from another brick structure at the back of the lot.
108 Chrystie Street (1) The brick structure on this lot takes up most of the area, leaving only a small yard in back.

Robinson 1893: Hydrants are shown in front of 101 Forsyth Street, and in front of 260 and 270 Grand Street. No changes have occurred on lots, except that the frame structures at 97 Forsyth Street and 270, 260, 258 and 252 Grand Street are shown with stone facing.

Sanborn 1894: This map includes more information about each lot, including use of structure in some cases and number of stories. Fire hydrants are shown in front of 101 Forsyth Street and 258 Grand Street. Six inch pipes are depicted on Forsyth Street and on Grand Street. Forsyth Street is 50 feet wide, while Grand Street is shown as 70 feet wide. Details are listed below with street numbers as shown, with lot numbers from Bromley 1897 in parentheses:
307 Broome Street/109 Forsyth Street (14) 307 Broome Street is a residential/commercial three story structure, while 109 Forsyth Street is two stories (residential/commercial) in front with a one-story section in back with a very small yard.
309 Broome Street (13) A three story residential/commercial structure occupies the front of the lot with a smaller one story structure in back.
311 Broome Street (12) This lot has a three story residential/commercial brick structure.
313 Broome Street (11) This lot has a five story residential structure.
315 Broome Street (10) This lot has a six story structure (store or dwelling) of first-class brick construction.

317 Broome Street (9) This is a residential/commercial six story structure.
319 Broome Street (8) This is a residential/commercial six story structure.
321 Broome Street (7) This lot is outside of the APE.
107 Forsyth Street (15) This is a three story residential structure with a smaller one story structure adjacent in back.
105 Forsyth Street (16) This is a five story structure (store or dwelling) of first-class brick construction. In back is a five story residential structure
103 Forsyth Street (17) This is a four story residential/commercial structure. In back is a four story residential structure.
101 Forsyth Street (18) This is a six story residential/commercial structure.
99 Forsyth Street (19) This is a five story residential structure.
97 Forsyth Street (20) This is largely covered by three story adjoined commercial/residential structures. In back is a two story brick warehouse of third-class construction.
95 Forsyth Street (21) A five story commercial/residential structure occupies most of the lot, with three small one story structures around the perimeters of the back of the lot.
93 Forsyth Street (22) This address comprises a three story commercial/residential structure.
270 Grand Street (22) This address houses a three story commercial/residential structure. Together with 93 Forsyth Street, the lot is entirely covered.
268 and 266 Grand Street (23 and 24) These lots are covered by structures, including two story commercial/residential structures facing the street and a mixture of one and two story structures in the back of the lots.
264 Grand Street (25) Three story commercial/residential structures cover most of the lot.
262 Grand Street (26) The lot is covered by a three story brick structure of second-class brick construction facing the street and a two story residence at the back of the lot. A steam boiler is present at the back of the lot as well.
260 Grand Street (27) This lot is covered by a six story brick residential building.
258 Grand Street (28) This lot is covered by a six story brick residential building.
256 Grand Street (29) This lot is covered with structures, including a four story commercial/residential structure facing the street and one and two story structures in back.
254 Grand Street (30) This lot is outside of the APE.
118 Chrystie Street (6) This lot has a five story commercial/residential structure.

116 Chrystie Street (5) This lot has a five story commercial/residential structure.
114 Chrystie Street (4) This lot has a four story commercial/residential structure.
112 Chrystie Street (3) This lot has a five story commercial/residential structure in front, a yard, and a five story residential structure in back.
110 Chrystie Street (2) This lot is almost entirely covered by a five story commercial/residential structure. Smaller one story sections are present along the north and south sides and a small yard is present at the back of the lot.
108 Chrystie Street (1) This lot has a five story brick store or dwelling, of first class construction.

Bromley 1897: The block is depicted similarly as on previous maps and atlases (Sanborn 1894; Robinson 1893). Additionally, transportation lines and pipes are indicated on Grand Street and Forsyth Street. Six inch utility pipes are shown on Forsyth Street, 12 inch pipes on Grand Street. While this atlas is less detailed about some aspects of the structures on individual lots, basements are shown for the first time. Added details are listed below with street numbers as shown, with lot numbers from Bromley 1897 in parentheses:
309 Broome Street (13) The three story structure has a basement.
311 Broome Street (12) The three story structure has a basement.
107 Forsyth Street (15) The three story structure has a basement.
101 Forsyth Street (18) The structure, previously described as having six stories, is shown as a five story structure with a basement.
99 Forsyth Street (19) The five story structure has a basement .
97 Forsyth Street (20) The three story building has a basement.
270 Grand Street (22) The structure at this address in shown with a stone facade.
268 and 266 Grand Street (23 and 24) The structure facing the street on these two lots is indicated to have 2 ½ stories.
256 Grand Street (29) The structure facing the street is shown with a stone front.
118 Chrystie Street (6) The five story structure has a basement.
116 Chrystie Street (5) The five story structure has a basement.
114 Chrystie Street (4) The four story structure has a basement.

Sanborn 1905: Forsyth Street is shown as 50 feet wide and Grand Street is shown as 70 feet wide. Fire hydrants are shown directly in front of 101 and 99 Forsyth Street and across the street from 107 and 109 Forsyth Street. Another two hydrants are located at the intersection of Grand and Forsyth Streets, one on the northwest corner and one on the southeast corner. Another hydrant is located between 258 and 260 Grand Street. The final hydrant in this section of the APE is across the street from 262 and 264 Grand Street. Additional details and changes to lots are described below, with Bromley 1897 lot numbers in parentheses.

311, 309 and 307 Broome Street/109 and 107 Forsyth Street (12, 13, 14, 15) What used to be four structures and lots split among three addresses on Broome Street and two addresses on Forsyth Street are now two large buildings, each composed of interconnecting sections. 311 Broome Street is a large stone faced six story structure with a basement, and is utilized as a mixed commercial and residential building. The structure at the corner of Forsyth and Broome Street is composed of many sections, and has six stories with a basement. It is also has stone facing and is mixed commercial and residential. The corner of the structure is labeled "Carpenter B." The address 107 Broome Street is not used. Small open areas are located behind both structures to the south.

313 Broome Street (11) This five story structure is now indicated with a basement, mixed commercial/residential use, and is labeled "Carpenter B."

101 Forsyth Street (18) This structure is indicated as having six stories and a basement and is labeled "Upholstering B."

97 Forsyth Street (20) The structure at the back of this lot is labeled "Cooperage."

93 Forsyth Street (22) This address comprises a three story structure now shown with a basement.

268 and 266 Grand Street (23 and 24) The street facing structures on these lots are indicated as two stories with attics.

262 Grand Street (26) The two story section of the building towards the back of the lot is still shown housing a steam boiler, here labeled "UPR-BLR." The structure surrounding the boiler is tin-clad and additionally labeled "Job-Printer."

260 Grand Street (27) The six story building on this lot is now shown with a basement, mixed residential/commercial use, and is labeled "Stock 5.6." See 258 Grand Street, below.

258 Grand Street (28) The six story building on this lot is now shown with a basement, mixed residential/commercial use, and is labeled "Stock of Lamps, Vases &c." Communication is indicated between this structure and 260 Grand Street, see above.

256 Grand Street (29) The front facing structure is labeled "Photo."

118 Chrystie Street (6) The structure is labeled "Bakery."

114 Chrystie Street (4) The structure on this lot now has six stories.

Bromley 1911: There are few differences from earlier Bromley and Sanborn maps and atlases. Changes are noted below, with lot numbers in parentheses:

313 Broome Street (11) There is no basement indicated, though one was noted on the previous map.

311 Broome Street/309 Broome Street and 109 Forsyth Street (now 12 and 14) Each of these two structures are indicated to have seven stories instead of six stories and a basement, as was indicated on the previous map.

101 Forsyth Street (18) The structure is indicated with five instead of six stories.
95 Forsyth Street (21) There is no basement indicated, though one was noted on the previous map.
270 Grand Street (22) There is no basement indicated, though one was noted on the previous map.
266 and 268 Grand Street (now 23) What were previously two structures that were two stories each with attics are noted as one six story structure.
258 and 260 Grand Street (now 27) There are no basements indicated, though they were noted on the previous map.
114 Chrystie Street (4) There is no basement indicated, though one was noted on the previous map.

Hyde 1913: This atlas shows different details compared with previous maps and atlases. On Forsyth Street, the sidewalks are shown about 15 feet wide; on Grand Street, the sidewalks approach 20 feet wide. Two lines indicated as part of the "Met. St. Ry. Co." are shown running on Grand Street with one line turning north along Forsyth Street. Sewer lines, 4' x 2'8" brick, are indicated on the west side of Forsyth Street and the south side of Grand Street. Additionally, 12" water mains are shown on the west side of Forsyth Street and a 20" water main is shown on the north side of Grand Street. Hydrants are shown in the same locations as previous maps, with an additional hydrant in front of 309 Broome Street. Details and changes on specific lots are noted below, lot numbers in parentheses:
309 Broome Street (14) The structure is indicated on this side as a saloon or hotel with liquor license. It is shown with six stories as opposed to seven, as was indicated on the previous map.
311 Broome Street (12) The structure is shown with six stories as opposed to seven, as was indicated on the previous map. It is also shown with a central stoop.
313 Broome Street (11) This structure is shown with a central stoop.
107/109 Forsyth Street (14) The structure at 109 Forsyth Street has a small one story frame addition that juts into the street near the corner of Forsyth and Broome Street. A central stoop fronts onto Forsyth Street as well. It is shown with six stories as opposed to seven, as was indicated on the previous map.
101 and 99 Forsyth Street (18 and 19) These two structures are indicated with six stories and no basement, unlike previous maps which show them with basements and five stories. Additionally, each building has a central stoop.
97 Forsyth Street (20) This structure has a stoop facing the street on the north end. The back structure is shown with three stories.
270 Grand Street (22) This structure is now shown as a brick building.

266 and 268 Grand Street (23) This structure is now shown as a brick building with a stone front.
264 Grand Street (25) The lot is now covered with structures, the back of which is a one story frame building.
254 Grand Street (29) This structure is indicated as a frame building with a brick or stone foundation in the front half, the back half is entirely brick.

Bromley 1916: The APE on this atlas is very similar to Bromley 1911 and Hyde 1913. Differences in the lots are noted below, with lot numbers in parentheses:
101 and 99 Forsyth Street (18 and 19) These structures are indicated with basements.
97 Forsyth Street (20) The back structure is now labeled as two stories with a basement instead of three stories with no basement.
270 Grand Street (22) The structure at this address is shown as a frame building instead of brick.
258 and 260 Grand Street (27) The structure on these lots is labeled "Lofts."
256 Grand Street (29) This structure is shown entirely made of brick.

Sanborn 1922: This section of the map is too dark to discern any detail about the lots within the APE themselves, which are similar in layout to Bromley 1916.
From west to east, two 12 inch water pipes and a 12 inch high-pressure water pipe are shown on Forsyth Street, and from north to south, a 20 inch water pipe and a 12 inch high-pressure water pipe are shown on Grand Street.

Bromley 1925: Figure 4.6-7. This is the last atlas described here showing the block prior to preparations for the construction of the Sara Delano Roosevelt Park. Lot details, specifically remaining open yard spaces are described below, with lot numbers in parentheses:
309 Broome Street/109 Forsyth Street (14) This lot is entirely covered with structures.
311 Broome Street (12) There is still yard space at the very back of and the southeast side of the lot, and about a thirty foot long section along the west side of the lot.
313 Broome Street (11) There is a small yard at the very back of the lot.
315, 317 and 319 Broome Street (10, 9 and 8) Each has a back yard comprising about one fourth of the lot.
321 Broome Street/120 Chrystie Street (7) This lot is covered by a structure.
105 Forsyth Street (16) There is a small yard between the front and back structures and a very small yard behind the back structure.
103 Forsyth Street (17) There is a medium sized yard between the front and small back structures.

101 and 99 Forsyth Street (18 and 19) Each of these lots has a small yard at the back as well as smaller airshafts along the north and south sides of the structures, each of which have basements.
97 Forsyth Street (20) A small yard is present between the front and back structures, both of which have basements. A very narrow one story structure without a basement is present along the north side of the back structure.
95 Forsyth Street (21) About a third of this lot is open yard in back.
93 Forsyth Street (22) This address, comprising the north half of Lot 22, is covered by a structure.
270 Grand Street (22) This address, comprising the south half of Lot 22, is covered by a structure.
268, 266, 264 and 262 Grand Street (23, 25 and 26) These lots are all shown with small yards in back.
262, 260 and 258 Grand Street (29 and 27) These lots are entirely covered by structures.
118 and 116 Chrystie Street (6 and 5) These two lots each have a structure with a basement facing the street and a yard covering about the back half of the lot.
114 Chrystie Street (4) This lot has a very small yard in back and small airshafts along the north and south sides of the structure.
112 Chrystie Street (3) This lot has a small yard between the front and back structures.
110 Chrystie Street (2) This lot has a very small yard in back and small airshafts along the north and south sides of the structures.
108 Chrystie Street (1) This lot has a small yard at the back of the lot.

Bromley 1930: The block is shown completely cleared of all development. Grand Street still appears to be present along the south side of the block. A rectangle is defined in the middle of the block with the following dimensions:
Broome Street, 126.5 7/8.
Forsyth Street, 291.6 5/8.
Chrystie Street, 291.9 7/8.
Grand Street, 125.

Bromley 1934: The block has now been redeveloped as the Sarah (sic) Delano Roosevelt Park. Broome Street is no longer a thoroughfare, but Grand Street still passes through. The park is 160 feet wide east-west. Chrystie Street is shown approximately 30 feet wider than previously, this 30 feet cutting into Block 418 over former Lots 1-7 and 30, completely covering former Lots 7 and 30. Forsyth Street is shown approximately 20 feet wider than previously, this 20 feet cutting into Block 418 over Lots 14-22.
The majority of the park within this section of the APE is taken up by a rectangular wading pool labeled "Depressed Area" which measures 75 feet east-west by 175 feet north-south. The area of the depressed

wading pool is over the interior sections of Lots 1-6, 9-12, 16-21 and 23-27. Much of the affected areas were formerly open yards.
Just north of the wading pool is an area labeled "Comfort Station." A rectangular pathway circumnavigates the pool and comfort station with exits onto the former area of Broome Street and one onto Grand Street mid-block. The sidewalk on Grand Street is still present on both sides of the street, and it appears that a transportation line is also still present on Grand Street as well as Forsyth Street. The sidewalk on the west side of Forsyth Street is no longer present.

Sanborn 1951: The area is labeled "Sara D. Roosevelt Parkway." The comfort Station near the northern end of the block is shown as 120 feet east-west by around 45 feet north-south, one story with a basement. It appears it would have affected the area of former Lots 8-12 towards Broome Street. Several fire hydrants are indicated on this map: two on the east side of Forsyth near Broome Street, one on the west side of Forsyth mid-block, and one on each corner of the intersection of Forsyth and Grand Streets. Another four hydrants are found on Grand Street, two on the north side and two on the south side, of these two are located at the intersection of Grand and Chrystie Streets.

Bromley 1967: The APE is depicted here the same as on Bromley 1934, except the area is labeled "Public Park."

Bromley 1974: The APE is the same as shown on Bromley 1967. Additionally, dimensions are given: Forsyth Street 291.6 5/8, and Chrystie Street 291.9 7/8 and Grand Street 125.4. The dimensions along Forsyth and Chrystie Streets extend to the entrances to the park where Broome Street meets it on either side.

Sanborn 2001: Figure 4.6-1. The APE is the same as depicted on Bromley 1974.

Street Elevation Table:

Data Source	Broome Street and Forsyth Street	Grand Street and Forsyth Street	Broome Street and Chrystie Street	Grand Street and Chrystie Street
1865 Vielé	40'	37'	38'	35.7'
1885 Robinson	40.3'	37'	38.2'	35.5'
1897-1974 Bromley	40.4'	37.1'	38.3'	35.7'
2001 Sanborn	40.4'	37'	38.3'	35.7'

Tax and Directory Table:

Note: Lot numbers are shown in parentheses after the street address.

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 418: Broome, Forsyth, Chrystie, and Grand Streets								
309 Broome Street (13)	no info.	Daniel Mack?	Robert Mack	M. Mc Chain	Leonard Sinfalt, tinsmith, Fred'k Liepoth, bootcrimpe,r Wm. Calkpreener, cabntmkr, William Kimball, carpente,r Peter Ewalt, bootmaker	John Mc Chain	Smith D. Bellows	Smith D. Bellows
311 Broome Street (12)	no info.	Daniel Mack?	Robert Mack	M. Mc Chain	J. O. Smith, butche,r Peter Ewald, shoemaker, Ann Northwood, tailoress, John Scott, sawmaker, Henry Smith, carpenter, Henry Eidar, tailor, Crestean Buroch, tailor	John Mc Chain	John Mc Chain	J. M. Chain
313 Broome Street (11)	no info.	John Pratzner?	J. G. Pratzner	M. G. Pratzer	J. T. P. Smith, gauger, J. B. Drummond, car man	A. Y. Pringle	A. Y. Pringle	A. Y. Pryngle
315 Broome Street (10)	no info.	no info.	St. Stephens Church	St. Stephens Church	St. Stephens Church	St. Stephens Church	Frederic k Fink	F. Finck
317 Broome Street (9)	no info.	no info.	St. Stephens Church	(St. Stephens Church)	St. Stephens Church	(St. Stephens Church)	Frederic k Fink	F. Finck
319 Broome Street (8)	no info.	no info.	St. Stephens Church	(St. Stephens Church)	St. Stephens Church	(St. Stephens Church)	Frederic k Fink	F. Finck

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
109 Forsyth Street/ 307 Broome Street (14) (Forsyth Street was Second Street in 1808)	Hicks & Cornwell (Second Street)	Leonard Lawrence, James Van Curen (Forsyth Street)	Charles Graham, James Rile (109 Forsyth Street)	Chas. Graham (307 Broome Street)	James Bryan, porterhouse (307 Broome Street) Joseph Silva, oysters, Richard Carran, mason, J. H. Bishop, clerk, Elizabeth Storey, John Faucett, whitesmith, J. F. Vortman, jeweller, Louis Bernhard, tailor (109 Forsyth Street)	John Mahoney (307 Broome Street)	John Gerken (307 Broome Street)	John Torker (307 Broome Street)
107 Forsyth Street (15) (Second Street in 1808)	Jamison Cox	Jameson Cox	Wm. Fox	James Hillman	Albert Spencer, medicines	A. Y. Pringle	A. Y. Pringle	A. T. Pringle
105 Forsyth Street (16) (Second Street in 1808)	Widow Shafer	Widow Shafer	Jamison Cox	Jameson Cox	Anne Cox	Ann E. Cox	Ann E. Cox	Annie E. Cox
103 Forsyth Street (17) (Second Street in 1808)	Widow Shafer	Widow Shafer	Wm. M. Stilwell, F. Bogarders	William M. Stillwell	Richard Hallowran, druggist, Richard Hornsey, tailor, Henry Biggins, die sinker REAR Daniel Raferty, cabntmkr, Richard McKenny, laborer, Walter O'Shea, packer, Conrad Halmg, tailor, Leopold Habrailgel, tailor, Charles Bihjuin, cabinetmkr, Louis Weimberg, tailor	Joseph Silva	Chas. Falbach, military Mch 11/69 H.S.J.	C. B. Falbrach

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
101 Forsyth Street (18) (Second Street in 1808)	Henry Carvier, Joseph Ferris, Mr. Palmer	Andrew Wheeler	Acter Civill	Est. A. Austin	Anderson Bogart, hatter, Catherine Hickey, nurse, Clarissa Ladd, nurse REAR Pingus Pingusson, segrs, Richard McCarthy, ship carpenter, Alex Whitelaw, soap boiler, James McKinnon, fireman, Patrick Lyons, porter, Solomon Levi, tailor, Frederick Wahr, tailor, Sarah Hunt, shoebinder, Henry Frank, tailor Phillip Shilling, shoemaker	Anderson Bogart	Anderso n Bogart	Anderson Bogart
99 Forsyth Street (19) (Second Street in 1808)	see 101 Forsyth Street above	Andrew Wheeler	Henry Quiripel, Executor to the Estate of Courvoisie r	John Oakley	Utel West, coppersmith, Jacob Vanhovenberg h, painter	Daniel West	Danl. West	Daniel West
97 Forsyth Street (20) (Second Street in 1808)	Wm. L. Bove, James Smith	Daniel Bartinett	Heirs of T. Underhill	John Oakley	Jane Bell, Susan Sarine, Benjamin Hicks, builder REAR Henry Bullwinkle, putty, James St. John, jack screws, D. S. Stewart, carver, J. T. Welling, boxmaker	Benjamin W. Hicks	Benj. W. Hicks	Benjamin W. Hicks
95 Forsyth Street (21) (Second Street in 1808)	Alexande r Fink	Mrs. Mincers, Heirs of Alexand er Fink	John Gardener	Mrs. Millner	no info.	Isaac Stevens	Isaac Stevens, military Jan 19th 1869	Isaac Stevens

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
93 Forsyth Street (22) (Second Street in 1808)	Alexander Fink	Mrs. Mincers, Heirs of Alexander Fink	no info.	no info.	John Hook, billiards, Lester Loyd, daguerotypist, M. A. Nicholson, B. Laventhrop, tailor, Lewis Zerronner, liquors, Jacob Fauth, paper carrier, Michael Egan, carpenter REAR Isaac Stephens, carpenter, Christian Laux, cabinetmaker, Henry Dorr, cabinetmaker	no info.	no info.	no info.
120 Chrystie Street/ 321 Broome Street (7) (Chrystie Street was First Street in 1808)	no info.	St. Stevens Church (property referred to as 114-120 Chrystie Street, corresponding to 118 and 120 Chrystie Street)	St. Stephens Church	St. Stephens Church	St. Stephens Church Jobst Myer, grocer Adam Stark, shoemaker (323 Broome Street, at Chrystie Street)	(St. Stephens Church)	Frederick Fink (321 Broome Street)	F. Finck (321 Broome Street)
118 Chrystie Street (6) (First Street in 1808)	no info.	see 120 Chrystie Street above	St. Stephens Church	St. Stephens Church	St. Stephens Church	(St. Stephens Church)	Louis Vertenheimer	Louis Vertheimer
116 Chrystie Street (5) (112 Chrystie Street in 1820, First Street in 1808)	Mr. Ogden & Co.	Andrew Ogden	no info.	no info.	J. J. Dean, undertaker	Vestry of St. Stephens Church	Louis Vertenheimer	John Laser
114 Chrystie Street (4) (110 Chrystie Street in 1820, First Street in 1808)	Mr. Ogden & Co.	Andrew Wheeler	Mr. Morgan Agent	Jay Jarvis	Margaret Hunt, Ezra Frost, dry goods	Jay Jarvis	Mr. Spall	Mrs. Shucks
112 Chrystie Street (3) (108 Chrystie Street in 1820, First Street in 1808)	Andrew Minuce	Andrew Wheeler	Wm. M. Stilwell	William M. Stilwell, minister deduction	(Rev.) W. M. Stilwell	Est. Wm. Stillwell	Mr. Reinhart	Mrs. Spall
110 Chrystie Street (2) (106 Chrystie Street in 1820, First Street in 1808)	Mr. Lawrence	Lancaster Burling, John L. Robinson	Lancaster Burling, Robert Giles Jr.	Lancaster Burling	D. R. Mangarm, dry goods	Lancaster Burling	E. O. Burling	Mr. Spall

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
108 Chrystie Street (1) (104 Chrystie Street in 1820, First Street in 1808)	Alexande r Fink	Alexand er Fink	Mrs. Fink	Elizabeth Fink	Margaret Fink, James Jones John Klein, weaver (106 Chrystie Street) James Thompson, fruits (104 Chrystie Street)	Margaret Fink	Margaret Fink	Mr. Reinhard t crossed out, Morris Alexande r penciled at side
270 Grand Street (22) (252 Grand Street in 1834 and 1844)	no info.	see below	John Minuse, James Weir, Square Sacket	Joseph Jackson	no info. (although see 104 and 106 Chrystie Street above)	George Peck	Wm. Runk	William Runk
268 Grand Street (23) (250 Grand Street in 1834 and 1844)	no info.	see below	James Lounsberr y, R. C. Folger	James Lounsberr y	Elias Combs, fancy store	James Lounsberr y	James Lounsber ry	William Lounsber ry
266 Grand Street (24) (248 ½ Grand Street in 1834 and 1844)	no info.	see below	Mrs. Ennefs, E. F. Bakers	John Brinkley	James Weir, apothecary	James Wier	James Wier	James Weir
264 Grand Street (25) (248 Grand Street in 1834 and 1844)	no info.	see below	Benjamin Andrews, E. M. Dolbeare	Benjamin Andrews, Noah Stodard, juror	Noah Stoddard, dry goods, Stephen Underhill	Benjamin Andrews	Benj. Andrews	Benjamin Andrews
262 Grand Street (26) (246 Grand Street in 1834 and 1844)	no info.	see below	James Lounsbery , John Crawford	James Lounsberr y	Nathan Soloman, capmaker, David Stineberg, dentist	James Lounsberr y	Jas. Lounsber ry	James Lounsber ry crossed out, Alfred Jewell penciled in
260 Grand Street (27) (244 Grand Street in 1834 and 1844)	no info.	see below	Edwin Fink	William B. Corning	Barnett Aaron, segars, Moses Hart, pedler	William Corning	Wm. Corning	William Corning
258 Grand Street (28) (242 Grand Street in 1834 and 1844)	no info.	see below	Edwin Fink	Catharine Ketcham	O. F. Wentworth, confectioner REAR John De Young	Jacob Wall	Jacob Wall	Jacob Wall
256 Grand Street (29) (240 Grand Street in 1834 and 1844)	no info.	see below	Samuel Sparks	Henry Norris, Benjamin Aloro, juror	G. H. Perryman, artificial flrs, Albro Brothers, grocers, George Albro	Henry Morris	Henry Morris	Henry Morris
254 Grand Street (30) (238 Grand Street in 1834 and 1844)	no info.	see below	James Lounsbery	James Lounsberr y	Nehemiah Lounsbery, carpets, J. L. Marsh, clerk, James Johnson, Thomas Whitlock, sashmaker	James Lounsberr y	James Lounsber ry	James Lounsber ry crossed out, John Wilkin penciled in

Note: For 1820 tax assessment records, no street addresses or lot numbers are given for Broome Street, Grand Street, or most of Chrystie Street. Three lots on Grand Street are listed, all associated with Alexander Fink, with Noah Pratt, Elias Smith and Jacob Frost as jurors. For 1808 tax assessment records, there are few ward, lot or street numbers. No owners or occupants listed in the 1820 records are on the 1808 records for Broome Street or Grand Street, although an Alexander Fink is mentioned once on Grand Street. Lots may have entirely different owners or occupants, exempt from taxes, or vacant.

Precontact Sensitivity:

The area of Block 418 and the adjacent Forsyth and Grand Street roadbeds was open, relatively flat meadowland in precontact times and was about 2,200 feet to the northeast of a fresh water source (Viele 1865). The area would have been suitable for habitation or use; but no sites have been recorded specifically in the immediate vicinity of the APE. The area is in the immediate vicinity of an area of land called "Werpoes" by Native Americans, as recorded in a land patent from 1651 (Stokes 1928: 72), and a habitation site called "Schepmoes" was recorded to the north of the APE at approximately East 10th Street and Second Avenue (Grumet 1981). Native American habitation sites or other activity areas were likely present in the general area during the precontact era.

However, post-contact activities since then would have likely disturbed precontact remains to some degree. This includes farming, which occurred during the 17th century under the Dutch West India Company and during the 18th century when the area was James Delancey's farm (Stokes 1928; Grim 1744; Delancey Farm Map 1865). However, plowing would not have disturbed more than about one foot beneath the surface, but as such, it is very unlikely that surface scatter or other surface remains from the precontact era would still exist. Thus, if any precontact era archaeological remains still exist, they would be more likely to be subsurface remains such as storage or trash pits.

Soil Boring C6-14 (Raymond International Inc., 1974, also see Appendix 4.6.7.3) indicates that the there is fill extending below grade to about 14 to 15 feet in depth, and there is up to 22 feet of fill near the corner of Chrystie and Grand Streets (Boring R, Appendix 4.6.7.3) which would be associated with 19th century development. If the precontact surface lies buried beneath the fill, assuming the fill represents introduced strata, then 19th and 20th century development may not have affected potential precontact levels, as even structures with basements may not have extended more than 15 feet below the surface. However, the water table has been observed as deep as 33 feet below the surface (see Appendix 4.6.7.3), and so 19th century wells may have extended to that depth. Therefore, the APE is considered to be moderately sensitive for precontact remains from about 15 to 20 feet below grade for much of the APE, and from about 23 to 28 feet below grade at the corner of Chrystie and Grand Streets.

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). In particular, the APE is located in a section assigned to Gerrit Jansen in 1645. During the 18th century, the entire parcel became part of James Delancey's Farm (Figure 4.6-2, Ratzer 1767; Grim 1744; Delancey Farm Map 1865; Stokes 1918). No particular structures are shown within the APE during these times, but this does not preclude the possibility of their existence.

By 1766 there is a major road that passes through the APE from Bowery to the East River; on the Montresor map (1766) the road is labeled "Road to Crown Point." North of this road the land is indicated as farmlands, and south of the road appears to be vacant land. The Ratzer map which came out the following year indicates the block in its present form, albeit the streets are not all named (Figure 4.6-2, 1767) .

At the end of the 18th century, when Manhattan was under British occupation, fortification walls passed directly through the APE (British Headquarters Map 1782, 1797). The palisade is shown running east-west just north of Grand Street. An attached fortification structure or garrison is shown attached to the south side of the wall north of Grand Street directly between Forsyth and Chrystie Streets. The structure is shown as two nearly touching L-shaped walls. The structure and wall are located within the southern two thirds of the block.

Lower Manhattan, up to and including the APE, was fully gridded by 1797 (Taylor Roberts). While in 1797 the fortification wall is not shown, a structure is depicted at the northwest corner of the block (Ibid.). Further maps do not show development on the block prior to 1852, except for the presence of St. Stephen's Episcopal Church, which is indicated on the northwest corner of the block on the Commissioner's Plan of 1811. A brief history of the church states that the congregation first came together in 1805 and built the church soon afterwards, holding its last service in 1866 (Inskeep 2000: 173-4).

The church had an associated cemetery that was located several blocks north, at (then) First Street between First and Second Avenues, outside of the APE. More specifically, First Street, which opened in 1817, is stated as having "passed through the cemeteries of St. Stephen's Protestant Episcopal Church (at Broome and Christie Streets [referring to the location of the Church, not the cemetery]) and of the Methodist Congregation" (Greenwald 1933). Burials were also conducted in the cathedral vaults of St. Stephen's Church as well. However, all remains from the cemetery and the church vaults were ultimately removed and transferred to Cypress Hills Cemetery in Brooklyn (Inskeep 2000).

However, there is the remote possibility that there are burials within the APE, (Lots 5-10, 118-120 Chrystie/321-315 Broome Streets), as it cannot be assumed that there were never any burials on the church grounds (Lots 6 and the back half of Lot 5 in particular, which were open yard areas at 118 and 120 Broome Street). However, since burials from the vaults beneath the church were reportedly removed, and would have been easily accessible, it is fairly unlikely that these burials still remain. Conflicting with historical reports that the church was built in 1802, the 1797 Taylor Roberts maps shows a structure on the northwest corner of the block, in the church's location, and Broome Street was named St. Stephen's Street 50 years earlier (Maerschalck 1855).

By 1852, the block is shown as fully developed with 39 structures (Dripps 1852). Property assessments dating from 1808 indicate that Chrystie and Forsyth Streets were lotted for development by that time, and lots on Broome and Grand Streets were taxed by 1820 (see tax table, above). Many structures are later shown with stores on their first floors (Figure 4.6-4 Perris 1857-62; Sanborn 1894). The occupants of the block by the mid-19th century included

as many skilled as non-skilled workers (see 1851 Directory information, tax table, above). The Viele map (1865), shows that sewers were available by mid-century, and while many structures probably had indoor plumbing, some may have continued to depend on wells and privies. During the 19th century, it is likely that wells or privies were present in some of the open yard spaces at the time, which are detailed below.

Between 1925 and 1930, all structures on the block were razed (Bromley). In the next five years, the block was re-developed as the Sara Delano Roosevelt Public Park (Bromley 1935). Broome Street was blocked off by the park, but Grand Street remained a thoroughfare. Chrystie Street was widened by about 30 feet to the east, defining the west boundary of the park and this APE. Forsyth Street was widened by about 20 feet to the west, defining the east boundary of the park. The center of the park was initially indicated as a "Depressed Area," which probably did not extend below reported fill levels discussed below (Bromley 1934).

Soil Boring C6-14 (Raymond International Inc., 1974) indicates that the predevelopment surface, if it remains, would be located under about 15 feet of fill. However, the water table has been observed as deep as 33 feet below the surface (see Appendix 4.6.7.3), and so wells are likely to have reached that depth.

Along Grand Street, two transportation lines have been indicated as part of the "Met. St. Ry. Co." railway, one line of which turns onto Forsyth Street (Colton 1856; Hyde 1913). These would not have affected the APE. Sewer lines, measuring 4' x 2'8" and made of brick, were indicated on the east side of Forsyth Street and the south side of Grand Street (Hyde 1913). WPA Subsurface Conditions Maps (Map No. 85, 1937; Map No. 73, 1939) detail clusters of utilities under both Forsyth and Grand Streets. The utilities under both streets include telephone and electricity ducts, gas and water pipes and postal cables, all of which are located five feet or less beneath the surface of the roadbed and were not located under the sidewalk at the time. The sewer line is shown in the middle of the street and is considerably deeper, located ten feet below the surface. The utilities do not appear to have affected levels below the fill.

Overall, several lots on the block had small open yards prior to the construction of the park. Larger yards were present on Lots 10, 9 and 8 (315, 317 and 319 Broome Street), Lots 17 and 21 (103 and 97 Forsyth Street), and Lots 6 and 5 (118 and 116 Chrystie Street). Smaller yards were present on Lots 12 and 11 (311 and 313 Broome Street), Lots 16, 18 , 19 and 20 (105, 101, 99 and 97 Forsyth Street), Lots 4, 3, 2 and 1 (113, 112, 110 and 108 Chrystie Street) and Lots 23, 24, 25 and 26 (268, 266, 264 and 262 Grand Street). Structures on Lots 2, 4, 18 and 19 also had narrow airshafts along the sides of the buildings which may have afforded open areas on the ground (Bromley 1925; Sanborn 1905). Any of these areas have the potential to hold shaft features such as wells or privies from earlier buildings on the block dating from the 19th century or earlier. These potential 19th century features may be located within the fill layer, while earlier remains would probably be located beneath the fill, although 19th century wells would pass below the fill layer to encounter water.

Additionally, many lots never had structures with basements; in sum, only 13 structures had basements at all. The lots without basements include Lots 10, 9, and 8 (315, 317 and 319 Broome Street), Lots 14, 16, 17, 21 and 22 (109, 105, 103, 95 and 93 Forsyth Street), Lots 7, 3, 2 and 1 (120, 112, 110 and 108 Chrystie Street), and Lots 23, 24, 25, 25, 29 and 30 (268, 266, 264, 262, 256 and 254 Grand Street). These areas are less likely to have disturbed any possible earlier shaft features from the 17th or 18th centuries, even though these remains would probably have been protected by fill.

In sum, the APE including Block 418 and the surrounding Forsyth and Grand Street roadbeds is moderately sensitive for potential pre-19th century historic remains in its entirety, if in fact the pre-19th century surface is located beneath and protected by between 15 and 22 feet of fill. More specifically, the southern two thirds of the block is highly sensitive for fortifications from the end of the 18th century, including a small fort as well as a wall (British Headquarters Map 1782, 1797).

For 19th century features such as wells or privies, the APE is moderately sensitive in former open yard areas on Lots 1-6, 8-12, 16-21 and 23-26 within the fill level from the current surface down to at least the depth of the water table, which lies about 33 feet below grade. There is also the moderate to minimal potential for historical burials on the back of Lot 5, all of Lots 6-10, and particularly the yard areas of Lots 5 and 6, which were associated with St. Stephen's Church during the first half of the 19th century. While the St. Stephen's cemetery was located off-site and all burials were reportedly relocated, there is the possibility that there may have been unrecorded burials on the church grounds. The APE is potentially sensitive for these historic resources from the surface down to about six feet below the fill, which extends to between about 14 and 15 feet below grade here.

Former Block 305 (now Block 302 north):

The Sara Delano Roosevelt Park APE includes the northern portion of Block 302, formerly known as Block 305, bounded by Grand Street to the north, Forsyth Street to the east, Chrystie Street to the west, and Block 302 south of Sara Delano Roosevelt Park (Figure 4.6-1). Included in the APE is the former Hester Street roadbed, which was once a through-way between Forsyth and Chrystie Streets but currently does not extend through the park. The Forsyth Street roadbed between Grand and Hester Streets is also included in the APE. The Grand Street roadbed between Forsyth and Chrystie Street is discussed in the preceding section which addresses Block 418. Block 305, as originally developed, contained 37 lots. All of the lots facing Chrystie Street (Lots 1-13) were truncated by approximately 30 feet on the west side when Chrystie Street was widened during the construction of the park in the 1930s. All of the lots facing Forsyth Street (Lots 20-32) were truncated by approximately 20 feet on the east side when Forsyth Street was widened during the construction of the park.

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. A lateral road between the approximate locations of Grand and Hester Streets today runs east off of the old Bowery Road to Boston, the current location of Bowery. This road would have crossed the northern section of the APE. What appears to be a small pond is shown on the eastern side of Bowery at this lateral road, located a few hundred feet from the western side of the APE. Other than fences shown along the roads, there are no other structures within this section of the APE.

The APE here is located about 1,800 feet northeast of the Collect Pond, a source of fresh water. The APE is also around 2,000 feet 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) and Hester's (sic) 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, Forsyth, Grand and Hester Streets (unlabeled). There are no structures indicated within the APE, which is shown as vacant land.

Ratzer 1767: Figure 4.6-2. Bowry Lane (sic) is shown, as are Chrystie Street, Forsyth Street (both unlabeled), Grand Street and Hester Street (labeled). There are no specific structures indicated on the APE, but shaded which may indicate it is developed. One block east of Grand Street, outside of the APE, is a two-block by two-block area labeled "Great Square."

British Headquarters

Map 1782: 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. Within the APE, there is a row of structures indicated along the east side of Chrystie Street between Grand and Hester Streets.

Directory Plan 1789: Nearly all of the streets surrounding the APE are now labeled, including First Street (later Chrystie Street), Second Street (later Forsyth Street), Eagle Street (later Grand Street), and Pump Street (later Hester Street). A note regarding Pump Street: the same street was called Hester Street on the west side of Bowery throughout the historic period into the present (including the present Directory Plan). The street south of Hester Street was temporarily called Pump Street, and is now Canal Street. There are no specific structures indicated in the APE, but the area is shown as developed.

British Headquarters Map 1797: This map is somewhat similar to the earlier 1782 British Headquarters Map. Fortifications are found just north of the APE between Broome Street and Grand Street. However, only one structure is indicated within the APE, on the corner of Forsyth and Grand Streets.

Taylor Roberts 1797: First Street (later Chrystie Street), Second Street (later Forsyth Street), Grand Street and Eagle Street (later Hester Street) are shown. Structures are shown on each of the corners of the block except for the southeast corner, with two additional structures on Chrystie Street and another structure on Forsyth Street. The freshwater pond is still indicated about eight blocks southwest of the APE.

Bridges 1807: First (Chrystie) Street, Second (Forsyth) Street, Grand Street and Hester Street are shown. No structures are indicated in the APE, few are shown on the map. The Collect Pond is not shown on this map.

Commissioner's Plan 1811: The APE is the same on this plan as shown on Bridges.

Hooker 1829: All modern street spellings are used on this map: Chrystie Street, Forsyth Street, Grand Street and Hester Street.

Colton 1836: This map is similar to Hooker 1829.

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

Bradford 1838: 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 block fully developed. A total of 59 structures are shown. Within the APE, 37 structures face the street while 22 are located on the interior of the block. Nearly all of the lots have yards and all but one lot have structures on them.

Colton 1856: This map is the same as Colton 1836.

Perris 1857-62: Figure 4.6-5. This is the first depiction of lots with street numbers and structural details. No lot numbers are given here. Details are listed below with street numbers as shown, with lot numbers from Bromley 1897 in parentheses:

269 Grand Street (20) The lot is entirely covered by a brick structure with commercial use.
267 Grand Street (19) This lot is almost entirely covered with a brick structure.
265 Grand Street (18) This lot is nearly entirely covered with a commercial structure, with only a very narrow open area in back.
263 Grand Street (17) A commercial frame structure occupies the front of the lot with a brick section in back and a very narrow open area at the very back of the lot.
261-255 Grand Street/98 Chrystie Street (13) This large corner lot is entirely covered by a store or warehouse.
85 Forsyth Street (21) This lot has a commercial brick structure at the front with a smaller open yard and warehouse or store space in back that connects to the lot to the south (Lot 22) and is connected in back with the large structure in Lot 13 (see above).
83 Forsyth Street (22) This lot has a commercial brick structure at the front equal to that on Lot 21 (above) with a smaller open yard and warehouse or store space in back that connects to the lot to the north (Lot 21) and is connected in back with the large structure in Lot 13 (see above).
81 Forsyth Street (23) This lot has a commercial frame structure in the northeast corner with a smaller brick building immediately behind it. A large alley on the south side leads into a larger back yard. In back is a brick structure labeled "Special Hazards."
79 Forsyth Street (24) Two commercial frame structures are present along the north side of the lot with open alley space south and west of them. In the very back of the lot is a brick structure labeled "Special Hazards."
77 Forsyth Street (25) Three interconnected commercial frame structures plus an additional outbuilding are present along the south side of the lot. An alleyway along the north side leads into a small yard and a brick structure at the very back of the lot.
75 Forsyth Street (26) A commercial brick structure is present at the front of the lot with an alleyway along the south side leading to an open yard and another brick structure at the back of the lot.
73 Forsyth Street (27) Three frame structures and an outbuilding are present along the north side of this lot. An alleyway along the south side leads to open yard space in the back.
71 Forsyth Street (28) Commercial brick structures are present at the front of the lot with a yard separating them from another smaller brick structure in back.
69 Forsyth Street (29) A commercial brick structure at the front of the lot is separated from another brick structure at the back by a yard.
67 Forsyth Street (30) A commercial brick structure at the front of the lot is half labeled "Special Hazards" (on the north side). A yard separates this structure from another brick structure in back.

65 Forsyth Street (31) This lot has a sequence of brick structures, the front structure is labeled commercial. An alleyway is present along the south side with small open spaces behind the front structure and along the back of the lot.
63 Forsyth Street/121 Hester Street (32) This lot has three small commercial structures: two are frame and one is labeled "Special Hazards." A small yard area is present in the northwest corner.
123 Hester Street (33) This small lot has a frame structure in front and a smaller brick structure adjoining it in back with a small yard.
125 Hester Street (34) This lot has two small frame structures and a small yard in back.
127 Hester Street (35) Two interconnected frame structures and a very small brick structure occupy this lot, which has a small L-shaped yard.
129 Hester Street (35) Two interconnected frame structures occupy this lot which has a small yard in back.
131 Hester Street (35) This lot has a brick structure in front and a small yard in back.
133 Hester Street (37) This lot has a brick structure in front and a small yard in back.
135 Hester Street/74 Chrystie Street (1) This lot has a commercial brick structure that occupies most of the lot with a small yard on the east side.
96 Chrystie Street (12) This lot has a commercial brick structure facing the street, a yard, and another brick structure in back.
94 Chrystie Street (11) This lot has five interconnected frame structures in front and along the north side with another frame structure in the back that is labeled "Special Hazards." Open yard area is present along the middle-south side.
92 Chrystie Street (10) This lot has a large commercial brick structure over most of the lot, a small yard and another small structure in back.
90 Chrystie Street (9) A commercial brick structure faces the street with an alleyway along the north side that leads to a yard and another brick structure at the back of the lot.
88 Chrystie Street (8) This lot has a frame structure in front, an alleyway along the south side leading to a larger yard and a brick structure at the back of the lot.
86 Chrystie Street (7) This lot has a commercial brick structure in front that is labeled "Special Hazards" along its south side with a small alleyway on the south side as well. There appears to be a wooden structure that connects this structure through an open yard to a brick structure in the back of the lot.
84 Chrystie Street (6) This lot has a brick structure facing the street that is less than half the size of the lot and open yard in back.

82 Chrystie Street (5) This lot has a commercial brick structure in front with a smaller brick structure attached, a medium sized yard, and a small outbuilding along the back of the lot.
80 Chrystie Street (4) This lot has a brick structure at the front, a yard, and a brick structure labeled "Special Hazards" at the back of the lot, with a very narrow open area at the very back.
78 Chrystie Street (3) This lot has four interconnected frame structures in the front, a medium sized yard, and a brick structure in back labeled 'Special Hazards'.
76 Chrystie Street (2) This lot has a commercial brick structure that occupies most of the lot with a small yard in back.

Mitchell 1860: This map is the same as Colton 1836.

Vielé 1865: This topographic map shows the APE to lie within relatively flat meadowlands. Sewer pipes are shown on Grand Street, Chrystie Street and Forsyth Street. The Collect Pond is depicted on this map.

Delancey Farm Map 1865: This map shown proposed block and lot divisions; while blocks are consistent with prior and subsequent depictions, lots depicted here are not representative of development shown on other maps and atlases. There are no structures indicated within the APE.

Vielé 1874: This map is similar to Vielé 1865.

Bromley 1879: This atlas shows schematized lots with alternative numbers. Within the APE, the large structure in the northwest corner is labeled "Lord & Taylor Dry Goods." Two elevated transportation lines are shown on Grand Street. Additionally, a fire hydrant is indicated at the northwest corner of Forsyth Street and Hester Street.

Robinson 1885: This map does not have quite the detail as Perris 1857, and uses the same lot numbers as Bromley 1879. There is one fire hydrant shown in front of 81 Forsyth Street, one in front of 63 Forsyth Street, and one shown in front of 135 Hester Street. Transportation lines are shown on Grand Street.
Differences or additional details about the lots or structures are listed below, with lot numbers in parentheses.
269 Grand Street (20) The structure has stone facing.
263 Grand Street (17) This lot, comprised of a small frame and larger brick structure, is labeled "J. T. McGuire Dry Goods."
261-255 Grand Street/98 Chrystie Street (13) This large corner structure is labeled "Lord & Taylor Dry Goods," and is connected with 85 and 83 Forsyth Street (Lots 21 and 22). The corner structure itself has stone facing.
85 and 83 Forsyth Street (21 and 22) These lots are joined with the Lord & Taylor on the northwest corner of the block. The structure on these lots is brick.
81 and 79 Forsyth Street (23 and 24) These two lots have two large structures, one frame and one brick, both are stables. They are joined by a smaller brick structure between them along the south side of the

lots. Connecting with the two lots on the west that face Chrystie Street (Lots 10 and 11), these four lots are labeled "W. H. Silberhorn & Bros. Pork Packers."
77 Forsyth Street (25) The structure is shown as brick.
73 Forsyth Street (27) A brick structure is shown at the front of the lot with a yard and another brick structure in back.
123 Hester Street (33) The structure is shown as brick.
94 and 92 Chrystie Street (11 and 10) These two lots are covered by a brick structure, and together with Lots 23 and 24 to the east, are labeled "W. H. Silberhorn & Bros. Pork Packers."
90 Chrystie Street (9) This shows the front structure as frame.
84 Chrystie Street (6) The brick structure at the front of the lot has stone facing and there is an additional brick structure at the back of the lot. There is a small yard between the structures.
80 Chrystie Street (4) The structure at the back of the lot is a stable.
78 Chrystie Street (3) The lot now has a large stone-faced building on most of the lot with a yard in back.

Robinson 1893: Some changes have occurred in the lots, they are noted below with lots in parentheses:
269 Grand Street (20) This structure is shown as just brick.
259, 257 and 255 Grand Street/98 Chrystie Street (13) "Lord & Taylor Dry Goods House" is linked to 79-85 Forsyth Street (see below).
85, 83, 81 and 79 Forsyth Street (21, 22, 23 and 24) These four lots are covered by a brick structure that is part of "'Lord & Taylor Dry Goods House'" on Lots 12 and 13 at the corner of Broome and Chrystie Streets. Lots 23 and 24 are no longer stables.
96 Chrystie Street (12) This structure is shown with stone facing.
94 and 92 Chrystie Street (11 and 10) These two lots are no longer labeled "Pork Packers."
88 Chrystie Street (8) This lot was previously shown with a frame structure in front and a brick structure in back with a yard in between; now there is one brick structure that covers most of the lot with a small yard in back.

Sanborn 1894: This map includes different information about each lot, including number of stories for each structure and use in some cases. Fire hydrant locations are the same as noted on Robinson 1893. Six inch pipes are depicted on Forsyth Street and on Hester Street; each street is 50 feet wide.
Details or changes about specific lots are listed below with street numbers as shown, with lot numbers from Bromley 1897 in parentheses:
269 Grand Street/87 Forsyth Street (20) The structure has five stories.
267 Grand Street (19) The structure has four stories

265 Grand Street (18) The structure is a class-D store or warehouse (first-class construction) with five stories in front, one and two stories in back.
263 Grand Street (17) The structure has four stories.
261-255 Grand Street/98 and 100 Chrystie Street (13) The majority of this structure is four stories, it is five stories at 98 Chrystie Street and is three stories in the southeast corner where it connects to 85-79 Forsyth Street.
85, 83, 81 and 79 Forsyth Street (21, 22, 23 and 24) These fours lots are connected to the larger structure in Lot 12 and have interconnected structures that are largely four stories, with smaller sections in the northwest corner that are three, two and one story.
77 Forsyth Street (25) The structure at the front is five stories and the structure in back is three stories.
75, 73, 71, 69 and 67 Forsyth Street (26, 27, 28, 29 and 30) Each of these lots has a five story structure in front and a smaller five story structure in back with a yard in between.
65 Forsyth Street (31) This lot has a five story structure in back, with a sequence of smaller structures in back against the north side of the lot which are one, five and four stories.
63 Forsyth Street/121 Hester Street (32) At 63 Forsyth Street the structures are two or one story, while 121 Hester Street has a two story structure.
123 Hester Street (33) This lot has a two story class-g frame structure of First-class construction with smaller two and one story structures along the west side.
125 Hester Street (34) This lot two structures with two stories and a smaller one story structure along the east side.
127, 129 and 131 Hester Street (35) Four interconnected seven story class-b warehouses of second-class construction occupy most of this lot .
133 Hester Street (37) A class-e three story store or dwelling of second-class construction occupies most of this lot.
135 Hester Street/74 Chrystie Street (1) A four story structure occupies most of the lot with a small one story structure on the east side facing Hester Street.
96 Chrystie Street (12) A four story stone faced structure occupies this lot which is interconnected with Lots 11 and 10, which together are labeled "Provisions."
94 Chrystie Street (11) This structure has five stories in front and three stories in back with a steam boiler in the back northeast corner. Together with Lots 12 and 10, it is labeled "Provisions."
92 Chrystie Street (10) This structure is four stories in front and one, two and three stories in back. There may be steam boilers at the back of the lot. Together with Lots 11 and 12, it is labeled "Provisions."

90 Chrystie Street (9) There is a four story structure at the front of the lot and a three story structure at the back of the lot.
88 Chrystie Street (8) A class-D five story store or dwelling of first-class construction occupies most of the lot.
86 Chrystie Street (7) A six story structure occupies the front of the lot and a five story structure is present at the back of the lot.
84 Chrystie Street (6) A stone-faced five story structure occupies the front of the lot and another smaller five story structure is present at the back of the lot.
82 Chrystie Street (5) A three story structure is present at the front of the lot and a five story structure occupies the back of the lot.
80 Chrystie Street (4) A three story structure occupies the front of the lot while a small class-g one story frame store or dwelling of first-class construction is present immediately behind it on the south side of the lot. At the back is a class-d two story store or dwelling of first-class brick construction.
78 Chrystie Street (3) A stone-faced five story building occupies most of the lot.
76 Chrystie Street (2) A class-e four story store or dwelling of second-class brick construction occupies most of the lot.

Bromley 1897: The block appears similarly as depicted on previous maps and atlases (Sanborn 1894; Robinson 1893).
Details or changes about specific lots are listed below with street numbers as shown, with lot numbers from Bromley 1897 in parentheses:
263 Grand Street (17) This structure is shown with a metal front.
121 Hester Street (32) This structure is shown as frame construction with a brick front or foundation.
125 Hester Street (34) This structure is shown as frame construction with a brick front or foundation.
82 Chrystie Street (5) The front structure on this lot is shown with three stories and a basement. It is the only structure on the block shown with a basement.
80 Chrystie Street (4) The back structure is indicated to be a stable.

Sanborn 1905: Many changes have occurred in the northern section of the APE. Lord & Taylor no longer occupies Lots 12 and 21-24 and a variety of new establishments now occupy those spaces. This map is particularly detailed with identified structures, and many buildings are indicated with basements. These additional details and changes to lots are described below, with lot numbers in parentheses.
269 Grand Street (20) This building has a basement and a sub-cellar and houses a synagogue as well as a store and light manufacturing.
267 Grand Street (19) This structure has a basement and houses a store and light manufacturing.

265 Grand Street (18) This structure has a basement in all areas except for the very back of the lot and houses dwellings and a restaurant.
263 Grand Street (17) This structure has a basement except for at the very back of the lot and houses a store and light manufacturing.
261-255 Grand Street/98 Chrystie Street (13) This large corner lot which once housed a Lord & Taylor Dry is now largely home to "The Grand Theater." Only a small structure at 261 Grand Street has a story in the first floor and light manufacturing. All areas of the lot have basements except for a small area at the front of 98 Chrystie Street. The Grand Theater has the following notes: "Heat: steam, Lights: gas & elec., four stand pipes...water tank, 5,500 gallons capacity." The stage is located along the east side of the lot and asbestos is indicated.
85 and 83 Forsyth Street (21 and 22) Once part of the Lord & Taylor Dry Goods store, these two lots house bowling alleys and stories on the first floor, dance halls and lodge rooms on the upper floors. All structures on the lot have basements except for a small two story structure in the middle of Lot 21.
81 and 79 Forsyth Street (23 and 24) These lots were also part of the Lord & Taylor Dry Goods store, but now house a large independent structure with a basement. The first floor and basement house Turkish baths, the second floor houses a synagogue, the third floor, a steam laundry; and the fourth floor, a collar and cuff factory. A steam boiler is shown in front of 81 Forsyth Street
77, 75, 73 and 71 Forsyth Street (25, 26, 27 and 28) Each of these lots has a mixed commercial/residential structure in front and a dwelling in back with a yard in between. No structures are depicted as having a basement. Lot 25 has a small structure in the back yard and Lots 26 and 27 each have two small structures in the back yards.
69 and 67 Forsyth Street (29 and 30) Each of these lots has a mixed commercial/residential structure in front with a basement and a dwelling in back with a yard in between. The front structure at 67 Forsyth Street houses a bakery. Both have small structures in the back yard.
65 Forsyth Street (31) The structure on this lot has a basement.
63 Forsyth Street/121 Hester Street (32) The structure at 63 Forsyth Street has a basement. The lot at 121 Hester Street is shown as a Chinese Laundry. It is unclear if it has a basement.
123 and 125 Hester Street (33 and 34) What used to be several frame structures now appears to be several interconnected structures, the details of which are unknown. There appears to be a small yard present at the back of these lots.
127, 129 and 131 Hester Street (35) The warehouse formerly on this lot is no longer depicted; the lot appears empty.
133 Hester Street (37) The structure on this lot houses a synagogue and has a basement.

135 Hester Street/74 Chrystie Street (1) The structures on this lot have no basements.
96 Chrystie Street (12) The structure has a basement and houses a bakery.
94 and 92 Chrystie Street (11 and 10) These two structures have basements.
90 Chrystie Street (9) The front structure has no basement but the smaller structure at the back of the lot does have a basement.
88 Chrystie Street (8) The structure that occupies most of the lot has a basement.
86 Chrystie Street (7) The front and back structures are shown with basements. The front structure is labeled "Paints B."
84 Chrystie Street (6) The front structure has a basement, the back structure does not.
82 Chrystie Street (5) The structure has a basement.
80 Chrystie Street (4) The main structure has a basement and now extends over most of the lot, covering the previous yard and leaving a small yard in back where previously there was a small structure.
78 Chrystie Street (3) The structure does not have a basement.
76 Chrystie Street (2) The structures on this lot do not have basements and the front structure is a Chinese Laundry.

Bromley 1911: The lots on this atlas are depicted more simply than on the Sanborn's map of 1905, but nonetheless reflect most changes and add a few. Notably, there are no basements indicated for any structures here except for two back structures at 86 and 84 Chrystie Street (Lots 7 and 6). Changes are noted below, lot numbers in parentheses:
163 Forsyth Street/121, 123 and 125 Hester Street (32, 33, 34 and 35) The structures once here are shown as a single six story brick structure labeled Lot 32. A small yard is present in the northwest corner of the combined lot.
127, 129 and 131 Hester Street (35) This lot which was shown empty on the previous map has a brick structure covering most of it.
133 and 135 Forsyth Street/ 76 and 74 Chrystie Street (37, 1 and 2) These lots are shown entirely covered by a brick structure labeled as Lot 1.
140 and 138 Chrystie Street/21 and 25 Delancey Street (9 and 10, now 10) What used to be two structures is now one six story brick structure with a small square yard located along the south side of the combined lot.

Hyde 1913: This atlas shows different details compared with previous maps and atlases. Sidewalks are shown about 15 feet wide on both sides of Forsyth and Hester Streets. A 4'x 2'8" brick sewer line is indicated on the east side of Forsyth Street and the south side of Hester Street. Additionally, 6" and 12" water mains are shown on the west side of Forsyth Street and water mains are shown on the north side of Hester Street. Fire hydrants are depicted in front of the following addresses:

265 Grand Street; 87, 81, 71 and 63 Forsyth Street; and 121 and 131 Hester Street.
Details and changes on specific lots are noted below, lot numbers in parentheses:
265 Grand Street (18) This structure houses the "Unique Theatre."
261-255 Grand Street/98 Chrystie Street (13) The entrance to 'The Grand Theater' is located on Grand Street.
85 and 83 Forsyth Street (21 and 22) There is a stoop along the south front of 85 Forsyth Street.
77 Forsyth Street (25) The structure at the back of the lot is no longer indicated.
69 Forsyth Street (29) The front structure has a hotel or saloon with a liquor license.
63 Forsyth Street/121, 123 and 125 Hester Street (formerly 32, 33 and 34--now 34) This lot has a stoop at 63 Forsyth Street at the north side of the lot.
127, 129 and 131 Hester Street (35) The brick structure at this lot has a central stoop.
133 and 135 Hester Street/74 and 76 Chrystie Street (37, 1 and 2--now 1) This large structure has a stoop at 76 Chrystie Street. A small yard is present along the north side in the center of the combined lots.
82 and 80 Chrystie Street (5 and 4) These structures have central stoops facing the street.
78 Chrystie Street (3) This structure has a stone facade.

Bromley 1916: The APE on this atlas is very similar to Bromley 1911 and Hyde 1913. Again, very few buildings are shown with basements. The only structure shown with a basement is an interior building at 77 Forsyth Street. Differences in the lots are noted below, with lot numbers in parentheses:
85 and 83 Forsyth Street (21 and 22) These two lots house a structure called the Grand Lyceum. The back structure on the lots is combined and is connected to the Grand Theatre at the corner of Chrystie and Grand Streets.
81 and 79 Forsyth Street (23 and 24) These two lots house a large structure now labeled the Forsyth Building.

Sanborn 1922: This map is too dark in places to discern detail about some of the lots within the APE themselves, which are similar in layout to Bromley 1916 but with the added detail of Sanborn 1905 where most structures are shown with basements. A 6" water pipe and a 12" high-pressure water pipe are shown on Forsyth Street, and a 12" water pipe, 6" water pipe and a 12" high-pressure water pipe are shown on Hester Street. Additional street addresses are given along Delancey Street and are indicated below:
269-263 Forsyth Street (20, 19, 18 and 17) Each of these structures houses some light manufacturing as well as a store.
83 Forsyth Street (22) This structure houses a Provisions store.

86 Chrystie Street (7) This structure houses some light manufacturing as wells as a store and dwelling. The structure in back is shown with a basement.

Bromley 1925: Figure 4.6-8. This is the last atlas described here showing the block prior to preparations for the construction of the Sara Delano Roosevelt Park and is largely identical to the 1916 Bromley atlas. Lot details, specifically remaining open yard spaces are described below, with lot numbers in parentheses:

269, 267 and 265 Grand Street (20, 19 and 18) There is no yard space on any of these lots.

263 Grand Street (17) There is a very small yard at the back of this lot.

261-255 Grand Street/98 Chrystie Street (13) The "Grand Theatre" covers nearly all of this lot plus the back of 85 and 83 Forsyth Street. A very small open space is present along the central south side of the lot.

85 and 83 Forsyth Street (21 and 22) There is no open space on this lot and the structure at the back of the lot connects with the Grand Theatre on Lot 13.

81 and 79 Forsyth Street (23 and 24) The Forsyth Building takes up most of the lots, leaving a very narrow yard at the very back.

77, 75, 73, 71, 69 and 67 Forsyth Street (25, 26, 27, 28, 29 and 30) Each of these lots has a structure in front and back with a small yard in between. The structure at the back of Lot 25 (77 Forsyth Street) is shown with a basement; it is the only structure shown with a basement on the entire lot (contrast with Sanborn's maps).

65 Forsyth Street (31) The structure on this lot has a small yard in back of it, and open areas on the north and south sides of the building.

63 Forsyth Street/121, 123 and 125 Hester Street (32, once also 33 and 34) The structure covers most of these lots, leaving a small yard in the northwest corner of former Lots 33 and 34.

127 and129 Hester Street (35) There is a yard at the back of this large lot.

131, 133 and 135 Hester Street/74 and 76 Chrystie Street (1, once including 37, 1 and 2) 131 Hester Street appears to be part of Lot 1, and only a small square yard exists on the north side in back of 133 Hester Street.

96, 94 and 92 Chrystie Street (12, 11 and 10) These structures each have a small yard in back and small airshafts along the north and south sides of the buildings.

90 Chrystie Street (9) There is a yard between the front and back structures on this lot as well as a very narrow alleyway along the north side of the front structure.

88 Chrystie Street (8) The lot has a small yard at its back and narrow airshafts along the north and south sides of the structure.

86 and 84 Chrystie Street (7 and 6) Both lots have yards between the front and back structures.
82 Chrystie Street (5) The lot has a small yard behind the main structure, and narrow airshafts along the north and south sides of the structure.
80 Chrystie Street (4) There is a yard at the back of this lot as well as a very narrow alleyway along the north side of the front structure that does not open onto the street
78 Chrystie Street (3) The lot has a medium to small-sized yard in back.

Bromley 1930: The block is shown completely cleared of all development. A rectangle is defined in the middle of the block with the following dimensions:
Grand Street, 125,
Forsyth Street, 391.1 3/5,
Chrystie Street, 390.0 1/2.
Hester Street, 125.

Bromley 1934: The block has now been redeveloped as the Sarah (sic) Delano Roosevelt Park. Hester Street is no longer a thoroughfare, as the park crosses Hester Street to the south, although Grand Street still passes through on the north side of the block. The park is 160 feet wide east-west. Chrystie Street is shown approximately 30 feet wider than previously, cutting into the east side of former Lots 1-13. Forsyth Street is shown approximately 20 feet wider than previously, cutting into Lots 20-32. In the center of the former block, a large rectangular section is labeled "Girls Playground, Depressed Area." This would include interior areas of former Lots 2-31. The area is 310 feet north-south by 100 feet east-west. A walkway surrounds the park with an opening onto Grand Street mid-block. The sidewalk on Grand Street is still present but there is no sidewalk indicated on Chrystie or Forsyth Streets bordering the park.
A 70 by 80 foot Comfort Station is located south of the Girls Playground, the northern 15 feet of which are centered over the former area of the Hester Street roadbed. The rest of the Comfort Station is located on Block 302 to the south.

Sanborn 1951: The area is labeled "Public Park." The Comfort Station indicated on Bromley 1934 is shown with a basement. There are hydrants noted at the corner of Grand and Chrystie Street (high pressure), Forsyth and Grand Street, mid-block on Forsyth Street on the west side (high pressure), one mid-block on Forsyth Street on the east side, and hydrants on all corners within the APE except the south east at Hester and Forsyth Streets (the northwest corner hydrant is high pressure).

Bromley 1967: The APE is depicted here the same as on Bromley 1934, except the area is labeled "Public Park."

Bromley 1974: The APE is the same as shown on Bromley 1967, except for the block has been relabeled as part of Block 302 which is immediately to the

south. Additionally, *dimensions are given*: Grand Street 125, Forsyth Street 828.1 1/8+ and Chrystie Street 828.6+. The dimensions along Forsyth and Chrystie Street extend from Grand Street to Canal Street.

Sanborn 2001: Figure 4.6-1. The APE is the same as depicted on Bromley 1974 and is labeled Block 302 along with the block to the immediate south.

Street Elevation Table:

Data Source	Grand Street and Forsyth Street	Hester Street and Forsyth Street	Grand Street and Chrystie Street	Hester Street and Chrystie Street
1865 Vielé	37'	40.9'	35.7'	44'
1885 Robinson	40.8'	40.8'	40.9'	38.2'
1897-1974 Bromley	40.1'	40.4'	40.1'	38.3'
2001 Sanborn	40.1'	40.4'	40.1'	38.3'

Tax and Directory Table:

Note: Lot numbers are shown in parentheses after the street address.

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 302/305: Grand, Forsyth, Chrystie, and Hester Streets								
269 Grand Street (20) (251 Grand Street in 1844 and 1834)	no info.	see below	P. T. & T. C. Cumberin g	James Snydam	J. P. Carter, barber, Richard Nixon, liquors (also see 87 and 89 Forsyth Street at Grand Street)	Henry Robinson	Henry Robinson	Henry Robinson
267 Grand Street (19) (249 Grand Street in 1844 and 1834)	no info.	see below	Miller & Stoutenbu rg	Miller & Hortenbur g	W. J. Wood, bakery	B. Bornhard	B. Bornhard	B. Bernhard
265 Grand Street (18) (247 Grand Street in 1844 and 1834)	no info.	see below	John W. Degraw	John D. Welsh	W. & J. Simpson, pawnbrokers, John Littledale, variety	S. Bradford	Wm. H. Bradford	J. Bertrand
263 Grand Street (17) (245 Grand Street in 1844 and 1834)	no info.	see below	Samuel Wignall	Samuel Wignall	E. H. Panne, variety, R. E. Roberts, stationery REAR W. S. Pierson, carpenter	S. Bradford	John E. McGuire	John F. Maguire

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
261-255 Grand Street/98 Chrystie Street (13) (243, 241, 239, 239 ½, and 237 Grand Street in 1844 and 1834, Chrystie Street was First Street in 1808)	Mann Gerarden (98 First Street)	see below Francis H. Dominick, Seth Corwin (Chrystie Street) Thomas Hays (98 Chrystie Street)	Samuel Wignall (243 Grand Street) Daniel Goodman (241 Grand Street) John Lane (239 Grand Street) Heirs of T. Domonic k, John H. Hankin (237 Grand Street) Heirs of T. Hays (98 Chrystie Street)	Samuel Wignall (243 Grand Street) Frederick Munden (241 Grand Street) Hopkins & Hanley (239 and 239 ½ Grand Street) John F. Bailey (237 Grand Street) Derritt Bishop (98 Chrystie Street)	W. H. Smith, lamps, G. R. Soloman, professor, G. R. Soloman, milliner (261 Grand Street) Salmon Bankman, ribbons (259 Grand Street) vacant lot (257 Grand Street) James Thompson, fruits, William Spencer, coals, Samuel Pim, agent (255 Grand Street) now building (98 Chrystie Street) Anthony Churchill (col'd), smith, J. R. Goungs, smith (100 Chrystie Street at Grand Street)	Lord & Taylor	Lord & Taylor	Lord & Taylor

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
85 Forsyth Street (21) (Second Street in 1808)	Enoch Hoyt	Enoch Hoyt Stephen Peck Martin Luff	John M. Luff	Ann Gilbert	Wm. Harris, confectioner, William Gleeson, shoemaker, N. B. Walker, barber, John Carey, fruit, J. W. Jennings, jeweller, Patrick McGrane, framemkr (87 and 89 Forsyth Street at Grand Street, also see 269 Grand Street) David Hickey, grocer, Joseph Hadlock, carpenter, Peter Ennis, tinman, Thomas Wainright, barber, John McCarty, joiner, --- --- Millan REAR Bridget Farley, Salmon Parmele, mason, Ann Joyce, washing, John McHugh, scalemaker (85 Forsyth Street)	Ann Goelet	Ann Goelet	A. Goetlet
83 Forsyth Street (22) (Second Street in 1808)	John Edenton	Enoch Hoyt	Jeremiah Lowland	Ann Gilbert	Patrick Healy, grocer, Thomas White, butcher, Daniel Lonergan, tailor, Francis Dinsella, clerk, Richard Moore, carpenter REAR John Rogers, laborer, Michael McMahon, shoemaker	Ann Goelet	Ann Goelet	A. Goetlet

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
81 Forsyth Street (23) (Second Street in 1808)	Francis Dominick	Edward Messen	Mary Whatson	Andrew Surrie crossed out, R. E. Mount penciled in	Denis Carey, shoemaker, Jennett Betts, J. H. Betts, builder, Thomas Seaman, tailor, John Longley, chairmaker REAR Wm. Lavinus, chairmkr, Grub & Laun, cabinetmakers, Henry Grub, John Laun	Richard E. Mount	Lord & Taylor	Lord & Taylor
79 Forsyth Street (24) (Second Street in 1808)	Conrad Jordan, Isaac Dreamer, Mr. Peacock, Mr. Gable	Conrad Jordan	Conrad Jordan	R. E. Mount	Peter Esdale, boilermaker REAR Thomas Toomy, shoemk, Hugh Gibney, bootmaker, Mary McEnery, Thomas Fenton, carpenter, J. A. Lucas, frame maker	Richard E. Mount	Lord & Taylor	Lord & Taylor
77 Forsyth Street (25) (Second Street in 1808)	Jacob Michels, Mr. Ford, Mr. Roosevelth	George Dominick, William Hupick	J. W. Domonic k	John B. Overton, Juror	John Schynberger, shoemaker, John Molaf, tailor, Thomas McCormick, architect, H. F. Deaves, rulemaker, Mary A. King, Susan Theol, seamstress REAR Francis Lapier, James Boyce, caster, James McHvena, tailor, G. F. Seethwill, butcher, James Keefe, laborer, John Storer, engineer, John Hume, wireworker	John B. Overton	Adam Nell	Adam Wall

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
75 Forsyth Street (26) (Second Street in 1808)	Mr. Kitcher, Mr. Place	Heirs of Wm. Shatrell	John Shamborough	John Shamburgh, juror Wetteran	J. B. Wetteran, grocer, Isabelin Akers, Edward Weber, musician, James Vansicklin, framemakr, Charles Mende, musician, Frederick Bargner, musician REAR Jacob Lotz, shoemaker, George Dobbs, machinist, Frederick Freitag, shoemaker, Jacob Shiebla, tailor, W. C. Scott, bricklayer, Patrick Golden, car man, John Kisar, laborer	John B. Wetteran	John B. Wetteran	John P. Wellman
73 Forsyth Street (27) (Second Street in 1808)	John Banta, William Cornwall	George Lorillard, William Mathews	Heirs of G. Lorillard	Peter Lorillard	Mary Northrop, sewing, Peter Pitcher, bookbinder, John Wheeler, porter REAR Thomas Waldo, Oliver Petit, fish	Peter Lorillard crossed out, J. B. Wetteran penciled in	John B. Wetteran	John P. Wellman
71 Forsyth Street (28) (Second Street in 1808)	Widow Bradford	Christian Ritter, Edward Welsh, Joseph Elmer	Christian Ritter	Christian Ritter	Michael Donohoe, carpenter, John Hamler, roller	John B. Wetteran	John B. Wetteran	Charles Van Hoff
69 Forsyth Street (29) (Second Street in 1808)	Widow Bradford	Christian Ritter	Youngs Ritter	Christian Ritter	H. A. James, boxmaker REAR Dugan & Jacobs, metals, William Dugan, George Jacobs	James B. Brady	James B. Brady	James B. Brady

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
67 Forsyth Street (30) (Second Street in 1808)	Henry Singer	Henry Singer	Youngs Ritter	Christian Ritter	S. Hiler & Co., stair rods, H. A. James, saw mill, Gerhard & Saxe, opticians, J. Gerhard, Charles Saxe, Cornelius Hurly, framemaker, Henry Kneip, turner, Alanson Goldon, framemaker, F. DeWilde, saw mill, George Birks, ales REAR John Myrick, boxmaker, Otis Bridges, sash & blinds, Samuel Sigler, looking glasses	James B. Brady	James B. Brady	James B. Brady
65 Forsyth Street (31) (Second Street in 1808)	Harry Brown	George Jacobs	James R. Whiting	John Walker	Pole Rapp, shoemaker, REAR John Wogar, boxmaker, Peter Neushwemler, grocer, Charles Seale, confectioner, France Peckla, machinist, William Ilenca, bookbinder, Frederick Funk, tailor, Daniel Barihet, shoemaker, George Kendgt, saddler	John Walker	Catharine Walker	Catherine Walker
63 Forsyth Street/121 Hester Street (32) (Forsyth Street was Second Street in 1808)	no info.	Baldwin & Falkmeer, Martin Luff, artillery (121 Hester Street)	Doct. Baldwin, Wm. Vanzant (121 Hester Street)	Est. Dr. Baldwin (121 Hester Street)	John Reisky, butcher (63 Forsyth Street) J. H. Reiski & Co., butchers, Joseph Hundt, August Reiski, Julia Cook, boarding (121 Hester Street)	Mr. Hund (121 Hester Street)	Fredk. Rollwagon (121 Hester Street)	John Falconer (121 Hester Street)

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
96 Chrystie Street (12) (First St. in 1808)	Jacob Lob	Francis F. Dominick	John Baldwin	John Baldwin	now building	Simon Stiger	Simon Stiger	Henry Silverhorn
94 Chrystie Street (11) (First St. in 1808)	J. Frasher	Samuel Buckbee, Harmony	John Baldwin	Henry Silverhorn	Henry Silverhorn, butcher	Henry Silverhorn	Henry Silverhorn	Henry Silverhorn
92 Chrystie Street (10) (First St. in 1808)	John Linderman	Mrs. Colles	Hannah Linderman	Hannah Lindman	Agnes Hammond	Henry Silverhorn	Henry Silverhorn	Henry Silverhorn
90 Chrystie Street (9) (First St. in 1808)	Alexander Lankeneau	Widow Spier, William Patten	G. Shrady	John Shrady	Cornelius Luby, grocer	John Schrady	John Schrady	John Schrady
88 Chrystie Street (8) (First St. in 1808)	Cornelius Schuyler	Huron Betts, Thomas Mason	Heirs of H. Betts, G. Douglas	William Pinchback, George Douglas, juror	Elizabeth Gatly, boarding	William Pinchback	Wm. Pinchback	Wm. Pinchback
86 Chrystie Street (7) (First St. in 1808)	Jacob Cocks, Mr. Callender	James Warner, Richard Lankinaw	Charles Anderson	Henry Ketcham	Elizabeth E. Stone, fancy store	Amos Beldon	S. W. Devoe & H. Koenig	H. Koenig
84 Chrystie Street (6) (First St. in 1808)	Widow Bradford	Widow Bradford	John Turner	John Turner	H. N. Wilhelm, physician, Herman Spangenberg, instrument maker	L. Gamprecht	L. Gamprecht	H. Koenig
82 Chrystie Street (5) (First St. in 1808)	Widow Bradford	George Hansen	Mrs. Patten, Wm. Dodge	William Patten	Charles Wagoner, boatman	Thomas Jackson	Thos. T. Jeremiah	Thos. T. Jeremiah
80 Chrystie Street (4) (First St. in 1808)	Gilbert Haight	Gilbert Haight	Peter McCarthey, G. Gorum, James A. Dellinger	Andrew Gassner	S. R. Strickland, engineer, A. B. Nicoley, clerk, Richard Mitchell, clerk	Est. of Peter Gasner	John Rowe	John Rowe
78 Chrystie Street (3) (First St. in 1808)	Nicholas Conklin	Nicholas Conklin	Nicholas Conklin	Lucretia Conklin	J. B. Marven, optician	John G. Henry	John G. Henry	J. Heifner
76 Chrystie Street (2) (First St. in 1808)	no info.	John W. Lenning	no info.	Blunt & Syms	John Neuschwander, bootmkr	William J. Syms	Wm. J. Syms	Wm. J. Syms
74 Chrystie Street/ 135 Hester Street (1) (Chrystie St. was First St. in 1808)	Widow Hoffman, Henry Gable (74 First Street)	Widow Hoffman, (Hester Street)	no info.	Blunt & Syms (74 Chrystie Street)	Anthony Gockern, grocer (74 Chrystie Street) Mathias Benst, bootmaker, Charles Ernenvine, hatter (72 Chrystie Street)	William J. Syms (74 Chrystie Street)	Wm. J. Syms (74 Chrystie Street)	Wm. J. Syms (74 Chrystie Street)

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
123 Hester Street (33)	no info.	Faulkineer & Baldwin, Couperth waite, Isaac Lennings	Doct. Baldwin	Est. Dr. Baldwin	Sarah Jones, F. B. Williams	Mr. Hund	Fredk. Rollwagon crossed out, Mr. Falkner penciled in	John Falconer
125 Hester Street (34)	no info.	Faulkineer & Baldwin, Job Couperth waite	Doct. Baldwin	Est. Dr. Baldwin	W. L. Borrowes, clerk, Henry White	Mr. Hund	Fredk. Rollwagon crossed out, Mr. Falkner penciled in	John Falconer
127 Hester Street (35)	no info.	Faulkineer & Baldwin, George W. Dean, Joseph Hadie	Doct. Baldwin	Martin Luff	Pia Brothers & Schmueriger & Co., pewter factory, Andrew Pia, Peter Pia, John Pia, Francis Schmueriger	F. Rollwagon	Fredk. Rollwagon	F. Rollwage n
129 Hester Street (35)	no info.	Faulkineer & Baldwin, Samuel Kepam, artillery	Doct. Baldwin, David Grenoch	Martin Luff	(refused)	J. B. Little	Mr. Falkener (Agt)	Mr. Faulkner
131 Hester Street (36)	no info.	Widow Hoffman	Martin Luff	Martin Luff	Lewis St. John, Catherine Duffey, teacher	Mrs. Luff	Mrs. Luff	Mrs. Luff
133 Hester Street (37)	no info.	Widow Hoffman	Martin Luff, David Sampson	Martin Luff	Elizabeth Bluff, Anthony Cocklan, grocer	Mrs. Luff	Mrs. Luff	Mrs. Luff

Note: The 1820 tax assessment records give no ward, street or lot numbers for the lots on Grand Street. The owners/occupants of the south side of Grand Street are listed as follows, from Chrystie to Forsyth Street: Susan Carr, Robert Huckett, Frances Dominick (with John Redman), Mrs. Ferris, William M. Lomer (with Cromley), and Silas Newman. The 1808 tax assessment records also give few corresponding ward, street or lot numbers. Names can be matched from later records in some cases, but for Grand Street and Hester Street, there were no owners/occupants registered in 1808 that were then listed in 1820. This could imply that lots were either under different ownership or occupancy, exempt from taxation, or vacant.

Precontact Sensitivity:

The area of former Block 305 (now Block 302 north) and the adjacent Forsyth Street and former Hester Street roadbeds was open, gently sloping meadowland in precontact times and was close to a fresh water source, located about 1,800 feet southwest of the APE (Viele 1865; see Ratzer 1766/67, Figure 4.6-2). Although no sites have been recorded specifically in the immediate vicinity of the APE, the area would have been suitable for habitation or use. A parcel of land called "Werpoes" by Native Americans, as recorded in a land patent from 1651, is identified in the immediate vicinity of the APE (Stokes 1928: 72), and a habitation site called "Schepmoes" was additionally recorded to the north of the APE at approximately East 10th Street and Second Avenue (Grumet 1981).

Activities and development since the colonial era would have likely disturbed precontact remains to some degree. Farming was prevalent in the area during the 17th century under the Dutch West India Company and in the 18th century, when the area of the APE was included as part of James Delancey's farm (Stokes 1928; Grim 1744; Delancey Farm Map 1865). However, plowing is not likely to have disturbed the ground to a depth of more than about one foot. As such, it is very unlikely that surface scatter or other surface remains from the precontact era would still exist. If any precontact era archaeological remains survived, they would be more likely to be subsurface features such as storage or trash pits.

Soil borings within the APE (see Borings 6 through 11, Engineering Services 1981, and Borings O, R, U and Y, Engineering Services 1984, Appendix 4.6.7.3) indicate that the majority of the APE is underlain by about 14 feet of fill, which is probably associated with 19th century development. Additionally, a boring from the northwest corner of the block (Boring R) shows 22 feet of fill. However, since it is now known if fill represents the disturbance from historical activities versus added strata, the fill is conservatively assumed to have been added with potential precontact levels buried beneath it. In this scenario, the majority of 19th and 20th century development would not, then, have affected the precontact surface, as even structures with basements may not have affected 14 feet below the surface, and less likely 22 feet below the surface. However, the water table has been observed as deep as 33 feet below the surface (see Appendix 4.6.7.3), and so 19th century wells would have to penetrate to that depth. The APE is thus considered to be moderately sensitive for precontact remains from about 15 to 20 feet below grade for the majority of the APE, and 23 to 28 feet below grade in the northwest corner of the block at Chrystie and Grand Streets.

Historical Sensitivity:

During the 17th century, Block 305 and the adjacent Forsyth Street and former Hester Street roadbeds were part of farmlands associated with the Bouwery parcels administered by Director Kieft of the Dutch West India Company (Stokes 1918). In particular, the APE is located in a section assigned to Gerrit Jansen in 1645. The APE became part of James Delancey's Farm in the 18th century, but it is unclear if the area of the block was farmed (Figure 4.6-2, Ratzer 1767; Grim 1744; Delancey Farm Map 1865; Stokes 1918). No particular structures are shown within the APE during these centuries, but this does not preclude the possibility of their existence. By 1766, the APE appears to be vacant, and is not depicted as farmland (Montresor 1766). In 1767, a map shows the block in its present form, however the streets are not all named (Figure 4.6-2, Ratzer 1767). At the end of the 18th century, British fortification walls passed directly through the block to the north, just north of Grand Street (Block 418), with an attached garrison or fortification structure (British Headquarters Map 1782, 1797). By the end of the century, the fortifications are no longer shown (Taylor Roberts 1797).

Lower Manhattan, up to and including the APE, was fully gridded by 1797 and structures are shown at this time on all corners of the block except the southeast, with two additional structures on Chrystie Street and another structure on Forsyth Street (Taylor Roberts 1797). By 1852, the block is shown as fully developed with 59 structures (Dripps 1852). Property assessments dating from 1808 indicate with certainty that Chrystie and Forsyth Streets were

occupied by that time, and Grand and Hester Streets were lotted for development by at least 1820 (see tax table, above). Many structures are later shown with stores on their first floors (Figure 4.6-5 Perris 1857-62; Sanborn 1894). The occupants of the block by the mid-19th century included as many skilled as non-skilled workers (see 1851 Directory information, tax table, above). The Viele (1865) map shows that sewers were available by mid-century, and while many structures in the APE probably had indoor plumbing, some may have continued to depend on wells and privies. During the 19th century, it is likely that wells or privies were present in some of the open yard spaces at the time, which are detailed below.

Between 1925 and 1930, all structures on the block were razed (Bromley). Within the next five years, the block was re-developed as the Sara Delano Roosevelt Public Park (Bromley 1935). Hester Street between Forsyth and Chrystie Streets was closed by the park, but Grand Street remained a thoroughfare. Chrystie Street was widened by about 30 feet to the east, defining the west boundary of the park and this APE. Forsyth Street was widened by about 20 feet to the west, defining the east boundary of the park. The center of the park was initially indicated as a "Depressed Area," but was not depressed more than six to eight feet so this would not have extended below the depth of fill, discussed below (Bromley 1934).

Soil borings within the APE (see Borings 6 through 11, Engineering Services 1981, and Borings O, R, U and Y, Engineering Services 1984, Appendix 4.6.7.3) indicate that the it is possible that the predevelopment surface is covered by about 14 feet of fill, which is probably associated with the development that occurred during the first half of the 19th century when the block was first defined and occupied. Additionally, a boring from the northwest corner of the block (Boring R) shows 22 feet of fill below grade. Furthermore, the water table has been observed as deep as 33 feet below the surface (see Appendix 4.6.7.3), suggesting that potential wells dating to the 19th century are likely to have reached that depth. These wells may have been constructed through the layer of fill.

Sewer lines, 4' x 2'8" brick, were indicated on the east side of Forsyth Street and the south side of Hester Street (Hyde 1913). WPA Subsurface Conditions Maps (Map No. 85, 1937; Map No. 73, 1939) detail clusters of utilities under Forsyth Street. The utilities include electricity ducts, gas and water pipes and postal cables, all of which are located five feet or less beneath the surface of the roadbed and were not located under the sidewalk at the time. The sewer line is shown in the middle of the street and is considerably deeper, located ten feet below the surface. The utilities do not appear to have affected levels below fill. No WPA maps are available that show the depths of the utilities under Hester Street, but other maps also note a 12" water pipe, 6" water pipe and a 12" high-pressure water pipe on Hester Street (Sanborn 1922, 1951). It is likely that the configuration of these utilities are similar to that of Forsyth, Broome and Grand Streets, where most utilities are relatively close to the surface, with sewer lines buried more deeply. Overall, it is not likely that the utilities noted here are found beneath the fill layer.

Overall, most lots had small to moderately-sized yard areas prior to the construction of the park. Yards were present on Lot 17 (263 Grand Street), Lots 23, 24, 25, 26, 27, 28, 29, 30, and 31 (81, 79, 77, 75, 73, 71, 69, 67 and 65 Forsyth Street), Lots 13 (south side), 12, 11, 10, 9, 8, 7, 6, 5, 4, 3 and the north of Lot 1 (98, 96, 94, 92, 90, 88, 86, 84, 82, 80, 78 and 76

Chrystie Street) and Lots 32 (northwest corner) and 35 (125, 127 and 129 Hester Street). Structures on Lots 5, 8, 10, 11, 12 and 31 also had narrow airshafts along the sides of the buildings which may have afforded open areas on the ground (Bromley 1925; Sanborn 1905). Any of these areas have the potential to hold shaft features such as wells or privies from earlier buildings dating from the 19th century or earlier. These 19th century features would be located within and probably beneath the fill layer, while earlier remains from the 18th or 17th centuries would probably be located beneath the fill.

Some lots never had structures with basements. The lots include Lots 26, 27 and 28 (75, 73 and 71 Forsyth Street), Lots 3 and 1 (78, 76 and 74 Chrystie Street), and Lots 32 (west two-thirds) and 35 (123, 125, 127, 129 and 131 Hester Street). Additionally there are some lots with more than one structure where only one has a basement. Structures without basements are found on Lot 25 (77 Forsyth Street) where only the back structure is shown with a basement, Lots 29 and 30 (69 and 67 Forsyth Street), where only the front structures are shown with basements, Lot 9 (90 Chrystie Street) where only the back structure has a basement, and Lot 6 (84 Chrystie Street), where only front structure has a basement. These areas are more likely to have undisturbed shaft features predating the 19th century development. The structure at 269 Grand Street (Lot 6) is listed with a sub-cellar as well as a basement, and is more likely to have disturbed levels below the fill, affecting potential 17th and 18th century remains, if any existed.

In sum, Block 305 is moderately sensitive for pre-19th century historic remains in its entirety except for Lot 6, given that the pre-19th century surface may lie buried beneath about 14 feet of fill with up to 22 feet of fill near the northwest corner. It may be that only 19th shaft features such as wells or particularly deep basements would have affected the 17th and 18th century landscape, which may lie beneath the fill. For 19th century features such as wells or privies, Block 305 is moderately sensitive in former open yard areas on Lots 1, 3-13, 17 and 23-32. These potential resources may be present from the surface down to the approximate depth of the water table at 33 feet below grade, and possibly deeper.

Block 302:

The Sara Delano Roosevelt Park APE includes the southern portion of Block 302, formerly the entirety of Block 302 until it merged with Block 305 to the north (Figure 4.6-1). Heretofore this block will be referred to as Block 302. It is bounded by Block 305 (now Block 302 north) of Sara Delano Roosevelt Park to the north, Forsyth Street to the east, Chrystie Street to the west, and Canal Street to the south. The Forsyth Street roadbed between Hester and Canal Streets and Canal Street roadbed between Forsyth and Chrystie Streets adjacent to the block are included in this APE. Hester Street was once a throughway but currently does not pass through the park; it is discussed in the preceding section that addresses Block 305. The current APE includes former Lots 1-38, with Lot 39 falling outside of the APE to the west. Lots 1-8 facing Chrystie Street were truncated by approximately 30 feet on the west side when Chrystie Street was widened during the construction of the park in the 1930s; Lots 17-31 facing Forsyth Street were truncated by approximately 20 feet on the east side when Forsyth Street was widened during construction of the park; Lot 39 at the corner of Chrystie and Canal Streets was completely covered over by the widening of Chrystie Street and Lot 38 on Canal Street was also partially truncated by the widening of Chrystie Street during construction of the park.

Cartographic History:

Grim Plan 1744: The APE appears to be in farmlands possibly associated with the "J. Delancy's Farm" located outside of the APE to the northwest. A lateral road angling to the northeast from the approximate location of modern Canal Street runs off of the old Bowery Road to Boston, the current location of Bowery. Other than fences shown along the roads, there are no structures within this section of the APE.
The APE here is located about 1,600 feet northeast of the Collect Pond, a source of fresh water. The APE is also around 1,800 feet 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 Hester's (sic) Street and Nicholas Street (later Canal 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, Forsyth, Hester and Canal Streets (unlabeled). There are no structures indicated within the APE, which is shown as vacant land. Structures are shown, however, on the west side of Chrystie Street and the south side of Canal Street, outside of the APE.

Ratzer 1767: Figure 4.6-2. Bowry Lane (sic) is shown, as are Chrystie Street, Forsyth Street (both unlabeled), Hester Street and Nicolas Street (later Canal Street) (labeled). There are no specific structures indicated on the APE, although the area is shaded which suggests it is developed.

British Headquarters

Map 1782: 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. Within the APE, a row of structures is shown along the east side of Chrystie Street between Hester and Canal Streets.

Directory Plan 1789: Nearly all of the streets surrounding the APE are now labeled, including First Street (later Chrystie Street), Second Street (later Forsyth Street), Pump Street (later Hester Street), and Fishers Street (later Canal Street). Note that Canal Street was also temporarily called Pump Street. The area of the APE has no specific structures indicated, but is shown as developed.

British Headquarters Map 1797: This map is similar to the earlier 1782 British Headquarters Map. Fortifications are found north of the APE between Broome Street and Grand Street. A row of structures is shown along the east side of Chrystie Street between Hester and Canal Streets within the APE.

Taylor Roberts 1797: First (later Chrystie) Street, Second (later Forsyth) Street, Eagle (later Hester) Street and Pump (later Canal) Street are shown. Development is indicated all along Chrystie Street and at the corner of Hester and Forsyth Streets. The freshwater pond is shown about seven blocks southwest of the APE.

Bridges 1807: First (Chrystie) Street, Second (Forsyth) Street, Hester Street and Pump (Canal) Street are shown. The Collect Pond is not shown on this map.

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

Hooker 1829: The following street names are used on this map: Chrystie Street, Forsyth Street, Hester Street and Walker (previously Pump, later Canal) Street. An unidentified structure is shown fronting on Chrystie Street mid-block.

Colton 1836: This map is similar to Hooker 1829, except that two structures are shown mid-block on Chrystie Street.

Tanner 1836: This map is similar to Hooker 1829. The structure on Chrystie Street is labeled as an Independent Methodist church.

Bradford 1838: This map is the same as Colton 1836.

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

Dripps 1852: This is the first map to show the block fully developed. A total of 56 structures are shown. Within the APE, 40 structures face the street while 16 are located on the interior of the block. Within the APE, many lots facing Forsyth Street have large yards behind structures. On Chrystie Street, two large structures are identified, one as "Public School No. 7", the other as "Temple of the Imanuel."

Colton 1856: This map is similar to Tanner 1836.

Perris 1857-62: Figure 4.6-6. This is the first depiction of lots with street numbers and structural details. All modern street names are used: Hester, Chrystie, Forsyth and Canal Streets. No lot numbers are given here. Details are

listed below with street numbers as shown, with lot numbers from Bromley 1897 in parentheses:

110 Hester Street/61 Forsyth Street (17) This lot is covered by a commercial frame structure at the corner and a sequence of smaller frame structures facing onto Hester Street. A small open yard is present in the southwest corner of the lot

112 Hester Street (16) This lot has a sequence of three structures labeled "Special Hazards" along the east side of the lot, the front of which is frame, the second two are brick. There is an additional frame structure at the very back of the lot. There is a small alleyway along the west side of the lot opening onto a small yard.

114 Hester Street (15) Three interconnected commercial structures are present along the west side of the lot, the first two are frame and the back structure is brick. A narrow alleyway passes along the east side of the street-facing structure that leads to a small yard along the east side of the lot.

116 Hester Street (8) A brick structure takes up more than half of this lot with open yard in back.

118 Hester Street (8) A commercial frame structure occupies the front of the lot with another structure taking up most of the back except for a narrow yard along the east side.

120 Hester Street/74 Chrystie Street (8) This is a very narrow lot with a commercial frame structure covering most of it. The structure lies outside of the APE.

59 Forsyth Street (18) This lot has two commercial frame structures in the front with a brick structure at the back. An alleyway along the south side of the lot leads to an open yard and there is additional open space on the north side of the brick structure.

57 and 55 Forsyth Street (19 and 20) A large commercial brick structure occupies the front of these two lots while a series of interconnected structures labeled "Special Hazards" are located at the back of the lots. Constructed of both wood and brick, these back buildings are labeled "Brewery."

53, 51, 49 and 47 Forsyth Street (21, 22 and 23) Each of these lots has a brick structure in front and a much smaller outbuilding at the back of the lot with a substantial yard between the structures.

45 Forsyth Street (24) A frame structure at the front of the lot has an alleyway along the south side that leads to an open yard and a brick building at the back of the lot.

43 Forsyth Street (25) A frame structure at the front of the lot has an alleyway along the south side that leads to a small yard and a smaller frame structure along the north side of the lot, another small yard, and two small frame structures at the back of the lot.

41 Forsyth Street (26) A brick building at the front of the lot is separated from a smaller brick building at the back of the lot by a yard.

39 Forsyth Street (27) This lot houses a large brick building set back from the street by about 25 feet labeled "Episcop. Ch. of the Holy Martyrs."
37 Forsyth Street (28) This narrow lot has a frame structure in front and a large open yard with a small outbuilding at the back of the lot.
35 Forsyth Street (29) A commercial frame structure occupies the front of the lot, then a sequence of small frame structures plus an outbuilding, then an open yard and another frame structure at the back of the lot.
33 Forsyth Street (30) This lot has a brick structure with a narrow alleyway along the north side leading to an open yard and another brick structure at the back of the lot.
31 Forsyth Street/107 Canal Street (31) This small square lot is entirely covered by a commercial brick building.
109 Canal Street (32) A brick structure covers this small square lot.
111 Canal Street (33) A commercial brick structure covers this small square lot.
113 Canal Street (34) This small square lot is depicted as vacant.
115 Canal Street (35) A brick structure covers this very small lot.
117 Canal Street (36) A brick structure covers this very small lot.
119 Canal Street (37) This very small lot is depicted as vacant.
121 Canal Street (38) A brick structures covers this very small lot.
123 Canal Street/46 Chrystie Street (39) A commercial brick structure covers this small square lot, which is outside of this APE.
72 Chrystie Street (8) This narrow lot has a commercial frame structure in front and a yard in back. The structure lies outside of this APE.
70 Chrystie Street (8) This lot has a sequence of frame structures with a narrow alleyway along the south side and a small yard in back.
68 Chrystie Street (8) This lot has a commercial brick structure in front and a large yard in back.
66 Chrystie Street (8) Two interconnected frame structures are present at the front of the lot. An alleyway along the north side leads to a small yard and a larger commercial brick structure.
60-64 Chrystie Street (8) This area is occupied by a large brick structure labeled "Grammar Schl. No. 7." Open yard areas are present on the north and south sides of the structure and a narrow area is present at the very back of the structure. A very small frame structure is depicted in the northeast corner.
58 Chrystie Street (7) A brick structure labeled "Special Hazards" is shown at the front of the lot with a narrow alleyway along the south side of the structure leading to an open yard and a frame structure in back also labeled "Special Hazards." Additional open yard space is present on the south side of the frame building.

56 Chrystie Street (5) This large lot has a brick structure labeled "Jews Synagog" (sic) that is set back from the street by about ten feet. There is also a small yard in back of the structure.
54 Chrystie Street (4) A frame structure occupies the front of the lot with a narrow alleyway along the south side of the lot leading to an open yard and a brick structure at the back of the lot. There is also a narrower alley along the north side of the frame structure.
52 Chrystie Street (3) A brick structure is present at the front of the lot with a small frame structure attached. A yard is present behind with a small outbuilding in the back of the lot.
50 Chrystie Street (2) A commercial frame structure is present at the front of the lot with open yard space and three interconnected frame structures in the back that are labeled "Special Hazards."
48 Chrystie Street (1) A commercial frame structure is present at the front of the lot with two connected frame structures in back labeled "Special Hazards." A yard is present between them.

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

Vielé 1865: This topographic map shows the APE to lie within relatively flat meadowlands. Sewer pipes are shown on Canal Street, Broome Street and Forsyth Street. The Collect Pond is depicted on this map.

Delancey Farm Map 1865: This map shown proposed block and lot divisions; while blocks are consistent with prior and subsequent depictions, lots depicted here are not representative of development shown on other maps and atlases. There are no notable structures indicated within the APE.

Vielé 1874: This map is similar to Vielé 1865.

Bromley 1879: This atlas shows schematized lots with alternative numbers. Two transportation lines are shown on Canal Street. Additionally, a fire hydrant is indicated at the northwest corner of Canal and Forsyth Streets. The "Grammar Sch. No. 7" and "Synagogue" are shown on Chrystie Street, as is the "P. E. Ch." on Forsyth Street, as indicated on Perris 1857-62.

Robinson 1885: This map does not have the same level of detail as Perris 1857, and uses the same lot numbers as Bromley 1879. There are additional fire hydrants shown in front of 47 Forsyth Street and 112 Canal Street (south side). The hydrant previously shown at the corner of Canal and Forsyth Streets is shown slightly west on Canal Street. Transportation lines are still shown on Canal Street.
Differences or additional details about the lots or structures are listed below, with lot numbers in parentheses.
45 Forsyth Street (24) The main structure is shown as brick.
43 Forsyth Street (25) A stone-faced structure occupies over half of the lot.
39 Forsyth Street (27) The lot is shown entirely covered by a brick structure labeled "Holy Martyrs- P. E. Ch.."
113 Canal Street (34) A brick structure covers this lot.

119 Canal Street (37) A stone-faced structure covers this lot.
70 Chrystie Street (8) A brick structure is shown on this lot.
68 Chrystie Street (8) A wood frame stable is present at the back of this lot.
60-64 Chrystie Street (8) The "Grammar Sch. No. 7" has expanded on its north and south sides, leaving open yard areas in the northeast corner, north side and southwest corner.
56 Chrystie Street (5) The "Jewish Synagogue" still occupies this lot.
54 Chrystie Street (4) The front structure is now shown as brick.
52 Chrystie Street (3) A brick structure is present at the front of the lot with a small frame structure attached. A yard is present behind with a small outbuilding in the back of the lot.
50 Chrystie Street (2) Only a brick structure in front is now shown on the lot.
48 Chrystie Street (1) Only a brick structure in front is now shown on the lot.

Robinson 1893: Few changes have occurred in the lots, they are noted below with lots in parentheses:
114 Hester Street (15) The lot now houses a brick structure
116, 118 and 120 Hester Street/74 through 60 Chrystie Street (8) The Grammar School No. 7 has expanded to cover all of these former addresses; the given addresses are 118 Hester Street and 66 Chrystie Street. A large brick structure covers most of the extra-large lot with alleyways along the east side on Hester Street and south side on Chrystie Street leading to individual yard areas in back.
53, 51, 49 and 47 Forsyth Street (21, 22 and 23) What used to be four brick structures have now been rebuilt as three brick structures with very small yard areas in back.
39 Forsyth Street (27) The "Holy Martyrs P. E. Ch." is again indicated set back from the street.
35 Forsyth Street (29) The frame structure at the front of the lot has brick foundations.
56 Chrystie Street (5) The "Jewish Synagogue" still occupies the lot.

Sanborn 1894: This map includes specific information about each lot, including use of structure in some cases and number of stories. Fire hydrant locations are the same as noted on Robinson 1893. Six inch pipes are depicted on Forsyth Street and on Broome Street, each of which is 50 feet wide. Details or changes about specific lots are listed below with street numbers as shown, with lot numbers from Bromley 1897 in parentheses:
110 Hester Street/61 Forsyth Street (17) The structures on this lot are one, two and three stories.
112 Hester Street (16) The structure has five stories.
114 Hester Street (15) This is a class-D six story structure of First-class brick construction.

116, 118 and 120 Hester Street/ 60-74 Chrystie Street (8) The Grammar School No. 7 is largely composed of four story structures with several very small one story structures along the walls of two interior yards. Two steam boilers are indicated in the center of the structure.
59 Forsyth Street (18) This is a four story structure.
57 and 55 Forsyth Street (19 and 20) Front and back structures on each of these lots are five stories. The front structure at 55 Forsyth Street is First-class brick construction (store or dwelling).
51, 49 and 47 Forsyth Street (21, 22 and 23) The address 53 Forsyth Street is not associated with any structure on this map. Each structure is six stories and the structure on Lot 22 at 49 Forsyth Street is First-class brick construction (store or dwelling).
45 Forsyth Street (24) The front structure is five stories, the back has four stories.
43 Forsyth Street (25) The structure has three stories in front and one story at the back of the structure.
41 Forsyth Street (26) This large structure has five stories.
39 Forsyth Street (27) This structure is labeled "Church of the Holy Martyrs (Episcopal)."
37 Forsyth Street (28) This five story structure is First-class construction (store or dwelling).
35 Forsyth Street (29) This lot has a sequence of one, two and three story structures with only a very small open area along the south side near the back..
33 Forsyth Street (30) A six story structure covers most of the lot with small one story structures on either side.
31 Forsyth Street/107 Canal Street (31) A five story brick structure of First-class construction (store or dwelling) covers this lot.
109, 111, 113, 115, 117, 119 and 121 Canal Street (32, 33, 34, 35, 36, 37 and 38) Four, five or six story structures cover each of these lots. 113 Canal Street (Lot 34) is a brick structure of first-class construction.
58 Chrystie Street (7) The building has five stories.
56 Chrystie Street (5) The "Synagogue" has a tin roof.
54 Chrystie Street (4) Both front and back structures have six stories.
52 Chrystie Street (3) Both front and back structures have five stories.
50 and 48 Chrystie Street (2 and 1) Both structures have five stories.

Bromley 1897: The block appears similar to previous maps and atlases (Sanborn 1894; Robinson 1893). Some street numbers have changed on Forsyth Street: Lot 19 was previously called 57 Forsyth Street and Lot 20 was 55 Forsyth Street on Sanborn's 1894 and no 53 Forsyth address existed. Now, Lot 19 is called 55 Forsyth Street, Lot 20 is 53 Forsyth Street and there is no 57 Forsyth Street.
While this atlas is less detailed about some aspects of the structures on individual lots, basements are shown for the first time. Structures with

basements include the main structures at 48 and 50 Chrystie Street (Lots 1 and 2) and at 55 through 47 and 43 Forsyth Street (Lots 19-23 and 25).
The former site of the Church of the Holy Martyrs at 39 Forsyth Street (Lot 27) now houses a large brick stable.

Sanborn 1905: Further details are provided on this map. Six inch water pipes are present on Forsyth Street and both a 20 inch and a 12 inch water pipe are shown on Canal Street. Forsyth Street is 50 feet wide while Canal Street is 75 feet wide. Additional details and changes to lots are described below, with lot numbers in parentheses.
110 Hester Street/61 Forsyth Street (17) This commercial/residential structure has a basement.
112 Hester Street (16) This commercial/residential structure has no basement.
114 Hester Street (15) This lot is now empty space that opens onto one of the yards associated with the Public School just west of it.
116, 118 and 120 Hester Street/ 60-74 Chrystie Street (8) The Public School No. 7 has no basements indicated.
59 Forsyth Street (18) This commercial/residential structure has a basement.
57 and 55 Forsyth Street (19 and 20) The commercial/residential structures that cover most of these two lots have basements.
51, 49 and 47 Forsyth Street (21, 22 and 23) Each commercial/ residential structure has a basement. 51 Forsyth Street (Lot 21) houses a bakery.
45 Forsyth Street (24) The front structure is commercial/residential, the back structure exclusively residential, and neither has a basement.
43 and 41 Forsyth Street (25 and 26) Each of these large commercial/residential structures has a basement.
39 Forsyth Street (27) This former church is now labeled "Livery" and has a basement.
37 Forsyth Street (28) This commercial/residential structure has no basement.
35 Forsyth Street (29) The front structure is commercial/residential and the back structure is just commercial; no structures on the lot have basements.
33 Forsyth Street (30) This large commercial/residential structure is shown with a basement..
31 Forsyth Street/107 Canal Street (31) This corner structure has a basement and is labeled "Al. Floors."
109, 111, 113, 115, 117 and 119 Canal Street (32, 33, 34, 35, 36 and 37) All structures on these lots have basements. All have commercial use, and all are dwellings as well except for Lot 37 which is exclusively a store. 109 Canal Street appears to have an independent electric plant and 115 Canal Street houses a bakery.

121 Canal Street and 123 Canal Street/46 Chrystie Street (38 and 39) This combined structure has a basement and houses a store as well as light manufacturing. An independent electric plant is indicated in the building and a steam boiler is shown in front of the structure (outside of the APE).

58 Chrystie Street (7) The commercial/residential building has no basement.

56 Chrystie Street (5) The "Synagogue" has no basement indicated. Further details are as follows: Heat: stoves, lights: gas.

54 Chrystie Street (4) The front commercial/residential structure has a basement while the rear residential structure does not.

52 Chrystie Street (3) Neither the front nor the back structure has a basement.

50 and 48 Chrystie Street (2 and 1) Both commercial/residential structures have basements.

Bromley 1911: The details on this atlas are virtually unchanged from Bromley 1897, only reflecting a few major changes seen on the previous Sanborn map (1905), including the razing of the structure at 114 Hester Street. Basements are depicted the same as on the previous Bromley atlas (1897) and do not reflect the Sanborn's data.

Hyde 1913: This atlas shows different details compared with previous maps and atlases. Sidewalks are 10 feet wide, on the south side of Hester Street and both sides of Forsyth Street, and the sidewalk approaches 15 feet wide on both sides of Canal Street. Along Canal Street, two transportation lines are shown. Sewer lines, 4" x 2"8" brick, are indicated on the east side of Forsyth Street and the south side of Canal Street. Additionally, 6" and 12" water mains are shown on the west side of Forsyth Street and 20" water mains are shown on the north side of Canal Street. Details and changes on specific lots are noted below, lot numbers in parentheses:

114 Hester Street (15) A staircase is shown on the west side of the lot that leads to a yard associated with the "Public School No.7." It appears that the yard is walled off from the street.

116, 118 and 120 Hester Street/ 60-74 Chrystie Street (8) The "Public School No. 7" has two more staircases that lead to the structure on Hester Street that fall within the APE.

59 Forsyth Street (18) This structure has two large staircases in front.

51, 49 and 47 Forsyth Street (21, 22 and 23) Each structure has a central stoop.

43 Forsyth Street (25) This structure has a central stoop.

39 Forsyth Street (27) This structure is still indicated as a stable.

37 Forsyth Street (28) This structure is indicated as a "Saloon or Hotel with Liquor License."

35 Forsyth Street (29) The back two structures on this lot are still shown to be frame, while the front is brick.

121 Canal Street and 123 Canal Street/46 Chrystie Street (38 and 39) Both of these lots are shown to be vacant. Again, Lot 39 is outside of the APE.

56 Chrystie Street (5) The site of the former Synagogue is shown with a six story brick structure indicated to have a store on the first floor taking up most of the lot. There is a small yard in back and small enclosed yards on each side of the structure.

Bromley 1916: The APE on this atlas is very similar to Bromley 1911 and Hyde 1913. More structures are shown with basements than on earlier Bromley atlases or Hyde 1913, but fewer basements are indicated than on the previous Sanborn map: In sum, structures with basements are shown on Lots 2, 21, 22, 23, and 24.

An additional fire hydrant is located on the east side of Forsyth Street near Hester Street, and there are no fire hydrants shown on the south side of Canal Street. The Manhattan Bridge Plaza just south of Canal Street (outside of the APE) is shown fully developed.

Differences in the lots are noted below, with lot numbers in parentheses:

121 and 123 Canal Street /46 and 48 Chrystie Street (39; formerly 38, 39 and 1) What was formerly two small lots facing Canal Street and a larger lot facing Chrystie Street have been combined into one. A large nine story brick structure labeled "Marcus Bldg." covers the entire lot.

Sanborn 1922: The lots are depicted are similar in layout to Bromley 1916. An additional fire hydrant is located on the south side of Canal Street about mid block. 12" and 6" water pipes and a 12" high-pressure water pipe are shown on Forsyth Street, and a 20" and 12" water pipe and a 16" high-pressure water pipe are shown on Canal Street.

Additional lot details are described below, with lot numbers in parentheses:

57 and 55 Forsyth Street (19) The structure on this combined lot houses light manufacturing as well as dwellings and a store.

51 and 49 Forsyth Street (21 and 22) Each of these structures has a sub-cellar as well as a basement.

39 Forsyth Street (27) This structure is labeled "Livery & Boarding."

35 Forsyth Street (29) This lot is now entirely covered by structures; the front half has a basement, while the back half does not. It is indicated as a having a stable and is labeled "Boarding."

121 and 123 Canal Street/46 and 48 Chrystie Street (39) These combined lots appear to form one structure, but it is blackened out on this map.

56 Chrystie Street (5) This lot which once housed a Synagogue is now shown with a six story structure on it with two smaller one story sections on the north and south sides. All parts of the structure are shown with basements.

Bromley 1925: Figure 4.6-9. This is the last atlas described here showing the block prior to preparations for the construction of the Sara Delano Roosevelt

Park and is largely identical to the Bromley 1916 atlas. Lot details, specifically remaining open yard spaces are described below, with lot numbers in parentheses:

110 Hester Street/61 Forsyth Street (17) A very small airshaft is present along the south side of the lot.

112 Hester Street (16) There is no yard space here.

114 Hester Street (15) This lot is entirely empty, although it once was entirely covered by a brick structure.

116, 118 and 120 Hester Street/ 60-74 Chrystie Street (8) The former Public School No. 7 is now labeled "East Side Continuation School." There are two large open yards in the back of the lot as well as an alleyway passing along the south side from Chrystie Street.

59 Forsyth Street (18) A small yard is present at the back of the lot.

57 and 55 Forsyth Street (19) A yard is present at the back of the lots as well as two small enclosed yards on the north and south sides of the structure.

51, 49 and 47 Forsyth Street (21, 22 and 23) Each structure has a small yard in back as well as small enclosed airshafts along the north and south sides of the structures.

45 Forsyth Street (24) A yard is present between the back and front structures and a very small airshaft is shown behind the back structure..

43 and 41 Forsyth Street (25 and 26) Each of these structures has a small yard in back and small airshafts along the north and south sides of each structure.

39 Forsyth Street (27) There are two narrow enclosed alleyways in back of the structure: one along the south side and one that wraps around the north side to the back.

37 Forsyth Street (28) There is a yard in back of this narrow structure.

35 Forsyth Street (29) There is only a very small open area at the back of the lot.

33 Forsyth Street (30) There is a small yard in back and narrow airshafts along the north and south sides of the structure.

31 Forsyth Street/107 Canal Street (31) There is no yard space.

109, 111, 113, 115, 117 and 119 Canal Street (32, 33, 34, 35, 36 and 37) No yard spaces are present on these small lots.

121 Canal Street and 123 Canal Street/46 and 48 Chrystie Street (39) There is no yard space on this combined lot.

58 Chrystie Street (7) There is a yard in back and two square air vents along each side of the structure (north and south).

56 Chrystie Street (5) This lot has a yard in back and an enclosed yard on the north and the south sides of the structure.

54 and 52 Chrystie Street (4 and 3) Each lot has a yard between the front and back structures and a very small space between the back structure and the back of the lot.

50 Chrystie Street (2) This lot has a yard in back.

Bromley 1930: The block is shown completely cleared of all development. A rectangle is defined in the middle of the block with the following dimensions:
Hester Street, 124.6 3/4,
Forsyth Street, 366.11 3/4,
Chrystie Street, 367.8 1/2,
Canal Street, 123.11.

Bromley 1934: The block has now been redeveloped as the Sarah (sic) Delano Roosevelt Park. Hester Street is no longer a thoroughfare, as the park crosses Hester Street to the north. The park is 160 feet wide east-west and ends in a semi-circle on the south side. Chrystie Street is shown approximately 30 feet wider than previously; thus, former Lots 2-8 are truncated by 30 feet on the west, Lot 1 is entirely gone, and Lot 39 is truncated by just a few feet on its west side. There do not appear to be any sidewalks. Forsyth Street is shown approximately 20 feet wider than previously, cutting into Lots 17-31. The center of the former block is labeled "Boys Playground." This would include interior areas of former Lots 1-30 (Lot 1 being part of the more recently combined Lot 39). The area is 335 feet north-south by 110 feet east-west. A 20 to 25 foot wide walkway runs around the park with a narrower additional section at the southern end of the park (possibly a barrier) facing Canal Street. A one-story Comfort Station is located at the northern end of the former block, partially located over the former area of Hester Street. It measures about 70 feet east-west by 40 feet north-south. Around 15 feet of the comfort station is located over the northeast corner of the former school at the front of Lot 8 facing Hester Street, the front of Lots 15 and 16, and the very back of Lot 17.

Sanborn 1951: The area is labeled "Sara D. Roosevelt Parkway." No further details are given about the area of the APE within Block 302.

Bromley 1967: The APE is depicted here the same as on Bromley 1934, except the area is labeled "Public Park."

Bromley 1974: The APE is the same as shown on Bromley 1967.

Sanborn 2001: Figure 4.6-1. Forsyth Street has been almost entirely blocked off by the Frank D'Amico Plaza, which is adjacent to an Intermediate School on Block 301 to the east. Two large structures impinge onto the east side of the former Forsyth Street roadbed.

Street Elevation Table:

Data Source	Hester Street and Forsyth Street	Canal Street and Forsyth Street	Hester Street and Chrystie Street	Canal Street and Chrystie Street
1865 Vielé	40.9"	43.7"	44"	45.10"
1885 Robinson	40.7"	45.5	40.5"	46.8"
1897-1974 Bromley	40.9"	45.7"	40.7"	46.10"
2001 Sanborn	40.9"	45.7	40.7"	46.10

Tax and Directory Table:

Note: Lot numbers are shown in parentheses after the street address.

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 302: Hester, Forsyth, Chrystie, and Canal Streets								
110 Hester Street/ 61Forsyth Street (17) (110 Hester Street was 124 Hester Street through 1851, Forsyth Street was Second Street in 1808)	Widow Hoffman (61 Second Street)	no info.	Heirs of Engle Friend, N. Eberhard crossed out, belongs to troop (61 Forsyth Street)	N. Eberhard, Frances Rampen penciled in (61 Forsyth Street)	James Curran, tailor, Nathaniel Dougherty, clerk (120 Hester Street at Forsyth Street) C. W. Sherwood, grocer (122 Hester Street at Forsyth Street) Henry Whitty, grocer, George Pferre, tailor (124 Hester Street) [compare with] Henry Wittlie, grocer, George Pfarre, tailor, Peter Mutter, clocks (61 Forsyth Street)	Mrs. Eberhardt (61 Forsyth Street)	John G. Otto lessee (61 Forsyth Street)	J. G. Otto (61 Forsyth Street)
112 Hester Street (16) (126 Hester St. through 1851)	no info.	Angel Freend	Heirs of E. Friend	Est. M. Eberhard	Christian Miller, fish, Philip Schaefer, confectioner	Mrs. Eberhard	P. Pfeifer	P. Pfeifer
114 Hester Street (15) (128 Hester St. through 1851)	Ingle Friends	John Heckes	Heir of E. Friend	Nicls. Gondirn	Marguarite Scheffmeyer, lqrs	Mr. Scheffmeyer	Mrs. Scheffmayer	Mrs. Schiffinger
116 Hester Street (8) (130 Hester St. through 1851)	Charles Burth	Charles Bunk	Heirs of E. Friend	Anthony Rampen	Charles Hicks, John Maginn, pilot	F. Rollwagon	F. Rollwagon	T. Rollwagen
118 Hester Street (8) (132 Hester St. through 1851)	Wm. Lawrence	Angel Freend	Heirs of E. Friend	Francis Rampen	Jacob Boehringer, butcher	Jacob Bockringer	Jacob Bockringer	Jacob Bockringer
120 Hester Street/ 74 Chrystie Street (8) (First St. in 1808)	Widow Hoffman, Henry Gable (74 First Street)	no info.	David Brombush (74 Chrystie Street)	no info.	Info	no info.	no info.	no info.

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
59 Forsyth Street (18) (Second St. in 1808)	Conrad Fordan, Isaac Tangburn	Ditmer Rutz, S. Campbell	Mrs. McAddams	Elizabeth Gorden	Thomas Naughten, tailor, Robert Day, stevedore REAR Roger Adams, porter, George Cook, printer, Ernest Malgenk, shoemaker, Jacob Thickneder, tailor, Thomas Smith, painter	Stephen Brooker	C. Freunet	C. Freeman
57 (now 55) Forsyth Street (19) (Second Street in 1808)	John McAdams, Dr. Weed	Widow M. Adams	Heirs of R. Landearer	Est. Richard Sampkert	Charles Halpich, physician, Auguste Reisky, butcher	E. Ricther	Green & Mitchell	Green & Mitchell
55 (now 53) Forsyth Street (20) (Second Street in 1808)	Joseph Clark, Mr. Walker	Marshall	Francis Ramppin	Frances Rampen	Erhard Richter, brewery	E. Ricther	Green & Mitchell	Green & Mitchell
53 (now the north part of 51 only) Forsyth Street (north part of 21) (Second Street in 1808)	Mr. Shearer, Mr. Funk	Marshall	Heirs of A. B. Woodruff, Abraham Vorris	Est. A. B. Woodruff, Charles Tallman, juror	Charles Talman, Ann Shanan	Est. of A. B. Woodruff	Est. E. B. Woodruff crossed out, Mortimer Porter penciled in	Mortimer Porter
51 (now part of 49 and 51) Forsyth Street (21/22) (Second Street in 1808)	Widow Shearman, Mr. Cunningham	Widow Hannah Shermer	Heirs of A. B. Woodruff, Thos. Bodle	Est. A. B. Woodruff, J. R. Noyes, juror	Augustus Bogart	Est. of A. B. Woodruff	Est. E. B. Woodruff crossed out, Mortimer Porter penciled in	Mortimer Porter
49 (now part of 47 and 49) Forsyth Street (22/23) (Second Street in 1808)	James Forrest	James Deforest	Heirs of A. B. Woodruff, T. H. Nappier	Est. A. B. Woodruff, Thomas Lewis, juror	Henry Burr, hatter	Est. of A. B. Woodruff	Est. E. B. Woodruff crossed out, Mortimer Porter penciled in	Mortimer Porter
47 (now the south part of 47 only) Forsyth Street (south part of 23) (Second Street in 1808)	Mr. Agnus, Joseph Wolf	Oce Wiley	Heirs of A. B. Woodruff, Wm. M. Hitchcock	Est. A. B. Woodruff, W. Philips, juror	Wells Phillips, shoes	Est. of A. B. Woodruff	Est. E. B. Woodruff crossed out, Mortimer Porter penciled in	Mortimer Porter

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
45 Forsyth Street (24) (Second Street in 1808)	Richard Van Voorhis, Wm. Ryan	William Rhine	Wm. Ryan	Est. William Ryan	James Ryen, carpenter, William Jones, printer REAR William Dalton, sailmkr, William Shott, goldsmith, John Taylor, engineer, Albert Shaplier, soap, Albert Strotman, clerk, Edward Dalton, sailmaker, John Armans, ship carpenter	Charles Rodman	Chas. Redman, military	Chas. Redman
43 Forsyth Street (25) (Second Street in 1808)	Rowlin Powell	John Forbes	John W. Degraw	James Rogers	Edwin Labras, gilder, Ann Adams, vests, Frederick Shoemaker, barkpr REAR Stephen Sheppard, mahy, Fanny McKibbon, tailoress, Samuel Bradfield, shoes	James Rogers	Henry Bischoff	Henry Bickhoff crossed out, Elise Lenor penciled in
41 Forsyth Street (26) (Second Street in 1808)	Richard Smith, Robert Furlong, Mr. Brush, Mr. Burlis	Richard Smith	Richard Smith	Capt. Rodgers	Abner Squire, J. D. Squire, Edwin Hillyer, clothing REAR F. Hofflich, carpenter, John Jockel, George Jockel, tailor, Catherine Jockel	James Rogers	James Rodgers	James Rodgers
39 Forsyth Street (27) (Second Street in 1808)	Nathaniel Hunt, John Hitchcock, Peter Chapple, Joseph Banter, Mr. Watts	Nathaniel Hunt, Isaac Keeler, William J. Stevenson, Charles Cox	Nathan Hunt	Est. Nathaniel Hunt	Charlotte Baldwin, teacher, Charles Henry, James Clark, pilot REAR James Mitchell, glazier	Meeting House	Meeting House	Church of the Holy Martyrs
37 Forsyth Street (28) (Second Street in 1808)	see 39 Second Street above	Nathaniel Hunt, Thomas F. Williams	Nathan Hunt, Peter B. Devan	Joseph West, juror	Andrew Chadcayne, tailor, C. N. Cogswell, P. G. Fowler, dress cutter	Joseph West	Joseph West	A. Lutz

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
35 Forsyth Street (29) (Second Street in 1808)	Capt. Ripley, Capt. Pennick	Stephen James, Joseph Hatches, Samuel Mashatt	Geo. Stephenson	Geo. G. Stevenson, Thomas Fardo, juror	John Hodgins, grocer, George Zinck, sausages, William Lowry, police, Christon Carstens, baker, L. Eveson, locksmith, Mathew Mooney, tailor, Stephen Cronin, tailor, John Doherty, tailor REAR Patrick Hogan, laborer, Donald McLeod, Mary Holden, washing, H. Wooliston, gasfitter, Charles Neidzuidzky, tailor	Mr. Beekman	Mr. Beekman	Mr. Beekman
33 Forsyth Street (30) (Second Street in 1808)	T. Fowler	Widow Davis	Mrs. Davis	Est. Hugh Taylor	Edmund Concklin, butcher, Abraham Riker, shoes, C. B. Pearson, fancy store REAR Fr'cis. Schnueriger, toys, James Bell, workman, James Brennan, laborer Edward Brennan, machinist	J. A. Ronalds	J. A. Ronalds	J. A. Ronalds
31 Forsyth Street/ 107 Canal Street (31) (Forsyth Street was Second Street in 1808, 107 Canal Street was 228 Walker Street in 1834 and 1844)	no info.	Anthony Hicks (31 Forsyth Street)	Charles Cashman, E. Wetmore, artillery (228 Walker Street)	Charles Cashman, Enoch Gessing, juror (228 Walker Street)	Ignatz Benning, grocer (31 Forsyth Street)	Charles Cashman (107 Canal Street)	Chas. Cashman (107 Canal Street)	Charles Cushman (107 Canal Street)
72 Chrystie Street (8) (First Street in 1808)	David Brombush, Mr. Dill	David Brombush	Joseph Miller	David Brombush (72 Chrystie Street) Mathias Bentz (72 ½ Chrystie Street)	Mathias Benst, bootmaker, Charles Ernenvine, hatter NOTE: 72 Chrystie Street is listed on the opposite side of Hester Street	Jacob Bochringer crossed out, Jacob Neidlinger penciled in (72 Chrystie Street) Mathies Bentry crossed out, Jacob Bochringer penciled in (72 ½ Chrystie Street)	Jacob Bochringer (72 and 72 ½ Chrystie Street)	Jacob Bockringer (72 and 72 ½ Chrystie Street)

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
70 Chrystie Street (8) (First Street in 1808)	Leonard Fisher, John Bostwick	Leonard Fisher	Heirs of Mrs. Fisher	Louisa Fisher	Patrick McCauly, tailor, W. J. White, smith	Mr. McCulloch	Jacob Bochringer	Jacob Bockringer
68 Chrystie Street (8) (First Street in 1808)	Henry Shearer	Zebuland Grant	Amos Willet	Amos Willet	Sarah Browne, boarding, William Pennoyer, tailor	Jacob Bochringer	Jacob Bochringer	Jacob Bockringer
66 Chrystie Street (8) (First Street in 1808)	Martin Litenbeck , Mr. Taget	Martin Lydebeek	R. P. Bunker	Saml. P. Mott	Jacob Nightlinger, car man, James Reilly, upholsterer, Mary Huddon	Samuel F. Mott	Saml. F. Mott	Clinton Graham
64 Chrystie Street (8) (First Street in 1808)	Mr. Beamer	David Dreamer	Public School	Public School	Sarah A. Bunker, school, W. H. Reuck, school	Public School	Public School	Public School
62 Chrystie Street (8) (First Street in 1808)	Widow Cline	Lohn Kline, David Dyke	Public School	Public School	Sarah A. Bunker, school, W. H. Reuck, school	Public School	Public School	Public School
60 Chrystie Street (8) (First Street in 1808)	Jacob Marsh, Michael Thuler	Jacob Hatch	Public School	Public School	vacant lot	Public School	Public School	Public School
58 Chrystie Street (7) (First Street in 1808)	Peter Crawbuck, John Tiers	Peter Crawbuck	Mordica Mires	M. Mires	John Egan, boarding Rynard Vollmer, baker	John Eagan	Mr. Fatman, Est. W. B. Miles	Est. H. Bellons
56 Chrystie Street (5) (First Street in 1808)	John Keyser	William Reynolds	Methodist Church	Methodist Church	Temple Imanuel (Rev.) G. W. Cohen	Jews Meeting House	Jews Meeting House	Jews Meeting House
54 Chrystie Street (4) (First Street in 1808)	Nathaniel Hunt, Henry Banks	Nathaniel Hunt	Nathaniel Hunt, G. H. Clapman	Est. M Hunt	Elisha Fitzgerald, machinist, John Barker, smith, James Perry, machinist	Mr. Miller	Mr. Miller	Mr. Miller
52 Chrystie Street (3) (First Street in 1808)	Widow How	Charity How	Daniel Kingsland	H. Cathn. Kingsland	Anne Gordon, boarding	John Schort	John Huff	John Huff
50 Chrystie Street (2) (First Street in 1808)	no info.	John Quackinbush, Samuel Townesend	Wm. Lard	Lewis B. Reed	J. H. Wilson, cutter, P. P. Dibney, carpenter, Maria Wilson, confectionery	Lewis Reed	Mr. Brannigan	Philip Jackberg, crossed out
48 Chrystie Street (1) (First Street in 1808)	John Quackinbush, G. C. Quackinbush, Captain Mufsey, Mr. Shearman	John Quackinbush	Wm. Lard	Lewis B. Reed	Patrick McKeever, grocer	Lewis Reed	Fredk. Reichter	F. Lichtor

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
46 Chrystie Street/123 Canal Street (39) (123 Canal Street was 212 Walker Street in 1844 and 1851)	James Dominick	Thomas Cooper, John Montonges, Freeman Smith (46 Chrystie Street)	Henry Kling (46 Chrystie Street)	R. Shields (212 Walker Street)	Patrick Leahy, liquors (44 and 46 Chrystie Street, see 212 Walker Street below) F. W. Grevel, physician, Julius Alexander, segars, Henry Grogan, confectioner (210 Walker Street at Chrystie Street) Patrick Leahy, liquors (212 Walker Street)	William Quinn (123 Canal Street)	Henry Kinzing (123 Canal Street)	Henry Kenzing (123 Canal Street)
109 Canal Street (32) (226 Walker Street in 1834 and 1844, 64 Pump Street in 1820 and 1808)	Mr. Purdy, Mr. Fisher	Jacob Purdy	Peter Lorillard, Joseph Desemus	E. S. Spencer	no info.	William L. Spencer vacant	Wm. A. Spencer	William A. Spencer
111 Canal Street (33) (224 Walker Street in 1851, 1844 and 1834, 66 Pump Street in 1820 and 1808)	Wm. Adams (66 Pump Street) Francis Gance (listed between 66 and 68 Pump Street)	John Gantz	Heirs of J. Gantz	Est. M. F. Gautz, Martin Bennet penciled in	Theodore Iverg, porterhouse, Martin Bennett, carpenter	Est. A. M. Z. Bennett	Evelina Spriggins	Evalina Spriggins
113 Canal Street (34) (222 Walker Street in 1851, 1844 and 1834, 68 Pump Street in 1820 and 1808)	David Camm (68 Pump Street) Francis Gance (listed between 66 and 68 Pump Street)	John Gantz	F. Rampen	Francis Rapen, Bussey penciled in	Charles Miller, boarding	Charles Bockert vacant	E. Obeslander crossed out, Military 1869 H.S.J. Friedrick Haag penciled in	Frederick Haag
115 Canal Street (35) (220 Walker Street in 1851, 1844 and 1834, 70 Pump Street in 1820 and 1808)	Seth Kneeland, John Fowles, Ellis McKay, John McMannus	John Gantz	Mrs. Graves	Ann Graves	Moses Coleman, capcutter, James Dewhurst, carpenter	Ann Graves vacant	Henry Kinzing	Henry Kenzing
117 Canal Street (36) (218 Walker Street in 1851, 1844 and 1834, 72 Pump Street in 1820 and 1808)	see 70 Pump Street above	John Gantz	Heirs of Mrs. Wheeler	William F. Mott	Percy Hackstaff, dressmaker, John Bradburn	William F. Mott vacant	Mr. Laurence	Mr. Laurence
119 Canal Street (37) (216 Walker Street in 1851, 1844 and 1834, 74 Pump Street in 1820 and 1808)	see 70 Pump Street above	John Gantz	George Smith	George Smith	George Smith, silverplater, George Mountjoy, silversmh	George Smith vacant	Geo. Smith	Elizabeth Zubrod
121 Canal Street (38) (214 Walker St. in 1844 and 1834, 76 Pump St. in 1820 and 1808)	see 70 Pump Street above	John Gantz	Heirs of Mrs. Wheeler	William F. Mott	James Hopkins, painter	William F. Mott vacant	Henry Kinzing	Henry Kenzing

Note: The current area of 47, 49 and 51 Forsyth Street (Lots 21, 22 and 23) was divided among four lots during the 19th century (47, 49, 51 and 53 Forsyth Street).

Precontact Sensitivity:

The area of Block 302 and the adjacent Forsyth and Canal Street roadbeds was open, relatively flat meadowland in precontact times and was close to a fresh water source, later known as the Collect Pond, located about 1,600 feet southwest of the APE (Viele 1865; see Ratzer 1766/67, Figure 4.6-2). Although no precontact sites have been recorded specifically in the immediate vicinity of the APE, the area would have been suitable for habitation or use. An area of land called "Werpoes" by Native Americans, as recorded in a land patent from 1651, is identified in the immediate vicinity of the APE (Stokes 1928: 72), and a habitation site called "Schepmoes" was additionally recorded to the north of the APE at approximately East 10th Street and Second Avenue (Grumet 1981).

Since the colonial era, farming activities and development would have likely disturbed precontact remains to some degree. During the 17th century under the Dutch West India Company, farming was prevalent in the area and in the 18th century the area was part of James Delancey's farm (Stokes 1928; Grim 1744; Delancey Farm Map 1865). However, plowing is not likely to have disturbed the ground to a depth of more than about one foot. While it is very unlikely that surface scatter or surface remains from the precontact era would still exist, subsurface remains such as storage or trash pits could have survived.

Soil borings within the APE (see Borings 1-5, Engineering Services 1979, Appendix 4.6.7.3) indicate that the APE has an average of 18 feet of fill (ranging from 15 to 20 feet), which is probably associated with 19th century development. Below this are levels which may represent the precontact living surface. In this scenario, the majority of 19th and 20th century development would not, then, have affected the precontact surface, as even structures with basements may not have affected 18 feet below the surface. However, the water table has been observed near adjacent blocks around 25 feet below the surface and as deep as 33 feet below the surface in the immediate vicinity (see Appendix 4.6.7.3), and so 19th century wells would have to penetrate to that depth. There may have been open yards on lots developed in the 19th century where such wells would probably have been located. The APE is thus considered to be moderately sensitive for precontact remains from about 19 feet below grade to about 24 feet below grade for the majority of the APE.

Historical Sensitivity:

During the 17th century, Block 302 and the adjacent Forsyth and Canal Street roadbeds were part of farmlands associated with the Bouwery parcels administered by Director Kieft of the Dutch West India Company (Stokes 1918). The very northwest corner of the APE is located in a section of Bouwery No. 4 assigned to Gerrit Jansen in 1645, while the rest of the block is located within Bouwery No. 5, assigned to Cornelis Claes Swits in 1645. The APE became part of James Delancey's Farm in the 18th century, but it is unclear if the area of the block was actively farmed (Figure 4.6-2, Ratzer 1767; Grim 1744; Delancey Farm Map 1865; Stokes 1918). No structures are shown within the APE during the 17th or 18th centuries, but this does not preclude the possibility of their existence.

By 1766, the APE appears to be vacant, and is not shown as farmland (Montresor 1766). In 1767, a map shows the block in its present form, and structures are depicted along the east side of Chrystie Street between Hester and Canal Streets and at the corner of Hester and Forsyth Streets by 1797, however the streets are not all named (Figure 4.6-2, Ratzer 1767; British Headquarters Map 1797; Taylor Roberts 1797). One or two structures are shown during the early part of the 1800s on Chrystie Street, and Tanner 1836 identified the southern structure as an Independent Methodist Church (Hooker 1829; Colton 1836; Tanner 1836). It may be that there was more development on the block by this time, but the lack of detail on early 19th century maps leaves this questionable. However, property assessments dating from 1808 indicate with certainty that Chrystie, Hester, Forsyth and Canal Streets were lotted for development, and possibly occupied by that time (see tax table, above).

The block is shown as fully developed with 56 structures by the middle of the 19th century (Dripps 1852). Two large structures on the east side of Chrystie Street include a Public School and a Synagogue labeled "Temple of the Imanuel" (Ibid.). An Episcopalian Church is shown on Forsyth Street, labeled "Episcopal Church of the Holy Martyrs" (Figure 4.6-6; Perris 1857-62). Many structures are later shown with stores on their first floors (Ibid.; Sanborn 1894). The Episcopal Church is converted to a stable by 1897 (Bromley) and the Synagogue ceases to be used as such by 1913 (Hyde). The school however increases in size to take up nearly on quarter of the block (see Figure 4.6-9; Bromley 1925).

The occupants of the block by the mid-19th century included both skilled and non-skilled workers (see 1851 Directory information, tax table, above). Additionally, Viele (1865) indicates that sewers were present by mid-century. Many structures probably had indoor plumbing installed, but some may have continued to depend on wells and privies which were utilized prior to the availability of sewer and water. During the 19th century, it is likely that wells or privies were present in some of the open yard spaces at the time, which are detailed below.

Between 1925 and 1930, all structures on the block were razed (Bromley). Within the next five years, the block was re-developed as the Sara Delano Roosevelt Public Park (Bromley 1935). Hester Street was decommissioned between Chrystie and Forsyth Streets, but Canal Street remained an open thoroughfare. Chrystie Street was widened by about 30 feet to the east, defining the west boundary of the park and this APE. Forsyth Street was widened by about 20 feet to the west, defining the east boundary of the park.

Soil borings within the APE (see 1-5, Engineering Services 1979, Appendix 4.6.7.3) indicate that the majority of the APE is underlain by about 18 feet of fill (ranging from 15 to 20 feet), which is probably associated with the development that occurred during the first half of the 19th century. Borings do not indicate whether 18 feet of fill was added, or if 18 feet of the pre-development surface was affected, so, conservatively, it is assumed that fill was added. The water table has been observed as deep as 25 feet below the surface within the APE and 33 feet below the surface in the immediate vicinity (see Appendix 4.6.7.3), and so wells from the 19th century are likely to have reached that depth. These 19th century wells would have been constructed through the layer of fill.

Along Canal Street, two transportation lines were shown, and brick sewer lines, measuring 4" by 2"8", were indicated on the east side of Forsyth Street and the south side of Canal Street (Hyde 1913). WPA Subsurface Conditions Maps (Map No. 85, 1937; Map No. 73, 1939) detail clusters of utilities under Forsyth Street just north of the APE, which are extrapolated for this part of the APE. The utilities include electricity ducts, gas and water pipes and postal cables, all of which are located five feet or less beneath the surface of the roadbed and were not located under the sidewalk at the time. The sewer line is shown in the middle of the street and is considerably deeper, located ten feet below the surface. The utilities do not appear to have affected depths below the fill. No WPA maps are available that show the depths of the utilities under Canal Street, but other maps also note a 20" and 12" water pipe and a 16" high-pressure water pipe on Canal Street (Sanborn 1922, 1951). It is likely that the configuration of these utilities are similar to that of Forsyth, Broome and Grand Streets, where most utilities are relatively close to the surface, with sewer lines buried more deeply. Overall, it is not likely that the utilities noted here are found beneath the fill layer.

Several lots had open yard areas prior to the construction of the park. Larger yards were present in back of Lot 8 which housed a school (specifically behind 60-66 Chrystie Street, and not including 114 Hester Street, which formerly housed a structure). Midsized to small yards were present on the former Lots 18, 19, 21, 22, 23, 24, 25, 26, 27, 28, 29 and 30 (59, 57, 55, 51, 49, 47, 45, 43, 41, 39, 37, 35 and 33 Forsyth Street), and Lots 7,5, 4, 3, and 1 (58, 56, 54, 52 and 50 Chrystie Street). Additionally, airshafts were located along the sides of structures on Lots 7, 17, 21, 22, 23, 25, 26 and 30 (Bromley 1925; Sanborn 1905). Any of these areas have the potential to hold shaft features such as wells or privies from earlier structures dating from the 19th century or earlier. Nineteenth century features would be located within the fill layer, while earlier remains from the 18th or 17th centuries would most likely be located beneath the fill.

Nearly half of the lots lacked structures with basements. The lots without any basements include Lots 16 and 15 (112 and 114 Hester Street), the large Lot 8 (116, 118 and 120 Hester Street/72, 70, 68, 66, 64, 62 and 60 Chrystie Street), Lots 24 and 37 (45 and 37 Forsyth Street), Lots 7 and 3 (58 and 52 Chrystie Street), and Lots 32, 33, 34, 35, 36 and 37 (109, 111, 113, 115, 117 and 119 Canal Street). Additionally there are some lots with more than one structure where only one has a basement. Structures without basements are found at the back of Lot 29 (35 Forsyth Street) and at the back of Lots 54, 50 and 48 (54, 50 and 48 Chrystie Street). These areas are less likely to have disturbed any possible earlier shaft features from the 17th or 18th centuries, even though these remains would have more likely than not been protected by fill.

Two lots had structures with sub-cellars as well as basements; these were Lots 21 and 22, located at 51 and 49 Forsyth Street respectively. Depending on the depth of the combined sub-cellar and basement, these areas are more likely than any others to have experienced disturbances below the fill.

In sum, Block 302 is moderately sensitive for pre-19th century historic remains in its entirety, below the ca.18 feet of fill. Only 19th century shaft features such as wells or particularly deep basements and possibly the sub-cellars on Lots 21 and 22 would have affected the

precontact or 17th and 18th century landscape, if it is in fact buried beneath the fill. In this scenario, these early historical archaeological remains would be found only beneath the fill layer, at about 18 feet beneath the surface. For 19th century features such as wells or privies, Block 302 is moderately sensitive in former open yard areas on Lots 1, 3-5, 8, 18, 19 and 21-30 and would be present in the fill layer from the current surface down to at least the depth of the water table, which lies between about 25 and 33 feet below grade.

4.6.7.2 Site File Search Results, NYCLPC, NYSOPRHP and NYSM

SITE FILE SEARCH RESULTS

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

ity ~~Village~~ New York Town _____ County New York

adsheets Central PK, Brooklyn, Jersey City

nducted by: K.C. Date 10.1.01

EW YORK STATE MUSEUM # Sites 7 SHPO # Sites ~~24~~ 19

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
7248 X		~~2 - A061.01.0014 - D03~~	survey in the 1970's
		3 - A061.01.0623 X - D023	2nd found historic Remains.
		4 - A061.01.06763 X	no other info was found.)
		~~5 - A061.01.0001~~ —	
	209 Water St. South Street NRL 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	
		A061.01.01286 X	
		A061.01.0541 X	
		A061.01.00542 X	
		A061.01.09531 X	

*According to Cynthia Blakemore @ SHPO

ATIONAL REG[illegible]ER E[illegible]GIBLE and LISTED ___X___ Eligible ___1___ Listed ___X___ Building Inver[illegible]

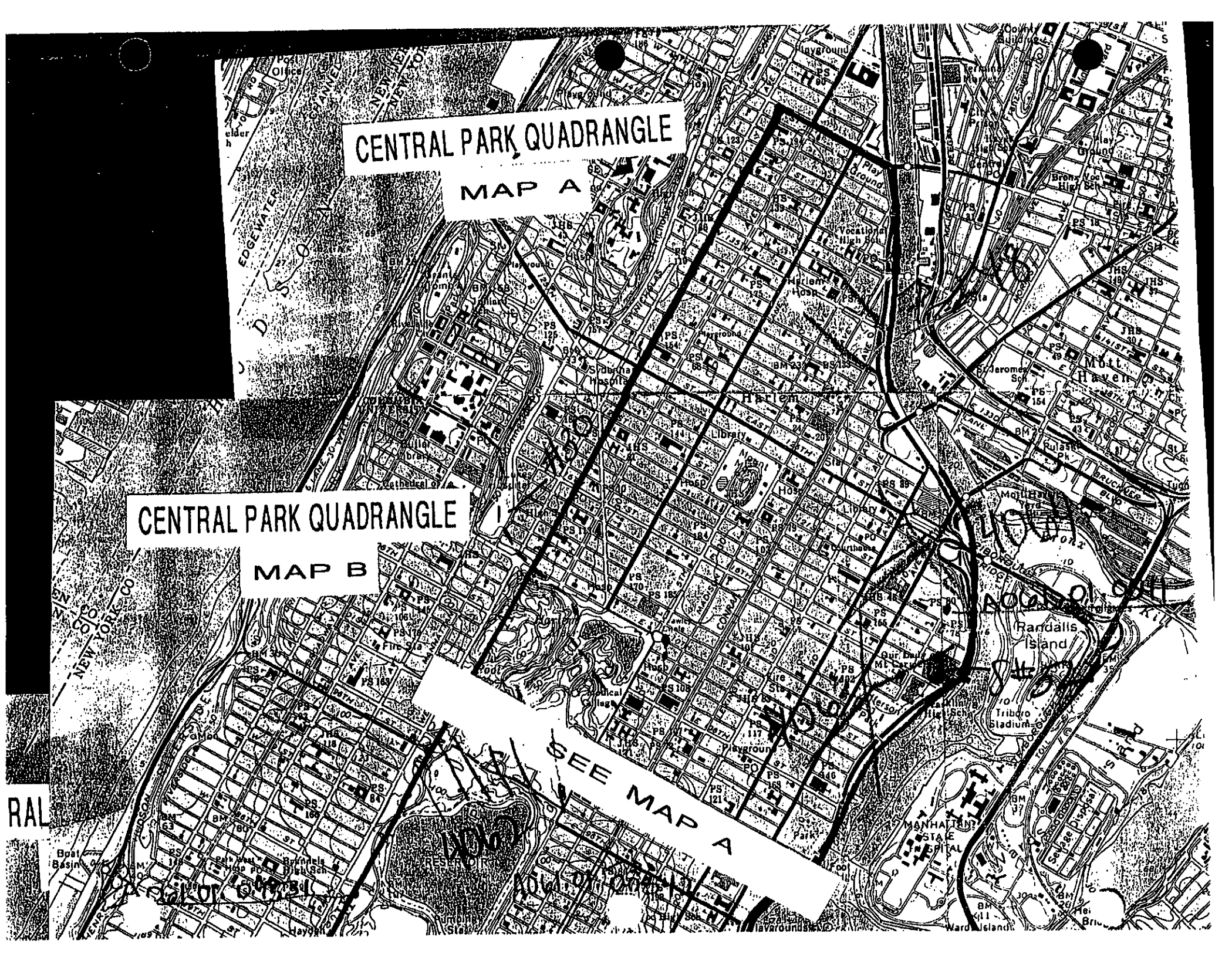
ilding Inventory #	NR Status	Form Copied	Property Description	Reads Checked
06101.000604	NRL	✓	South Street Seaport Historic District 209 Water Street	

EVIOUS SURVEYS

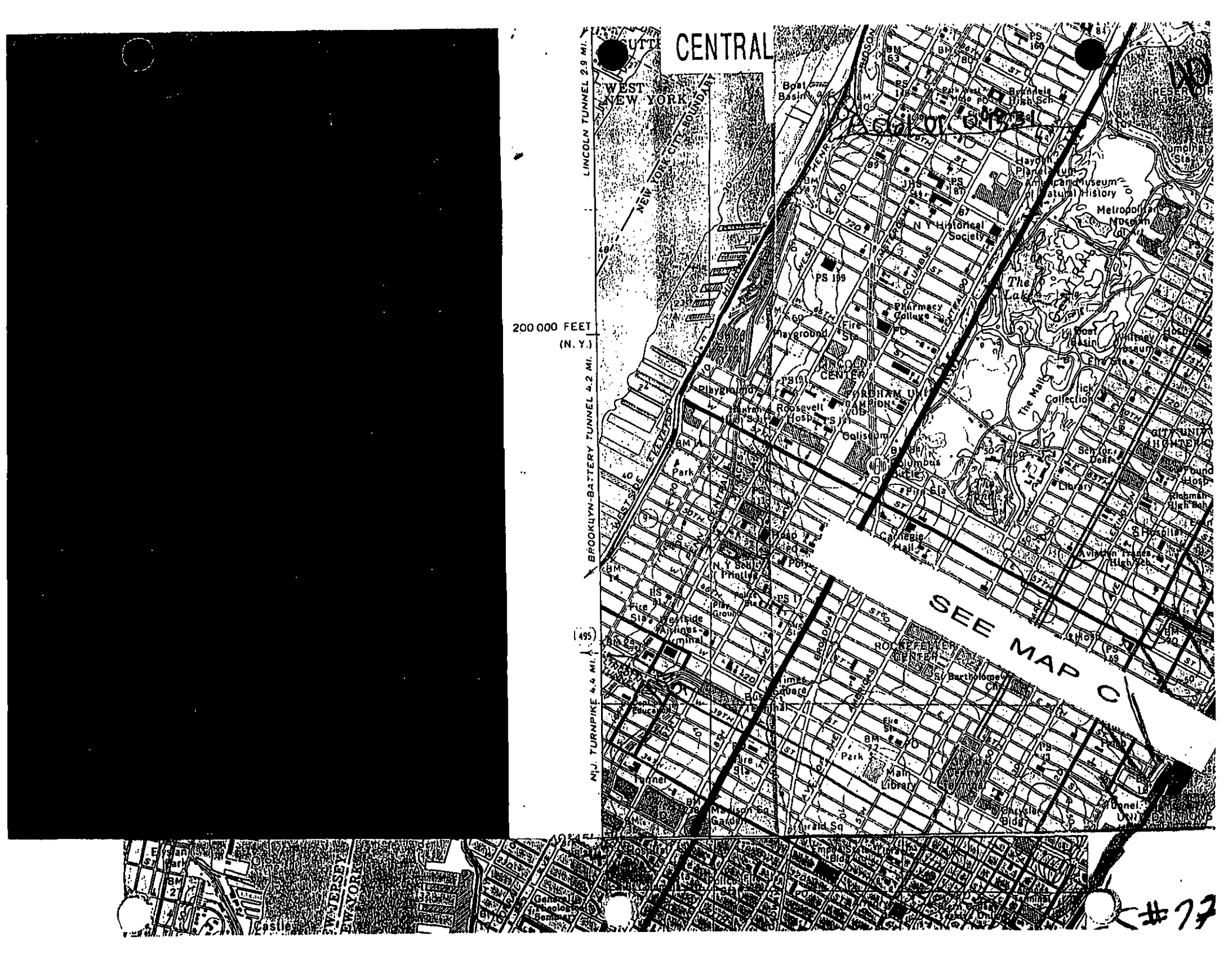
<17 previous surveys w/in Radius>

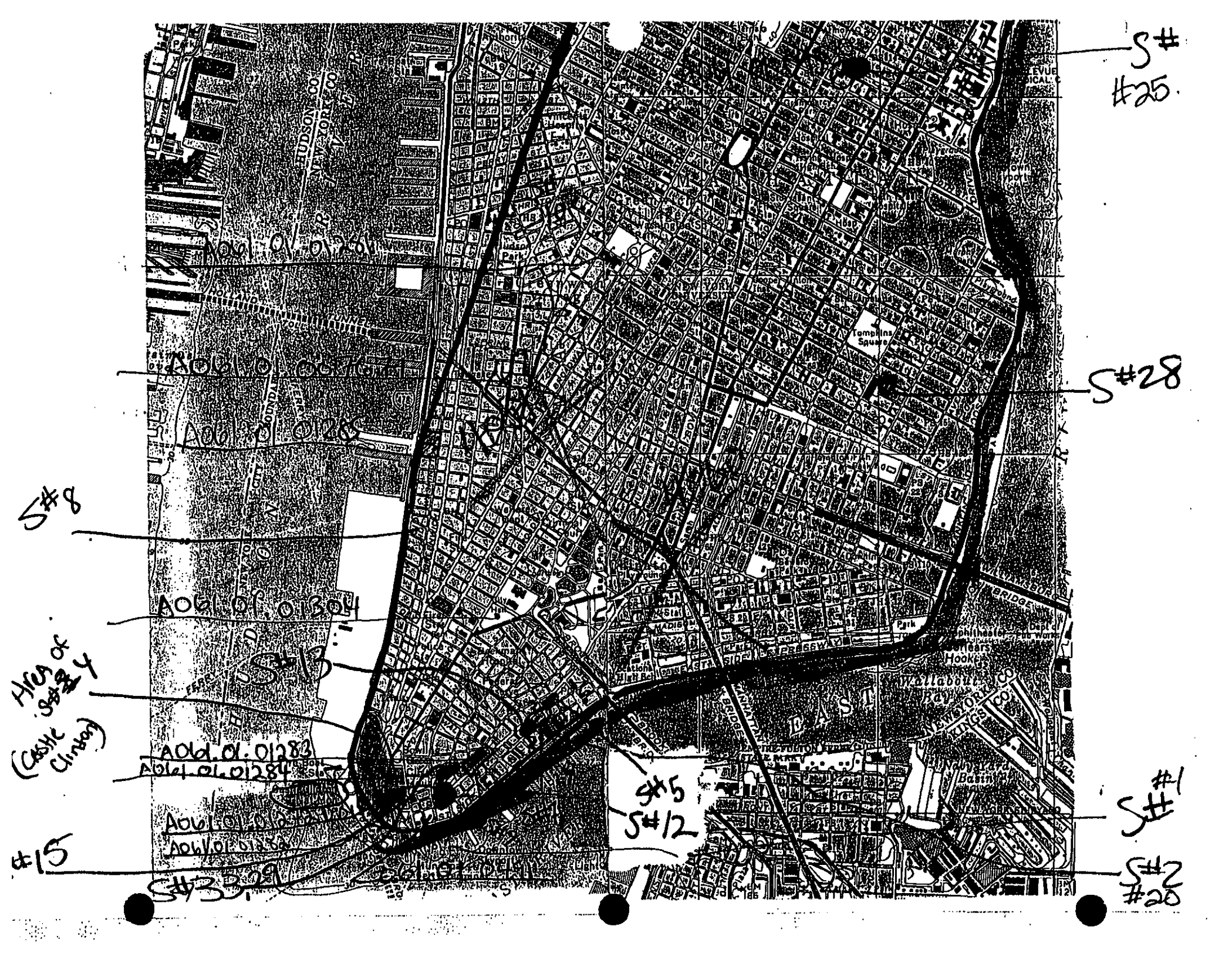
8 Westside Highway Program – 1983
William O. Hersey – 1963 Castle Clinton Ad – the Battery
Broad Street Financial Center – Greenhouse January 1985
X
64th Pearl Street 17th Landfill Arnold Pickman & Nan Rothschild May 1981
Stone Street Historic District 9/17/81 NYC Landmarks Pres. Comm. Tracker
9 Barclays Bank Site – 100 Water St. Berger – 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block Kardon & Larrabee July 1971
7 Te[illegible] Block – S. St. Seaport Historic Distr[illegible] – 1983

5 209 Water St. – Schuyler – ? Date
East River Reach – New York Harbor Collection Kardon & Larrabee October 1977
10 Sheridan Square – 1983 – Rutgers University
Lower Eastside Service Center – Louis Berger Jan '98
27 750 Sixth Ave. HPI February 1998
Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1989 / December 1989
32 East River Reach HPI Sept. 1998
Stone Street Historic District NYC Landmark Pres. Comm. February 1998


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A
Harlem
Randalls Island
Mott Haven
Triboro Stadium
MANHATTAN STATE HOSPITAL
Sydenham Hospital
Harlem Hosp
Vocational High Sch
Play Ground
Playground
Library
Fire Sta
Boat Basin
Ward Island
NEW YORK CO
EDGEWATER
RAL


SEE MAP C
S#27
Long Island City
Athletic Field
Health Center
Playground
Rainey Park
Carnegie Hall
Main Library
Rockefeller Center
Coliseum
Library
Pharmacy College
Roosevelt Hosp
Fire Sta
Park
1000
0
DEPTH CURVES


CENTRAL
WEST NEW YORK
NEW YORK CITY BOUNDARY
LINCOLN TUNNEL 2.9 MI.
200 000 FEET
(N. Y.)
BROOKLYN-BATTERY TUNNEL 4.2 MI.
N.J. TURNPIKE 4.4 MI.
Boat Basin
Brunnels High Sch
Hayden Planetarium
American Museum of Natural History
Metropolitan Museum of Art
N Y Historical Society
PS 199
Pharmacy College
Playground
Fire Sta
LINCOLN CENTER
FORDHAM UNIV CAMPION COL
Roosevelt Hosp
Coliseum
Columbus Circle
Fire Sta
Carnegie Hall
The Lake
Boat Basin
Whitney Museum
The Mall
Frick Collection
Library
Sch for Deaf
Hospital
Aviation Trades High Sch
Park
Hosp
Poly
N Y Sch Printing
Fire Sta
Westside Airlines Terminal
Play Ground
ROCKEFELLER CENTER
St Bartholomew Ch
Times Square
Bus Terminal
Park
Main Library
Chrysler Bldg
Tunnel
Madison Sq Garden
Herald Sq
Tunnel
Castle
Eyman Park
Hosp
Hosp
Pumping Sta
SEE MAP C
#77


S# #25
S#28
S#8
A061.01.01304
S#13
Area of S#4 (Castle Clinton)
A061.01.01283
A061.01.01284
S#5
S#12
S#1
#15
S#2 #20
S#33.29
Tompkins Square
Wallabout Bay
EAST
HUDSON CO
NEW YORK CO
KINGS CO
Park

4.6.7.3 Soil Borings

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.

Note: Elevations for Engineering Services Borings [1-5, 1979] refer to the Borough of Manhattan Datum, which is 2,750 feet above mean sea level at Sandy Hook, as established by the U. S. Coast & Geodetic Survey.

Boring 1
Engineering Services, Subsurface Exploration Section 1979
Location: Southwest interior of Sara D. Roosevelt Park near the intersection of Canal and Chrystie Streets within former Block 302.
Elevation at Grade: 50.5'
0-0.7': Asphalt
0.7-14.0': Fill (fine to medium brown sand, trace to little silt, trace gravel, trace cinders, brick, concrete, glass etc.)
14.0-17.0': Possible fill (fine to medium to coars brown sand, trace to little gravel, trace silt)
17.0-22.0': Fine to medium brown sand, trace silt, trace gravel
22.0-31.5': Fine to medium to coars brown sand, little to some gravel, trace silt with slight "oily" odor
No ground water encountered.

Boring 2
Engineering Services, Subsurface Exploration Section 1979
Location: Interior of Sara D. Roosevelt Park near the intersection of Hester and Chrystie Streets within former Block 302.
Elevation at Grade : 50.6'
0-0.5': Asphalt
0.5-19.0': Fill (fine to medium dark brown sand, little silt, trace to some gravel and brick, trace wood, brick cinders, etc)
19.0-21.0': Fine to medium brown sand, trace to little silt
21.0-31.5': Fine to very fine dark brown sand, little to some silt, trace mica, bulls liver
Ground water observed at 25.0'.

Boring 3
Engineering Services, Subsurface Exploration Section 1979

Location: Northeast interior corner of Sara D. Roosevelt Park near the intersection of Hester and Forsyth Streets within former Block 302.
Elevation at Grade : 50.3'
0-0.5': Asphalt
0.5-14.0': Fill (fine to coarse gray-brown sand, little to some gravel, trace to little silt, trace brick concrete, cinders, etc.)
14.0-20.0': Fill (gravel, little fine to coarse brown sand, trace silt, some wood, etc.)
20.0-24.0': Very fine dark brown sand, some silt, trace mica, bulls liver
24.0-31.5': Fine to medium to coarse brown sand, trace to little gravel, trace silt with thin, very fine dark brown silty sand layers
Ground water observed at 26.5'.

Boring 4
Engineering Services, Subsurface Exploration Section 1979
Location: Southeast interior corner of Sara D. Roosevelt Park near the intersection of Canal and Forsyth Streets within former Block 302.
Elevation at Grade : 50.2'
0-0.5': Asphalt
0.5-7.0': Fill (fine to coarse brown sand, little gravel, trace silt, little brick, concrete, cinders, etc.)
7.0-15.0': Fill (concrete and brick, some fine to coarse sand, little gravel, trace metal, etc.)
15.0-19.0': Fine brown sand, little silt, trace mica, bulls liver
19.0-27.0': Fine to medium brown sand, trace silt, trace gravel
27.0-31.5': Fine to medium to coarse brown sand, some gravel, trace silt
Groundwater observed at 24.8' (entire boring dry on second and third observations, four and five days after initial observation).

Boring 5
Engineering Services, Subsurface Exploration Section 1979
Location: East interior of Sara D. Roosevelt Park between Hester and Canal Streets, toward Forsyth Street within former Block 302.
Elevation at Grade : 50.3'
0-0.5': Asphalt
0.5-19.0': Fill (brick and fine to medium brown sand, some gravel, little silt, trace cinders, etc.)
19.0-25.5': Fine to very fine dark brown sand and silt, trace mica, bulls liver with medium to coarse brown sand layers
25.5'-28.0': Fine brown sand, some silt, trace gravel, bulls liver
28.0-31.5': Fine to coarse brown sand, some gravel
No groundwater observed.

Boring 6
Engineering Services, Subsurface Exploration Section 1981
Location: Interior of Sara D. Roosevelt Park within former Block 305 near the corner of Chrystie and Hester Streets.
Elevation at Grade : 35.4'

0-0.2': Blacktop
0.2-0.3': Concrete
0.3-10.0': Fill (fine to coarse brown sand and gravel, trace silt, little brick, wood, concrete, etc.)
10.0-15.0': Brown silt, some very fine sand, "stratified" bulls liver
15.0-19.0': Fine to medium brown sand, trace silt
19.0-23.0': Fine to medium brown sand, little silt, trace gravel, trace mica
23.0-28.0': Fine brown sand, little silt, bulls liver
28.0-31.5': Fine to medium brown sand, little gravel, trace silt
No groundwater encountered.

Boring 7
Engineering Services, Subsurface Exploration Section 1981
Location: Interior of Sara D. Roosevelt Park within former Block 305 near the corner of Forsyth and Hester Streets.
Elevation at grade: 35.5'
0-0.2': Blacktop
0.2-0.5': Concrete
0.5-8.0': Fill (fine to coarse brown sand and brick, little gravel, trace silt, etc.)
8.0-13.0': Fill (brick fragments, etc)
13.0-25.0': Fine to medium brown sand, little gravel, trace silt
25.0-31.5': Fine to medium brown sand, trace to little silt, trace gravel
No groundwater encountered.

Boring 8
Engineering Services, Subsurface Exploration Section 1981
Location: Interior of Sara D. Roosevelt Park within former Block 305 between Grand, Forsyth, Chrystie and Hester Streets.
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: Interior of Sara D. Roosevelt Park within former Block 305, just south of Grand Street between Chrystie and Forsyth Streets.
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: Interior of Sara D. Roosevelt Park within former Block 305 near the corner of Chrystie and Grand Streets.
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 11
Engineering Services, Subsurface Exploration Section 1981
Location: Interior of Sara D. Roosevelt Park within former Block 305 near the corner of Forsyth and Grand Streets.
Elevation at grade: 35.8'
0-0.2': Blacktop
0.2-0.3': Concrete
0.3-9.0': Fill (fine to coarse brown sand, some gravel, trace silt, some brick, etc.)
9.0-14.0': Fill (brown silt and fine to medium sand, trace gravel, trace brick, concrete, etc.)
14.0-18.0': Fine to medium brown sand, trace silt, trace gravel
18.0-21.0': Fine to medium brown sand, little silt
21.0-25.0': Fine to medium brown sand, trace silt
25.0-31.0': Fine to medium brown sand, trace silt, trace gravel
31.0-31.5': Fine to medium brown sand, little silt
No groundwater encountered.

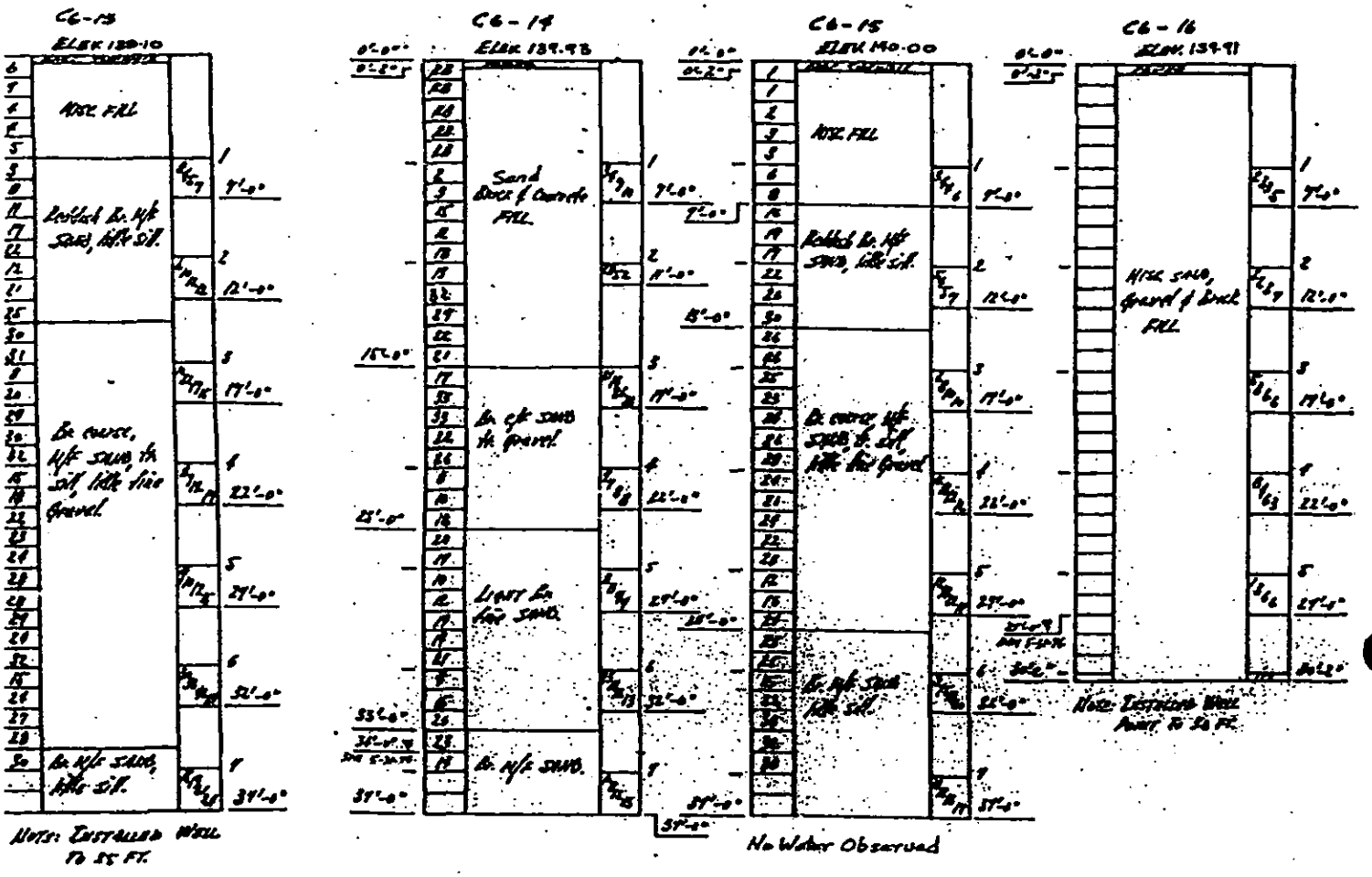
Boring O
Engineering Services, Subsurface Exploration Section 1984
Location: Edge of Sara D. Roosevelt Park within former Block 305 towards the corner of Chrystie and Hester Streets.
Elevation at grade: 38.9'
2" asphalt

0-14.0': Fill (fine to coarse brown sand, some gravel, trace silt, trace brick, cinders, etc., boulders)
14.0-23.0': Fine to medium brown sand, trace to little silt, trace gravel
23.0-26.5': Fine to medium brown sand, trace silt, trace gravel
Groundwater encountered at 24.2'.

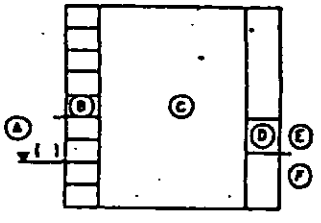
Boring R
Engineering Services, Subsurface Exploration Section 1984
Location: Edge of Sara D. Roosevelt Park within former Block 305 towards the corner of Chrystie and Grand Streets.
Elevation at grade: 38.8'
2" asphalt
0-9.0': Fill with boulders (brick, some fine to medium brown sand, trace silt, gravel, 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'.

Boring U
Engineering Services, Subsurface Exploration Section 1984
Location: Edge of Sara D. Roosevelt Park within former Block 305 towards the corner of Forsyth and Grand Streets.
Elevation at grade: 38.6'
2" asphalt
0-9.0': Fill with boulders (fine to medium brown sand, trace silt, gravel, some brick, etc.)
9.0-15.0': Fill with boulders (fine to coarse brown sand, some gravel, trace silt, etc.)
15.0-26.5': Fine to medium brown sand, trace silt, gravel
No groundwater encountered.

Boring Y
Engineering Services, Subsurface Exploration Section 1984
Location: Edge of Sara D. Roosevelt Park within former Block 305 towards the corner of Forsyth and Hester Streets.
Elevation at grade: 38.8'
2" asphalt
0-14.0': Fill (fine to medium brown sand, trace to little gravel, trace silt, brick, etc.)
14.0-18.0': Fine to medium brown sand, trace silt, gravel
18.0-26.5': Fine brown sand, trace to little silt, trace wood, trace veget.)
No ground water encountered.



LEGEND



(A) WATER LEVEL ( ) HOURS AFTER COMPLETION.

(B) NUMBER OF BLOWS OF A 300 LB. HAMMER FALLING 18" REQUIRED TO DRIVE A 2½" DIA. CASING (UNLESS OTHERWISE NOTED) EACH 12".

(C) STRATA DESCRIPTION.

(D) NUMBER OF BLOWS OF A 140 LB. HAMMER (UNLESS OTHERWISE NOTED) FALLING 30" REQUIRED TO DRIVE A 2" SPLIT SPOON EACH 6".

(E) SAMPLE NUMBER.

(F) DEPTH AT END OF SAMPLE DRIVE.

THIS IS TO CERTIFY THAT THIS DRAWING IS A COMPILATION OF INFORMATION DELIVERED, PAGE THE FULL SCALE ISSUE.

FOR OFFICE RECORD

RAYMOND INTERNATIONAL INC.

BORING SECTIONS

NEW YORK CITY TRANSIT SYSTEM

SECOND AVE SUBWAY
ROUTE 132-C SECT. 2

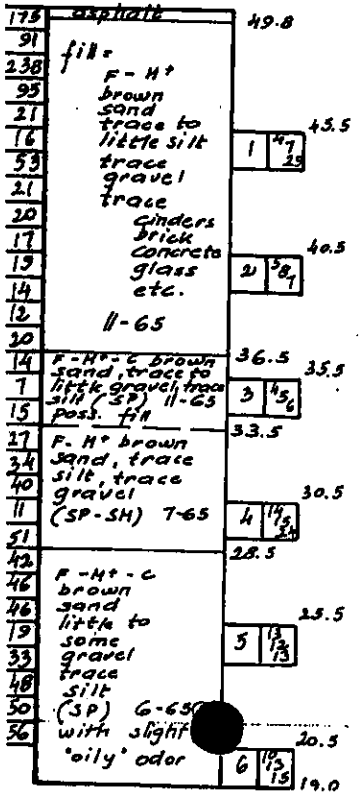
BOROUGH Manhattan

DRAWN BY: F.F.
CHECKED BY: J.E.

DATE: July 1974
SCALE: 1/8" = 1'-0" Vert

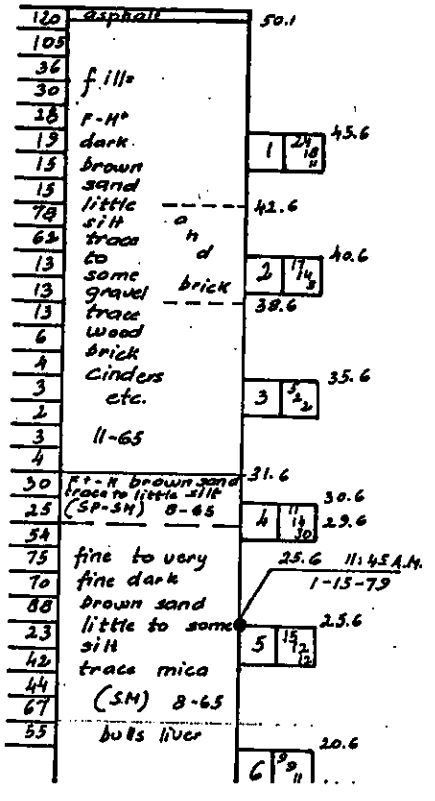
1

SURF. ELEV. 50.5



2

SURF. ELEV. 50.6



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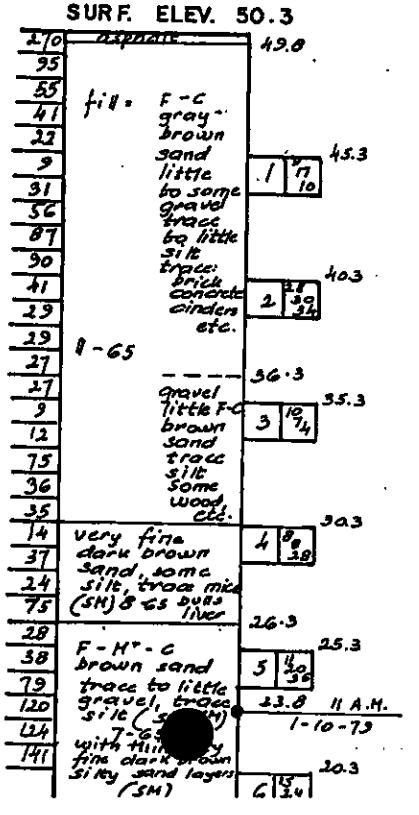
SURF. ELEV. 50.3



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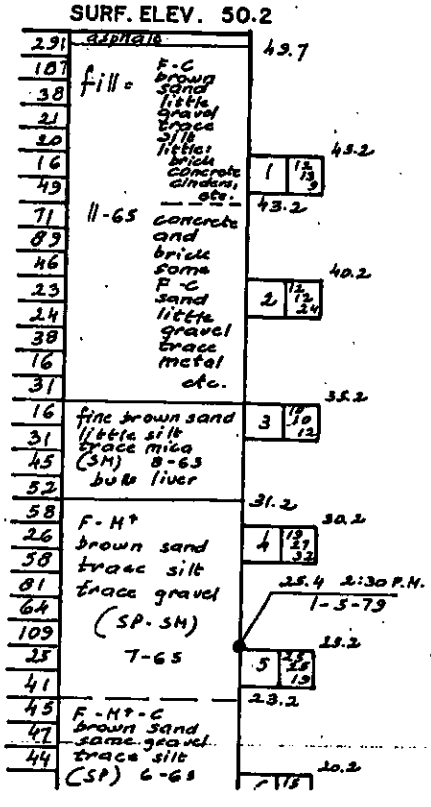
SURF. ELEV. 50.2



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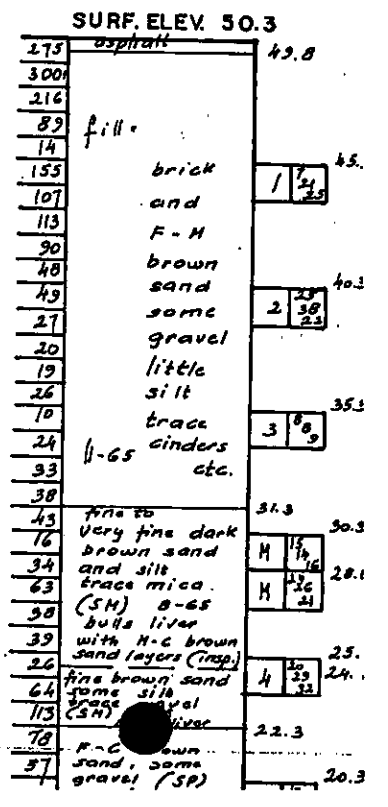
SURF. ELEV. 50.3



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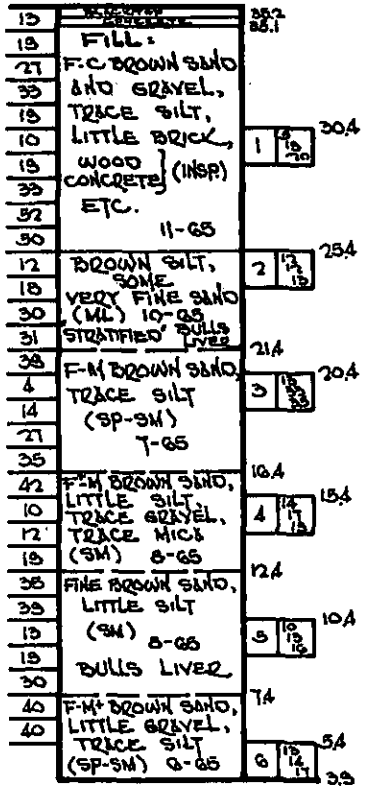
SURF. ELEV. 35.4



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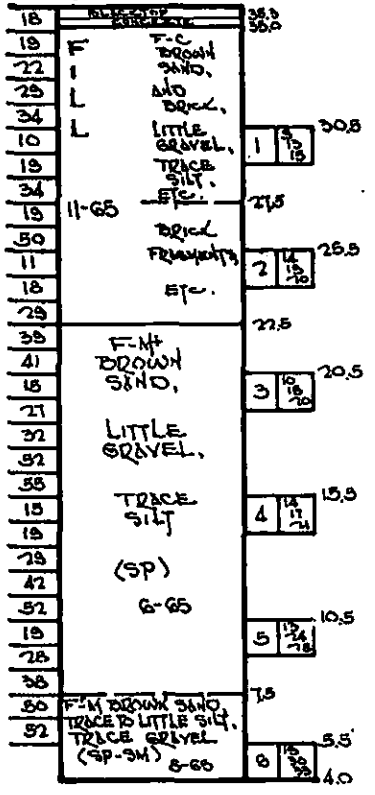
SURF. ELEV. 35.5



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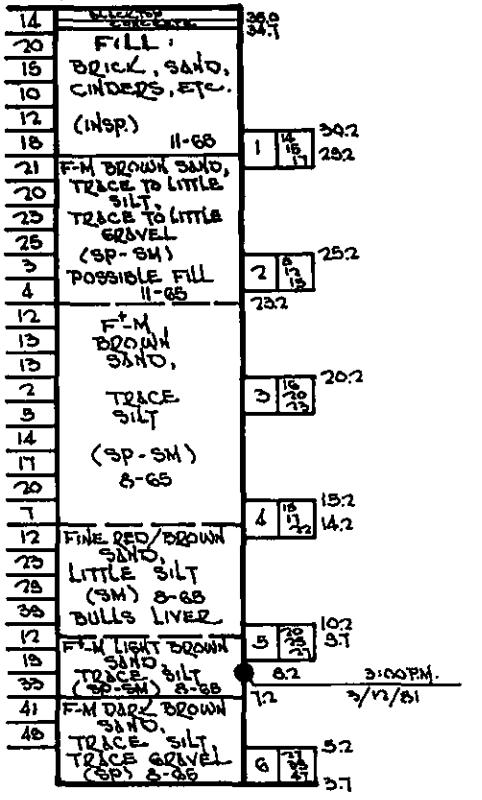
SURF. ELEV. 35.2



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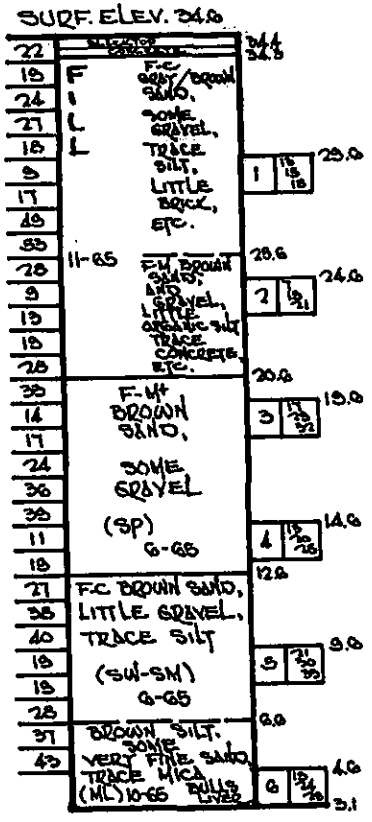
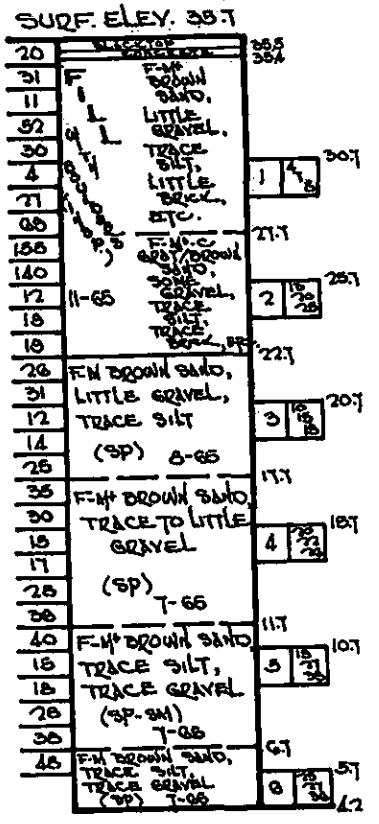
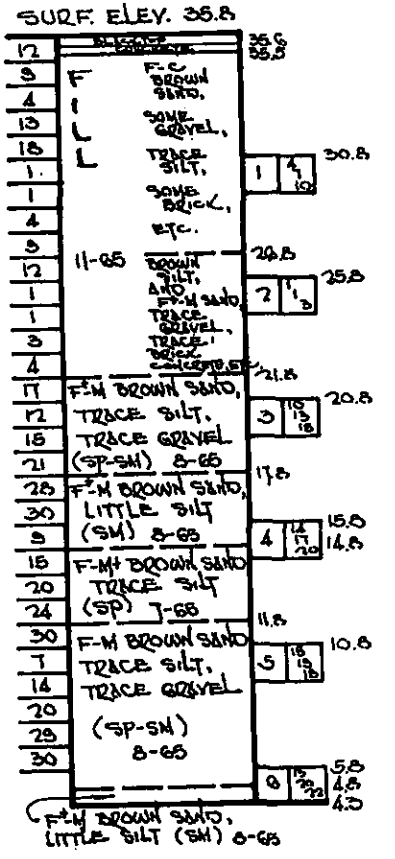

SURF. ELEV. 34.6
FILL
F-C GRAY/BROWN SAND, SOME GRAVEL, TRACE SILT, LITTLE BRICK, ETC.
11-65
F-M BROWN SAND AND GRAVEL, LITTLE ORGANIC SILT TRACE CONCRETE ETC.
F-M+ BROWN SAND, SOME GRAVEL (SP) G-65
F-C BROWN SAND, LITTLE GRAVEL, TRACE SILT (SW-SM) G-65
BROWN SILT, SOME VERY FINE SAND, TRACE MICA (ML) 10-65
34.6
34.6
28.6
20.6
12.6
9.6
4.6
3.1

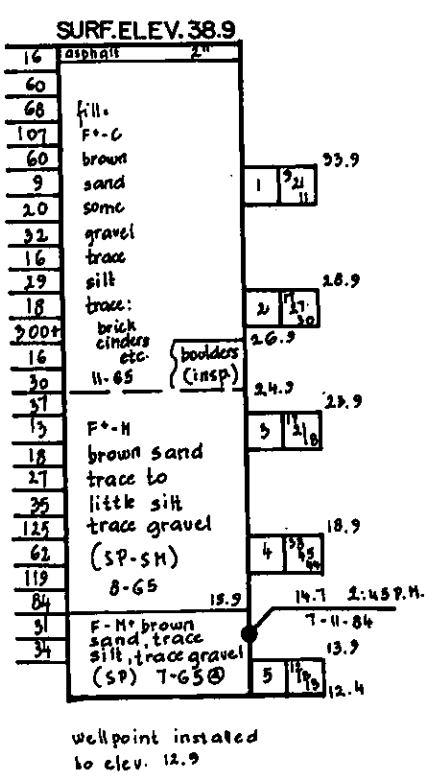
10

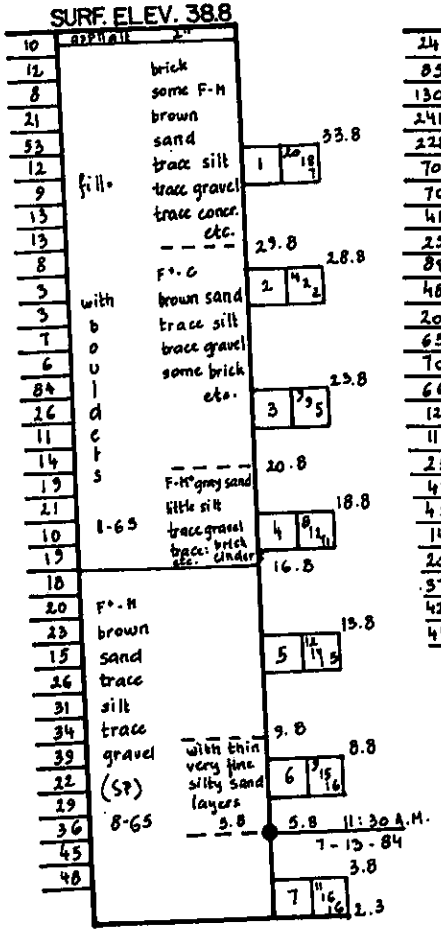

SURF. ELEV. 35.7
FILL
F-M+ BROWN SAND, LITTLE GRAVEL, TRACE SILT, LITTLE BRICK, ETC.
F-M-C GRAY/BROWN SAND, SOME GRAVEL, TRACE SILT, TRACE BRICK
11-65
F-M BROWN SAND, LITTLE GRAVEL, TRACE SILT (SP) G-65
F-M+ BROWN SAND, TRACE TO LITTLE GRAVEL (SP) J-65
F-M+ BROWN SAND, TRACE SILT, TRACE GRAVEL (SP-SM) J-65
F-M BROWN SAND, TRACE SILT, TRACE GRAVEL (SP) J-65
35.7
30.7
27.7
22.7
17.7
11.7
6.7
4.2

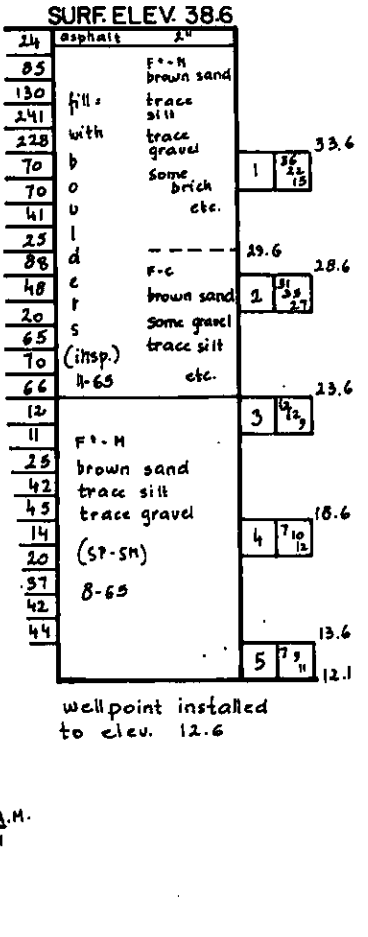
11

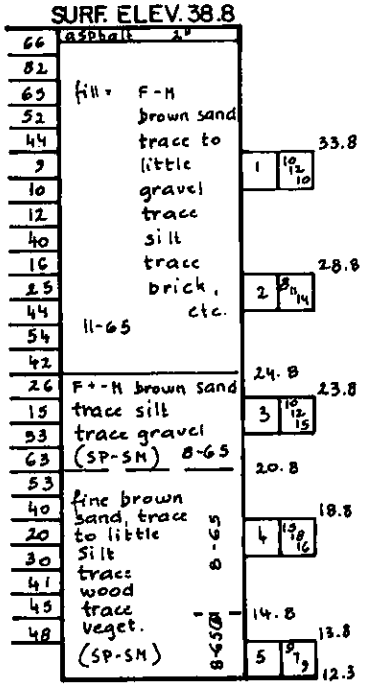

SURF. ELEV. 35.8
FILL
F-C BROWN SAND, SOME GRAVEL, TRACE SILT, SOME BRICK, ETC.
11-65
BROWN SILT, AND F-M SAND, TRACE GRAVEL, TRACE BRICK, CONCRETE ETC.
F-M BROWN SAND, TRACE SILT, TRACE GRAVEL (SP-SM) 8-65
F-M BROWN SAND, LITTLE SILT (SM) 8-65
F-M BROWN SAND TRACE SILT (SP) J-65
F-M BROWN SAND TRACE SILT, TRACE GRAVEL (SP-SM) 8-65
F-M BROWN SAND, LITTLE SILT (SM) 8-65
35.8
30.8
24.8
21.8
17.8
11.8
5.8
4.3

O R U Y


SURF. ELEV. 38.9
asphalt 2"
fill: F+-C brown sand some gravel trace silt trace: brick cinders etc. 11-65
boulders (insp)
F+-M brown sand trace to little silt trace gravel (SP-SM) 8-65
F-M+ brown sand, trace silt, trace gravel (SP) T-6-85
33.9
28.9
26.9
24.9
23.9
18.9
15.9
14.7 2:45 P.M. 7-11-84
13.9
12.4
wellpoint instaled to elev. 12.9


SURF. ELEV. 38.8
asphalt 2"
fill: brick some F-M brown sand trace silt trace gravel trace concr. etc.
with boulders F+-C brown sand trace silt trace gravel some brick etc. 11-65
F-M+ gray sand little silt trace gravel trace brick etc. under
F+-M brown sand trace silt (SP) 8-65
33.8
29.8
28.8
23.8
20.8
18.8
16.8
15.8
9.8
8.8
with thin very fine silty sand layers
5.8 11:30 A.M. 7-13-84
3.8
2.3


SURF. ELEV. 38.6
asphalt 2"
fill: F+-M brown sand trace silt trace gravel some brick etc. 11-65
with boulders F-C brown sand some gravel trace silt etc. (insp.)
F+-M brown sand trace silt trace gravel (SP-SM) 8-65
33.6
29.6
28.6
23.6
18.6
13.6
12.1
wellpoint installed to elev. 12.6


SURF. ELEV. 38.8
asphalt 2"
fill: F-M brown sand trace to little gravel trace silt trace brick, etc. 11-65
F+-M brown sand trace silt trace gravel (SP-SM) 8-65
fine brown sand, trace to little silt trace wood trace veget. (SP-SM)
33.8
28.8
24.8
23.8
20.8
18.8
14.8
13.8
12.3

5.0 NASSAU STREET ALIGNMENT ARCHAEOLOGICAL RESOURCE EVALUATION

5.1 Study Area Description

Because of several different alignments under consideration in this area, the northern section of the APE was conservatively defined to include the area between Chrystie Street and Forsyth Street, and from East Houston Street to Delancey Street, from building line to building line (Figure 5.1-1). There is an existing subway tunnel beneath Chrystie Street between East Houston Street and Delancey Street. These built areas are not considered potentially sensitive for archaeological resources since they have experienced severe subsurface effects. However, directly outside of the existing tunnels and ventilation shafts, there may be potential effects to the APE in areas left undisturbed by the tunnel's construction. However, this section of the APE overlaps with that of Chapter 4.5 on Chrystie Street. Therefore, while the entire Chrystie Street roadbed is included in this APE, its potential sensitivity has already been presented in Chapter 4.5.

The APE for this section includes city Lots 1 through 8 and 28 through 43 on Block 425, and the Kenmare Street (Delancey Street) roadbed from the west side of Chrystie Street west to the west side of Cleveland Place (Marion Street). The APE also includes all of Block 481 south of Kenmare Street, and the Broome Street roadbed from the west side of Mulberry Street to Centre Street. The APE then veers south to include the Cleveland Place and Center Street roadbeds, from building line to building line, south to Grand Street. The following discussion of the APE will progress from east to west along Delancey Street and Kenmare Street, and north to south along Cleveland Place and Grand Street. The construction method would be a combination of cut-and-cover and mining.

Like the existing tunnel that exists beneath Chrystie Street between East Houston and Delancey Streets, although a subway tunnel exists beneath Kenmare Street, Block 481, and Centre Street, there is the potential for effects to occur outside of area of prior effects where new ventilation shafts or pedestrian access would be considered. Therefore, the APE encompasses all of the areas with existing subway tunnels. Prior effects from subway construction have been documented and are discussed below.

5.2 Existing Conditions

5.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

No precontact sites were inventoried in the immediate vicinity of the APE at either the OPRHP, NYSM, or NYCLPC. Stokes reported that the Native American village of Werpoes was formerly situated north and west of the Collect Pond, southwest of the APE, located somewhere between Franklin Street, Lispenard Street, Church Street, and Lafayette Street (Stokes 1928:92). Grumet stated that the author Schoolcraft understood

that "Warpoes" was simply the name of a parcel of land elevated above the Collect. However, Grumet's more in depth analysis of this term suggests that neither assertion is supported by the historic record (Grumet 1981:59).

Archaeological Potential

Prior to European contact, this area would have been a habitable and even favorable location for Native American use or occupation. A fresh water pond (the Collect) is shown on early historical and topographic maps within two to nine blocks of the APE (e.g. Grim 1744; Montresor 1766; Viele 1865), and the land itself is largely level meadow, save for a hill or cluster of knolls and small plateaus or ridges just north-northeast of the Collect, which may have provided protection. Geological studies suggest that the area of this APE may have up to ten feet of fill in the area of Delancey Street and Chrystie Street, and up to five feet of fill in the area of Centre Street and Grand Street, which could protect early resources (see discussion of soil borings in subsequent Block appendices). However, site file searches have not identified any previously identified precontact resources in the area. Therefore, the precontact sensitivity of this APE is moderate in areas with minimal subsequent effects, but is low to nonexistent in areas with extensive historic effects (see Appendix 5.7.1).

5.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

The most prominent historic site inventoried in proximity to the APE, is the African Burial Ground, south of this APE, which is a National Historic Landmark and a New York City Historic District (Howson and Harris 1991; Harris et al 1993). The boundaries of the National Historic District encompass approximately seven acres. The burial grounds are thought to extend beyond the bounds of the National Historic Site, thus the LPC expanded the boundaries when they designated it a city landmark. The Landmarked site, designated the African Burial Ground and the Commons Historic District, encompasses City Hall Park and the blocks bounded by Chambers Street, Broadway, Duane Street, Foley Square (in part), and Centre Street, about six blocks south of the APE.

Archaeological excavations were completed at the African Burial Ground on a portion of Block 154. Research found that the level of overall preservation was good because sixteen to twenty-five feet of fill protected the original surface and an intact stratum of burials. A low-lying ravine and the Collect Pond, once just north of City Hall, were filled during the late 18th and early 19th centuries when Broadway was leveled between four and 15 feet (Howson 1991:5; Harris et al 1993:21). Modern basements, built years after the burial ground was abandoned, only penetrated fill except on the lots fronting Broadway where the original ground surface was higher.

According to Howson (1991), the Viele (1859) map showed that the original topography at the burial ground sloped down to the Collect Pond north of present-day Chambers Street and east of Broadway. The site of the burial ground was in a ravine between two hills, distant from the colonial community, and thus it was an acceptable place to bury African Americans. Furthermore, according to Howson, the Dutch West India Company granted farms to Africans north of the town, around the Collect Pond and in some places, extending northward as far as present-day 34th Street.

The earliest documented burial at the grounds dates to 1712/13, and burials probably ceased in 1795. Excavations found that burials were densely distributed. The site was used intensively, resulting in superimposed burials, which, in some cases, caused disturbance to earlier interments. In total, over 400 burials were professionally excavated by archaeologists (Harris et al 1993:21, 40).

Archaeological Potential

This APE has been historically occupied since instructions were drawn up in 1625 to divide the area encompassing the APE into farm lots or "bouweries." These were then leased or granted by the Dutch West India Company (Stokes 1928:70-73). Future Blocks 425 and 424 (east of the Bowery Road to Boston) fell within Bouwery No. 4, in a section leased to Bastiaen in 1647 by Mr. William Kieft, Director General of New Netherland, who granted many of the leases within the APE during the 1600s. The very northern section of Block 425 was leased by Kieft to the negro Antony Congo in 1647, but this section of the block falls outside of the APE (Stokes 1918:Plate 175).

Bouwery No. 8 occupied a tract of land west of Bowery Road and north of what would later become Broome Street, encompassing the APE from Kenmare Street at Bowery to what is now Block 481. By 1638 it was occupied by Dr. Hans Kierstede, surgeon to the Dutch West India Company. Stokes places his house "about on the site of the later Bayard Mansion" (Stokes 1928: 73). The Bayard Mansion itself was located less than one block west of current Block 481, just outside of the APE (Ibid.:435). Within Bouwery No. 8, a short grant was given to "Jan Negro" in 1647 by Kieft. The grant was 200 paces "along the wagon road [Bowery]" and "extended back from the Wagon road 325 paces to the house of Mr. Hans." (Ibid.:73). As the land parcel appears to abut Broome Street to the south, it would have encompassed the entire APE from Kenmare Street at Bowery to Block 481. In a request to purchase the Bouwery in 1651, it was described having "meadowland, a farmhouse, 50 feet long and 22 feet deep, a haystack, two mares, a stallion and a negro" (Ibid.). This bouwery is cited as the last farm on Manhattan retained by the Dutch West India Company. As the precise location of structures associated with this parcel is not clear, it cannot be discounted that the house of Dr. Kierstede may fall within the APE, as it is said to be located *about* on the site of the Bayard Mansion which is a block west of the APE. It is not clear, either, if Jan Negro occupied Dr. Kierstede's house or if another house was constructed. Remains of structures or shaft features from the 1600s may then exist in the APE, more likely in the area of Block 481 which is closest to the estimated location of Dr. Kierstede's house.

Bouwery No. 7 was located directly south of Bouwery No. 8, and encompasses the APE at Centre Street between Broome Street and Grand Streets. Its first occupant was Evert Focken, who died before 1630 (Stokes 1928:71). In 1638 it passed into the hands of Thomas Sanders, who was given the erroneous moniker, "the mad smith" (giving the hilly area the name "Smith's Hill") (Ibid.:72). In 1639 Sanders contracted to fence the plantation, construct a tobacco house and plant tobacco crops. Sanders appears to have broken his original contract with Kieft, however, and the land reverted to the Company and passed through several hands for the rest of the century (Ibid.). There is no mention of the location of any structures--the tobacco house or a residence--and so it is possible that structural or shaft features from the 17th century occupation were located within the APE.

By the early 1700s, two prominent farms, the Delancey Farm and the Bayard Farm, occupied the east and west sides of the Bowery Road to Boston, respectively (Figure 5.1-2; Ratzer 1766/67; Stokes 1918:949, 1928:435). The Delancey Farm, home to James DeLancey, Lieutenant Governor, was located near the southeast corner of Block 425 within the APE, which is identified as the Mansion House plot (Figure 5.1-10; Holland 1757; Stokes 1918:949, Plate 175). The DeLancey residence was erected by May Bickley prior to 1724 and purchased by DeLancey from Dr. Brune Bickley in 1733 (Stokes 1918: 949). The residence is said to have been in "ruinous condition" in 1791, and demolished by 1799 (Ibid.). One reference in Stokes reports that it was demolished by 1795 (Stokes 1926:1279), while another source states it was razed after 1797 (1918:949). There are direct cartographic indications of only one other structure of unknown use or function which appears to be associated with the Delancey Farm that may fall within the APE on Block 425 to the north (Holland 1757). For consideration, however, other, unmapped structures associated with the DeLancey residence may have also existed that fell within the APE.

The Bayard residence (outside of the APE, see below) was erected by Col. Nicholas Bayard in 1735 and occupied by his son, Stephen Bayard (Stokes 1928:70-71, 435). The Bayard Farm encompassed the area formerly known as Smith's Hill plus several parcels to the north (Ibid.:70). By 1784 the Bayard residence was put up for rent, and in 1798 it was leased to Jacques Delacroix who used the facility as a tavern, the "Vauxhall Gardens" (Stokes 1918:981, 1928: 435). In 1801 an amphitheater was constructed on the site (exact location unknown), but in 1805 Delacroix moved his operations to another location and the original Bayard residence was demolished in 1821 (Ibid.). The Bayard residence had been located on the southern end of current Block 473, just west of the APE (Stokes 1928:435) and the rest of the Bayard farmlands encompassed all of the APE west of Bowery. There are no secure indications on early maps of structures associated with the Bayard Farm that existed within the APE. However, there is the possibility that unmapped outbuildings, such as barns, or shaft features, such as wells, fell within the APE.

The British Headquarters Map of 1782 shows that during a seven year period a fortification wall ran east-west between the approximate locations of Grand Street to Kenmare Street, approximately one block south of the APE. Forts were located just south

of the wall, many on defensible hilltops. One small fort was located on a knoll just south of Kenmare Street. This knoll is indicated on Holland 1757 as "Bayard's Hill commanding over all the high Ground." These fortifications were constructed by George Washington's troops in 1775-76 and continued to be used and augmented by the British during their occupation of New York City between 1776 and 1783. By the end of the century, however, they were apparently razed (Kearns et al 1998).

The gridding of Lower Manhattan into avenues and streets took place by 1797 (Hayward 1797; Taylor Roberts 1797), and by mid-century, all blocks within this APE were fully developed (Dripps 1852). Important developments in the 19th century included the establishment of the Harlem Railroad, which ran north on Centre Street, turned east on Broome Street, and then north again on Bowery (Mitchell 1846; Dripps 1852). The east half of Block 472 was home to the Centre Market for most of the 19th century (just outside of the APE), after which it became a Police Headquarters for most of the 20th century (Tanner 1836; Robinson 1893; Sanborn 1905, 2001; Bromley 1974). Otherwise there are no particular structures marked on 19th century maps or atlases within the APE such as churches, cemeteries, government or other public buildings. Exceptions are 143 Chrystie Street (Lot 26), which in 1876 is labeled "Church" and 195 Mulberry Street (Lot 9), which from 1844 to 1869 is noted as the "Methodist Book Concern" in the tax records (see Appendix 5.7.1). 195 Mulberry Street (Lot 28) is also noted as the Methodist Book Concern in tax records of 1858, but this may be an error, as the book concern is shown located across the street on maps and atlases (e.g. Perris 1857). In general, the area was overall characterized by a mixture of residential and commercial occupation (NYCLPC, for time period 1815-1879).

The most significant historical effect within the APE was the construction of the Centre Street Loop, a subway tunnel passing through Delancey Street west to Cleveland Place, turning south on Centre Street (Figure 5.1-1). The cut and cover method of construction of the subway would have destroyed any subsurface resources that once lay within or in its path. Kenmare Street was created to accommodate the subway tunnel between Bowery and Cleveland Place and its construction meant the razing of all development in the middle of Blocks 478-481 as well as most of the southern half of Block 481, all of which comprise a major portion of the APE (Figures 5.1-11 through 5.1-16 and Figures 5.1-20 through 5.1-22).

While much of the APE consists of roadbeds where once there were structures, portions of Blocks 481 and 425 still have back yard areas that have been open through time (Figure 5.1-1). These areas are the most likely to have remains of 19th century resources, if they are so present. Yard scatter is not likely to have survived, but deep shaft features, especially wells may have since the water table is located approximately 30' below current grade (Borings C6-17 and C6-19: Raymond International, Inc., 1974). While utilities were available to all areas of the APE at this time, it can not be presumed that all residents or occupants utilized indoor plumbing. These shaft features may have been excavated from the surface formed when the area was filled to level it in the process of development. Geological studies imply fill levels from five to ten feet for most of the APE (see discussions of subsurface conditions, Appendix 5.7.1, and Soil Boring Logs,

Section 5.6.3). Earlier historic resources from the 17th and 18th centuries and possibly precontact archaeological remains may have been preserved under that fill.

Approximately the top foot or so of the surface of the APE would have been affected by farming practices which occurred from the mid-17th century on (e.g. Stokes 1918, 1928; Grim 1744; Montresor 1766; Figure 5.1-2). The complete development of the area by the mid-1800s would have further affected the area, particularly in the construction of basements (Dripps 1852). Landscape modification that occurred along with development would have either destroyed resources where hills were razed or potentially protected them where areas were filled.

In particular, the APE would have been affected by the probable filling and leveling of areas around Kenmare Street and Cleveland Place to Centre Street and Grand Street (compare street elevations, Robinson 1885 and Sanborn 1922/23 or Bromley 1902; also see Bayard's Hill on Holland 1757; Viele 1865). The area known as "Bayards Hill," located at the south end of Block 471, was certainly leveled, as it formerly "commanded over all the high ground," which implies a considerable height (Ibid.). Recorded changes in elevations appear slight over time (5-6"), but soil borings (WPA ca. 1935) also reveal an average of five feet of fill in this area of the APE. However, these soil borings are known to be questionable, given they were completed almost 70 years ago. The area of the APE around Block 425 shows more constant elevations through time, but considerably more variation in identified fill levels through soil borings (see soil boring logs, Section 5.6.3), from zero to ten feet, but one area showing 30'. It is probable that some of these fill episodes were connected to excavations for the construction of the Centre Street Loop (JMZ line) or Chrystie Street (former BDQF line) subway tunnel. While the dimensions of the Centre Street Loop tunnel as it was constructed are known, it is not possible to tell precisely how much land outside of the tunnel area was affected.

In sum, the Centre Street Loop tunnel reaches depths of 50' below the surface at Delancey Street and Chrystie Street, 40' below the surface at Kenmare Street and Elizabeth Street, 33' below the surface at Kenmare Street and Mulberry Street, 30' below the surface at Centre Street and Broome Street, and 20' below the surface at Centre Street and Grand Street; widths are reported to be approximately 90' at Delancey Street and Chrystie Street, reaching a maximum of almost 95' at Kenmare Street just west of Bowery, narrowing to almost 60' around Kenmare Street and Mott Street, widening as it passes under the south half of Block 481 to 60' along Centre Street (WPA Subsurface Conditions Maps: Project No. 609, Map No. 85, 1937 and Project No. 665-97-3-32, Maps No. 73 and 75, 1939; MTA/SYSTRA 2001, Drawing No. CT-514).

It is clear, then, that the majority of roadbeds within the APE (Delancey Street, Kenmare Street and Centre Street) have been almost completely disturbed below grade by the excavation of the subway lines to depths of almost 50' and utilities, averaging depths of 5-10' (WPA Subsurface Conditions Maps 1939). Sewers especially affected areas, since they tended to be more deeply buried and then slope downwards--in many cases they appear 12-15' below grade. Some large water lines have also severely afffected the APE already, for example the 20' Catskill city water tunnel adjacent to the north side of the

Delancey subway tunnel, which reaches a depth of 50' below the surface (Ibid.). Notably, the WPA Subsurface Conditions Maps show Kenmare Street with considerably fewer utilities marked than other streets in the APE; however, this may not be the case today. It is important to note that Kenmare Street was constructed only at the beginning of the 20th century, over at least 50 years of prior development. Thus potential resources could only remain within the areas not previously disturbed by cut and cover construction of the Kenmare Street subway tunnel which would have destroyed all potential resources in its path.

5.3 Summary of Archaeological Potential

In areas under Kenmare Street that were not affected by the subway tunnel, the roadbed may have protected 19th century shaft features as well as more deeply buried earlier remains (Figures 5.1-24a and 5.1-24b). This includes most of the Kenmare Street roadbed between Mulberry Street and Cleveland Place. The Broome Street roadbed in particular may lie over the original lane that led from Bowery to the historic Bayard farm of the 17th century and earlier 16th century farmhouses, although the recorded structures themselves fall outside of the APE. Other areas with possible extant archaeological remains beneath include the sidewalks on either side of Kenmare Street between Elizabeth Street and Cleveland Place, the sidewalk on the west side of Mulberry Street between Kenmare Street and Broome Street, both sidewalks on either side of Cleveland Place between Kenmare Street and Broome Street, and the sidewalk on the west side of Centre Street from Broome Street to just south of Grand Street. While utilities are present under these roadbeds and sidewalks, they may be resting within a layer of fill, above earlier remains.

Yards that have remained open through history may also yield precontact or historic remains associated with the filled surface from the 19th century, or earlier surfaces buried beneath. The areas that appear undisturbed by construction through time are the interior yards within the APE in Block 425 in the southeast corner (behind Lots 35-42), and the interior yards within the southeast corner of Block 481 (behind Lots 33-38) (Figures 5.1-24a and 5.1-24b).

Specific areas of sensitivity within the Nassau Street alignment are as follows, based on depths of fill for each area from available soil borings (see Appendix 5.7.3):

Block 425 (southeast portion of block between Chrystie Street, the Bowery, Delancey Street and Rivington Street): The potential for precontact sensitivity is moderate from the surface to a depth of 14' below grade. Historic period 17th and 18th century remains are possible, particularly features from the 18th century residence of Lieutenant Governor James Delancey, and residential wells or privies from the 17th through 19th centuries. Historic remains could be present from undisturbed surfaces or below basements to a depth of 28' or even 37' below grade, depending on the past depth of the water table.

Delancey Street between Chrystie Street and Bowery: Precontact sensitivity is

moderate to low in areas outside of the existing subway tunnel from the surface to a maximum depth of 14' below grade, based on depths of fill. Areas on either side of the subway tunnel are also sensitive for 17th to 19th century wells and privies to a depth of approximately 30', particularly on the south side of Delancey Street, which was formerly the northern section of Block 424. Exceptions would be areas where utilities are buried, particularly on the north side of the subway tunnel where a 20'-diameter water main is located directly adjacent to the subway.

Kenmare Street between Bowery and Elizabeth Street: Precontact and historic sensitivity is limited to the three lots to the north of Kenmare Street included in the APE, given that the rest of the APE has been entirely disturbed by the subway tunnel under Kenmare Street. Potential precontact resources would be located beneath the aforementioned basements to a depth of about 15' below grade (where basements were less that 15' deep). Historic 17th to 19th century wells or privies could exist beneath the basements to a depth of approximately 30' below grade.

Kenmare Street between Elizabeth Street and Mott Street: Moderate sensitivity for precontact remains exists on Kenmare Street with resources potentially lying from five to 15' below grade in areas not already affected by prior subway construction. Historic 17th to 19th century wells or privies may exist from the surface to a depth of approximately 30' below grade outside of the existing subway tunnel.

Kenmare Street between Mott Street and Mulberry Street: Moderate sensitivity for precontact remains exists on Kenmare Street, and resources may lie between five and 11' below grade in areas not affected by the existing subway tunnel. Furthermore, 17th through 19th century historic wells or privies could also exist from the surface to approximately 30' below grade.

Kenmare Street between Mulberry Street and Cleveland Place: Moderate sensitivity for precontact remains exists on Kenmare Street, and resources may extend between five and 11' below grade in areas not affected by the existing subway tunnel. There is also the potential for 17th through 19th century historic wells or privies and possible Revolutionary War period fortification from the surface down to approximately 35' below grade.

Cleveland Place between Kenmare Street and Broome Street: The entire APE is moderately sensitive for precontact resources from between about five to 11' below grade. There is also the potential for 17th through 19th century wells and privies and possible Revolutionary War period fortification walls to exist from the surface down to a maximum depth of 35' below grade.

Block 481 (between Kenmare Street, Mulberry Street, Broome Street and Cleveland Place, under which the subway turns from Kenmare Street to Centre Street): The APE is moderately sensitive for precontact resources in all areas outside the existing subway tunnel, with resources potentially lying between five and 11' below grade. Historic period resources may include 17th through 19th century wells and privies and possible Revolutionary War period fortification walls which, if present, could exist from

the surface down to a maximum depth of 35' below grade.

Broome Street between Mulberry Street and Centre Street: The entire APE is moderately sensitive for precontact resources from between about five to 11' below grade. There is also the potential for 17th through 19th century wells and privies, as well as possible Revolutionary War period fortification walls to exist from the surface down to a maximum depth of about 35' below grade.

Centre Street between Broome Street and Grand Street: The APE is moderately sensitive for precontact resources which may lie between about six to ten feet below grade outside of the area of the existing subway tunnel. There is also the potential for 17th through 19th century wells and privies and possible Revolutionary War period fortification walls to exist from the surface down to a maximum depth of 35' below grade.

5.4/5.5 Proposed Project Effects and Recommendations

There is both a minimal to moderate potential for precontact remains and a higher probability that historic remains exist within the APE, outside of areas of prior subsurface effects, most notably from prior subway construction. Several potentially sensitive areas are beneath roadbeds and sidewalks as well as back yards, as detailed above.

Due to the Nassau Street alignment's greater potential environmental effects and engineering difficulties, this alignment is no longer being evaluated as a project alternative. Therefore, potential project effects on the sensitive areas described above have not been assessed, and mitigation recommendations have not been provided.

5.6 Figures and Photographs

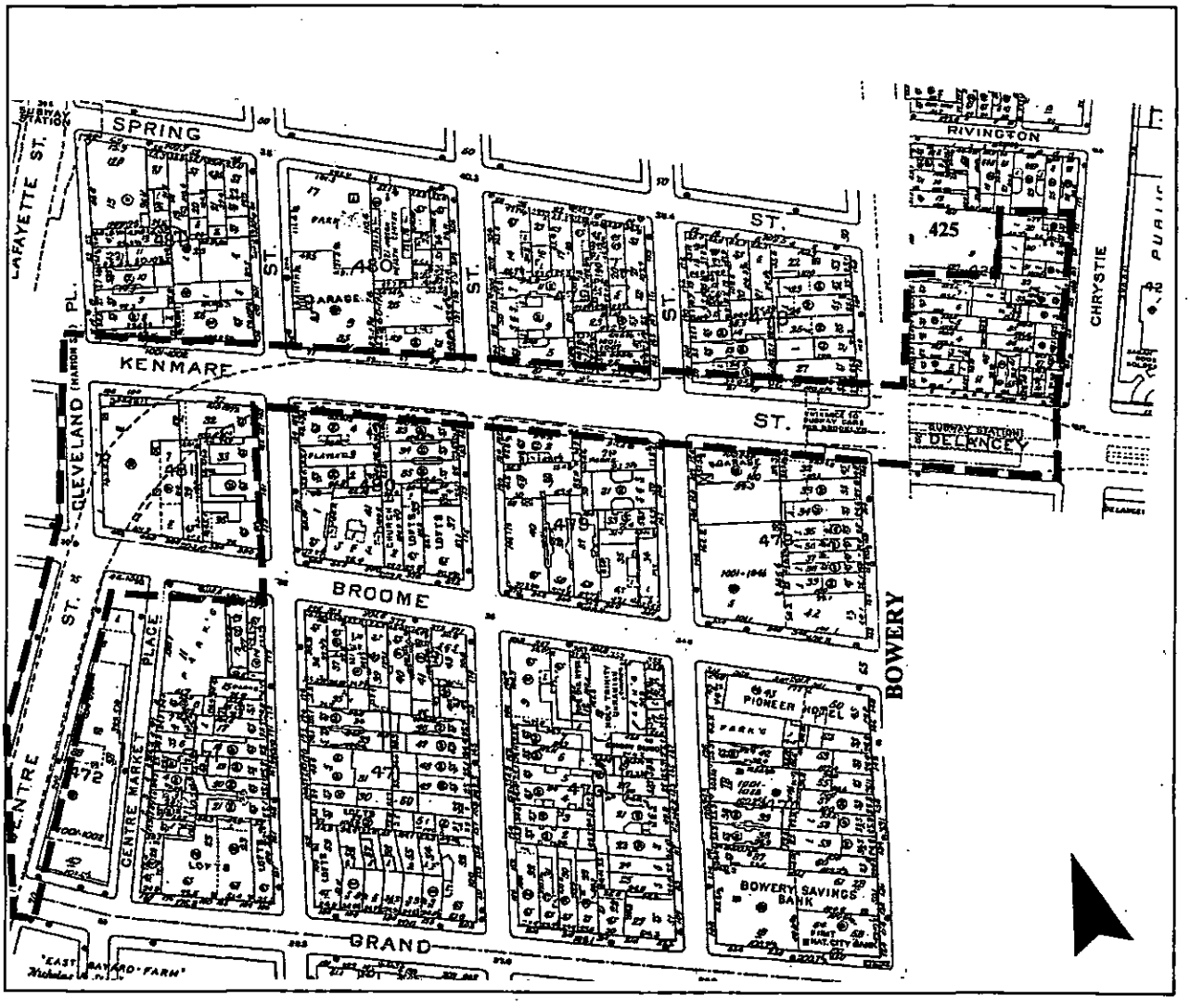


FIGURE 5.1-1

Nassau Street Alignment from Block 425 to Centre Street at Grand Street.
Sanborn 2001.

Approximate Scale: ½ inch = 100 feet

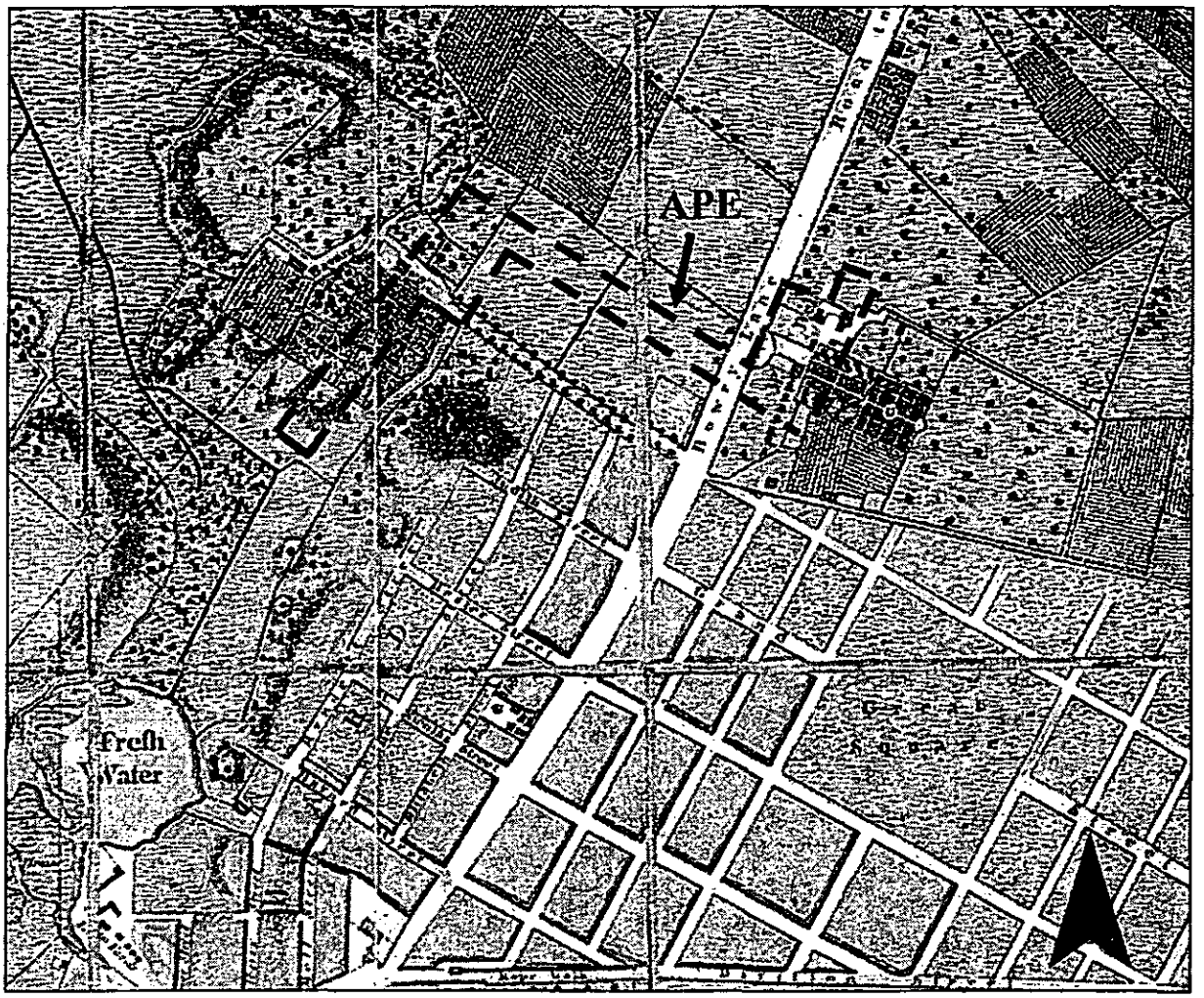


FIGURE 5.1-2

Plan of the City of New York Nassau Street Alignment. Ratzer 1766/67.

No Scale

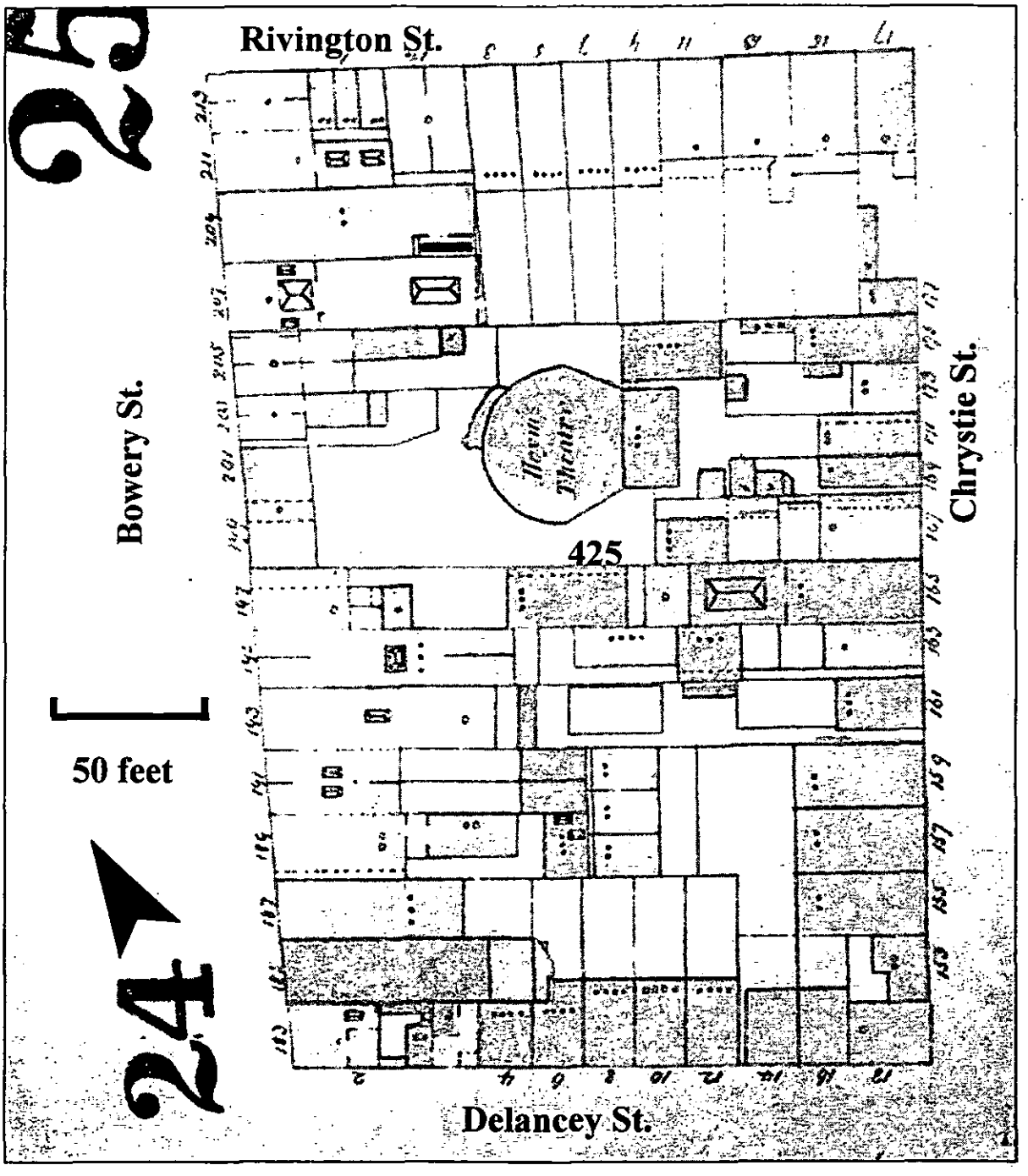


FIGURE 5.1-3

Maps of the City of New-York. Block 425. Perris 1857-62.

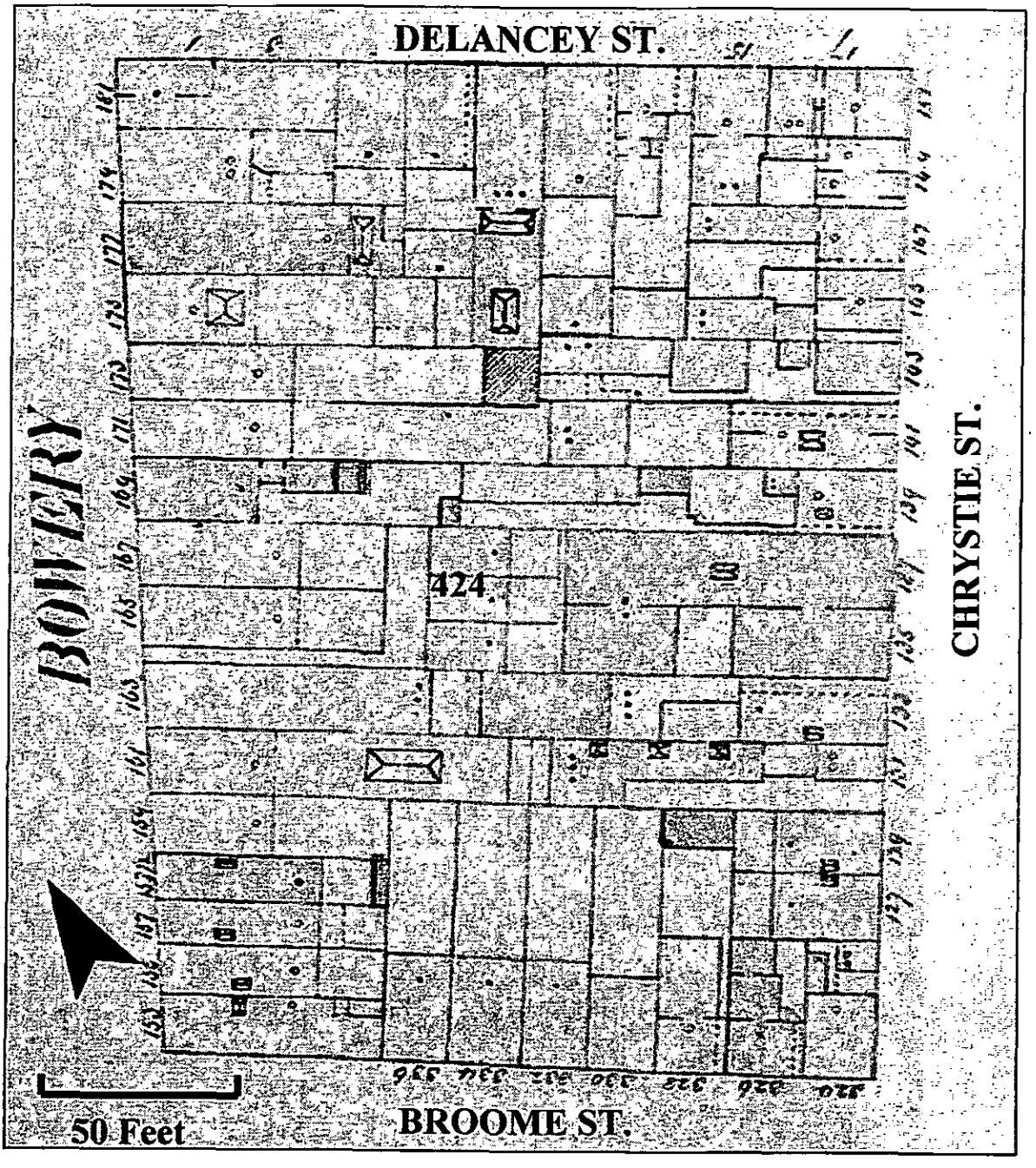


FIGURE 5.1-4

Maps of the City of New-York. Block 424. Perris 1857-62.

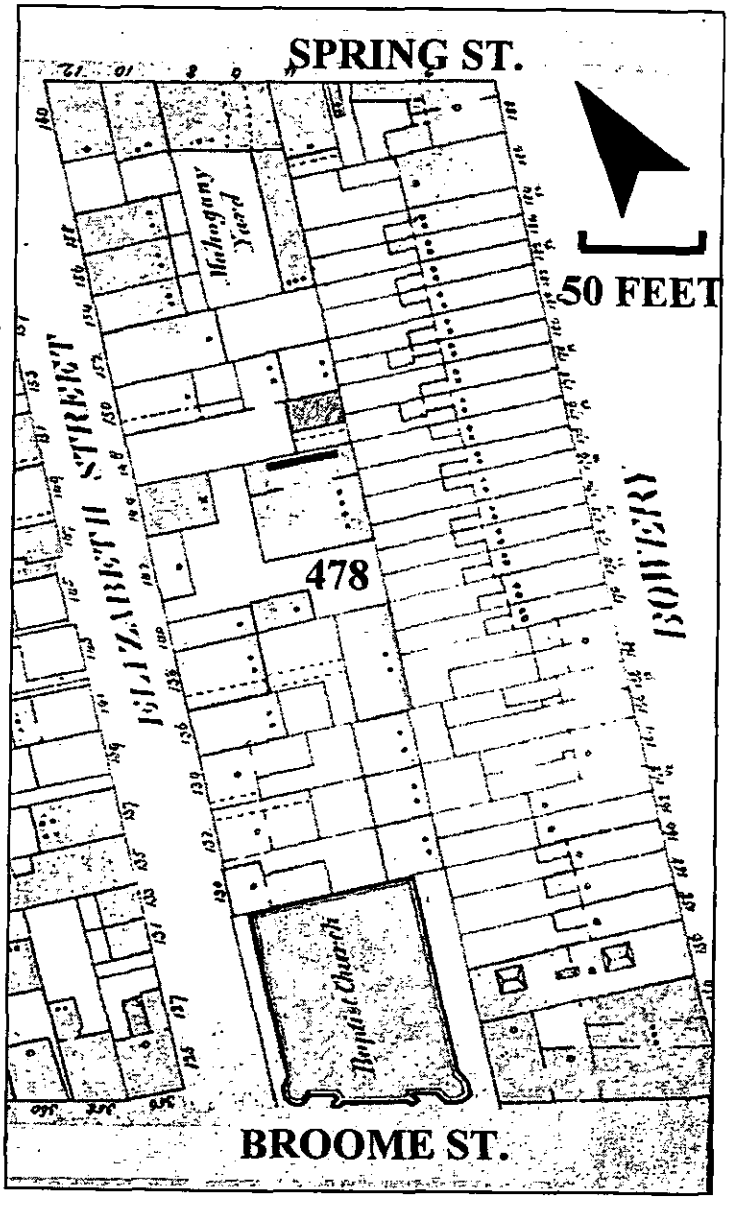


FIGURE 5.1-5

Maps of the City of New-York.
Block 478, future location of Kenmare Street. Perris 1857-62.

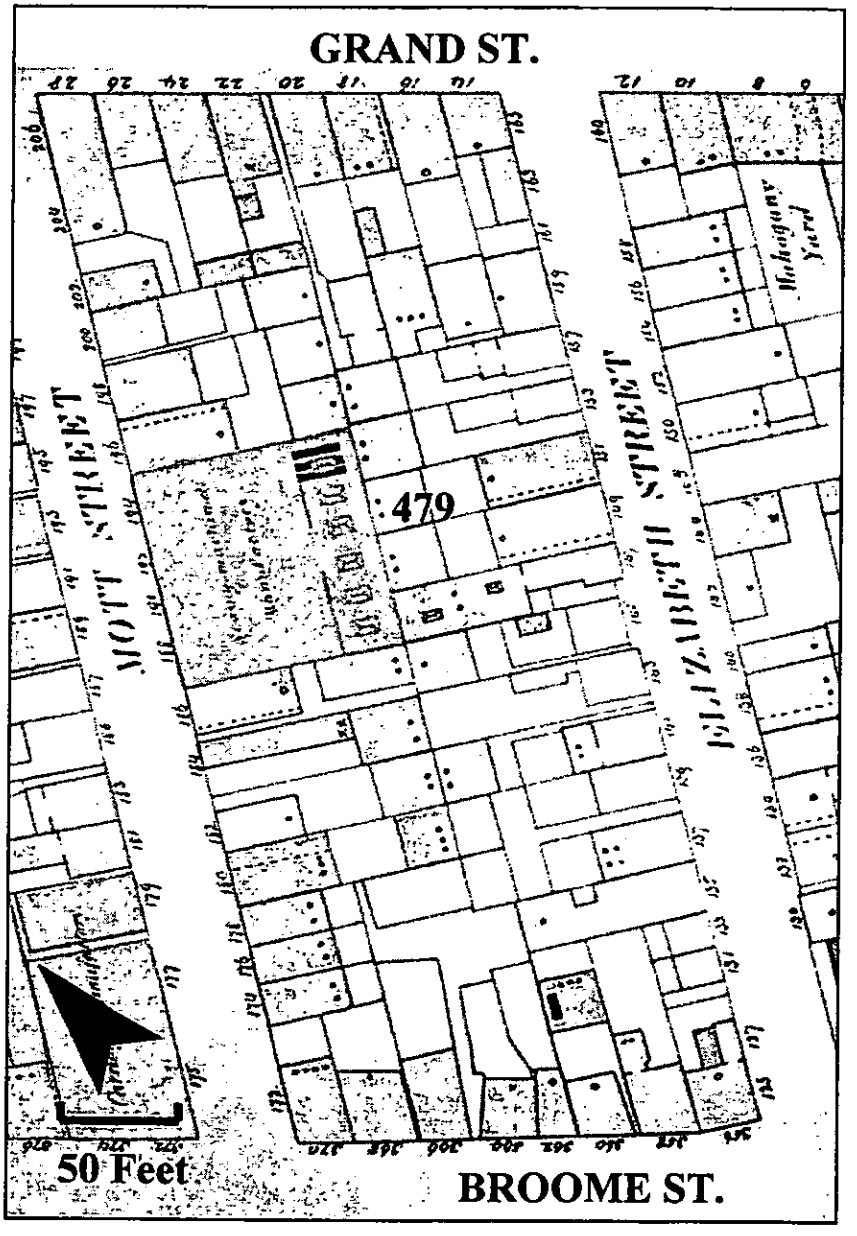


FIGURE 5.1-6

Maps of the City of New-York. Block 479, future location of Kenmare Street. Perris 1857-62.

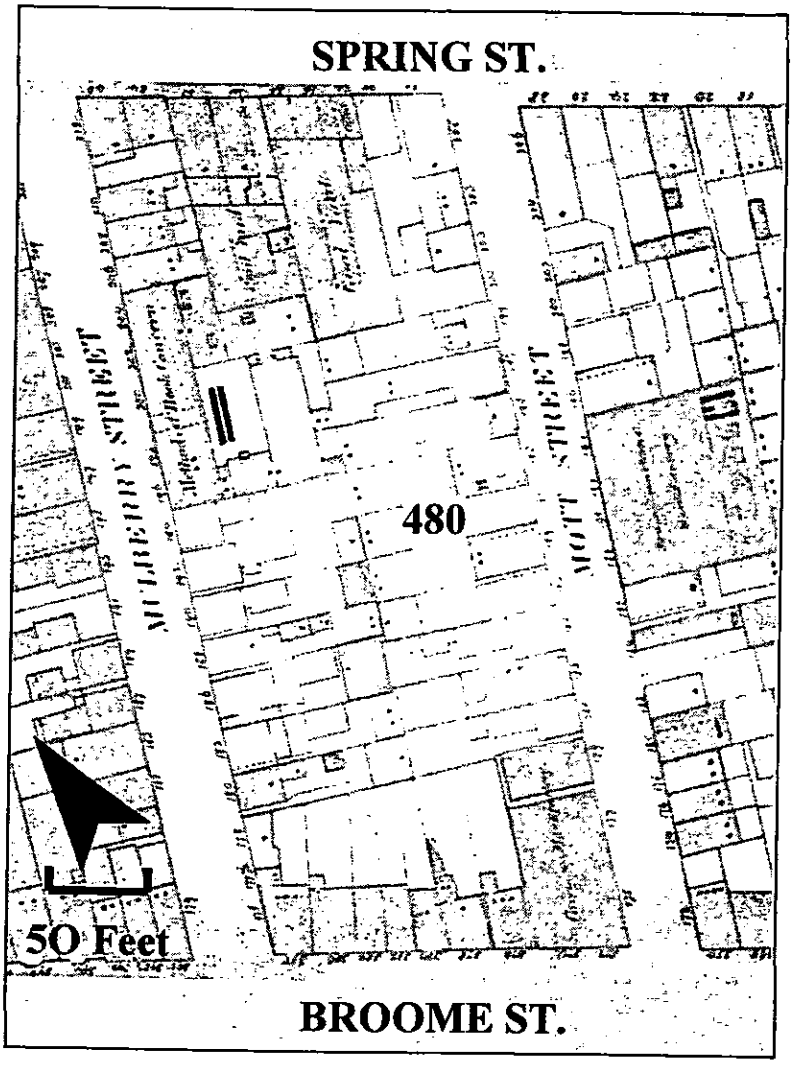


FIGURE 5.1-7

Maps of the City of New-York. Block 480, future location of Kenmare Street. Perris 1857-62.

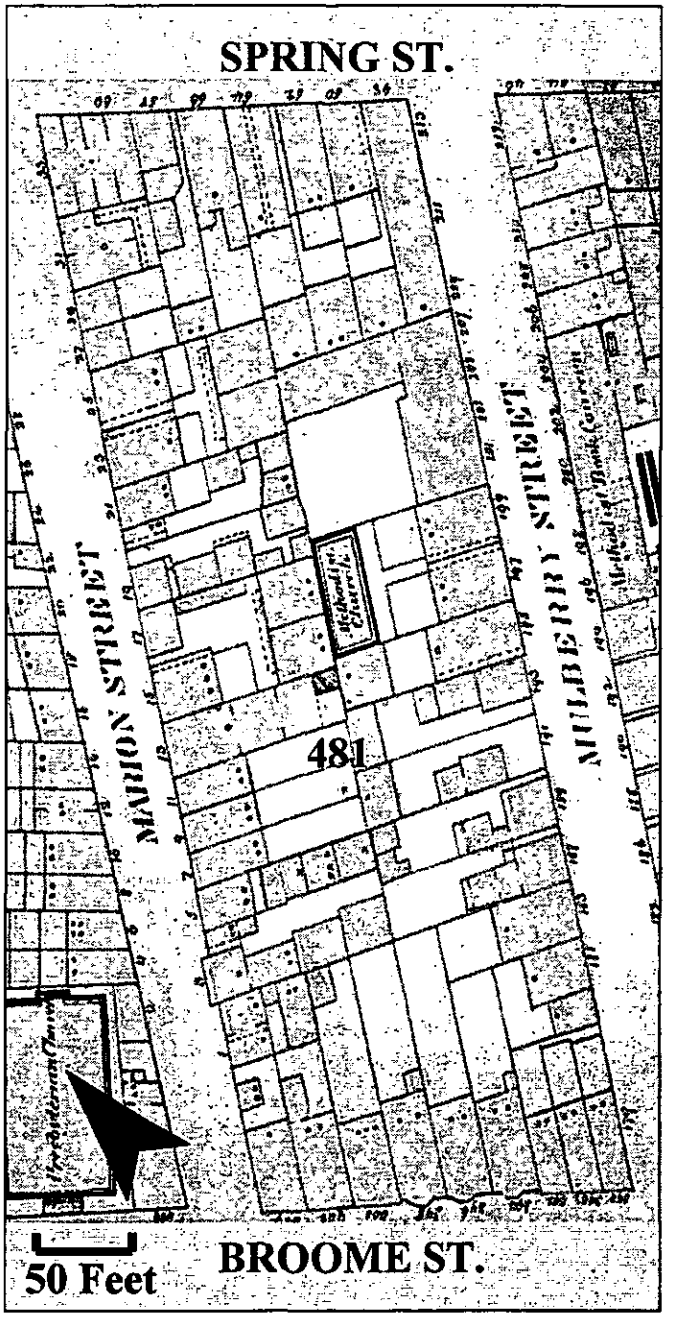


FIGURE 5.1-8

Maps of the City of New-York. Block 481, future location of Kenmare Street. Perris 1857-62.

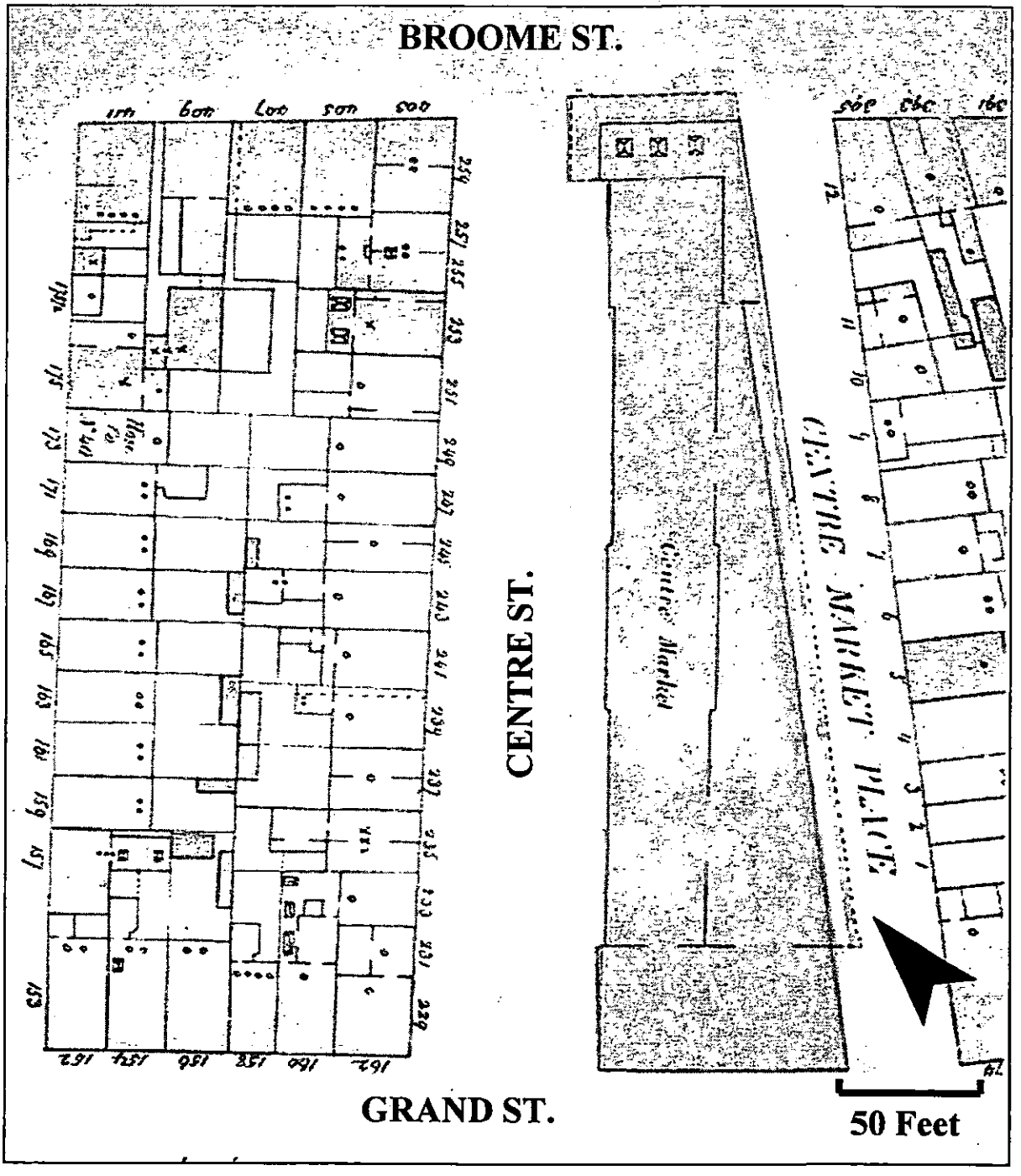


FIGURE 5.1-9

Maps of the City of New-York.
Centre Street from Broome Street to Grand Street. Perris 1857-62.

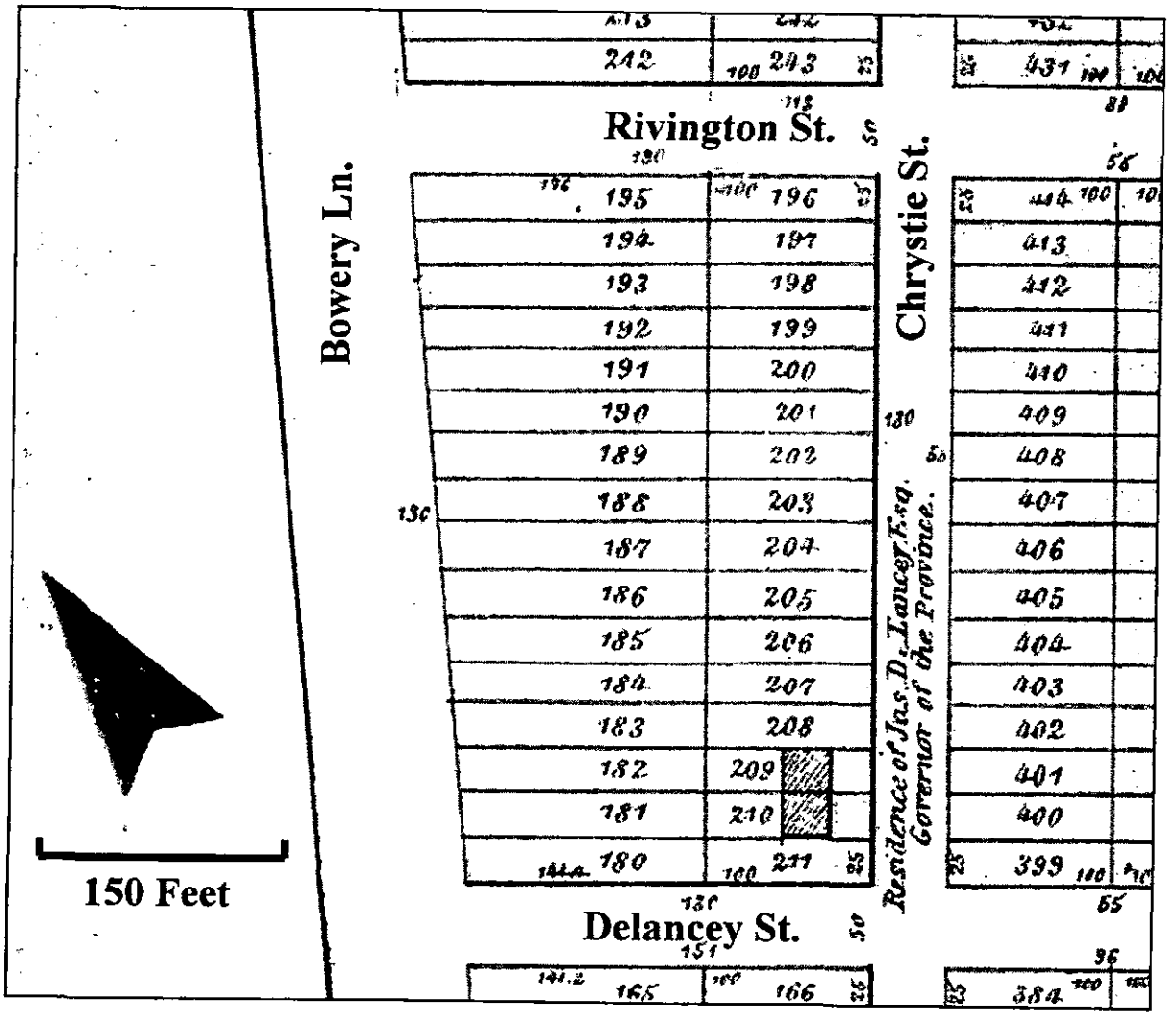


FIGURE 5.1-10

Delancey Farm Map. Block 425. 1865.

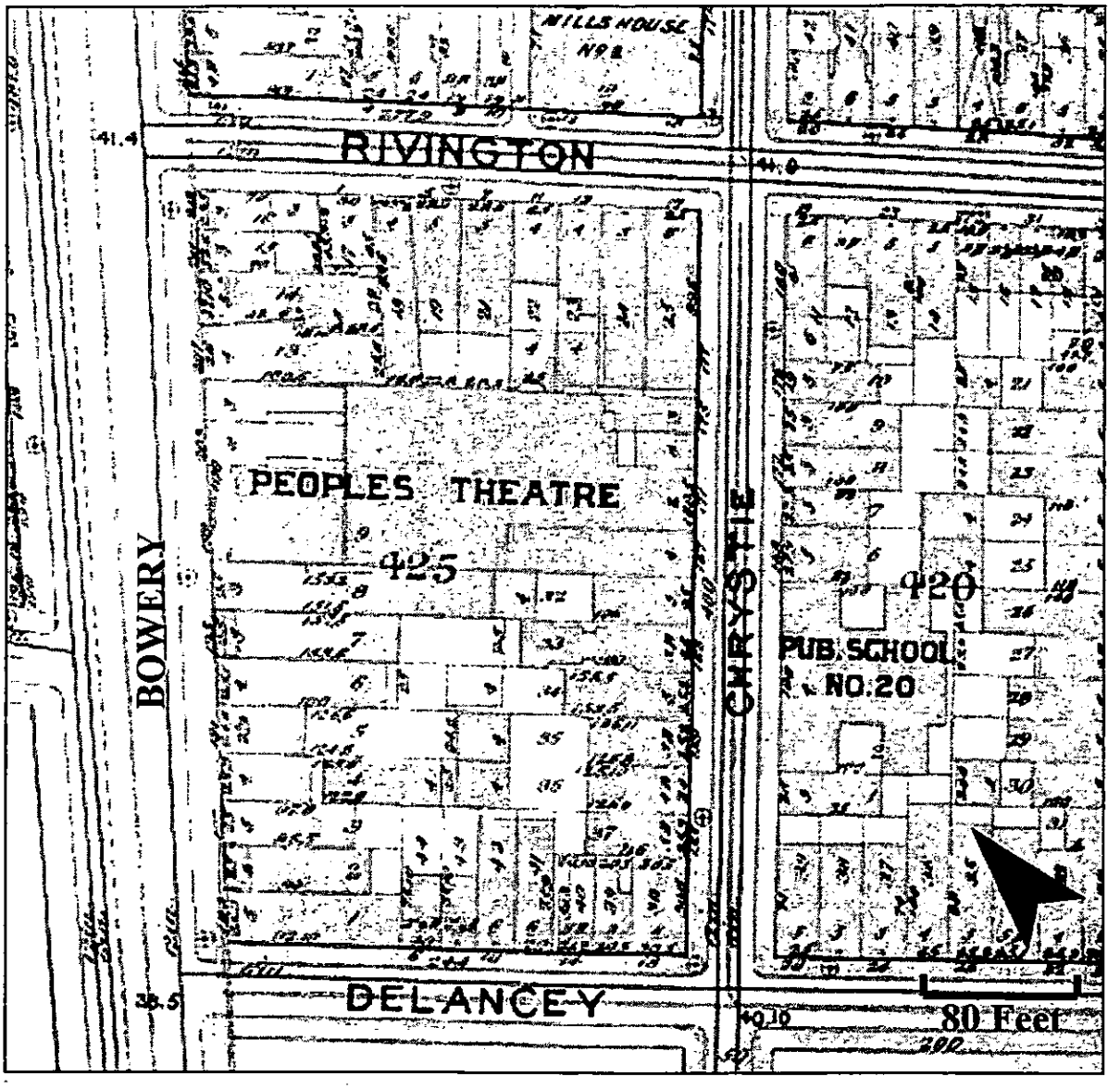


FIGURE 5.1-11

Atlas of the City of New York, Borough of Manhattan. Block 425. Bromley 1902.

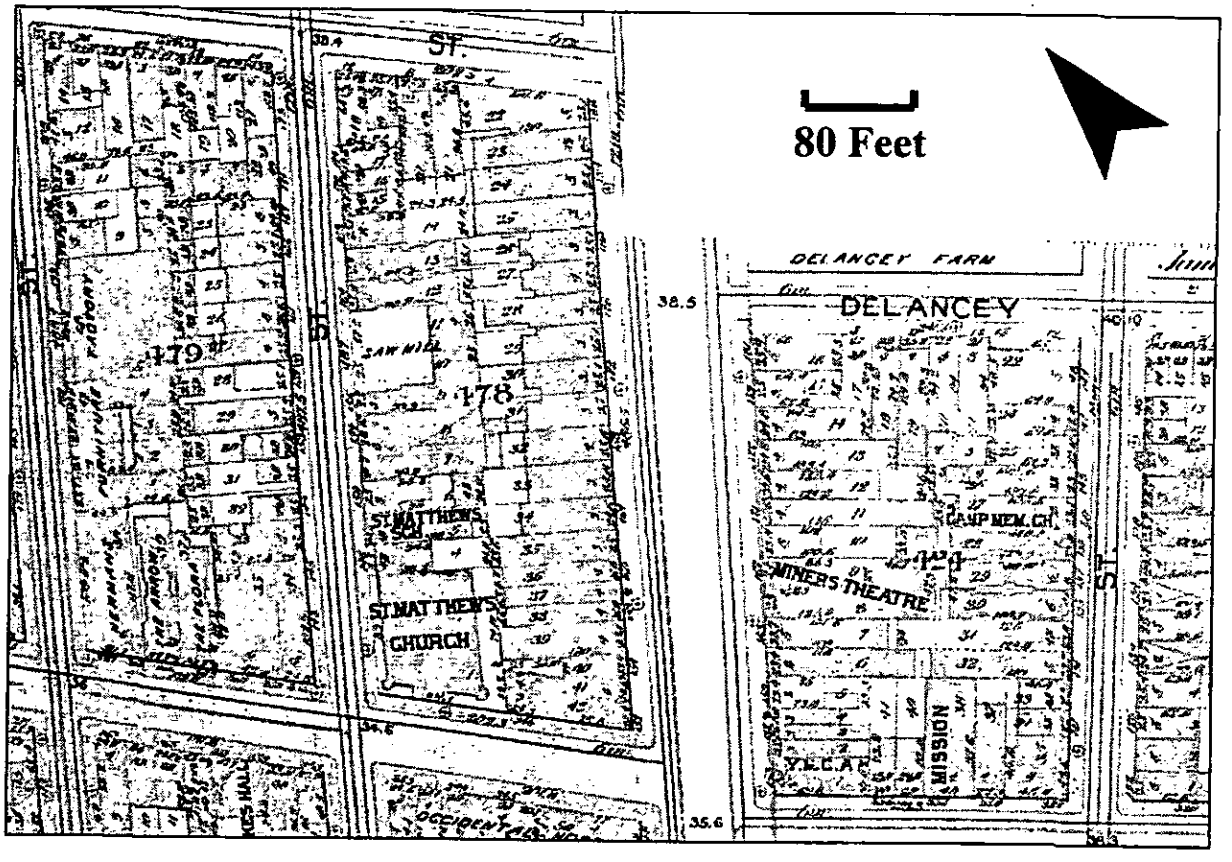


FIGURE 5.1-12

Atlas of the City of New York, Borough of Manhattan.
Blocks 424, 478 and 479 before the construction of Kenmare Street.
Bromley 1902.

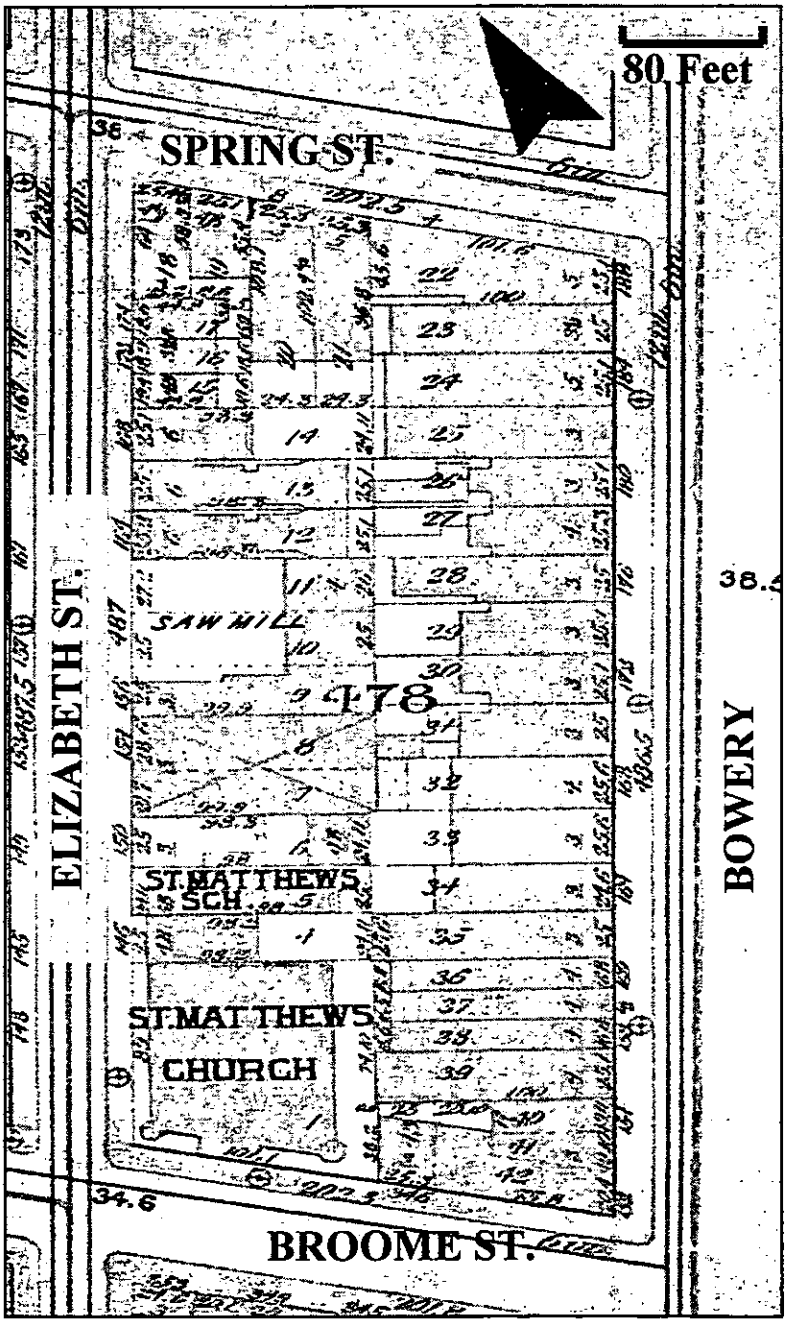


FIGURE 5.1-13

Atlas of the City of New York, Borough of Manhattan.
Block 478 before the construction of Kenmare Street.
Bromley 1902.

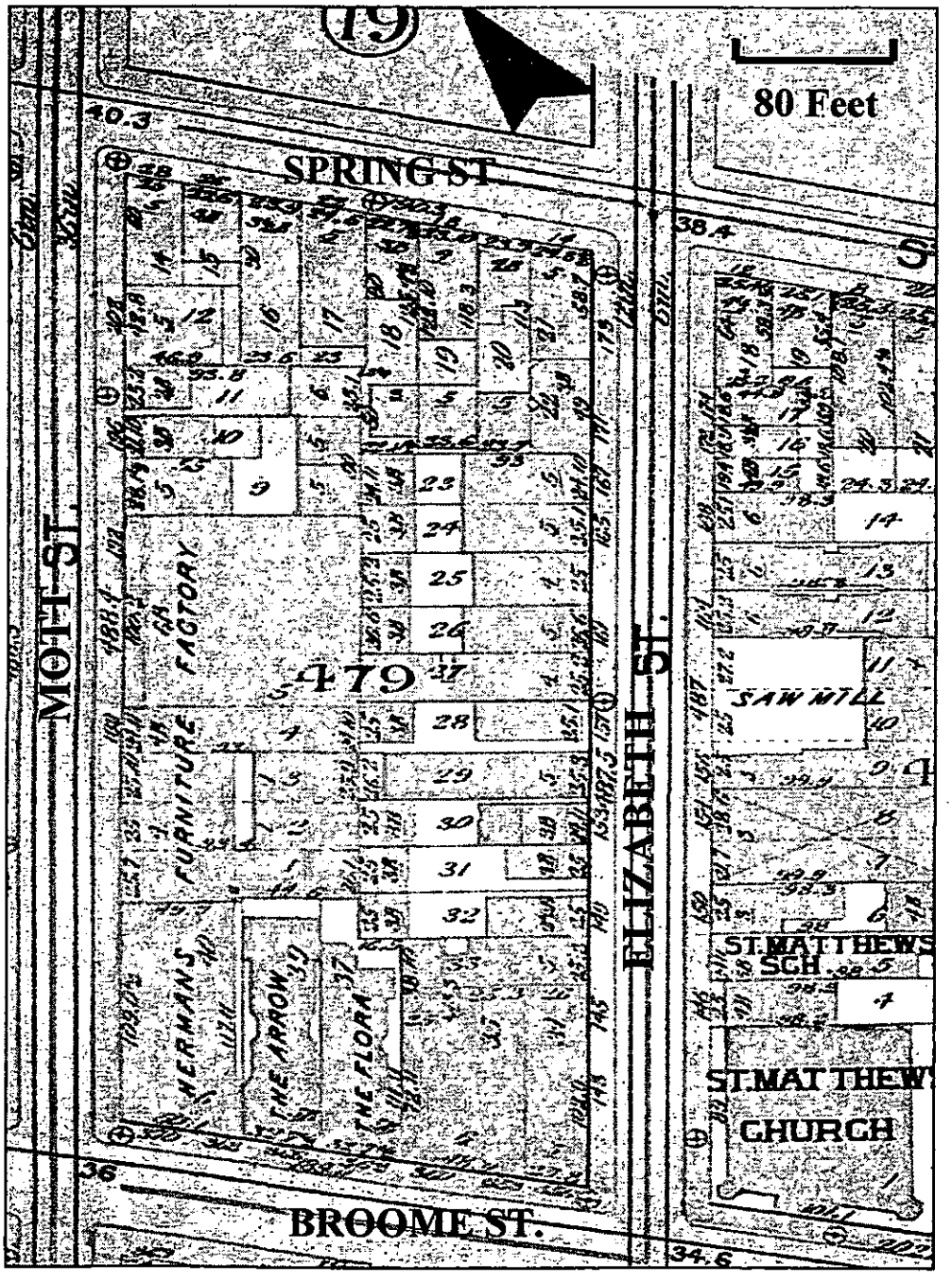


FIGURE 5.1-14

Atlas of the City of New York, Borough of Manhattan.
Block 479 before the construction of Kenmare Street.
Bromley 1902.

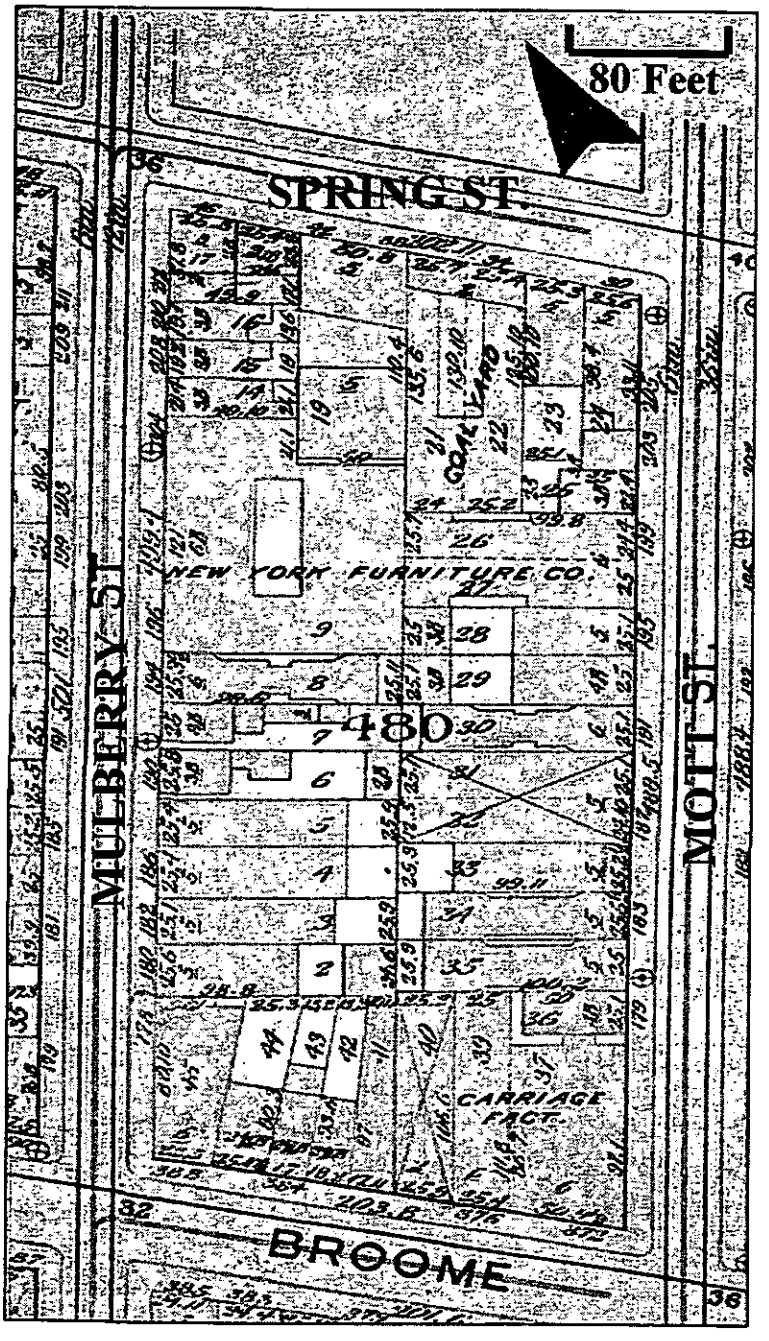


FIGURE 5.1-15

Atlas of the City of New York, Borough of Manhattan.
Block 480 before the construction of Kenmare Street.
Bromley 1902.

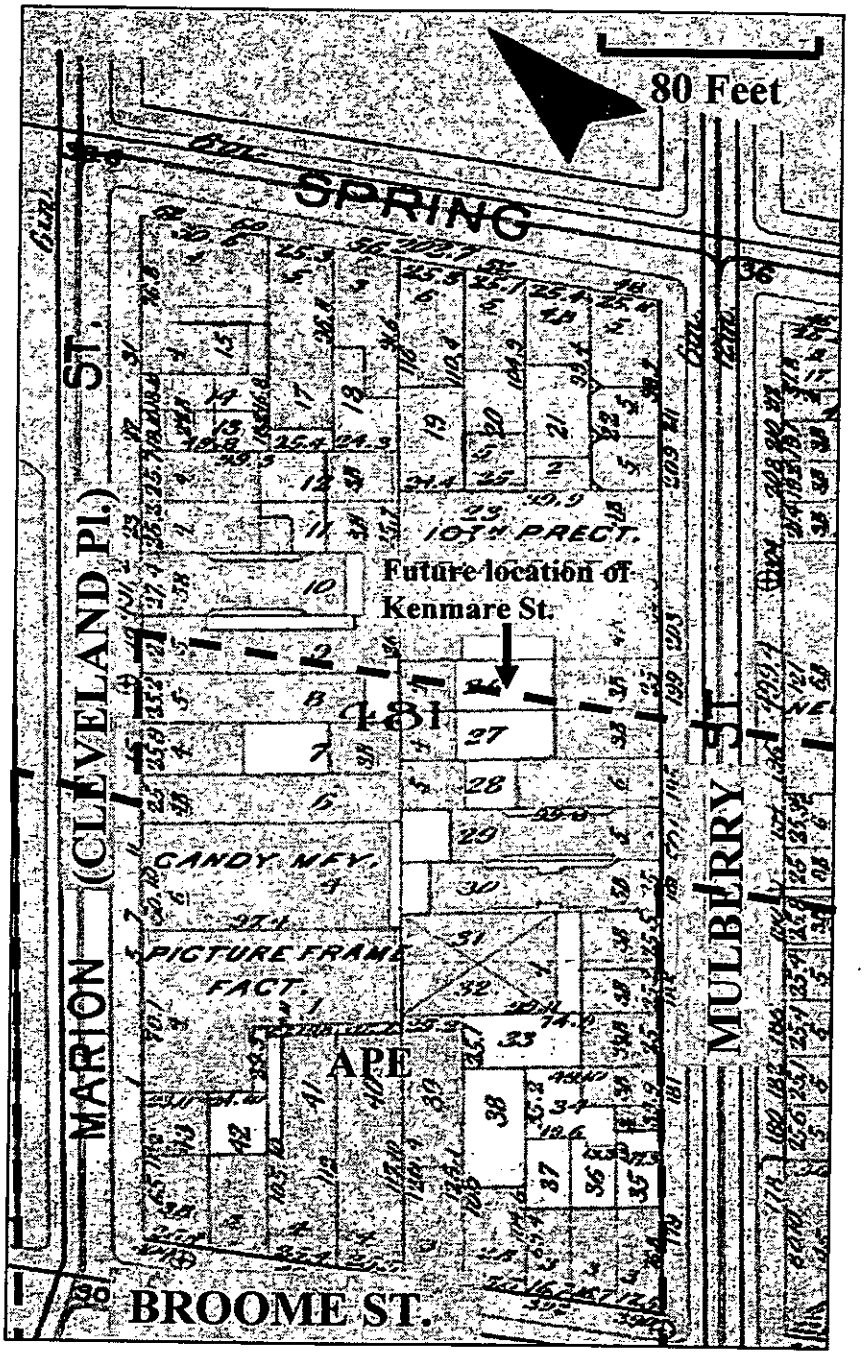


FIGURE 5.1-16

Atlas of the City of New York, Borough of Manhattan.
Block 481 before the construction of Kenmare Street.
Bromley 1902.

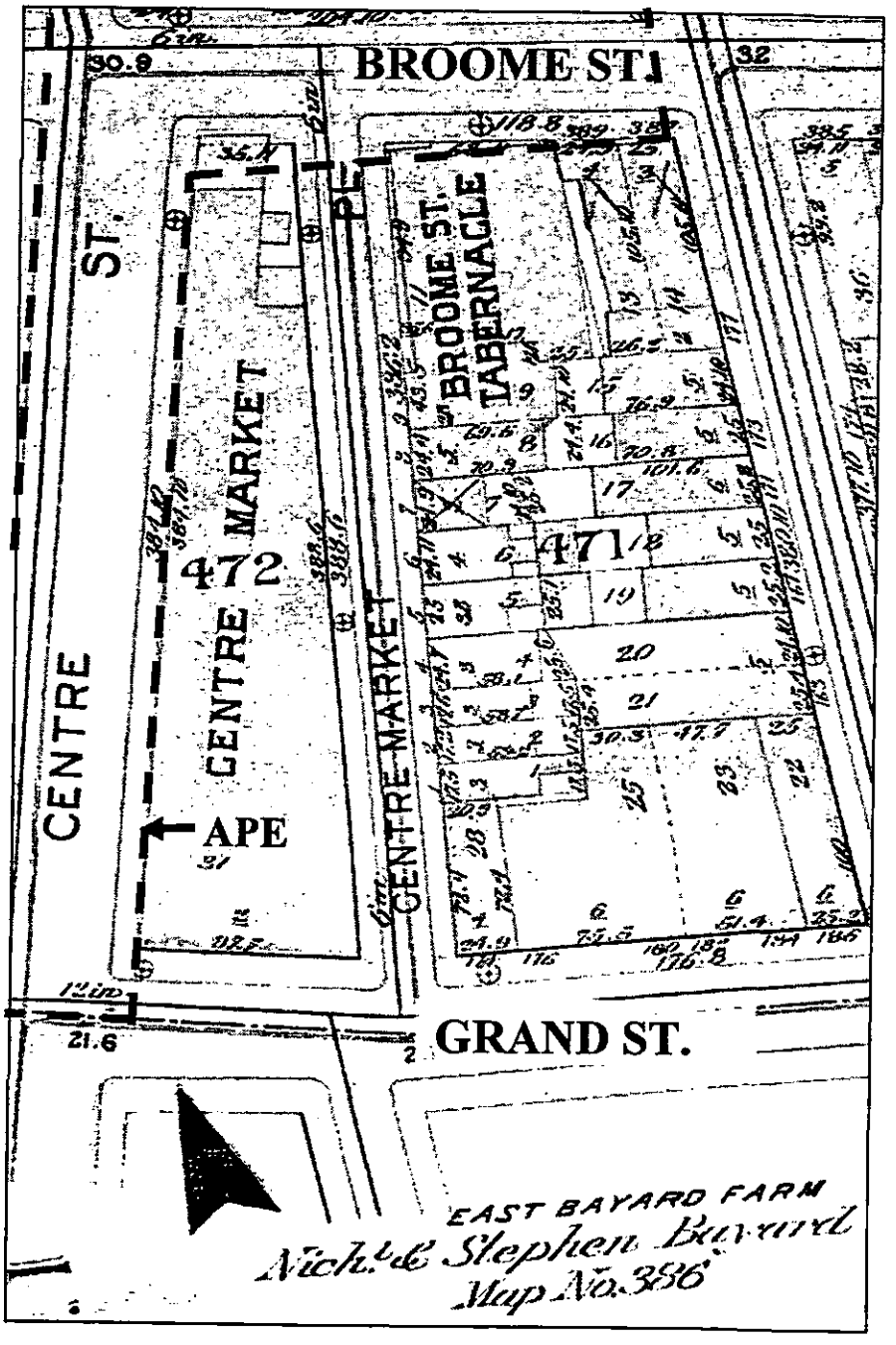


FIGURE 5.1-17

Atlas of the City of New York, Borough of Manhattan.
Centre Street from Broome Street to Grand Street, east side.
Bromley 1902.

Approximate Scale: ½ inch = 50'

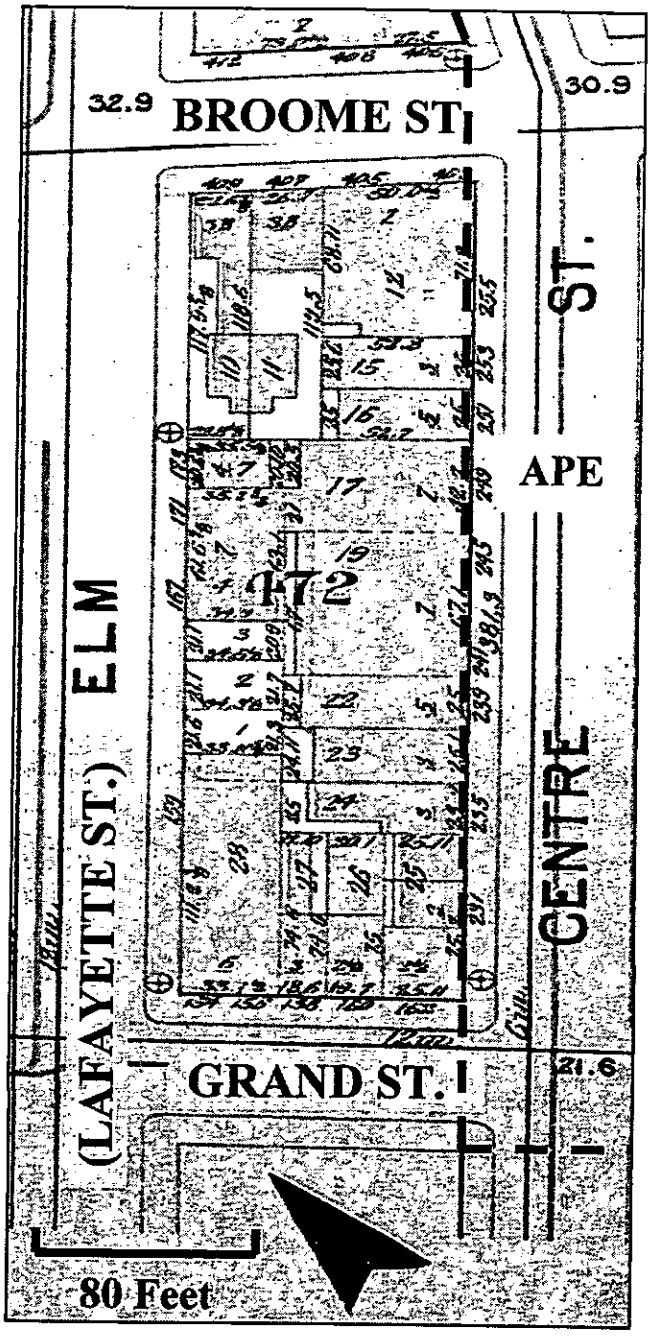


FIGURE 5.1-18

Atlas of the City of New York, Borough of Manhattan.
Centre Street from Broome Street to Grand Street, west side.
Bromley 1902.

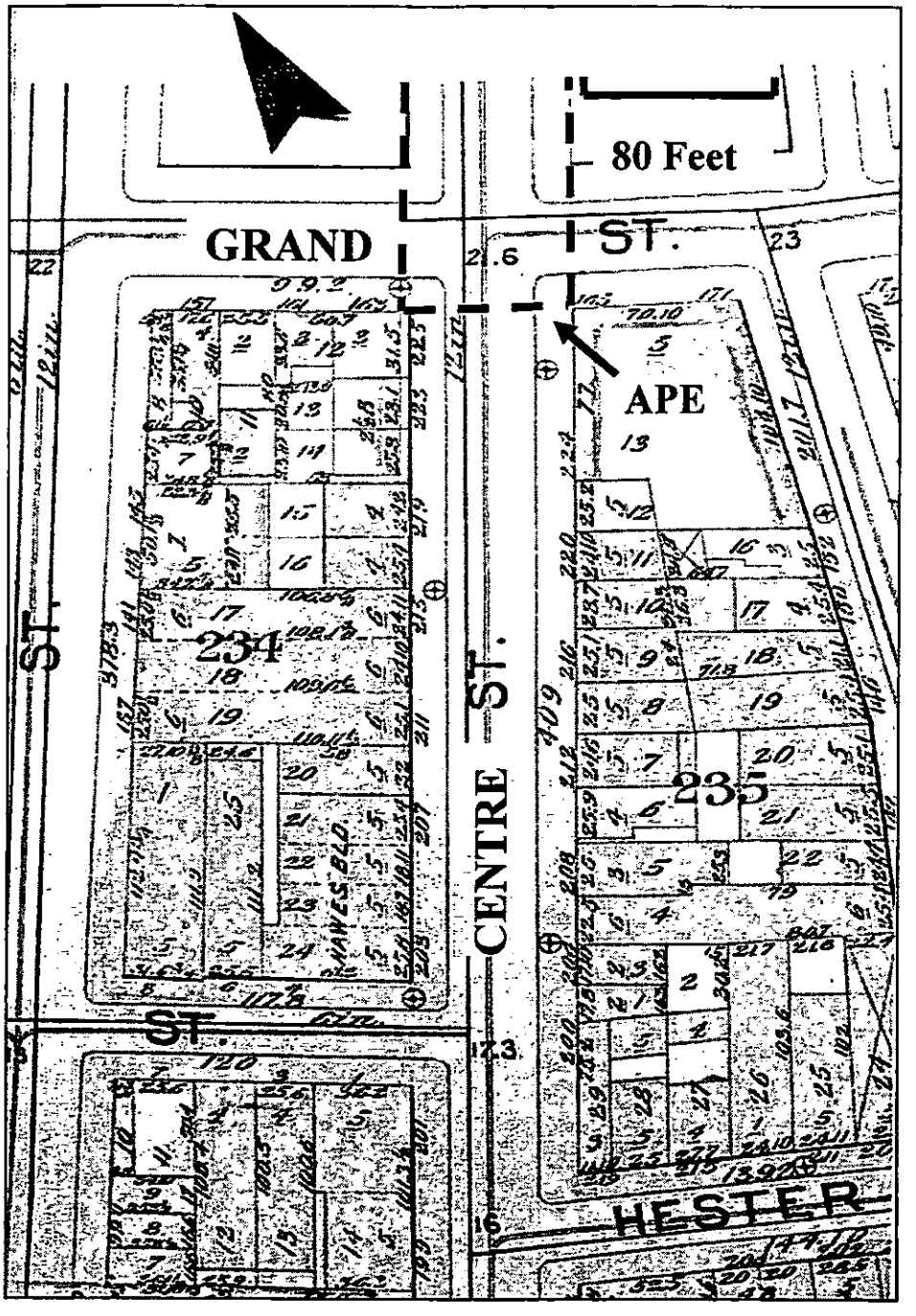


FIGURE 5.1-19

Atlas of the City of New York, Borough of Manhattan.
Centre Street south of Grand Street. Bromley 1902.



FIGURE 5.1-20

Atlas of the City of New York, Borough of Manhattan.
Blocks 425, 424, 478, 479 and 480. Bromley 1911.

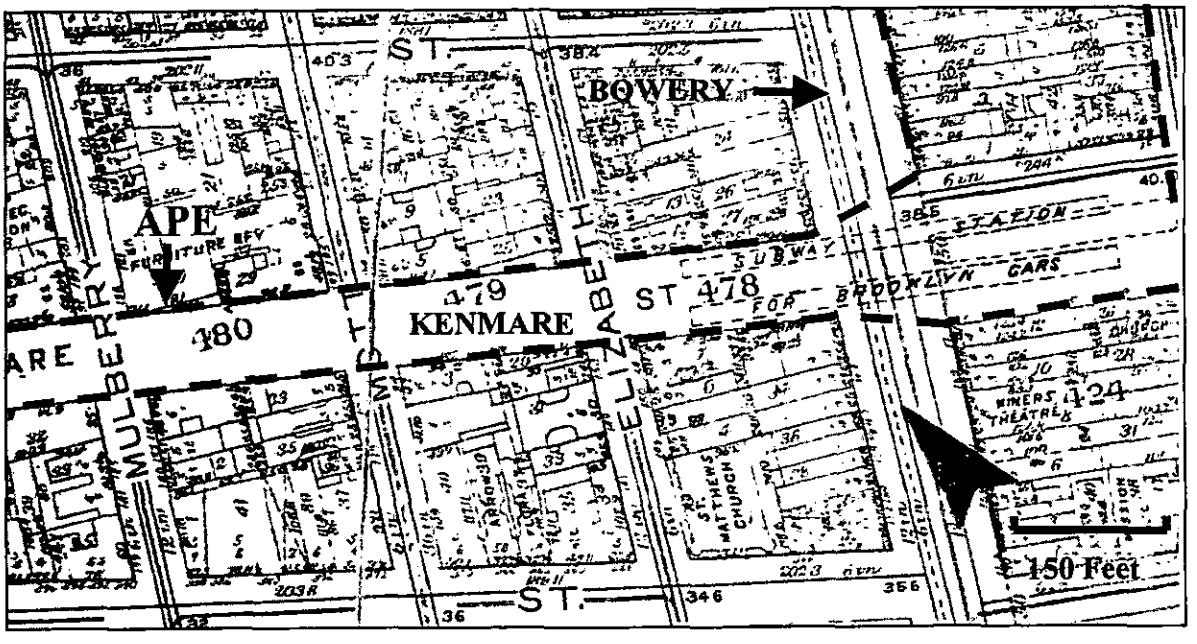


FIGURE 5.1-21

Atlas of the City of New York, Borough of Manhattan.
Kenmare Street from Bowery to Mulberry Street.
Bromley 1911.

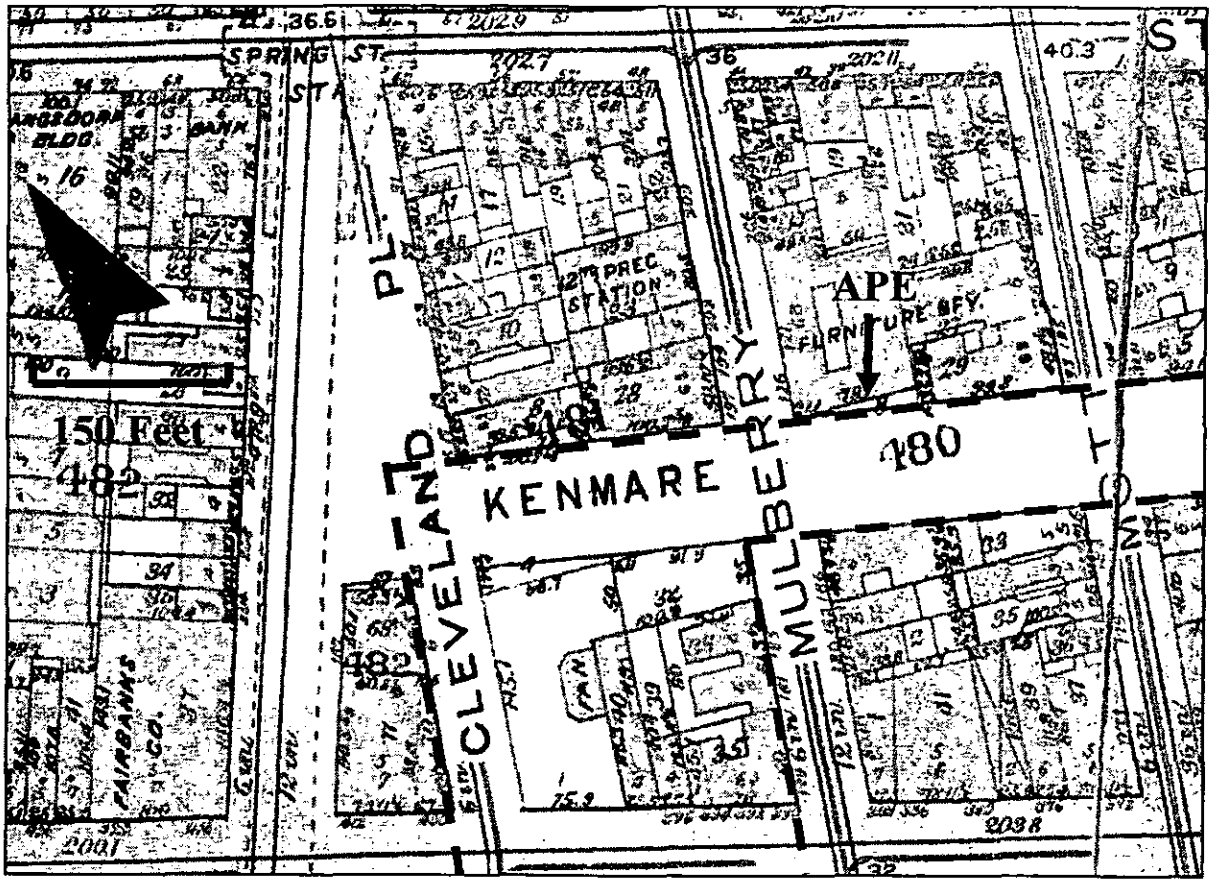


FIGURE 5.1-22

Atlas of the City of New York, Borough of Manhattan.
Kenmare Street from Mott Street to Cleveland Place, including Block 481.
Bromley 1911.

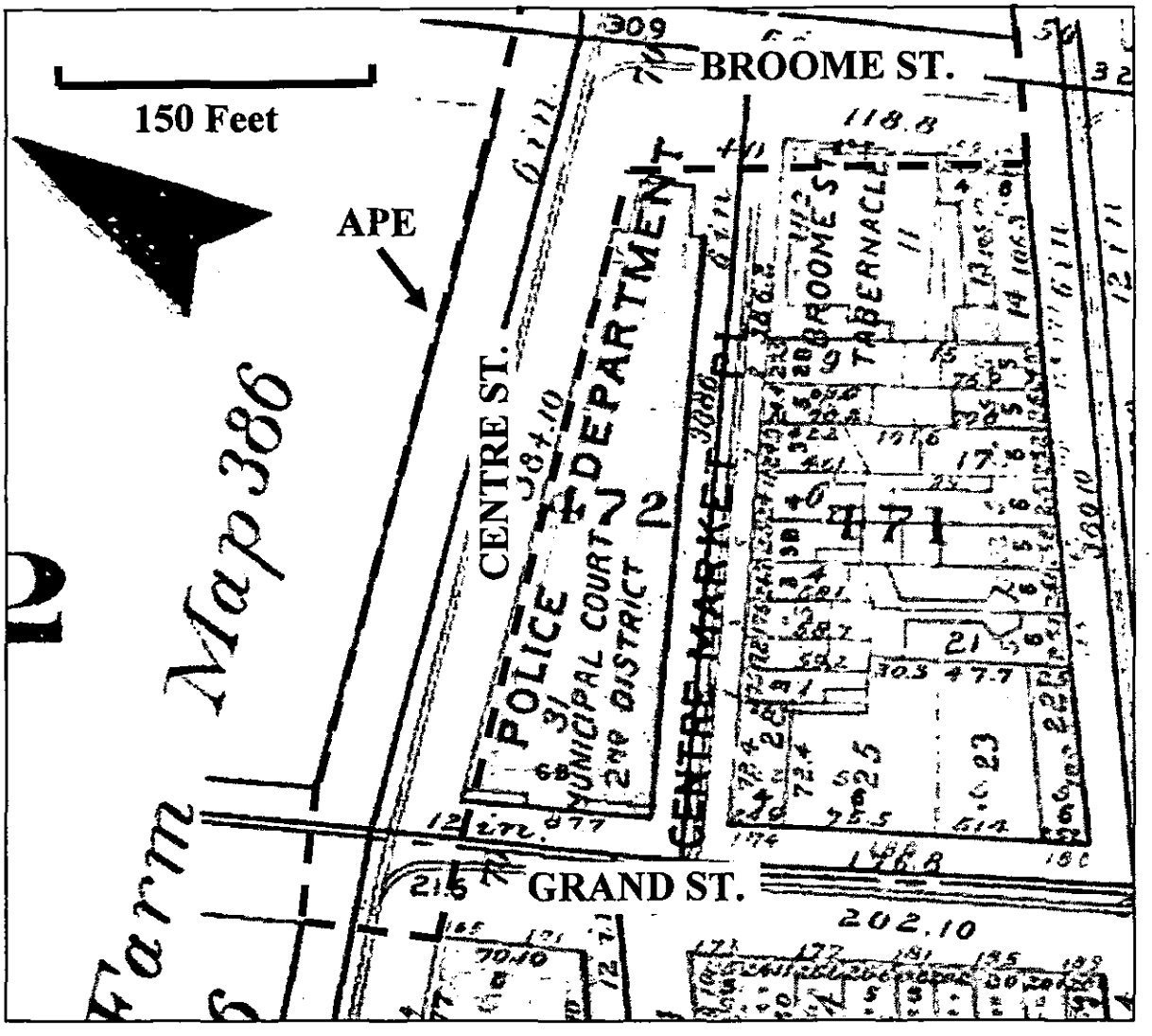


FIGURE 5.1-23

Atlas of the City of New York, Borough of Manhattan.
Centre Street from Broome Street to Grand Street.
Bromley 1911.

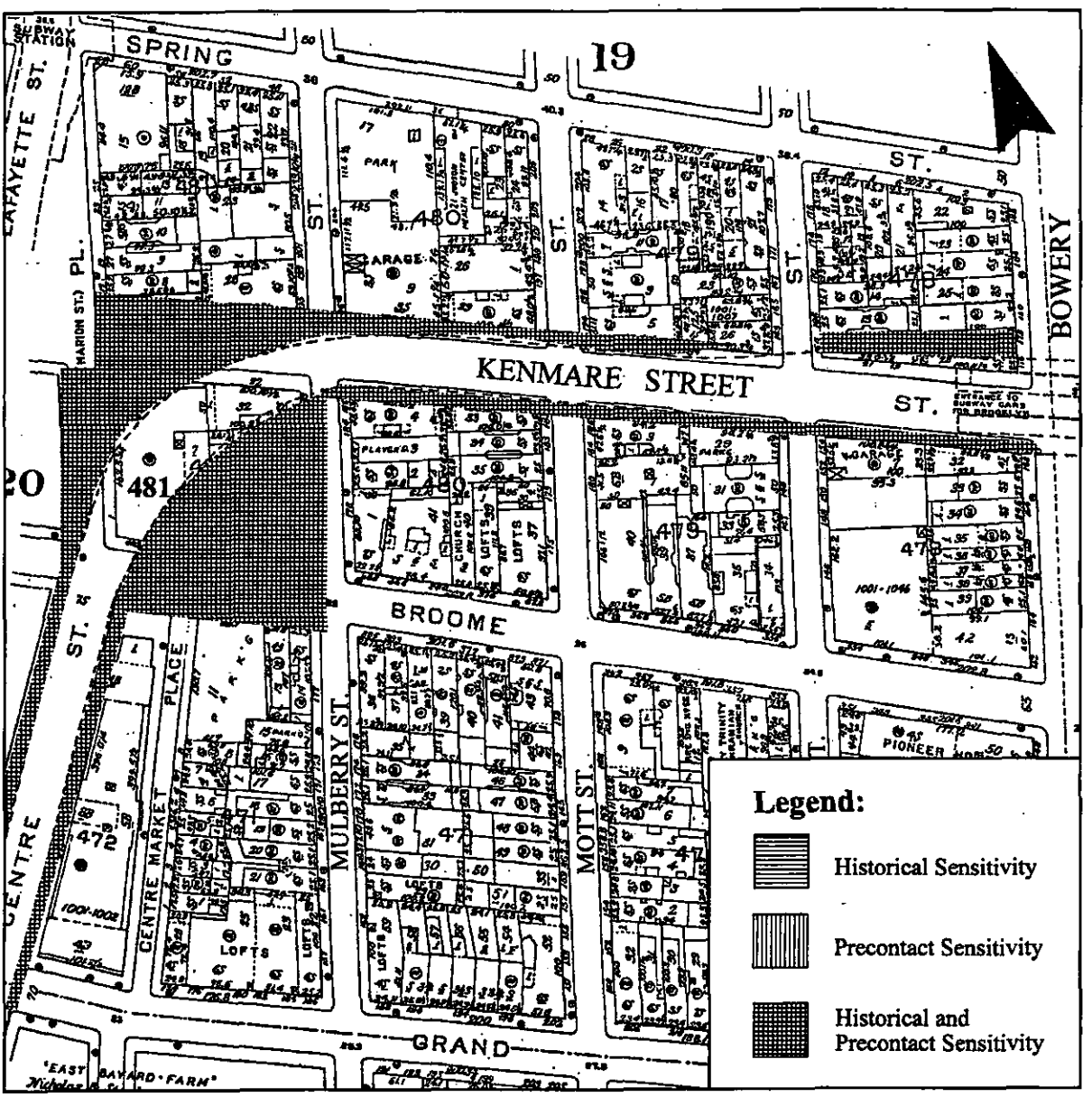


FIGURE 5.1-24b

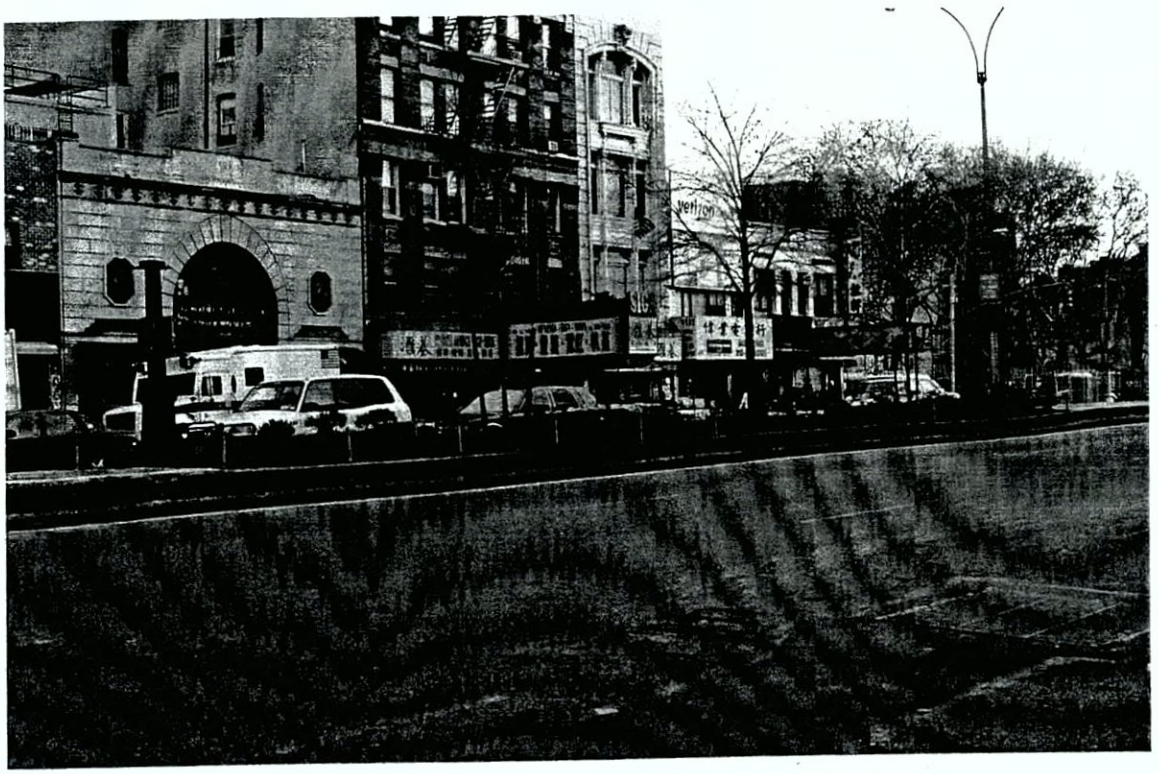
Area of Potential Archaeological Sensitivity.

Kenmare, Centre, and Broome Streets, including Lots 12, 27 and 28 on Block 478, and Block 481. Sanborn 2001.

Approximate Scale: ½ inch = 50 feet



Photograph 5.0-1: Facing north on the southside of the corner of Delany Street and Chrystie Street.



Photograph 5.0-2: Facing northeast on the south side of Delany Street towards the corner of Chrystie Street. Note: Facing Block 425.



Photograph 5.0-3: Facing north from the corner of Bowary Street and Delancy Street towards Delancy Street and Block 425.



Photograph 5.0-4: Facing southwest looking down Chrystie Street.



Photograph 5.0-5: Facing northwest from the southern lots of Block 478 towards Kenmare Street and Bowery Street.



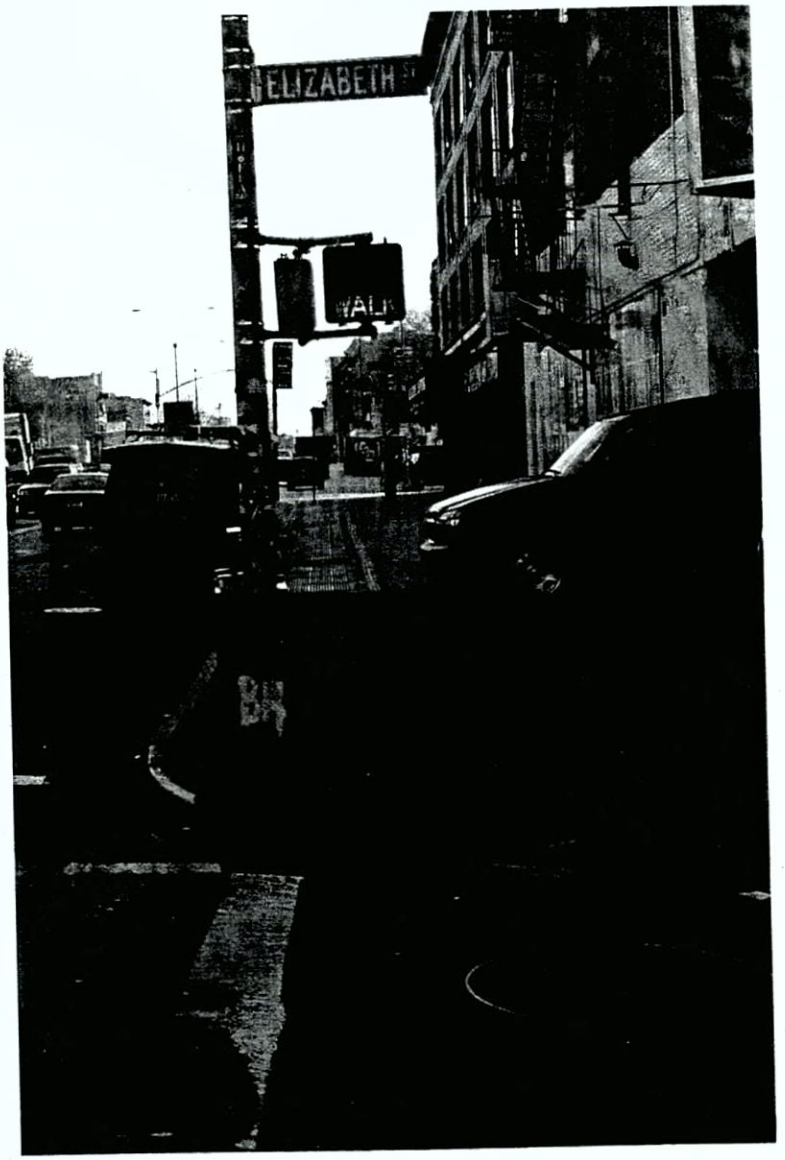
Photograph 5.0-6: Facing northeast from the southern lots of Block 478 toward the corner of Kenmare and Elizabeth Streets.



Photograph 5.0-7: Facing north from the southern lots of Block 478 towards Kenmare Street and Bowery Street.



Photograph 5.0-8: Facing west from Chrystie Street from the middle of the sidewalk on Delaney Street.



Photograph 5.0-9: Facing east on the south side of Kenmare Street between Elizabeth and Bowery Streets.



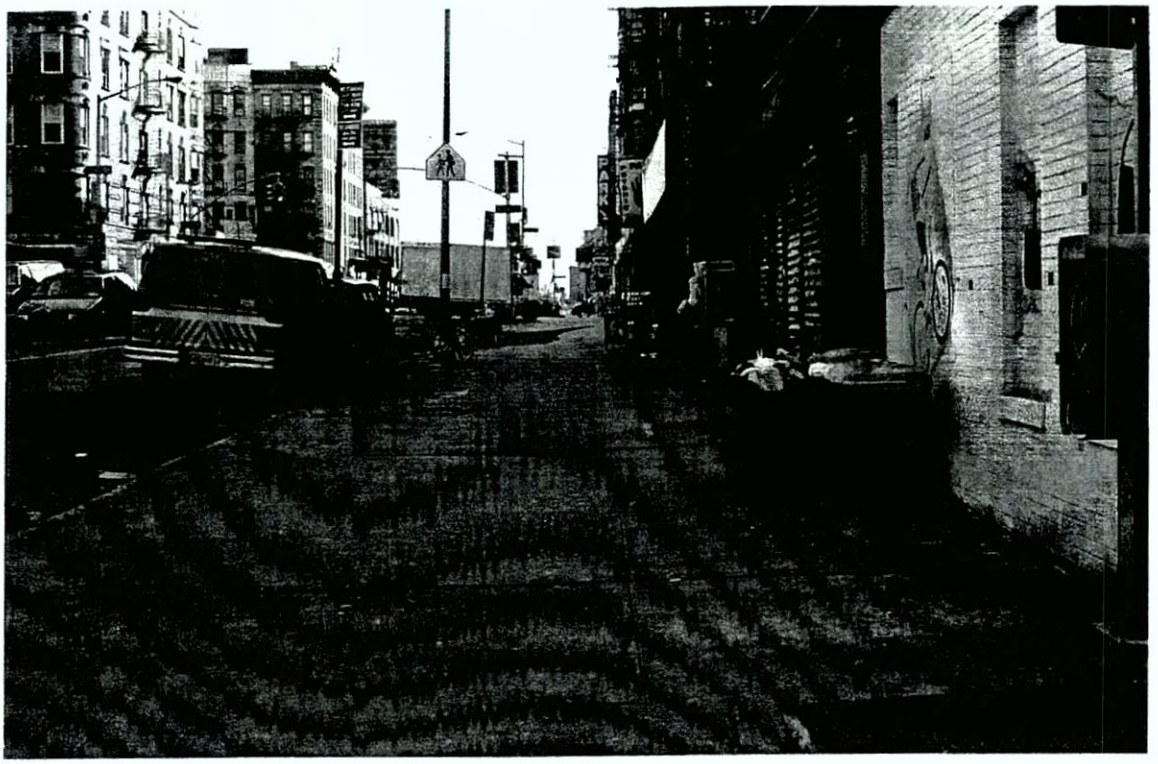
Photograph 5.0-10: Facing west from the north side of Kenmare Street between Bowery and Elizabeth Streets.



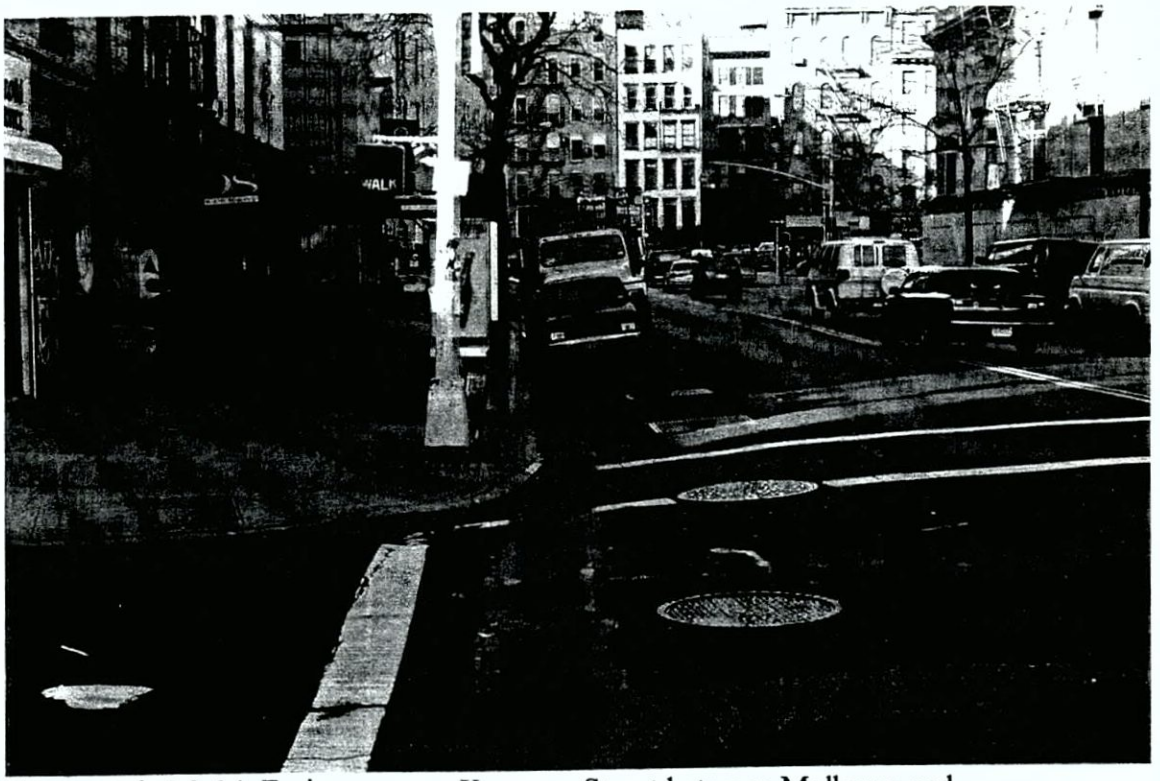
Photograph 5.0-11: Facing north from the north side of Kenmare Street between Elizabeth and Mott Streets.



Photograph 5.0-12: Facing east from the north side of Kenmare Street between Mott Street and Mulberry Street.



Photograph 5.0-13: Facing east on the south side of Kenmare Street between Mulberry and Mott Streets.



Photograph 5.0-14: Facing west on Kenmare Street between Mulberry and Cleveland Streets. Note: Southern part of Kenmare Street roadbed.



Photograph 5.0-15: Facing west on Kenmare Street between Mulberry and Cleveland Streets. Note: looking at northwest corner of Block 481.



Photograph 5.0-16: Facing southwest from the corner of Mulberry Street and Kenmare Street toward Block 481.



Photograph 5.0-17: Facing south from the northwest corner of Cleveland and Kenmare Streets. Note: Cleveland Street roadbed.



Photograph 5.0-18: Facing northeast from the corner of Cleveland and Broome Streets, looking up Cleveland Street.



Photograph 5.0-19: Facing northwest from Mulberry and Cleveland Streets towards Broome Street roadbed. .



Photograph 5.0-20: Facing south from Kenmare Street from the east side of Cleveland Street.



Photograph 5.0-21: Facing south from the west side of the Centre Street sidewalk.



Photograph 5.0-22: Facing north from Grand Street towards the west side of Centre Street.

5.7 Appendices

5.7.1 Documentary Assessment of APE

Block 425:

Block 425 is bounded by Rivington Street, Chrystie Street, Delancey Street, and Bowery Street. Lots within the APE include 1 through 8, and 28 through 44, according to Sanborn's *Insurance Maps* 2001. The northern quarter of the block plus a large lot on the west side (Lot 9, a former gas station) are not included in the APE. The APE also includes the Chrystie and Delancey Street roadbeds, including sidewalks, on the east and south sides of the block, respectively.

(Note: The archaeological sensitivity of the Delancey Street roadbed is discussed in detail under Block 424, and the sensitivity of the Chrystie Street roadbed is discussed in detail in section 4.5.)

Cartographic History:

Lyne1730: The "High Road to Boston" is present, later to become Bowery, that will bound Block 425 on the west. The block area is outside of the city (not on map).

Carwitham 1740: The "High Road to Boston" is present, the Block 425 area is not on the map.

Grim 1744: Block 425 is located approximately 3,000' northeast of the city wall, also northeast of the Collect (a source of fresh water), and probably within what appears to be the residential area of J. Delancey's Farm. One structure that appears to be the main residence is present on map on the east side of Bowery Road (sic), set back behind a half-moon driveway and lane. If the Grim plan is absolutely correct, then the front of the Delancey residence would have been located on the current block in the eastern-most 30' of Lots 30, 31, 32, 33 and 34, and extending into Chrystie Street from the said lots. Note that the calculation of the location of Block 425 was determined using distances and orientations from then-established city blocks (below Beekman Street) that have current counterparts and may not be entirely correct when extrapolated to outside of the city wall. Notably, using this method, the location of Block 425 appears to cut across the Bowery Road of 1744, which may suggest that since that time, Bowery shifted to the west by approximately 120'. If the location of Block 425 is adjusted to align with the east side of the current Bowery Road by moving it west approximately 120', the location of the Delancey residence would still be within Lots 30 through 34, inclusive, but fully within the eastern 120' of the lots.

Maerschalck 1755: The "High Road to Boston" (Bowery) is present, and gridding to the west of it as far north as St. Steven's (later Broome) Street (one block south of Kenmare Street), but nothing is noted to the east of Bowery.

Holland 1757: This plan shows Bowery as the "High Road." The Delancey compound, labeled as the residence of the "Lieut. Governeur" is shown east of Bowery, within the APE. An additional four structures are portrayed in a square configuration just north of the main Delancey residence. Two of the additional buildings are located directly north of the Delancey residence (within 250'), while the other two are located directly east of these. The first of the two buildings directly adjacent to the Delancey residence, if accurately represented, lies within the APE over Lots 28 through 30, possibly extending further north. The rest of the APE is shown as vacant farmland.

Montresor 1766: Block 425 is located within area labeled as James Delancey's farm, in an area that appears to be level. On this map, two smaller structures flank the main residence to the north and to the south (parallel with Bowery). The map is too small to determine the location of the structures in relation to the current landscape with certainty, but it is likely that the residence was present as portrayed on Grim 1744 and Holland 1757. The structure shown south of the main residence appears to have been located in the southern lots of Block 425 (possibly including Lots 1 through 5, 36 through 41 and 43) and/or the roadbed of Delancey Street. The structure shown on the north side the main residence on this map was appears to have been located in the northern lots of Block 425, that fall outside of the APE. However, see Holland 1757 for a portrayal of a structure north of the main residence that appears to fall within the APE.

Ratzen 1767: Figure 5.1-2. The road to Boston is now called Bowry Lane (sic), and what will become Block 425 is clearly located within the Delancey Farm. The main residence appears to be in the center of Block 425, offset slightly to the east, probably located within what later became Lots 30 through 34. The southernmost structure noted in the Montresor plan does not appear to be present, but there are four smaller structures to the north and northeast of the residence, one of which probably is the northern structure discussed above. Of the four smaller structures, two located to the north of the main residence would probably fall outside of the APE, as it appears they would have been located in the northern lots of the block (see Montresor). The two small structures located northeast of the main residence may have been located in the modern Chrystie Street roadbed, east of Lots 26 and 28. Note that structures, notably the residence, appear to be smaller than in previous maps; estimated locations may not be accurate based on this or prior maps.

Holland 1776: This plan shows gridding along Bowery Lane, Road to Albany and

Boston (sic) in the area of the APE. East of Bowery, the Delancey Farm is gridded by lanes into several small blocks, several of which are in the APE. This gridding does not follow the alignment of the current street grid (that at the time existed one block south of the APE) but rather was aligned perpendicular and parallel with Bowery. A lane or path is portrayed in the general location of Delancey Street. First Street (later Chrystie) only exists up until Bullock Street (later Broome), after which a lane angles to the north to parallel Bowery. Additionally, another path bisects the APE from north to south, parallel to Bowery, approximately in the middle of Block 425. Another lane passes through the middle of the APE running east-west, that is a perpendicular extension of the lane from Bowery leading to the Delancey residence. An additional small structure appears to be located in the southwest corner of the APE.

British Headquarters Map 1782: This map shows that Bowery Lane (sic) and Block 425 are among farmlands, with very low relief. The Delancey Farm is present, just north of the British Fortification wall that appears to wind east-west between Broome Street and Grand Street, approximately 300' south of the APE. A small fortification is indicated on the map, just above the approximate location of Broome Street, to the east of the APE by several hundred feet. Some smaller unfortified structures (probably associated with the Delancey Farm) are indicated west of the fortification that may be located within the east side of the APE, but the map scale is too small to determine precise locations.

McComb 1789: The main Delancey Farm structure is likely located within Lots 30 through 36 of Block 425, possibly bordering Chrystie Street to the east (the street is not yet established beyond that of a property boundary, but it is present–as First Street–in the blocks immediately south of Block 425). There are no indicated buildings in the block other than the main dwelling, although this is not to say that outbuildings did not exist at this time.

Hayward 1797: Block 425 is present in its current form, bounded by Rivington Street, First Street (later to become Chrystie), Delancey Street, and Bowry Road (sic). The Delancey residence is shown in the middle of the block, set back from Chrystie Street by approximately 30'. This would place the structure approximately over the west end of current Lots 31 through 33.

Taylor Roberts 1797: The APE is shown exactly as it is portrayed on Hayward 1797.

Bridges 1807: Block 425 is defined by Rivington Street, First Street, Delancey Street, and Bowery Road (sic). Few structures are indicated on this map overall, and no structures are shown on Block 425.

Hooker 1929: Block 425 is defined by Rivington Street, Chrystie Street, Delancey Street, and Bowery (current street names), and occupies

the northwest corner of Ward 10. The block is shown specifically subdivided into unnumbered lots on its northern end at this time, but overall shading indicates the entire block was developed.

Hooker 1833: The APE is unchanged from 1829.

Colton 1836: Block 425 is defined by Rivington Street, Christie Street (sic), Delancey Street, and Bowery. One small structure (public, specific function unknown) is shown within the block, probably over Lots 7 or 8 or just north (outside) of the APE, the rest of the block is indicated as developed in general.

Bradford 1838: The map is similar to Colton 1836 and the APE remains unchanged.

Burr 1839: This map shows a railroad/transportation line beginning at Bowery and Prince Street (one block north of Block 425) and heading north.

Endicott 1842: This map of the Croton water pipes shows water on Rivington Street, Chrystie Street, Delancey Street and Bowery.

Mitchell 1846: A transportation line is shown turning north onto Bowery from Broome Street. No notable or public structures are shown on Block 425, although the block is shown as generally developed.

Dripps 1852: The street names have not changed since 1829, and the Harlem Railroad is indicated on Bowery. Block 425 is shown fully developed, with approximately 43 unnumbered lots with structures. The general orientation of the lots is similar to early 20th century lot configuration, although sizes of some lots are different, as some lots later became consolidated. On Delancey Street, nearly all lots have structures that face the street, save for two near the southwest corner. Otherwise the southwest corner of the block is fully developed with structures that face Bowery at the corner extending largely over the entire lots, or with small back yards. The lots that face Delancey Street have structures in their front halves, the back halves are open yards. Most lots on Chrystie Street have structures facing the street, many have structures in the yards behind and narrow alleyways passing between lots into the yards.

Colton 1856: Transportation lines and a railroad are shown on Bowery, and one transportation line on Christie Street (sic). Few structures are indicated on this map, none on Block 425.

Perris 1857: Figure 5.1-3. Lots are shown in the same configuration as in Dripps 1852, with the addition of Hoym's Theater in the northwest interior of the block, just outside of the APE, and a few more interior structures on lots facing onto Chrystie Street. Many lots in the block are "special hazards," meaning they were sites of manufacture or public halls that were more susceptible to fire than a typical structure.

Within the APE the following lots and buildings are shown (lot numbers are given in parentheses):

175 Chrystie Street (27) A brick structure housing "special hazards" takes up most of the lot, with a small yard separating it from another brick warehouse on the back of the lot. A small frame shed ("special hazard") is located on the north side of the yard.

173 and 171 Chrystie Street (28 and 29) Two smaller commercial brick structures face the street while a larger brick structure ("special hazard" that abuts Hoym's Theater is located behind both lots. Two small structures are located on the north side of the yard behind Lot 28.

169 Chrystie Street (30) This lot houses a "special hazard" brick structure with a narrow alleyway on the south side. In the yard behind are four small structures in a row, two of which are wood frame storehouses. The structure behind Hoym's Theater intrudes on the northwest corner of this lot.

167 Chrystie Street (31) A commercial brick structure takes up almost half of the lot in from, while a "special hazard" brick structure is located in the back of the lot on the southwest, with a yard between. On the north side of the yard appears to be a small wooden shed.

165 Chrystie Street (32) The lot is almost entirely covered by structures, a "special hazard" brick structures in front with a smaller commercial brick structure behind and a very small yard in back. A "special hazard" brick structure is located east of the yard, it is unclear if it is part of this lot or the opposing lot (Lot 8).

163 Chrystie Street (33) A "special hazard" brick structure takes up the first third of the lot with an alley along its south side leading to a medium yard with a "special hazard" brick structure in back. Another brick structure is located west of this structure surrounded by open yard to the south and west, but it is unclear if this is part of this lot or the opposing lot (Lot 7).

161 Chrystie Street (34) A medium sized "special hazard" brick structure has an alley passing along its southern edge leading to a large open yard. Within the yard is a small, narrow structure abutting the structure in the lot to the north, plus a larger wood frame structure further west, again with an alley on its south side.

159 and 153 Chrystie Street (35 and 38) Three brick structures are located on the east sides of the lots facing the street with open yards behind them. Behind the north two lots on the interior of the block are another three brick structures .

18 and 14 Delancey Street (38 and 40) Three wood frame buildings are located here, each with open back yards, and Lot 40 has a narrow alley on the west side. The structure on the corner of the block (Lot 38) is commercial.

12 to 8 Delancey Street (41 to 43) These three lots have brick structures on their front halves, with open back yards. Lot 42 is a

commercial structure.

6 Delancey Street (44) Again this lot has a brick structure, possibly an intruding back structure from Lot 2, and an open back yard.

4 Delancey Street (1) This lot has a brick structure, possibly an intruding back structure from Lot 2, and the main structure on Lot 2 intrudes slightly into the back of the lot.

2 Delancey Street (1) On this map, 2 Delancey Street is the same structure as 183 Bowery , however there are also a series of quite small structures between 2 and 4 Delancey Street that include two small frame structures (one at the corner is commercial), a small commercial brick structure, a small "special hazards" frame structure and an additional very small building in the interior of the lot. Only a small yard is left in the middle of the aforementioned structures.

197 Bowery (8) The street-facing structure is a commercial brick building, and smaller frame structures, one of which is "special hazard" abut the main structure in back of the lot, where there is a large open yard and then a large "special hazard" brick structure that may be part of Lot 32.

195 Bowery (7) The lot is nearly all taken up by a large brick structure with a small open yard in back.

193 Bowery (6) This lot has a large commercial brick structure, a very small yard, and a small structure at the back of the lot.

191 Bowery (5) This lot has a commercial brick structure, a medium sized yard, and a small structure in back.

189 Bowery (4) This lot has a medium sized commercial structure, then a smaller brick structure connected to the first by a small wood frame feature, leaving an L-shaped yard along the southern end. A "special hazard" brick structure is located at the back of the lot after a small yard.

187 Bowery (3) The lot is mostly covered by a brick building, with a yard behind.

185 Bowery (2) This lot is either a brick "special hazard" building or a warehouse (the lot is pasted over the original map, and the color-code indicating structure type is unclear). The structure may possibly have an extension behind it; otherwise it has a small open yard.

183 Bowery (1) This lot has a commercial wood frame structure at the corner of the block, while further along Delancey Street are several small structures described above for 2 Delancey Street.

Mitchell 1860: Transportation lines/Harlem Railroad are shown on Bowery, and one transportation line on Christie Street (sic). Few structures are indicated on this map, none on Block 425.

Dripps 1863: This map is not as detailed as Dripps 1852. Transportation lines/railroad are shown on Bowery, and a transportation line on Chrystie Street. Block 425 falls within the area defined as the

historic Delancey Farm, which encompasses all of Ward 10 and beyond.

Vielé 1865: This topographic map shows Block 425 resting on relatively flat meadowland. Sewers/canals are indicated in Bowery, Delancey Street, and Rivington Street roadbeds. No structures are indicated in block, as few are indicated on the map. Fresh water (the Collect) is located less than one-half mile (about 2,500') southwest of block within a swampy/marshy zone.

Delancey Farm Map 1865: Figure 5.1-10. Block 425 is clearly part of the Delancey Farm lands. The block is shown divided into 32 lots, numbered 180 through 211, of relatively equal size, except for the angle of Bowery that makes northwestern lots larger. This is not in accordance with immediately earlier and later maps (see Dripps 1852 and 1867) that show length-wise lots perpendicular to the side of the street upon which they face (that is, for north- and south-facing lots as well as east- and west-facing lots). These may be proposed subdivisions, and although the actual lot configurations did not follow this map, the overall block location did. A structure is indicated in the Lots designated as 209 and 210, set back from Chrystie Street by approximately 20'. This structure is identified as the "Residence of Jas. DeLancey, Esq., Governor of the Province." Taking this cartographic representation literally, this places the Delancey residence over current Lots 36 through 40. Given the stylized representation of lots on this map, unlike other representations before and after (see Dripps 1852, 1867), it is possible that this is not the exact location of the residence within the block (see interpretation below).

Dripps 1867: This map is similar to Perris 1857 and the APE is unchanged.

Vielé 1874: This is similar to Vielé 1865, however a transportation line is indicated on Bowery, but no sewers or canals are indicated on this map.

Watson 1874: Transportation lines/railroad are shown on Bowery and a transportation line is shown on Chrystie Street. Few structures are indicated on the map, none on Block 425, since the map lacks detail.

Latimer 1881: This transportation map shows elevated railroads: the Third Avenue line runs along Bowery. No structures are indicated on the block, few on map.

Robinson 1885: Three transportation lines and two railroad tracks are shown on Bowery, and a transportation line is present on Christie Street (sic). Transportation lines are indicated on the legend as either horse or cable car lines. Three fire hydrants are shown along the lower part of Bowery (two within the APE), two along the west side of Chrystie Street, one on the east side. The dimensions of Block 425 are noted as follows: Rivington Street–276', Christie Street–400',

Delancey Street–244.4', Bowery–399.1'. Bowery itself is shown about 120' wide, remaining streets are shown about 50' wide. Lots roughly approximate current (2001) divisions, numbering 1 through 43 in a counter-clockwise direction from the northwest corner (this differs from current numbering). The functions of most structures within the APE are not indicated, but it is assumed that the block held a mix of residential and commercial structures, as will be noted in later maps and atlases. A large lot just outside the APE in the northwest corner of the block is identified as the People's Theater. Lots are generally the same as in Perris 1857, although somewhat less detailed, except as specifically noted below (lot numbers are in parentheses):

167 Chrystie Street (31) The structure is shown as a stable.

8 Delancey Street (43) The structure is shown with a small extension along the east side into the back yard.

2 Delancey Street/183 Bowery (1) The lot is now entirely covered by a brick structure.

197 Bowery (8) The structures behind the main structure are now shown as brick.

191 Bowery (5) A frame structure as well as a brick structure are shown in the back yard.

189 and 187 Bowery (4,3) Each lot is now entirely covered by a brick structure.

189 Bowery (2) The lot is shown with a brownstone structure covering most of it.

Colton 1885: This map of suburban lines of the Long Island Railroad and its connections shows an electric railway line on Bowery. No structures are indicated on the block, few are shown on the map.

Sanborn-Perris 1894: A more detailed map, Bowery is labeled as 113' wide, Delancey Street and Chrystie Street appear to be about 55' wide. Hydrants are in the same locations as shown in 1885. Structures within the APE range from two to six stories, with a few one story sheds or small buildings in the back of lots in the southern end of the block. Extra details are as follows (lot numbers in parentheses):

175 Chrystie Street (27) The main structure is commercial/residential and three stories tall.

173 Chrystie Street (28) The main structure is commercial/residential, three stories. Two steam boilers are shown at the back of this lot.

171 Chrystie Street (29) This lot has a two story structure in front of the lot and a one story structure at the back of the lot that opens onto the stage area of the "People's Theater" that is outside of the APE.

169 Chrystie Street (30) Once a stable, this structure is now a storehouse, two stories in front, one story in back.

167 Chrystie Street (31) This lot is almost entirely covered with

structures: a four story commercial/residential structure in front and a one story structure in back with a narrow yard along the north side of the back structure.

165 Chrystie Street (32) This lot has a five story commercial/residential structure in front, and a yard separating it from a smaller four story structure at the back.

163 Chrystie Street (33) A five story structure takes up more than half of the lot.

161 Chrystie Street (34) This lot has a five story commercial/residential structure in front, and a large yard with a four story structure in the middle in back.

159 and 157 Chrystie Street (35, 36) These two lots have a five and four story structure in front, respectively, and a yard in back that separates them from three side by side four story structures at the very back.

155 Chrystie Street (37) This lot is largely covered by a five story structure.

18 Delancey Street (38) A six story structure, indicated as a warehouse, covers the entire lot.

16 and 14 Delancey Street (39,40) Each lot has a three story commercial/residential structure in front with at least two one story structures in back, leaving only small open yard spaces. A narrow alley passes along the west side of Lot 40.

12 through 6 Delancey Street (41 through 44) Each lot has a two story structure in the front half, and Lots 41 through 43 have smaller one or two story structures attached to the back of the main structure. Yards take up around half of the available lot space.

4 through 2 Delancey Street/183 Bowery (1) A steam boiler is indicated in front of the building between the two addresses. The structure itself is five stories and covers the entire lot.

197 Bowery (8) The front story has three stories, the middle structure has two stories with a narrow yard along the north side, and the back structure has one stories.

195 Bowery (7) This lot is almost entirely covered by a five story structure.

193 Bowery (6) This lot is almost entirely covered by a four story structure, with a very small two story structure taking up the south half of the very back of the lot.

191 Bowery (5) This lot has a sequence of two story buildings taking up most of the lot.

189 Bowery (4) A four story, then three story building takes up most of the lot.

187 Bowery (3) This is a largely five story warehouse. The back of the lot is covered by a one story structure, leaving a tiny open area on the south side.

185 Bowery (2) A steam boiler is shown near the back along the

north side of the four story structure. A small yard is present in back.

Bromley 1897: This atlas confirms Robinson's 1885 street widths and dimensions. Buried utility pipes are located beneath all streets surrounding Block 425. Under the Rivington Street roadbed there are 6' pipes closest to the block, 12' pipes on the other side. Along Chrystie Street, 12' pipes lay buried close to the block while 6' pipes are on the other side. Delancey Street only shows a 6' pipe running through it. Bowery has two 12' pipes running on either side of its transportation line. Old Bowery road is delimited within the current roadbed, the eastern side at the edge of Block 425 and the western side around 25' east from the adjacent block. No transportation lines are represented on this or any subsequent maps or atlases until the Delancey Subway appears. Lot through numbering here matches modern Sanborn's (2001). Nearly all of the structures are three stories or more, except Lot 5, with 2.5 stories. Details or changes on lots (in parentheses) are presented below:

175 Chrystie Street (27) An alleyway is shown between this lot and the one directly north.

173 through 167 Chrystie Street (28 through 31) Five lots have been condensed into four; it appears that Lots 31 through 32 were combined and became part of the Peoples Theater located in the center of the block, the back section of which may fall within the APE. These appear to have formed the entrance to the theater, as there are no other street through facing structures associated with the theater. The other structures are three or four stories, but former Lots 31 through 32 are 2 stories. Only very small yards remain behind Lots 28 and 29.

163 Chrystie Street (33) This structure is shown in its current form, with narrowed interior alleys on both sides of the structure that do not open onto the street or the interior of the block. It has a basement.

161 through 155 Chrystie Street (34 through 37) These structures are shown with basements.

157 Chrystie Street/18 Delancey Street (38) The structure that was once frame in back is now entirely brick.

16 through 10 Delancey Street (39 through 42) Yard sizes appear to have decreased behind all lots. Lot 39 gains brownstone facing and Lot 40 is shown with brick facing, a basement and an alley between it and Lot 41.

8 Delancey Street (43) This building is shown with a basement.

197 Bowery (8) The yard decreases in size.

195, 191 Bowery (7, 5) New yards emerge behind these structures. In the case of Lot 7, a brick structure in the back yard is torn down and in the case of Lot 5, a wooden structure is torn down.

187 Bowery (3) A new yard emerges behind this structure.
185 Bowery (2) This structure, shown as a brownstone on Robinson 1885, is portrayed as brick.

Bromley 1902: Figure 5.1 through 11. Lots and block dimensions, where reported, are unchanged from 1897, with the exception that the façade of Lot 39 that changed from brownstone to brick (or perhaps was incorrectly indicated on the 1897 atlas). In addition to the previous water and sewer pipes present, there is now also a 6' pipe between the two 12' pipes on Bowery. Hydrants are in the same locations as on the 1885 Robinson, but an additional hydrant is shown in the middle of Rivington Street.

Sanborn 1905: This map shows a much greater degree of detail. Delancey Street has been widened to 150', cutting into the block to the south over what had been Lots 13 through 26 of Block 424. There are now a total of two hydrants on Rivington Street, three on Chrystie Street, three on Delancey Street, and three on Bowery
Within the APE in Block 425, lots (in parentheses) are described as follows:
175 Chrystie Street (27) This lot houses a "Mattress Maker" in a three story structure of mixed commercial and residential use, with two steam boilers in back.
173 Chrystie Street (28) This is also a three story structure with mixed commercial and residential use with two steam boilers in back. Additionally, there is an independent electric plant at the back of Lots 27 and 28.
171 Chrystie Street (29) This houses a two story carpenter's building.
169 Chrystie Street (30) This is a two story storehouse
167 Chrystie Street (31) The four story building on this lot is used commercially on the first floor, with light manufacturing on the second, and residences on the third and fourth. A one story structure is shown at the back of the lot.
165 Chrystie Street (32) The main structure is five stories, mixed residential and commercial, while the four story building in back is exclusively residential. Two small one story structures are found in the yard between the front and back structures.
163 Chrystie Street (33) This is a five story residential structure with a basement.
161 Chrystie Street (34) The structure is five stories with mixed commercial and residential use. A one story structure is located in the back yard.
159 through 155 Chrystie Street (35 through 37) These three structures are all five story residential buildings with basements. One story structures are shown behind Lots 35 and 36 with yards.
153 Chrystie Street/18 Delancey Street (38) This six story building has a basement and was used commercially and for light

manufacturing.

16 Delancey Street (39) The three story structure with a basement houses a "dyer," and a smaller one story structure is located in the back section of the lot.

14 Delancey Street (40) This structure houses a dispensary, with three stories in front and two stories in back, both with basements, and yard behind them.

12 Delancey Street (41) A carpenter occupies this six story structure with a basement, with residential use in the upper stories.

10 Delancey Street (42) This is also a six story commercial structure with a basement and residential use above.

8 through 6 Delancey Street (43 through 44) Both structures are mixed commercial and residential, three stories with basements, and have smaller one story structures in the back behind small yards.

4 through 2 Delancey Street/183 Bowery (1) This is a five story lodging house.

197 Bowery (8) This is a Penny Theater, three stories with a basement in front, two stories in the middle section, with a one story shooting gallery at the back of the lot.

195 Bowery (7) The lot houses a pawn shop in a five story structure with a basement.

193 Bowery (6) This is a four story structure with a basement, with a store on the first floor and meeting rooms on the remaining floors.

191 Bowery (5) At the front is a three story structure with a basement with a drugstore housed in the basement/first floor. Behind the main structure is a one story structure with a basement, a one story structure without a basement, and a two story storehouse at the back of the lot. Yard size between the structures appears to have decreased.

189 Bowery (4) The four store structure with a basement in front of the lot is used for "medium" manufacturing above a store on the first floor, and a three story structure at the back of the lot is exclusively used for manufacturing.

187 Bowery (3) This is a five story structure with both a basement and a sub through cellar. It is used for "medium" manufacturing above the commercial first floor. A smaller one story structure is located at the back of the lot. The yard appears to have decreased in size.

185 Bowery (2) A four story lodging is located on this lot with a printer on the first floor.

Bromley 1911: Figure 5.1 through 20. Kenmare Street, as a western extension of Delancey Street, appears for the first time, bisecting several blocks to the west (Blocks 478 through 481) that were wholly occupied according to Sanborn's 1905. All elements of Block 425 appear to

be the unchanged, except for the presence of the Delancey Subway Station for Brooklyn Cars running along Kenmare and Delancey at its intersection with Bowery. The station runs approximately 50' parallel from Block 425 at Delancey Street.

Hyde 1913: In Block 425, changes can be observed in the following lots (lot numbers in parentheses):

159 through 157 Chrystie Street (35,36) There is a small shed or possibly two small adjoining sheds located in the back yards of these lots, occupying perhaps a quarter of the available space. These are not present on the maps immediately pre through and post through dating this atlas.

16 Delancey Street (39) The structure is now shown with a brick façade.

14 Delancey Street (40) The wooden structure has been replaced by a brick structure.

193 Bowery (6) A wooden porch or shed is added onto the back of the brick building.

Following are discussions of the Chrystie Street, Delancey Street, and Bowery roadbeds and sidewalks:

Chrystie Street is shown to have (from west to east): two water pipes (one is 12"), one trolley line approximately mid through street (Met. St. Ry. Co.), and a 15" sewer line. One hydrant is shown on the east side of the street. Two hydrants are shown on the west side of the street: one in front of Lot 38 , one in front of Lot 26, both in the sidewalk.

Delancey Street, 150' wide, is shown to have (from north to south): a 20" water pipe, a 6" water pipe, one trolley line turning from Bowery to the north (Met. St. Ry. Co.), mid through street is a 4' by 2' 8" brick sewer line, another trolley line turning from Bowery to the north (Met. St. Ry. Co.), and lastly a 12" water pipe near the southern sidewalk curb. One fire hydrant is shown on the north side of the street at the edge of the sidewalk between Lots 1 and 44 in Block 425. One fire hydrant is shown on the south side of the street at the edge of the sidewalk towards the western end of Lot 26.

Bowery (of which only its intersection with Delancey Street/Kenmare Street falls in the APE) is shown to have (from west to east): an elevated railroad (Interborough Rapid Transit) line, a sewer line (4' by 2' 8" brick), a trolley line, a salt water high pressure 24" pipeline, another trolley line with a turn off into the south through center of Delancey Street, a 20" water main that turns off towards the north side of Delancey Street, another trolley line with a turn through off into the north through center of Delancey Street (Met. St. Ry. Co.), another sewer line with a manhole in the middle of the street, a final trolley line, a 12" water main, and another elevated railroad on the east side of Bowery.

Bromley 1916: The following changes are noted on this atlas:
14 through 12 Delancey Street (40, 41) The alleyway between these lots is no longer present.
8 through 6 Delancey Street (43, 44) A new theater is located in the combined Lots 43 and 44, that once held two main structures and an interior structure. A new alley is present on the west side of Lot 44.
There are now a total of four fire hydrants on north side of Delancey Street and three on the west side of Chrystie Street.

Sanborn 1922/23: Within the APE, the following changes are shown on this map:
159 through 157 Chrystie Street (35, 36) Two small structures are now located behind these lots.
8 through 6 Delancey Street (43, 44) The new theater is labeled "Moving Picture Theater."
195 Bowery (7) The lot is now shown entirely developed, with no remaining open yards.
There are a total of three 12" water pipes, one of which is high pressure, are indicated in Chrystie Street; Delancey Street is indicated as having 20" and 6" water pipes and a 12" high pressure water pipe to the north of the subway station in the roadbed, a 12" water pipe and a 12" high pressure water pipe south of the subway station in the roadbed. Bowery is shown to have (from west to east) a 20", 12" and another 12" water pipe, then a 24" high pressure water pipe.

Bromley 1926: The APE is generally unchanged from Bromley 1916.
4 through 2 Delancey/183 Bowery (1) This building is labeled the "Puritan House."
197 Bowery (8) The structure is labeled "The Montauks."
195 Bowery (7) The building is shown to house lofts.
185 Bowery (2) This is shown as the "Savoy Hotel."

Bromley 1932: The APE is unchanged from Bromley 1926. However, Lot 43/44 is no longer labeled as a theater and the alleyway on its west side is no longer present.

Sanborn 1951: A few changes or details are noted on use of structures within the APE, lot numbers are shown in parentheses:
175 Chrystie Street (27) This is an Awnings Store.
173 Chrystie Street (28) This houses a manufacture of store fixtures.
169 Chrystie Street (30) The front of the lot houses an auto representative.
167 Chrystie Street (31) A manufacture of fire through proof doors occupies this lot.
159 Chrystie Street (35) This once through exclusively residential structure now houses a sign maker.
157 Chrystie Street (36) This once through exclusively residential structure houses a carpenter.

155 Chrystie Street (37) This once through exclusively residential structure is now used commercially as well (specifics unknown).
153 Chrystie Street (38) The lot appears to house offices.
195 Bowery (7) The lot is portrayed as a warehouse.
185 Bowery (2) The lot is shown as a club house.

Bromley 1955: The APE is similar to Bromley 1932. Changes to lots (in parentheses) or structures, plus the status of open yards are noted below:
173 Chrystie Street (28) A very small yard still exists behind the structure.
165 Chrystie Street (32) New construction has covered most of the remainder of the prior existing yard, leaving only a very small yard at the back
163 Chrystie Street (33) A very small yard still exists at the back of the lot.
161 Chrystie Street (34) New construction has covered all of the previously remaining open yard. A frame structure has been replaced with brick.
159 through 157 Chrystie Street (35, 36) Two brick structures in the back of each lot have been razed. Remaining sizable yard space still exists between the front structures and the recently demolished back structures that had never been developed historically.
155 Chrystie Street (37) A very small yard still exists at the back of the lot.
16 Delancey Street (39) The wood frame structure has been replaced with brick.
12 through 10 Delancey Street (41, 42) Very small yards still exist at the back of these lots.
197 Bowery (8) A very small yard still exists at the back of the lot.
195 through 193 Bowery (7,6) Yard space behind the two lots has been covered with new brick construction, replacing a wood frame structure at the back of Lot 6. A very small yard still remains near the back of Lot 6.
191 through 187 Bowery (5 through 3) Very small yards still exist at the back of these lots.
The open yards mentioned here are still open, according to Sanborn's *Insurance Map* 2001. Additionally, the People's Theater (Lot 9, just outside of the APE) has been replaced with a gas station.

Bromley 1967: The APE is unchanged from Bromley 1955.

Bromley 1974: The APE is unchanged from Bromley 1955.

Sanborn 1984 through 85: The APE is unchanged from Bromley 1955.

Sanborn 1990 through 91: The APE is unchanged from Sanborn 1984 through 85.

Sanborn 2001: The APE is unchanged from Sanborn 1990 through 91. The gas station (Lot 9, outside of the APE) is no longer present.

Street Elevation Table:

Data Source	Rivington x Chrystie	Rivington x Bowery	Delancey x Chrystie	Delancey x Bowery
1865 Vielé	41.0'	41.0'	41.0'	39.0' (Bowery at Spring)
1885 Robinson	41.7'	41.3'	40.9'	38.4'
1897 through 1974 Bromley (9 atlases total)	41.9'	40.1'	38.5'	41.4'
1922/23 Sanborn	41'	41'	40'	38'
1984 through 85, 90 through 91, 2001 Sanborn	41.9'	40.1'	38.5'	41.4'

Tax and Directory Table:

Note: Lot numbers are shown in parentheses after the street address.

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 425: Bowery, Rivington, Chrystie, and Delancey Streets			*Faint and Illegible Soiled Document					Faint
175 Chrystie St. (27)	No Record	No Record	G. Hutchinson	Bradford Frost	Bradford Frost, *Strawhats*	Otto Schaible	James Horn	James Horn
173 Chrystie St. (28)	No Record	No Record	John Oliver	James Horn	John Keenan, *strawhats* B.T. Horn, *clerk* H.W. Henyes, *painter*	Otto Schaible	James Horn	James Horn
171 Chrystie St. (29)	No Record	No Record	Joseph Cose	James Horn	R.H. Olssen, *truckmaker*	Otto Schaible (171 ½)	James Horn (171 ½)	James Horn (171 ½)
169 Chrystie St. (30)	No Record	No Record	Christian Feale	James Horn	No Listing	James Horn	James Horn	James Horn

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
167 Chrystie St. (31)	No Record	No Record	Andrew D. Gale	James Horn	M.B. Biglow, *China Ornamentor* A.K. Patterson WW Simons, *strawgoods*	James Horn	James Horn	James Horn
165 Chrystie St. (32)	No Record	No Record	Dick Kugfiers	Lecount & Ward	Lecount & Ward, *wheelrights* *John Lecount *William Ward	Lewis Hard	Lecount & Ward	Lecount & Ward
163 Chrystie St. (33)	No Record	No Record	Mrs. Morrison	Est. of Mrs Morrison	Samuel Rychman, *baker* Edgar Theal, *currier*	James M. Richmond?	Samuel Rychman	Samuel Rychman
161 Chrystie St. (34)	No Record	No Record	Andrew Tiger?	J. M. Farare William Flandrow	J. M. Farare McTernen, *dry goods* P.J. Cozans, *bookseller*	John Perrier	Jacob Bochner	J. Bochner
159 Chrystie St. (35)	No Record	No Record	H. Dowing	Stephen Williams	Thomas White, *butcher*	Eliza Williams	Eliza Williams (crossed out)	Eliza Williams
157 Chrystie St. (36)	No Record	No Record	Jacob Gerald	Stephen Williams	Stephen Williams, *butcher*	Eliza Williams	Eliza Williams (crossed out)	Eliza Williams
155 Chrystie St. (37)	No Record	No Record	Wilson Taylor	W. Taylor	Adam Werner, *bootmaker* George Wilder, *straw hats*	Eliza Williams	Eliza Williams (crossed out)	Eliza Williams
153 Chrystie St. (38)	No Record	No Record	Not For This Year	Not For This Year	John Frank, *Cigars*	Not For this Year	Not For this Year	Not For this Year
18 Delancey St. (38)	No Record	No Record	James Horn	James Horn	Harman Bormann, *grocer*	James Horn	James Horn	James Horn
					1851			

LOCATION	1808	1820	1834	1844	Directory	1858	1869	1876
16 Delancey St. (39)	No Record	No Record	Margaret Haler C.H. Burloch	Margaret Haler	R.F. Purdy Louis Clows	Hurton Burloch	Louis Meden through fends?	Louis Meden through fends
14 Delancey St. (40)	No Record	No Record	Jacob Appley & W. Richardson	J. A. Appley	*(rear)* J.A. Appley	Est. of Jacob Appley	Est. of Jacob Appley	J. Appley
12 Delancey St. (41)	No Record	No Record	Wilson Taylor & ?	Wilson Taylor	James Beak, Boarding	William Taylor	Mr. Trowbridge	Mr. Trow through bridge
10 Delancey St. (42)	No Record	No Record	Wilson Taylor	Wilson Taylor	Andrew Oakley, *Dentist* John Cummer through field	William Taylor	A. Oakley	A. Oakley
8 Delancey St. (43)	No Record	No Record	James Hart	Wilson Taylor	Joseph Applegate, J.C. Hartt	William Taylor	Mark Relach	Mark Relach
6 Delancey St. (44)	No Record	No Record	James Hart	Wilson Taylor	Mahlon Mattison	William Taylor	Mr. Simpson	Mr. Simpson
4 Delancey St. (1)	No Record	No Record	Not For This Year	Not For This Year	Mary Dwier	Not For This Year	Not For This Year	Not For This Year
2 Delancey St. (1)	No Record	No Record	Not For This Year	Not For This Year	Peter Tonsor,	Not For This Year	Not For This Year	Not For This Year
197 Bowery (8)	No Record	No Record	Dick Kugfiers	M. P. Anderson	Dick & Merritt, *Coals* *T.W. Dick *Randolph Merritt Isaac Merritt, *boarding*	Thomas W. Dick	Karl S. Klun	Karl Klun
195 Bowery (7)	No Record	No Record	H. Morrison	Est. of H Morrison	Zion Bernstein, *pawnbroker*	Wilson Simfison	Wilson Simfison	Wilson Sim through fison
193 Bowery (6)	No Record	No Record	Not For This Year	Peter Lovietland	Simon Gott Getreu, *Caps* T.D. Smith, *Public House*	Peter Levillard?	Loiulbard?	Lioul through bard?

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
191 Bowery (5)	No Record	No Record	Dewing	Est. of Dewing	J.M. Gillet, *stoves* Peter Woods, *Rag Carpets* G.A. Cassebeer, *drugs*	William K. Thorne (also 191 ½)	K. Thorne (also 191 ½)	K. Thorne
189 Bowery (4)	No Record	No Record	C.H. or C.A.	P. Pinchney	Frederick Zschocke, *port.hse* A.D. Pennyman, *artificial legs* J.B. Reed, *artist* John Rivington, *boarding (rear)* Antine Weit Bernard Migrel William Koeker, *cabinet through maker*	Peter Gasner (crossed out)	Mr. B. Astor	W.B. Astor
187 Bowery (3)	No Record	No Record	H. Taylor	Wilson Taylor A. Gould	A.A. Goold, *Grocer* Sons of Temperence and Odd Fellows Lodgerooms M.D. Gale, *Soap*	Wilson Taylor	Mr. Simpson	Mr. Simp through son
185 Bowery (2)	No Record	No Record	John Burich?	Mr. Burich?	Jacob Berman, *rag carpets* Thomas	Mrs. Babcock	Mrs. Babcock	Mr. Babcock

					Kane, *boots*			
LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
185 Bowery (2) continued					Valentine Lutz, *pict frames* Henry Seaman, *cabinetware*			
183 Bowery (1)	No Record	No Record	Henry Wright	Establish through ment through Henry Wilett	Cornelius Cerson, *pubhouse*	Est. of Henrey Wilett	B. Letif	? Frost

Precontact Sensitivity:

Although the area would have been a habitable, perhaps desirable location during the precontact period (i.e., not located on swamp lands, relatively close to sources of water (within 2,500'), it has been heavily developed and has undergone considerable modification in both historic and more recent times. This includes the establishment of the Bowery Road to Boston in the 17th century which would have seen heavy use, the use of the area as farmland administered by the Dutch West India Company in the 17th century, the modification of the land while it was the Delancey Farm through the 1740s to 1780s (Stokes 1928:435; Grimm 1744; Holland 1776), urbanism and construction from the beginning of the 19th century (Hooker 1929), and the construction of the Delancey Subway Station by 1911 (Figure 5.1 through 20, Bromley 1911). Precontact sensitivity is estimated to be moderate.

Historical Sensitivity:

This APE is historically recorded as having been occupied since the 1640s when the area was subdivided into farm lots or "bouweries" and leased by the Dutch West India Company. Instructions were drawn up in 1625 as to how to divide the area (Stokes 1928:70 through 73). What would become Block 425 fell within Bouwery No. 4, in a section leased to Bastiaen in 1647 by Mr. William Kieft, Director General of New Netherland (Stokes 1918:Plate 175). The very northern section of Block 425 was leased by Kieft to the negro Antony Congo in 1647, but falls outside of the APE (Ibid.).

The large farm of James De Lancey, Lieutenant Governor, was the next major established historical settlement in the area of Block 425 (Figure 5.1 through 10, Delancey Farm Map 1865). Stokes (1918:949, Plate 175; 1926 V: 1279) indicates that residence was located within the APE, near the southeast corner, and the Block 425 area fronted onto the Bowery Road to Boston (see also Grim 1744, Holland 1757; McComb 1789). According

to research presented in Stokes Volume 3 (1918), the residence was erected by a May Bickley prior to 1724, and purchased by James De Lancey (sic) in 1744. It was found to be in ruins by 1791 and demolished between 1795 and 1799 (Stokes 1918:949; 1918:1279).

On earlier maps, the residence was shown located at the opposite end of a lane that opened to a wide arc fronting onto Bowery and is consistently illustrated through at least a 40 through year time span (Grim 1744; McComb 1789). While the boundaries of the current block itself were not delineated during the Delancey Farm era, if the historic maps are precise, then it is very likely that the main structure was located approximately over Lots 30 to 35, possibly as far south as Lot 40, within the APE (Figure 5.1 through 10, Delancey Farm Map 1865). There are direct indications of only one other structure associated with the Delancey Farm that may fall within the APE on Block 425; it would be located to the north of the main residence, but its use is not noted (Holland 1757). It is also certain that the Delancey residence would have had associated wells, privies, and possibly cisterns that would have been located close to the house, as a matter of both convenience and necessity, and thus these features could also be located within the APE.

During the British occupation of 1776 to 1783, maps show fortification walls running east to west approximately at the current location of Grand Street (British Headquarters Map 1782). These fortifications would have been outside of the current APE to the south by approximately 300 feet. A small fortification is indicated on the map, just above the approximate location of Broome Street, to the east of the APE by several hundred feet. There are also some smaller unfortified structures indicated west of the fortification that may have been present in the very east side of the APE, and appear to be part of the Delancey Farm.

The possibility that 17th through 18th century archaeological remains exist depends on the degree of disturbance after that time. Several lots on Block 425 have yards that have remained undeveloped up until the present, including larger yards behind Lots 35 and 36, and much smaller yards behind Lots 3 to 6, 8, 28, 32, 33 37, 41 and 42. A few structures do not appear to have ever had basements: these include the street through facing structures on Lots 28, 30, 32, 34, and smaller structures on the interior of the block behind Lots 34 to 36 and 43 (although some of these structures have been demolished or rebuilt, there is no indication that basements were constructed). Thus, domestic and/or farm through related artifacts and historical features such as cellars, house foundations, wells, cisterns or privies from 17th and 18th century occupation could be found if they were not destroyed or reused in subsequent times.

It is less likely that evidence of any of the early 17th century or later Delancey farm through era structures or yard scatter would remain due to normal construction that would have most through likely destroyed all near through surface architecture. Additionally, the already level nature of the precontact period landscape makes it further unlikely that the area would have historic remains preserved under substantially large amounts of landfill, as such modification would be unnecessary. However, soil borings suggest that there could be fill in the area of the APE in levels up to 10.5' (WPA ca. 1935; Raymond

International, Inc., 1974). These are discussed further below. In sum, even without a protective layer of fill, there is still the possibility that deeper shaft features from these 17th and18th century structures such as early cellars, wells, or privies could have survived in undeveloped, undisturbed areas.

As the area was urbanized during the beginning of the 19th century, the dimensions of the block were quickly established and essentially have not changed (Taylor Roberts 1797). Tax records indicate that some lots appear to have changed lessees or ownership frequently during the 19th century, while some individuals held leases or owned several structures for longer periods of time. From the number of individuals listed in the Directory of 1851, it is clear that many buildings housed apartments.

Mixed residential and commercial lots indicate that a diversity of historical features or remains might still survive. According to the tax records form 1851 (above), occupants engaged in a range of careers or commercial activities, from currier or baker to china ornamenter or maker of artificial limbs. Only one professional is listed, a dentist at 10 Delancey Street. This information suggests that the area was populated mainly by the working class and shop keepers. Many structures apparently housed apartments but several also appear to have housed single families.

Open shaft features may have been used as privies or trash pits as residents switched to more modern plumbing in the mid through 19th century. Given the apparent working through class level of the neighborhood, it is likely that although plumbing was available at the time (Endicott 1842), it may not have been hooked up to structures. There were many open yard areas in the middle of the block adjacent to smaller partially residential structures (see above for list of yards) and these areas would have been the location of privies or wells from this era.

Little of the original Bowery Road to Boston would be present in the current APE because a) the corridor does not include more than an approximately 200' segment where the former course of Bowery crossed Delancey Street; and, b) the construction of the Delancey Subway Station in the early 1900s.

In the 19th century, both Bowery and Chrystie Street had a variety of transportation lines. Bowery was the eventual site of the Harlem Railroad that started probably as a horse and car line by the 1830s, and later became an elevated railroad (Burr 1839; Mitchell 1846; Dripps 1852). Chrystie Street was the site of horse through or cable through car lines by the 1850s (Colton 1856). While pylons and street tracks are fairly ubiquitous, trolley yokes and saddles that could exist along the streetbeds would be of archaeological value.

The Delancey Street subway station, construction beginning in 1907 and opened for passenger service in 1913, encompasses almost the entire intersection of Delancey Street and Bowery plus several hundred feet of Delancey Street between Bowery and Chrystie Street (Brennan 2001b; Figure 5.1 through 20). Delancey Street was widened by 100' to the south in order to accommodate a subway line that was planned to link Brooklyn and Lower Manhattan over the Williamsburg Bridge. For further discussion of the widening

of Delancey Street and the effect on archaeological resources, see the *Documentary Assessment of APE* in the appendix for Block 424. Chrystie Street is the site of the former BDQF subway line that opened in 1967, that also would have affected the area (see section 4.5). For detailed discussion of streetbed (subway tunnel and utility) disturbances, see the discussion of Block 424 for Delancey Street and Section 4.5 for Chrystie Street.

According to five soil borings on Delancey Street and Chrystie Street, fill levels around Block 425 range from 0 through 10.5' in depth, and possibly 30' according to one boring (Works Progress Administration, ca. 1935; Raymond International, Inc., 1974). The Works Progress Administration boring at the corner of Bowery and Delancey Street (Boring 1.20.18), shows '6 of fill atop layers of coarse and fine sand. A boring at the corner of Chrystie Street and Delancey Street (WPA Boring 1.20.9) shows no fill, but 65' of sand over mixed layers of sand, clay and gravel. A more recent boring taken at the corner of Chrystie Street and Delancey Street (Boring C6 through 15, Raymond International, Inc.), shows 9' of miscellaneous fill over mixed layers of sand, silt and fine gravel. Another recent boring along the edge of the proposed subway tunnel within the streetbed on Chrystie Street shows 30.2' of "miscellaneous sand, gravel and brick fill", with the water table found at 28' below surface (Boring C6 through 17, Raymond International, Inc., 1974). Boring C6 through 19 at the southwest corner of Chrystie Street and Rivington Street shows 3' of fill over sand, silt and gravel with the water table at 32.5', while boring C6 through 20 at the northeast corner of Chrystie Street and Rivington Street shows 10.5' of fill over sand silt and gravel, no water observed after sample of 37' in depth (Raymond International, Inc., 1974). The construction of the BDQF subway line that ran down Chrystie Street would have affected the streetbed greatly and it is likely that the 30.2' of fill noted in Boring C6 through 17 resulted from the construction of the subways tunnel. The borings close to Chrystie Street or Delancey Street are in part suspect due to their proximity to areas that were excavated for the tunnel.

The construction of basements in the 19th and 20th centuries would have affected possible archaeological resources, depending on the level of potential fill. Of the lots within the APE, those with structures that had basements recorded include Lots 1 through 8, 29, 33, and 35 through 43 (Figure 5.1 through 11, Bromley 1902; Sanborn 1905, 1922/23). Of these structures, Lot 3 housed a structure with a sub through cellar as well as a basement (Ibid.).

Further, currently observed subsurface effects include a subway entrance in front of 4 to 6 Delancey Street, with stairs heading down towards the west. The dimensions of this entrance should be verified, as the entrance is not shown on the WPA Subsurface Conditions Map (1939). Additionally, the sidewalks may contain vaults leading to basements; these are not currently documented, but would affect areas under the sidewalk adjacent to the building line.

Taking the available soil borings at face value, the original surface of Block 425 may have been modified in a varied manner, ranging from no fill to 30' of fill within less than

a block's distance apart. However, the age of several borings (from the 1930s) makes them suspect to a degree. A discrete fill layer of 30' indicated on Chrystie Street while other surrounding fill layers were 10.5' or less is most likely indicative of the effect of subway tunnel construction to accommodate the BDQF subway line (Soil Borings, WPA, ca. 1935; Raymond International, Inc., 1974). The remaining borings may also then indicate further 20th century disturbance or conversely may indicate fill levels in the area up to 10.5' deep, that would have been laid down in the 19th century, possibly protecting early 19th century or earlier archaeological resources. The borings also reveal that the water table varies from 28' to 32.5' to possibly over 37' in depth (no water observed in one boring 37' deep). Historic wells potentially would have been as deep and possibly deeper. Cisterns and privies, however, would most likely have been less deep. Even without the benefit of a protective layer of fill, the bottom of historic wells from the 17th, 18th or 19th centuries could still exist, beneath extant yards or even basements, that are not likely to extend 28' below grade.

In sum, the construction of a variety of transportation lines, then the subway line and the station, plus the presence of numerous utilities in every streetbed surrounding Block 425 make it less likely that historic remains would be found in said locations. There is a greater likelihood of finding historic remains in the interior of Block 425, particularly in the southern half where more yards have remained open through time, including larger yards behind Lots 35 and 36, and smaller yards behind Lots 3 to 6, 8, 28, 32, 33, 37, 41 and 42. Additionally, the street through facing structures on Lots 28, 30, 32, 34, and the interior through side structures of Lots 34 to 36 and 43 that do not appear to have basements may contain deeply buried or truncated historic resources such as wells, cisterns, privies, cellars or old house foundations below their currant foundations. Potential archaeological resources could be associated with 17th century farms; however there is no documentation of structures in the area of the APE. From before 1724 to 1799, it is clear that the house that became the residence of Lieutenant Governor James Delancey in1744 was located in the southeast corner of the block, possibly over Lots 35 through 37 that have had open yards since that time period, or early 19th century development (Stokes 1918:949, Plate 175; Figure 5.1 through 10, Delancey Farm Map 1865). Especially if the area was covered by fill, less to deeply buried features such as house foundations or cellars may still survive from the 18th century; otherwise it is more likely that only deep wells would have survived in a truncated fashion.

The mixture of multi-story through one-story residential and commercial structures indicates that many people occupied the block by the end of the 19th century. Tax records indicate many were working class. It is likely that not all had plumbing as soon as it was available in 1842 (Endicott), and thus would have continued to depend on privies and possibly wells. Shaft features associated with later 19th century development are more likely to be found in the extant yards mentioned above, affecting the area from the top of grade through any fill level, as the yards would have been the available living surfaces for such features. Overall, historic sensitivity ranges from moderate to high for this section of the APE.

Block 424:

Block 424 is bounded by Delancey Street, Chrystie Street, Broome Street, and Bowery. Lots within the APE include Lots 13 through 25 and the north half of Lot 26, that were all eradicated by 1905 for the widening of Delancey Street to accommodate the Delancey Street Subway Station, part of the Centre Street Loop. The Delancey Street roadbed is also included in this discussion.

Cartographic History:

Lyne 1730: The "High Road to Boston" is present, later to become Bowery, that will bound Block 425 on the west. Block 424 is outside of the city (not on map).

Carwitham 1740: The "High Road to Boston" is present, but APE is not on map.

Grim 1744: Block 424 is located approximately 3,000' northeast of the city wall, northeast of the Collect, to the south of what appears to be the residential area of J. Delancey's Farm.

Maerschalck 1755: The "High Road to Boston" (Bowery) is present, gridding to the west of it is shown as far north as St. Steven's (later Broome) Street but nothing noted to the east of Bowery within the APE.

Holland 1757: The "High Road" (Bowery) is present, and the APE is located immediately south of the Delancey residence that here is labeled "Lieut. Governeur." A lane that appears to pass to the east from Bowery through the APE is labeled "Somerndicks," although it's precise location cannot be determined, as it is not shown with clear boundaries. The general area of the APE is shown as vacant farmland.

Montresor 1766: Block 424 is located within area labeled as James Delancey's farm, in an area that appears to be relatively level. On this map, two smaller structures flank the main residence to the north and to the south, parallel with Bowery Road (sic). The map is too small to determine the location of the structures in relation to the current landscape with certainty, but it is likely that the residence was present to the north and the small outbuilding to the south of the residence possibly fell within Block 424.

Ratzen 1767: Figure 5.1-2. The road to Boston is now called Bowry Lane (sic), and what will become Block 424 is clearly located within the Delancey Farm. The southern structure noted in the Montresor plan does not appear to be present. Note that structures, particularly the residence, appear to be smaller than on previous maps, making it difficult to locate these structures with any degree of accuracy.

Holland 1776: This map indicates gridding along Bowery Lane, Road to Albany and Boston (sic) in the area of the APE. East of Bowery, the Delancey Farm is gridded by lanes into several small blocks just north of the APE. This gridding does not follow the alignment of the current street grid (that existed at this time one block south) but rather was aligned perpendicular and parallel with Bowery. A lane or path is portrayed in

the general location of Delancey Street. First Street (later Chrystie) only exists up until Bullock Street (later Broome), after which a lane angles in to the north to parallel Bowery. Additionally, another path bisects the APE from north to south, parallel to Bowery, approximately in the middle of Block 424. So, a total of three paths at this time affect the APE: one in the northeast corner, one on the east side and one crossing the middle. No structures are shown in the APE, and the land is shown as vacant farmland.

British Headquarters Map 1782: This map shows that Bowery Lane (sic) and Block 424 are among farmlands, with very low relief. Delancey Farm is present, just north of the British Fortification wall that appears to wind east to west between Broome Street and Grand Street.

McComb 1789: The main Delancey Farm dwelling is likely located within Block 425 to the north of Block 424, and no other buildings noted in the area of Block 424.

Hayward 1797: Block 424 is present in its current form, bounded by Delancey Street, First Street (later to become Chrystie), Bullock (later Broome) Street, and Bowry Road (sic). The southwest half of Block 424 not quite extending up to Delancey Street is shown developed, possibly affecting the southwest section of the APE.

Taylor Roberts 1797: The APE is unchanged from Hayward 1797.

Bridges 1807: Block 424 is defined by Delancey Street, First (later Chrystie) Street, Broom (sic) Street, and Bowery Road. Few structures are indicated on this map overall, and no structures are shown on Block 424.

Hooker 1829: Block 424 is indicated as developed and is located near the northwest corner of Ward 10. No public structures, churches or other structures of note are indicated.

Hooker 1833: The APE is unchanged from Hooker 1829.

Colton 1836: The APE is unchanged from Hooker 1829.

Bradford 1838: The APE is unchanged from Hooker 1829.

Burr 1839: This map shows a railroad/transportation line beginning at Bowery and Prince Street (two blocks north of Block 424) and heading north.

Endicott 1842: This map of the Croton water pipes shows pipes on Chrystie Street, Delancey Street and Bowery.

Mitchell 1846: Current street names are depicted and a transportation line is shown turning north onto Bowery from Broome Street. No public structures are noted on Block 424.

Dripps 1852: Current street names are depicted and the Harlem Railroad is indicated on Bowery. Block is shown fully developed, with unnumbered lots and structures. General orientation of lots is similar to the lot configuration of the early 20th century. Facing Delancey Street, the APE covers 13 lots with 20 structures on them. Most lots have open areas associated with them.

Colton 1856: Transportation lines and the railroad are indicated on Bowery, plus a transportation line on Christie (sic) Street. Few structures are indicated on map, none on Block 424.

Perris 1857: Figure 5.1-4. Lots are shown in a similar configuration to that in Dripps 1852, with the addition of more structures within the APE. Following is a description of lots (in parentheses) and structures:

149 Chrystie Street (22/23) This lot is shown with two commercial frame structures facing Chrystie Street and a small yard behind with a frame structure on its north half.

147 Chrystie Street (24) This lot has a commercial frame structure in front and a long brick building against the north side of the lot in back with an open yard along the south side.

145 Chrystie Street (25) A commercial frame structure with an alley along its south side occupies the front of the lot, and a smaller frame structure then a brick structure occupy the rest of the south side of the lot, with an open yard on the north side.

143 Chrystie Street (26) This lot is shown with three frame structures along the north side and then a brick structure at the back. A small open space is present between the second and third structures, and a very small space is present between the first and second structures.

19 through 15 Delancey Street/151 through 149 Chrystie Street (22) At this time, the lot had a commercial frame structure at the corner defined by 151 Chrystie Street and (19) 17 Delancey Street. A very small alleyway separated this structure from a commercial brick structure on the east side of 15 Delancey Street. A small frame structure was situated behind this brick structure, with a small yard in the back. At 15 Delancey Street, there was a commercial frame structure facing the street with a brick structure behind it.

13 Delancey Street (21) This lot had a commercial wood frame building with a back yard separating it from another frame structure at the back.

11 Delancey Street (20) This lot was covered in part by a commercial brick structure, behind which was a small yard and another brick structure.

9 Delancey Street (19) The brick structure covering this lot entirely is noted as a "special hazard."

7 Delancey Street (18) The wood frame structure on this lot is also noted as a "special hazard," with a small yard and then a brick structure in back.

5 Delancey Street (17) A brick structure occupies the front of this lot, with a small yard in back.

3 and 1 Delancey Street/181 Bowery (16) This lot is entirely occupied by a commercial brick structure.

179 Bowery (15) A commercial brick structure occupies the front of this lot, while there is another brick building in the north half of the back yard and a small frame building against the back of the main

structure. A small yard occupies the southeast corner.
177 Bowery (14) This lot is almost entirely covered by a commercial brick structure with a tiny yard in the northeast corner.
175 Bowery (13) This lot has a commercial frame structure covering most of the lot, with a small yard separating it from a small outbuilding in back.
173 Bowery (12) This lot has a commercial brick structure covering less than half of the lot, with a large yard and what is indicated to be a smokehouse at the back of the lot.

Mitchell 1860: Transportation lines and the Harlem Railroad are indicated on Bowery, plus a transportation line on Christie (sic) Street. Few structures are indicated on map, none on Block 424.

Dripps 1863: This is not as detailed as Dripps 1852. Transportation lines and the railroad are shown on Bowery, and a transportation line on Chrystie Street. Few structures are indicted on this map, none are shown on Block 424.

Vielé 1865: Block 424 is shown resting on relatively level meadowland, and sewers/canals are indicated in the Bowery, Delancey Street, and Broome Street roadbeds. No structures of note are indicated in block, but few are shown on the map. Fresh water (the Collect) is less than one-half mile (about 2,500') southwest of block within a marshy zone.

Delancey Farm Map 1865: Figure 5.1-10. Block 424 is clearly part of the Delancey Farm lands. The block is shown divided into roughly equally-sized rectangular lots that are all oriented east to west. This is not in accordance with immediately earlier and later maps (see Dripps 1852 and 1867) that show length-wise lots perpendicular to the side of the street upon which they face (that is, for north- and south-facing lots as well as east- and west-facing lots). It is most likely that the lots shown on this map represent proposed rather than actual lot divisions. No structures of note are shown on this block, although the Jas. Delancey residence is indicated one block north (Block 425).

Dripps 1867: Similar to Dripps1852. The Welsh Baptist Tabernacle appears to be located within the southeast corner of the APE, or possibly just south of the APE (in the area of Lots 25 through 30, or 145 through 135 Chrystie Street).

Vielé 1874: Similar to Vielé 1865, a transportation line is indicated on Bowery, no sewers/canals are indicated on this map.

Watson 1874: Transportation lines/railroad are shown on Bowery and a transportation line on Chrystie Street. Few structures are indicated on this map, none on Block 424.

Latimer 1881: This transportation map shows elevated railroads: the Third Avenue line runs along Bowery. No structures are indicated on Block 424, few are shown on this map.

Robinson 1885: Three transportation lines and two railroad tracks are shown on Bowery, and a transportation line on Christie Street (sic).

Transportation lines are indicated on legend as either horse or cable car lines. Within the APE, one fire hydrant located mid-block on the south side of Delancy (sic) Street, one just south of Delancy and Bowery. A fire hydrant is indicated on Bowery in front of Lot 15 and on Delancey Street between Lots 20 and 21. Delancey Street is 244.4' long at the top of the block. Bowery itself is around 120' wide, remaining streets are about 50' wide.

Lots roughly approximate current (2001) divisions. Basements are not indicated on this atlas. Using lot numbers from the late 19th/early 20th century prior to the widening of Delancey Street, the APE consists of now non-existent Lots 13 through 25 and the northern half of Lot 26, that are described below, with lot numbers in parentheses:

151 and 149 Chrystie Street/15 and 19 Delancey Street (22/23) These lots at the corner of Delancey and Chrystie Street are covered by a brownstone taking up the entire area, indicated as the "Delancy."

147 Chrystie (24) This lot has a long, L-shaped brick structure that runs the length of the lot with a long, narrow alley on the north side and a narrow yard on the south side.

145 Chrystie Street (25) The lot has an L-shaped wood framed structure in the east side of the lot with a brick structure extending to the back of the lot, with a narrow yard on the north side abutting the yard in Lot 24.

143 Chrystie Street (26) This lot has three structures, the easternmost and middle are both wood framed and the westernmost at the back of the lot is brick, abutting the central structure; a long alley transverses the southern side of the lot (outside of the APE), and a small yard separates the street fronting and middle structures.

13 and 11 Delancey Street (21, 20) Each has a brick structure facing the street and another brick structure of equal size at the back of the lot with a medium-sized yard separating them.

9 and 7 Delancey Street (19, 18) Each lot is entirely covered by a brownstone structure.

5 Delancey Street (17) A small brick structure is present with a small back yard.

3 and 1 Delancey Street/181 Bowery (16) A brownstone covers the entire lot at the northwest corner of the APE.

179 Bowery (15) A brick structure covers most of the lot, with a small back yard.

177 Bowery (14) A brick structure is shown on this lot with a very small yard in the northeast corner.

175 Bowery (13) This lot consists of a brick structure with a back yard taking up a third of the lot.

In sum, lots with back yards within the APE include Lots 26 and 24, 21, 20, 17, 15 and 13.

Colton 1885: This map of suburban lines of the Long Island Railroad and its connections shows an electric railway line on Bowery. No structures are indicated on the block, few are shown on this map.

Sanborn-Perris 1894: Similar to Robinson 1885. Details of structures are noted below (except construction material, which cannot be determined from the microfilm), lot numbers are in parentheses:

151 and 149 Chrystie Street/15 and 19 Delancey Street (22/23) Three five story commercial/residential structures fronting onto Delancey Street are shown here, with a very narrow one story structure along the south side of the lot at 149 Chrystie Street. Only a very small yard remains in the interior southwest corner.

147 Chrystie (24) Two commercial/residential four story structures take up most of the lot, with a small open yard on the south side of the back structure that joins with the yard in the following lot.

145 Chrystie Street (25) A three story wood frame structure faces the street and a four story structure is located in back, with an open yard north of the back structure.

143 Chrystie Street (26) This lot has a series of four commercial and residential structures aligning to its northern boundary, with an open alley along the southern end of the lot that is outside of the APE. A large two story building facing Chrystie Street is abutted by a small two story building. A small yard separates this building from a medium four story building that abuts a three story structure that continues until the back of the lot.

13 and 11 Delancey Street (21, 20) Both lots have five story commercial/residential structures taking up around half of the lots, with smaller three and four story commercial buildings in back with equally sized yards in between.

9 and 7 Delancey Street (19, 18) Each lot has a four or five story commercial/residential building with a masonry front in front of the lot with a one or two story building in back; only Lot 19 has a very small yard.

5 Delancey Street (17) A three story commercial building covers over half of the lot and the rest is vacant yard.

3 and 1 Delancey Street/181 Bowery (16) A five story commercial structure with a masonry front covers the entire lot.

179 Bowery (15) A three story residential/commercial structure covers the front half of the lot and a two story structure covers the north half of the remaining yard in back.

177 Bowery (14) A four story brick warehouse covers most of the lot with a smaller one story structure behind and a very small yard in the northeast corner.

175 Bowery (13) A four story commercial structure covers most of the lot with a smaller one story structure behind and a very small yard in back.

Bromley 1897: This atlas confirms Robinson's 1885 street widths and dimensions. By this time the lot numbering matches modern Sanborn's (2001). All buildings in the APE are 3 to 5 stories tall. Added details are listed below, with lot numbers in parentheses:

151 and 149 Chrystie Street/15 and 19 Delancey Street (22/23) The structures are indicated as brick with brownstone facing.

145 Chrystie Street (25) The main structure is shown with a basement.

143 Chrystie Street (26) The main structure is shown with a basement. The last two structures at the back of the lot are wood frame and at the very back of the lot, brick.

13 and 11 Delancey Street (21, 20) Lot 21 has a frame building in back, Lot 20 has a brick building in back.

9 and 7 Delancey Street (19, 18) Main structures are brick faced with brownstone.

5 Delancey Street (17) The main structure is shown with a basement. The back yard intersects with the yards behind Lots 15 and 14.

Along Chrystie Street, 12" pipes run beneath the street close to the block, and 6" pipes run on the other side. Delancey Street has only a 6" pipe running through it. Bowery has two 12" pipes running on either side of its transportation line. Old Bowery road is delimited within the current roadbed, the eastern side at the edge of Block 424 and the western side around 25' from the adjacent block.

Bromley 1902: Figure 5.1-12. Lots are the same as in 1897 Bromley, as are the block dimensions where reported. The water/sewer pipes are the same, with the addition of a 6" pipe between the two 12" pipes on Bowery. Hydrants are in the same locations as in 1885. Sidewalks are indicated on this atlas as ten to 15' wide on Delancey Street and Chrystie Street, and 15' to 20' wide on Bowery.

Sanborn 1905: Delancey Street has been widened to 150' to the south, taking out Lots 13 and 25 and the northern half of Lot 26.

Bromley 1911: Figure 5.1-20. Kenmare Street, as a western extension of Delancey Street, appears for the first time, to the west of Block 424. Its construction accommodated the "Delancey Subway Station for Brooklyn Cars" that is now present, running beneath Kenmare Street and Delancey Street at their intersection with Bowery. The station runs approximately 50' parallel from the block edge, and is centered at the intersection of Bowery and Delancey where it continues east on Delancey Street towards Brooklyn. While the subway entrances are at the northwest and southwest corners of Kenmare Street and Bowery, the station continues approximately 180' east of Bowery along Delancey Street. A meridian approximately 20' wide is now present in the center of Delancey Street.

Hyde 1913: Sidewalks on Bowery and Delancey Street are shown about 20' wide, on Chrystie Street 15 and 20' wide.

Bowery is shown to have (from west to east): an elevated railroad (Interborough Rapid Transit) line, a sewer line (4' by 2' 8" brick), a

trolley line, a salt water high pressure 24" pipeline, another trolley line with a turn off into the south and center of Delancey Street, a 20" water main that turns off towards the north side of Delancey Street, another trolley line with a turn-off into the north-center of Delancey Street (Met. St. Ry. Co.), another sewer line with a manhole in the middle of the street, a final trolley line, a 12" water main, and another elevated railroad on the east side of Bowery. Delancey Street has a 12" pipeline close to Block 424, two trolley lines (Met. St. Ry. Co.), a sewer line (4' by 2' 8" brick), and a 6" and a 20" pipeline north of the trolley lines. Chrystie Street has a trolley line, two pipelines and a sewer line. Fire hydrants are located curbside on Delancey Street at the back end of Lot 26 and one on Bowery in front of Lot 12.

Bromley 1916: The APE is similar to Hyde 1913. Another hydrant is located on Delancey Street near the northwest corner, the other hydrant portrayed on Hyde 1913 on Delancey Street is not shown. Sidewalks are shown between about ten to 15' wide on Bowery and Delancey Streets, about ten feet wide on Chrystie Street. A small, one story brick structure is shown in the middle of Delancey Street, mid-block within the meridian above the subway station. Its function is not indicated here, but a WPA Subsurface Map (1939) indicates it was a subway entrance, albeit not necessarily pedestrian access.

Sanborn 1922/23: Two fire hydrants are shown, one towards the northeast and one towards the northwest corners of the block on Delancey Street, one on Chrystie Street near the north end, and one on Bowery near the north end. On Delancey Street, there is the addition of another 12" high pressure water pipe on either side of the street.

Bromley 1926: This depiction of the APE is similar to Bromley 1916, but no hydrants are shown at the corner of Delancey Street and Chrystie Street.

Bromley 1932: The APE is unchanged from Bromley 1926.

Sanborn 1951: The APE is very similar to Sanborn 1922/23.

Bromley 1955: The APE is very similar to Bromley 1926.

Bromley 1967: The APE is unchanged from Bromley 1955.

Bromley 1974: The APE is unchanged from Bromley 1955.

Sanborn 1984-85: The APE is unchanged from Bromley 1955.

Sanborn 1990-91: The APE is unchanged from Bromley 1955.

Sanborn 2001: The APE is unchanged from Bromley 1955.

Street Elevation Table:

Data Source (maps)	Delancey x Chrystie	Delancey x Bowery
1865 Vielé	41.0'	39.0' (Bowery at Spring)
1885 Robinson	40.9'	38.4'
1897-1974 Bromley (9 atlases total)	40.1'	38.5'
1922/23 Sanborn	40'	38'
2001 Sanborn	40.1'	38.5'

Tax and Directory Table:

Note: Lot numbers are shown in parentheses after the street address.

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 424: Bowery, Delancey, Chrystie, and Broome Streets								
151 Chrystie St. (22)	No Reels	No Reels	Conrad Jordan	Conrad Jordan	Jobst Hinrichstruss, *grocer*	Conrad Jordan	Conrad Jordan	Conrad Jordan
149 Chrystie St. (22/23)	No Reels	No Reels	Robert Wallace	J.N Jones	William Daniels, *Locksmith* Samuel Rich, *bootmaker*	Richard E. Mount	Richard E. Mount	Richard E. Mount
147 Chrystie St. (24)	No Reels	No Reels	John Hilton	Joseph Went-worth	Margaret Darrey, *Dressmaker*	J.W. Went-worth	J.W. Went-worth	J.W. Went-worth
145 Chrystie St. (26)	No Reels	No Reels	W? Day J.W. Pentworth ?	Joseph Went-worth	J.W. Wentworth, *cooper* W.M. Jube, Policeman	J.W. Went-worth	J.W. Went-worth	J.W. Went-worth
143 Chrystie St.	No Reels	No Reels	James R.Hicks	James R. Hicks	"refused"	Mrs. Washburn	Mr. Wash-burn	Church
19 Delancey St.	No Reels	No Reels	Not This Yr	Not This Yr	M.H. Underhill	Charles L. Doe	Charles L. Doe	Charles L. Doe

(22)					Thomas Pasco			
17 Delancey St. (22)	No Reels	No Reels	Not This Yr	Not This Yr	Conrad Briel, *butcher* Samuel Taylor *tailor* Haram White, Boarding	Charles L. Doe	Charles L. Doe	Charles L. Doe
15 Delancey St. (21)	No Reels	No Reels	Not This Yr	Not This Yr	Henry Straus, *porterhouse* Conrad Bauer	Not For This Year	Not For This Year	Not For This Year
13 Delancey St. (20)	No Reels	No Reels	Peter B. Meyres	Not This Yr	Jacob Brom, *shoemaker* (rear)	Jacob Brom	Ignatz Frolich?	Ignatz Frolich
LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
13 Delancey St. (20) continued					Christian Luer, *cabinetmaker* Anton Schaeg			
11 Delancey St. (20)	No Reels	No Reels	Forbes Clapp	Not This Yr	Gotlieb Seigardt, *shoemaker* George Fentin, *Blacksmith*	Adolf Hagen-luher?	Frank Cook	F. Cook
9 Delancey St. (19)	No Reels	No Reels	No Record	Not This Yr	A.L. Kellers Soap	Louis Kellers	Joseph Fausig	Joseph Fausig
7 Delancey St. (18)	No Reels	No Reels	P. Meayle	Not This Yr	D.U. Waterbury, Edwin Hall, Job Walker	Adolf Hagen-luher?	K. Khum	K. Khum
5 Delancey St. (17)	No Reels	No Reels	No Record	Not This Yr	Benjamin Van Tuyl, Andrew Prosch	John McGay	John McGay	John McGay
3 Delancey St. (16)	No Reels	No Reels	No Record	Not This Yr	William Knipe *Cabinetmaker*	Not For This Year	Not For This Year	Not For This Year
1 Delancey St. (16)	No Reels	No Reels	No Record	Not This Yr	Mrs. Hibbert *Boarding*	Not For This Year	Not For This Year	Not For This Year
181 Bowery (16)	No Reels	No Reels	Isaac Ward, Wm Knipe	William Knipe	Lyman Rodgers, *porterhouse*	S?B. Simfison?	S?B. Simfison?	S?B. Simfison ?

179 Bowery (15)	No Reels	No Reels	John McGraph	John McGraph	John McGraph, *grocer*	John McGraph	John McGraph	J. McGay
177 Bowery (14)	No Reels	No Reels	George Vaughn	George Vaughn	Francis Queen, *periodicals*	George Vaughn	George Vaughn	G. Vaughn
175 Bowery (13)	No Reels	No Reels	Peter Meabe	Forbes Clapp	C.W. Simmons, *millinery* William Steinhard, *clothing* Mrs. A. Harff, Milliner Thomas Whack, *tinware*	Bradford	Eleza Bradford	Bradford
173 Bowery (12)	No Reels	No Reels	R. Stephens James Latourette	Do Do William Geery	*Edward Henly provisions*	Roosevelt Stephens	Roosevelt Stephens	Richard Brea?

No Reels prior to 1828

Precontact Sensitivity:

Block 424 would have been habitable during the precontact period, and within 2,500' of a fresh water source. However, the area has seen heavy use and has undergone considerable modification in both historic and more recent times. This includes the modification of the land while it was administered by the Dutch West India Company in the second half 17th century, the Delancey Farm through the 1740s to 1780s (Figure 5.1-10; Stokes 1928; Grimm 1744; Holland 1776), urbanism and construction from the beginning of the 19th century (Hooker 1829), the construction and excavation of the Delancey Subway Station in the early 1900s, and specifically the widening of Delancey Street in the process of that construction (Figure 5.1-20, Bromley 1911). It is possible that the area is covered by a layer of fill up to ten feet deep that may have protected early resources (see discussion of soil borings below) However, due to early historic and more recent disturbance, precontact sensitivity is estimated to be only moderate.

Historical Sensitivity:

Block 424 lies in the area of the historic period Bouwery No. 4, a farm lot that was overseen by the Dutch West India Company and whose boundaries were initially determined in 1625 (Stokes 1928:70-73). This tract of land was leased to Bastiaen in 1647 by Mr. William Kieft, Director General of New Netherland (Stokes 1918:Plate 175). Later, the Block 424 area would be located within the Delancey Farm (mid to late 1700s), just to the south of the residence of James Delancey (Stokes 1918:949; Figure 5.1-10) on the east side of the historic period Bowery Road to Boston (Grim 1744; Holland 1757; McComb 1789). It is possible

that outbuildings related to the Delancey Farm once occupied the area of the APE, but map sources for this time period do not reliably show such structures. During the seven year British occupation, maps show fortification walls running east to west approximately between the current location of Broome Street and Grand Street (British Headquarters Map 1782). These fortifications most likely were outside of the current APE to the south by several hundred feet. While 17th and 18th century artifacts such as surface scatter or fields are not likely to have survived from this era, more deeply buried historical shaft features such as foundations, cellars, wells, privies or cisterns could still be present if they were not destroyed or reused in subsequent times. Possible fill suggested by soil borings discussed below may have further preserved early historical remains (WPA, ca. 1935; Raymond International, Inc. 1974).

Before discussing the period of 19th century development, discrepancies exist in the documentation and representation of Delancey Street from the 19th through the early 20th century that must be addressed. The Key Map from the Manhattan Borough President's Office indicates that Delancey Street was 150' wide as of 1795, as does the Works Progress Administration map (WPA 1937:Subsurface Conditions Map, Project No. 609, Map No. 85). However, all other maps and atlases show Delancey Street to be around 50' wide up until the construction of the Delancey Subway station in the early 1900s (Dripps 1867; Robinson 1885; Bromley 1897, 1902). Prior to subway construction, Block 424 is indicated on all maps and atlases other than WPA with 41 numbered lots (Bromley 1897, 1902). After the construction of the subway, the north section of the block is truncated by approximately 100' and Lots 13 through 25 plus the north of Lot 26 are no longer present (Figure 5.1-20, Bromley 1911). It is notable that the WPA maps also indicate that Kenmare Street was laid out in 1795 when in truth it was planned and laid out only after the Interborough subway system was developed at the turn of the 20th century. It appears then that the WPA maps may be prone to date related error. Delancey Street is therefore assumed to be 50' wide pre-subway construction and 150' wide post-subway construction.

The block was fully developed by the late 1800s, only to be partially razed through the widening of Delancey Street (discussion below). In the process, Lots 13 through 25 and the north of Lot 26 were destroyed. In the tax and directory table for lots within the APE shown above, it is evident that some lots changed hands frequently while others retained ownership or leases throughout the 19th century. The Directory of 1851 indicates that occupants of the lots within the APE were employed in a variety of largely service-oriented labor. Multiple occupancy of lots indicates many were apartments, and several are shown as boarding houses. This indicates this was a working class area, which implies certain types of archaeological remains would exist from this period. Specifically, the surmised level of income suggests that although plumbing was available (Endicott 1842), many would not or could not have afforded to hook up to the plumbing system and would have needed to continue to rely on privies.

To summarize briefly, historic remains in the path of the subway tunnel would have been destroyed but could still exist beneath the south sidewalk on Delancey Street where small yards in the back of the former locations of Lots 19, 13, plus a very small yard in the middle of Lot 26 were open throughout the historic period. Slightly larger yards in the middle of

Lots 20 and 21, adjacent to the subway tunnel, may have been partially disturbed by utilities but still represent a possible resource. Yards in back of Lots 24 and 25 were also affected by utilities, but are located closer to the sidewalk curb, which may have areas that were not disturbed.

All of the aforementioned areas may hold either 19th century or earlier historic remains, that could be buried under fill. Nineteenth century shaft feature remains would be more likely to exist in the open yard areas from that time. If a fill episode occurred, the remains of features such as wells from the 18th century or earlier could potentially exist beneath 19th century structures, and would include all of Lots 25 and 13, the northern 5' of Lot 26, the southern ten feet of Lot 25, the southern 28' of Lots 21 and 20, the southern 32' of Lot 19, the southern ten feet of lot 18, and the northern ten feet of Lot 14. Of these, only the structures on Lots 25 and 26 are shown with basements. The area beneath the north sidewalk has seen more subsurface disturbances, including a subway station entrance towards the west end of the street. But there has not been any other large scale construction documented in the area specifically; it is located very close to the original Delancey residence and for this reason may be more likely than the south side to hold earlier 17th and 18th century historic resources.

Both Bowery and Chrystie Street had a variety of transportation lines during the historic era. Chrystie Street was the site of horse- or cable-car lines by the 1850's. Bowery was the eventual site of the Harlem Railroad that probably started as a horse-car line by the 1830's, and later became an elevated railroad. It is unlikely that any of the original Bowery Lane (the historic road to Boston) exists within the APE due to the construction of the Delancey Subway Station.

The Rapid Transit Commission planned the Centre Street Loop subway tunnel with a station at Bowery and Delancey Street in order to connect Lower Manhattan with Brooklyn by way of the Williamsburg Bridge (Engineering News 1910). The bridge opened in 1903 and in the same year the city laid out a street (initially called the Delancey Street extension, later named Kenmare Street) over several developed blocks west of Delancey Street to accommodate the continuation of the subway west to Centre Street (Brennan 2001b; Manhattan Borough Presidents Office records). Construction on this portion of the subway began in 1907. In the process, Delancey Street was widened by an extra 100' to the south, for a total current width of 150' (cf. Figure 5.1-11 and Figure 5.1-20). As mentioned before, this razed all structures on Lots 13 through 25 and the north half of Lot 26 in Block 424. The subway station was opened for passenger service in August, 1913 (Brennan 2001b).

Chrystie Street was also the location of a subway tunnel. Formerly the BDQF line, this tunnel was opened in 1967 (Brennan 2001b). For further discussion of the Chrystie Street roadbed, see Section 4.5.

According to the Works Progress Administration Project No. 609 Subsurface Conditions Map No. 85 (1937), the subway tunnel beneath Delancey Street between Chrystie Street and Bowery occupies an area approximately 85' wide beneath the Delancey Street roadbed. At the intersection of Delancey Street and Chrystie Street, the tunnel is located 34' north of the southwest corner (building line) and 32' south of the northwest corner. At the intersection of

Delancey Street and Bowery, the tunnel is located 32' north of the southeast corner and 24' south of the northeast corner. Sidewalks on either side of Delancey Street are 20 to 22' wide. The north 60' of the original block would have been entirely destroyed by the cut and cover method construction of the tunnel, taking out all subsurface remains below Lots 22, 23, 17 to 15, the northern 15' of Lot 24, the north 60' of Lots 21 to 18, and the northern 15' of Lot 14. Former lots in the APE left unaffected by the subway tunnel include all of Lots 25 and 13, about the northern 5' of Lot 26, the southern ten feet of Lot 25, the southern 28' of Lots 21 and 20, the southern 32' of Lot 19, the southern ten feet of lot 18, and the northern ten feet of Lot 14. Of these lots, Lots 24 and 25 had medium sized yards, Lot 26 had a very small yard mid-lot, Lots 21 and 20 had medium to small yards in back with between the main structures and structures in back, and very small yards were located at the back of Lots 19 and 13.

A subway entrance has been observed on the north side of Delancey Street in front of Lots 43 or 1. The stairs lead to the west, and may affect a large portion of the area under the sidewalk. However, this entrance is not shown on the WPA Subsurface Conditions Map (1939).

Between the subway tunnel and the south side of Delancey Street, there is a cluster of utilities including water, gas, electric, and sewage lines that lie within 5' of the surface (including the granite/concrete surface). No disturbances are recorded under approximately a 14' wide area of sidewalk on the south side of Delancey Street against the building line. Between the subway tunnel and the north side of Delancey Street, there is a larger cluster of utilities including water, electric, telephone, gas, and sewage lines that extend up to 18' beneath the surface including the remaining roadbed and the southern half of the sidewalk, leaving approximately a ten feet wide area of sidewalk against the buildings without disturbances noted. Additionally, a 20' city water tunnel (Catskill) is present adjacent to the north side of the subway tunnel, reaching a depth of 50' below the surface.

The subway tunnel itself is also shown to reach 50' below the surface (WPA 1937: Subsurface Conditions Map Project No. 609, Map No. 85, 1937). SYSTRA Engineering repeats this information: "...proposed alignments are believed to have shallow profiles (not deeper than 50' from the surface of the Street) and to have been constructed by cut and cover methods," but notes that the tunnel may be no more than 41' deep (they cite the approximate street elevation at Bowery and Delancey Street as 138.4' and the approximate base of railroad elevation as 97') (SYSTRA Memo 11/12/01).

Of the lots within the APE, only structures on Lots 17, 25 and 26 are indicated as having basements (Figure 5.1-12, Bromley 1902); however, this map does not necessarily indicate all basements that might have been present (Sanborn 1905). Lot 17 would have been completely destroyed by the construction of the Delancey subway tunnel. Nonetheless, there is reason to believe that subsurface effects by the remaining structures within the APE may have not been much below that of the natural surface. Yards (or parts of yards) behind Lots 25 and 26, 21 and 19 and 13 were never under development prior to the expansion of Delancey Street and would not have been disturbed by the excavation of the subway tunnel.

Soil borings show that fill levels on top of the natural surface on Delancey Street run up to 10.5' in depth, possibly up to 30.2' in depth. The Works Progress Administration boring at the corner of Bowery and Delancey Street (Boring 1.20.18, ca. 1935) shows 6' of fill atop layers of coarse and fine sand. A boring to the west (Boring 1.20.4, WPA 1937) shows 5' of sand atop 20' of what is referred to as "fill clay sand gravel." A third boring at the corner of Chrystie Street and Delancey Street (Boring 1.20.9, WPA 1937) shows no fill, but 65' of sand over mixed layers of sand, clay and gravel. A more recent, and probably more reliable boring at the corner of Chrystie Street and Delancey Street (Boring C6-15, Raymond International, Inc., 1974) shows 9' of miscellaneous fill over mixed layers of sand, silt and fine gravel. The natural presence of clay layers in Boring 1.20.9 below a fill layer makes the identification of the subsurface fill layer in Boring 1.20.4 somewhat suspect, as it is entirely composed of naturally occurring deposits. However, note that the majority of these borings date from the 1930s and may not accurately represent the current subsurface conditions. A conservative estimate of the depth of the natural surface beneath Delancey Street is 0-10.5' below current grade, as reported on the more modern boring. The boring that shows 30.2' of fill (Boring C6-17, Raymond International, Inc., 1974) probably shows the effect of the construction of the BDQF subway tunnel that runs under Chrystie Street. The presence of this tunnel may also have affected other borings in the vicinity of Chrystie Street. Given the known disturbance of the Delancey subway station as well, no soil boring around this APE can be completely reliable.

It is very unlikely that any remains are present below the current subway tunnel, due to its current depth. However, the 32' to 34' wide area between the tunnel and the current building line of Block 424 beneath the roadbed and the sidewalk may still hold untouched historic deposits. This would include parts of the former Lots 13, 19, 20, 21, and 24 to 26. The areas most likely to be undisturbed are those beneath the south sidewalk, small five to ten foot wide yards in the back of Lots 19 and 13, plus a very small yard in the middle of Lot 26. Slightly larger conjoined yards mid-lot in Lots 20 and 21 are located in the same place as utility lines, adjacent to the subway tunnel, and may have possibly been disturbed. Conjoined yards in back of Lots 24 and 25 are also partially located under utilities, but closer to the sidewalk curb. The area beneath the north sidewalk is also likely to hold historic deposits, but it has seen more subsurface disturbances. Although there has not been any recorded construction in this area specifically, it is located very close to the original 18th century Delancey residence and therefore is more likely than the south side to hold early historic resources. There is a lesser possibility that earlier 17th century resources also exist in the area of the APE, when it was part of farmlands administered by the Dutch West India Company, but there are no documented structures in the area of the APE from this time.

There is the possibility that historic remains still exist in the yard areas of former Lots 13, 19, 20, 21, and 24 to 26, and also below the north sidewalk area and unexcavated streetbed adjacent to Block 424. Historic resources are more likely to have survived than precontact due to landscape modification that would have likely occurred while the area was farmed during the 17th century under administration by the Dutch West India Company (Stokes 1918: Plate 175), when it was part of the Delancey Farm during the second half of the 18th century and later with more modern development. The possible modifications after Delancey's occupation include the possible addition of up to ten feet of fill during the 19th

century that would have buried historic surfaces as well as building construction that may have destroyed some of the earlier historic surfaces. In the former case, it is more likely that earlier historic features including privies or wells could have remained at least partially intact; in the latter case, if construction affected natural surfaces, only the lower portions of earlier historic features would still remain intact.

Current water table levels average 30' below the modern surface (Borings C6-17 and C6-19, Raymond International, Inc., 1974). It is not unlikely that historic era wells would extend to this depth. While water was available to the area of the APE by 1842 (Endicott), this is not to say that every structure was hooked up, as many may have continued to rely on privies and wells, especially given the apparent working-class nature of the neighborhood. The prior yards and open areas hold a higher likelihood of yielding complete features from the 19th century or earlier, while partial or truncated deep shaft features from the 17th and 18th century could possibly be found beneath former structures within the APE as well. Areas of former structures on Lots 25 and 26 had basements, and thus are the least likely areas to have any resources; however, depending on the depth of the basements, deep wells could still be truncated beneath. Historic sensitivity is gauged to be moderate in areas with no prior effect.

Kenmare Street between Bowery and Elizabeth Street and Lots 12, 27 and 28 of Block 478 North of Kenmare Street:

Block 478, bounded to the east by Bowery and to the west by Elizabeth Street was divided into northern and southern halves by the construction of Kenmare Street between 1905 and 1911. The APE itself includes the street bed and sidewalks on Kenmare Street between Bowery and Elizabeth Street (former Lots 29-31, 11-9 and parts of Lots 32 and 8 on Block 478), and extant Lots 27, 28 and 12 on Block 478 north of Kenmare Street.

Cartographic History:

Lyne 1730: The "High Road to Boston" is present, later to become Bowery, that will bound Block 478 on the east. The APE is north of the boundaries of this map.

Carwitham 1740: The APE is very similar to Lyne 1730.

Grim 1744: This APE is located approximately 2,800' northeast of the city wall, northeast of the Collect, probably within what appears to be fields associated with Nicholas and Stephen Bayard's Farm, roughly east of the main Bayard residence. Note that the calculation of the location of Block 478 was determined using distances and orientations from then-established city blocks (below Beekman Street) that have current counterparts and may not be entirely correct when extrapolated to outside of the city wall.

Maerschalck 1755: The "High Road to Boston" (Bowery) is still present, gridding to the west of it includes Elizabeth Street running north-south that forms the western boundary of Block 478 and St. Steven's Street (later Broome Street) that forms its southern boundary.

Holland 1757: This map shows the "High Road" (Bowery) and the APE is located on the west side of Bowery directly across from the residence of the "Lieut. Governeur" (the Delancey farm), while Nicholas Bayard's farm is located west to southwest of the APE. No structures are noted in the APE, which is vacant farmland.

Montresor 1766: The APE is located within the area labeled as Bayard's farm, and appears to be level, although a knoll is indicated a few hundred feet to the southwest and two bluffs are shown to the northwest. A small structure with an associated garden is located on the west side of Bowry Lane, Road to Albany and Boston (sic), probably just south of the Kenmare Street APE, as it is shown slightly south of the Delancey Farm.

Ratzen 1767: Figure 5.1-2. The APE is clearly located within vacant farmlands on the west side of Bowry Lane (sic), directly across from the Delancey Farm.

Holland 1776: This map shows gridding along Bowery Lane, Road to Albany and Boston (sic) in the area south of the APE. West of Bowery, the gridding extends to Ann (later Grand) Street and above it, the lane

leading to Bayard's farm (later Broome Street). Within the APE, a is structure shown on the west side of Bowery that appears to be located in the future location of Kenmare Street. The land immediately surrounding the structure is portrayed as vacant farmland.

British Headquarters Map 1782: This map shows Bowery Lane (sic) and a British Fortification wall that winds east to west between what will be Grand Street and Broome Street, one block south of Block 478, which is shown as vacant farmland.

Directory Plan 1789: The Bowery Lane/Road to Boston (sic) is present, as is Elizabeth Street and Byards (sic) Lane (later Broome Street), not to be confused with Byard (sic) Street located four blocks to the south. Block 478 is shown as farmland, and Elizabeth Street is not shown to extend north past Broome Street.

Hayward 1797: The area is shown to be completely gridded south of Houston Street. Block 478 is present, bounded by Bowry (sic) Road, William (Broome) Street, Elizabeth Street, and Oliver (Spring) Street. The easternmost two-fifths (cutting across the APE) and the southernmost one-fifth of the block (outside of the APE) are indicated as developed, but the nature of that development is unknown.

Taylor Roberts 1797: The APE is the same as on Hayward 1797.

Bridges 1807: Block 478 is defined by Bowery Road, Broom (sic) Street, Elizabeth Street and Spring Street. Few structures are indicated on the map, none are indicated on Block 478 within the APE.

Hooker 1829: Block 478 is shown fully developed, but the nature of the development is unknown.

Hooker 1833: The APE is unchanged from Hooker 1829.

Colton 1836: The APE is unchanged from Hooker 1829.

Bradford 1838: The APE is unchanged from Hooker 1829.

Burr 1839: The APE is unchanged from Hooker 1829

Endicott 1842: This map of the Croton water pipes shows that water lines were present on Bowery and Elizabeth Street.

Mitchell 1846: The APE is unchanged from Hooker 1829. However, the Harlem Railroad is shown turning north onto Bowery from Broome Street to the west.

Dripps 1852: The Harlem Railroad is shown turning north onto Bowery from Broome Street to the west. Block 478 is shown fully developed, with 49 or 50 unnumbered lots with structures, including the First Baptist Church in the southwest corner of the block (outside of the APE). The lots by and large correspond to later lot configurations in shape but not necessarily in size, as some later lots appear to occupy what are shown as multiple lot areas on this map. All lots on the east side of the block facing Bowery Road have long, narrow, abutting structures that occupy the eastern half of each lot, ten or eleven of which fall within the APE (where Kenmare Street will bisect the block), while the back

(west) half of each lot has open space. Structures on the west side of the block facing Elizabeth Street are of various sizes. Within the APE facing Elizabeth Street there appears to be one large lot with three structures facing the street with a very large open yard with street access. Two additional lots on either side of this lot have portions that fall within the APE: to the north, the lot is largely occupied by a structure, with a very small yard behind; to the south, a larger structure faces Elizabeth Street, while a smaller structure occupies the back of the lot separated by a medium sized yard.

Colton 1856: Transportation lines and a railroad are shown on Bowery, and a transportation line is present on Broome Street. Few structures are indicated on this map, one in the southwestern corner of Block 478, outside of the APE.

Perris 1857: Figure 5.1-5. The lots within the APE are shown in the same configuration as in Dripps 1852. In addition to the Baptist Church in the southern part of the block, a Mahogany Yard is indicated in the northern part, both of which fall outside of the APE. Within the APE, the following lots and structures are shown (lot numbers are in parentheses):

178 ½ to 170 Bowery (27 to31) This area of the APE is divided into half-lots. Each has a commercial/residential brick structure covering half of the lot with a smaller brick structure attached to the back of the structure. Lot 27 has an additional small frame structure.

168 Bowery (32) This larger lot has a commercial/residential frame structure covering less than half of the lot with a large open yard behind.

148 Elizabeth Street (12) This lot is covered by structures, largely a storehouse, with smaller structures in back, including one frame in the southeast corner and a small smokehouse in the northeast corner. (Note: there is no 146 Elizabeth Street on this map.)

144 to 140 Elizabeth Street (11 to 9) This large conjoined lot holds from north to south, a "special hazard" frame structure, a commercial/residential frame structure, an alleyway, and a "special hazard" brick structure with another immediately behind it. A large "special hazard" brick structure occupies the northeast quarter of these three combined lots. There are open yard areas to the west and south of this structure.

138 Elizabeth Street (8) There are two "special hazard" structures that occupy the front and back of the lot, with a yard between them.

Mitchell 1860: The Harlem Railroad is present on Bowery, and a transportation line is shown on Broome Street. Few structures are indicated on this map, and none are shown on Block 478.

Dripps 1863: This map is not as detailed as Dripps 1852. Transportation lines/railroad are still shown on Bowery, and a transportation line is present on Broome Street. Few structures are indicated on the map,

however the church is still shown on the southern half of Block 478, outside of the APE.

Vielé 1865: The APE is shown as relatively level meadowland, and sewers/canals are indicated under the Bowery and Elizabeth Street roadbeds. No structures are indicated on the block, and very few appear on the map. Fresh water (the Collect) is located less than one-half mile (about 2,500') southwest of this APE.

Dripps 1867: Similar to Perris 1857. Within the APE, the large "special hazard" brick structure at the back of Lot 11 is no longer present.

Bayard Farm Map 1869: Proposed lots are shown schematically, without any development, but the map confirms this APE as the location of prior farmland. No indication of past structures associated with the farm is depicted on the block.

Vielé 1874: This is similar to Vielé 1865, and the APE is unchanged.

Watson 1874: Transportation line/railroad is shown on Bowery, and a transportation line runs on Broome Street. Few structures are indicated on this map, and none are on Block 478.

Latimer 1881: This transportation map shows elevated railroads: the Third Avenue line runs along Bowery.

Robinson 1885: Three transportation lines/two railroad tracks are shown on Bowery, and a transportation line is still present on Broome Street. These are indicated on the map legend as either horse or cable car lines. Within the APE, there is one fire hydrant at what will be the northeast corner of Kenmare Street and Bowery. The dimensions of Block 478 (as of yet undivided by Kenmare Street) are noted as follows: Bowery–486.5', Broome Street–202.3', Elizabeth Street–487.0', Spring Street–202.5'. Bowery itself is about 120' wide, remaining streets are about 50' wide.

Street numbers on Elizabeth Street have changed from 150 to 138 to 164 to 154 Elizabeth Street. Changes to lots or structures are as follows (lot numbers are in parentheses). Former Elizabeth Street addresses are from Perris 1857, unless otherwise noted:

178 1/2 Bowery (27) The small frame structure in back is no longer indicated.

168 Bowery (32) This structure was shown as frame in earlier maps; now it is brick. A brick structure also occupies the back of the lot, separated from the main structure by a yard

162 (formerly 148) Elizabeth Street (12) The lot is covered by one brick structure that, together with the lot above (outside the APE), is labeled "Clark & Bros. Provisions."

160 to 156 (formerly 144 to 140) Elizabeth Street (11 to 9) The structures at the front of Lots 11 and 10 are no longer present, but a large brick structure spans the entire back of these three conjoined lots, that are labeled "E. Kassing N.Y.C. Steam Saw Mill." A large open

yard is present in most of the northwest corner of these three lots.

Colton 1885: This map of suburban lines of the Long Island Railroad and its connections shows an electric railway line on Bowery. No structures are shown on this map.

Sanborn-Perris 1894: Bowery is shown to be 113' wide at the APE, Elizabeth Street is 49.6' wide, but Kenmare Street has not yet been created. Hydrant placement is the same as on the Robinson 1885 atlas. The following details are shown on this (lot numbers in parentheses). Original street numbers on Elizabeth Street are from Perris 1857 unless otherwise noted:

178 1/2 Bowery (27) A four-story residential/commercial structure occupies the first half of the lot, a smaller three-story structure adjoins it in back, and an irregularly shaped one-story frame structure takes up most of the rest of the back yard.

178 Bowery (27) This lot has a four-story residential/commercial structure with a small three-story building adjoining it behind. Nearly half of the lot is open yard.

176 (formerly 176 1/2 and 176) Bowery (28) This lot has a three-story residential/commercial structure and a one-story structure behind it with a small yard at the back of the lot.

174 1/2 Bowery (29) The three-story commercial/residential structure has smaller two story and three story structures just behind it, with open yard for the rest of the lot.

174 Bowery (29) This lot has a three-story commercial/residential structure with a smaller three-story structure along the south side abutting the main structure. Most of the lot is open yard.

172 (formerly 172 1/2 and 172) Bowery (30) This lot is entirely covered with buildings, most of which is three stories, the rest of which is one or two stories.

170 1/2 Bowery (31) A mixed-use three-story structure takes up the front half of the lot, with small one and two story structures behind it. The back of the lot is open yard.

170 Bowery (31) The three-story residential/commercial structure is followed by a narrow two story, then two narrow one-story structures that take up the southern half of the lot.

168 Bowery (32) This lot is covered by a large mixed-use four-story structure with one-story structures in back, leaving two very small yard spaces in back.

164 (formerly 162 in Robinson 1885, 148 in Perris 1857) Elizabeth Street (12) The "Provisions" store is largely four stories, with three story structures at the back of the lot.

162 to 156 (formerly 160 to 156 in Robinson 1885, 144 to 140 in Perris 1857) Elizabeth Street (11 to 9) The Saw Mill takes up most of the back half of these conjoined lots with one or four story structures. Along the north edge is another one story structure that does not reach the street. A three-story structure on the south edge fronts onto

Elizabeth Street. A large open yard remains in the lot facing onto the street.

154 (formerly 138) Elizabeth Street (8) The lot is the northern half of a "Carriage Factory," the section in the APE is three stories.

Bromley 1897: This atlas corroborates Robinson's 1885 street widths and dimensions and lot-numbering matches the modern Sanborn's (2001). The APE includes only Lots 9 to 12, 27 to 31, and parts of Lots 8 and 32. Within the Broome and Spring Street streetbeds are 6' utility pipes, Elizabeth Street has 6' pipes in the east and 12' pipes in the west part of the road, and Bowery has two 12' pipes running on either side of the street tracks. Old Bowery road is shown delimited within the current Bowery roadbed, the eastern side at the edge of Block 425 and the western side about 25' from the adjacent block. Note that the APE within Bowery only includes that section of Bowery where it intersects with Kenmare Street and Delancey Street. Changes or details about lots or structures are noted below, lot numbers in parentheses:

178 to 170 Bowery (27 to 31) No half-lots (or addresses with "1/2") are represented on this map. Lot 27 has one wooden structure taking up the northern half of its back yard. Lot 31 has two small wooden structures and one brick structure in its back yard.

164 Elizabeth Street (back to the Robinson 1885 numbers, formerly 164 in Sanborn-Perris 1894, 148 in Perris 1857) (12) The lot is shown as part of a Packing Company.

154 (formerly 138) Elizabeth Street (8) This is a brick stable that takes up the entire lot plus the lot to the south (outside of the APE).

Bromley 1902: Figures 5.1-12 and 5.1-13. The lots within the APE are the same as shown on the 1897 Bromley atlas, as are the block dimensions where reported. However, there is the addition of a wooden structure that takes up the entire back yard of Lot 30, within the APE. The water/sewer pipes are the same, with the addition of a 6' pipe between the two 12' pipes on Bowery. Hydrants are in the same locations as on the 1885 Robinson atlas.

Sanborn 1905: The APE is in the same basic layout, with the addition of a hydrant on the west side of Elizabeth Street within the APE. Half-addresses/lots are again shown on Bowery that were not shown on Bromley 1897; these are noted below. Most structures are mixed commercial/ residential except as noted. Details of structures and lots are as follows (lot numbers are in parentheses):

178 1/2 through 178 Bowery (27) The lot is shown divided into two addresses. Yards still exist behind each.

176 Bowery (28) The lot houses a three story structure with a basement on the front half, a one story structure in back with a small yard.

174 1/2 through 174 Bowery (29) The lot is shown with two addresses. Each front structure has a basement, plus the small

structure behind 174 Bowery. Open yard exists behind each.

172 Bowery (30) One three story structure with a basement that is exclusively a store is located in the front have of the lot, while several smaller structures abut the building behind. The final third of the lot is open yard.

170 1/2 through 170 Bowery (31) Same as Sanborn-Perris 1894, but one small two-story structure directly behind 170 1/2 Bowery has a basement. A small yard still exists between back structures.

168 Bowery (32) The building is shown as a factory as well as a commercial and residential structure. Small yards still exist in back.

164 (formerly 148) Elizabeth Street (12) The provisions store no longer exists. The lot has a six story structure with a basement on the front part of the lot, with a narrower, then again a continued lot-wide structure behind. Small yards are present along the sides of the middle structure and at the very back of the lot.

162 through 156 (formerly 144 through 140) Elizabeth Street (11 through 9) The Veneer Saw Mill is in the same configuration, but the four story structure in the northeast corner of the combined lots has a basement. The only building used as a dwelling is a small three-story structure located in the very southwest corner of the lot. Most of the west half of the lot facing on to Elizabeth Street remains open yard.

154 (formerly 138) Elizabeth Street (8) What was labeled as a stable on Bromley 1897 is shown again as a Carriage Factory. It is shown with a basement.

Bromley 1911:

Figures 5.1-20 and 5.1-21. Kenmare Street, as a western extension of Delancey, appears for the first time within the APE. It is approximately 80' wide including sidewalks, bisecting Block 478 east-west midway, taking out all of Lots 8 through 11, the southwest corner of Lot 12, the southwest corner of Lot 28, all of Lots 29 through 31 and the northeast corner of Lot 32.

The Delancey Subway Station for Brooklyn Cars appears with the construction of Kenmare Street, running along Kenmare and Delancey at its intersection with Bowery. The station runs closely parallel to the Kenmare street edges, beginning around 60' from the western edge of the block, and the subway continues east towards Brooklyn.

Of the remaining lots on the APE, the following details are noted (lot numbers are in parentheses):

178 Bowery (27) This lot is entirely covered by a brick structure.

176 Bowery (28) The former structures on this lot have been torn town and replaced with a frame structure in the middle of the lot. Only a very small portion of Lot 28 had been open yard; the rest had been a building with basements. Thus, only about 10' at the back of the lot remains undisturbed at this time.

164 (formerly 148) Elizabeth Street (12) A six story brick structure now covers the entire lot except for a very small square yard located against the north side, mid-lot.

Hyde 1913: Kenmare Street is shown to be 80' wide, including sidewalks that appear to be very wide (15' to 20').

There are 4' by 2' 8" brick sewers located along Elizabeth Street and Bowery. One manhole is present close to the middle of Elizabeth Street where it intersects with Kenmare Street. Bowery is shown to have (from west to east): an elevated railroad (Interborough Rapid Transit) line, a sewer line, a trolley line, a salt water high pressure 24" pipeline, another trolley line with a turn off into the south-center of Delancey Street, a 20" water main that turns off towards the north side of Delancey Street, another trolley line with a turn-off into the north-center of Delancey Street (Met. St. Ry. Co.), another sewer line, a final trolley line, a 12" water main, and another elevated railroad on the east side of Bowery.

Structures are portrayed as follows (lot numbers in parentheses):

178 Bowery (27) The lot is covered by a one-story brick building with a liquor license (the Map Legend indicates it was a hotel or saloon; more probably it was a saloon, based on size).

176 Bowery (28) A subway entrance is indicated mid-lot. The rest of the lot is taken up by a three story commercial structure.

164 (formerly 148) Elizabeth Street (12) This lot is a five-story brick building with a store on the first floor.

Bromley 1916: This is similar to Hyde 1913, all lots in APE are completely developed with brick buildings. None are indicated with basements, Lot 12 shown with six stories.

Sanborn 1922/23: The APE is similar to that portrayed on Bromley 1916. However, all remaining lots in APE (Lot 27,28 and 12) are shown with basements. Entrances to B.R.T. subway extend from the former wooden structures indicated in Bromley 1911 to encompass the sidewalks in front as well as large central sections of Lot 28 facing Kenmare Street. A new fire hydrant is now located on the southeast corner of Kenmare Street and Elizabeth Street.

Bromley 1925: The APE is similar to Sanborn1922/23. An extension of the subway is shown beneath Kenmare Street heading west from the Delancey Street Station. The subway tunnel is shown to be approximately 40' wide, not quite reaching the sidewalk edges.

Bromley 1932: The APE is similar to Bromley 1925, but the subway entrances indicated as iron-fronted structures.

Sanborn 1951: The APE is unchanged from Sanborn 1922/23.

Bromley 1955: The APE is similar to that portrayed on Bromley 1932. However, the area of subsurface effect for the subway tunnel under Kenmare Street is now shown to encompass the entire sidewalk on the south side of

the street, all of the sidewalk on the north side of the street, nearly all of Lot 28 and the southern third of Lot 12.

Bromley 1967: The APE is unchanged from Bromley 1955.
Bromley 1974: The APE is unchanged from Bromley 1955.
Sanborn 1984-85: The APE is unchanged from Bromley 1955.
Sanborn 2001: The APE is unchanged from Bromley 1955.

Street Elevation Table:

Data Source (maps)	Spring x Bowery	Spring x Elizabeth	Broome x Bowery	Elizabeth x Bowery	Kenmare East side	Kenmare West side
1865 Vielé	39.0'	39.0'	35.0'	35.0'	--	--
1885 Robinson	39.0'	38.4'	35.5'	34.6'	38.4 *	--
1897-1974 Bromley (9 atlases total)	--	38.4'	35.6'	34.6'	38.5' *	--
1922/23 Sanborn	40'	39'	--	35'	38'	36'
2001 Sanborn	--	38.4'	35.6'	34.6'	38.5' *	--

* Bowery on Delancey Street (east) side

Tax and Directory Table:

Note: Lot numbers for street addresses are shown in parentheses.

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 478: Kenmare between Bowery and Elizabeth Streets								
178 ½ Bowery (27)	No Reels	No Reels	Not This Year	Not This Year	No Listing	No Reels	Not This Year	Not This Year
178 Bowery (27)	No Reels	No Reels	James Drake	Peter Lorillard	Mrs. Rachel Pearson, *grocer* Mrs. M.D. Hodge, *milliner*	Peter Lorillard	Tobb J. Turnbull	Not This Year
176 ½ Bowery (28)	No Reels	No Reels	Not This Year	Not This Year	No Listing	Not This Year	Not This Year	Not This Year
176 Bowery (28)	No Reels	No Reels	L. Van Reusellan	E.W VanRenfr alear	No Listing	Est of Robb J. Turnbull	Robb J. Turnbull	Not This Year
174 ½ Bowery (29)	No Reels	No Reels	Not This Year	Not This Year	No Listing	Not This Year	Not This Year	Not This Year
174 Bowery (29)	No Reels	No Reels	L. Van Reusellan	C.P. VanRenfr alear	Thomas Negus, *shoes* Thomas Henderson, *thread*	Est of Robb J. Turnbull	Robb J. Turnbull	Not This Year
172 ½ Bowery (30)	No Reels	No Reels	Not This Year	Not This Year	No Listing	Not This Year	Not This Year	Not This Year
172 Bowery (30)	No Reels	No Reels	Widow Higgind	Andrew Jackson	J.M. Story, *fancy goods* Simon Sondhein, *laces*	Est of Robb J .Turnbull	Robb J. Turnbull	Not This Year
170 ½ Bowery (31)	No Reels	No Reels	Not This Year	Not This Year	No Listing	Not This Year	Not This Year	Not This Year
170 Bowery (31)	No Reels	No Reels	L Van Reusellan	W.C Dusenbur y	Simon Leserman, *clothing*	A. H Gould	A.H. Gould	Not This Year

					Louis May, *jewelry*			
168 Bowery (32)	No Reels	No Reels	Est. of Barday	Caleb Bartlett	John Axford, *books* Elizabeth Wright, *corsets*	John Axford	John Axford	Not This Year
148 Elizabeth St. (11/10)	No Reels	No Reels	James Drake	George Mitchell	John McChesney	Samuel Clark	Samuel Clark	Not This Year
144 Elizabeth St. (10)	No Reels	No Reels	L. Van Reusellan	Wilkins	NY Phoenix Coal Yard John Kelly, *Grates* G.W. Hendrix, *Builder*	Wilkins	George M. Wilkins	Not This Year
142 Elizabeth St. (10/9)	No Reels	No Reels	L. Van Reusellan	Wilkins	NY Phoenix Coal Yard John Kelly, *Grates* G.W. Hendrix, *Builder*	Wilkins	George M. Wilkins	Not This Year
140 Elizabeth St. (8)	No Reels	No Reels	L. Van Reusellan	Wilkins	NY Phoenix Coal Yard Same as above	Not This Year	George M. Wilkins	Not This Year
138 Elizabeth St	No Reels	No Reels	Richard Anderson	W. Flansrow	Williams Flandrau, *coachmaker*	J. Clark	W. Flansrow	Not This Year

Note: No reels for 14th Ward Prior to 1928

Precontact Sensitivity:

This APE, that was depicted as relatively level meadowland prior to historic development, was situated within 2,500' of a fresh water source, suggesting it could have been a habitable location (see Viele 1865). However, as the APE exclusively consists of the current Kenmare Street roadbed and sidewalks, the area has experienced extensive disturbance. Kenmare Street was constructed over blocks that had been developed for over 100 years (Taylor Roberts 1797) and prior to that, the lands had probably been farmed for up to 150 years (Stokes 1928:70; Grim 1744; Directory Plan 1789). WPA soil borings (ca. 1935) suggest that the area may have from 5-10' of fill, that would have been laid down during 19th century

development, effectively protecting pre-19th century resources. Nonetheless, prior occupation would have still affected precontact resources.

The majority of the APE consists of an extant subway tunnel (originally the B.R.T. then B.M.T. Centre Street Loop, now the J/M/Z line) that runs beneath Kenmare Street (Figure 5.1-1). Cut and cover construction would have destroyed all possible archaeological remains within the tunnel area. The remaining APE only consists of extant Lots 27, 28 and 12 (all of which are entirely covered by structures with basements). The degree of overall disturbance throughout the historic to modern period in the area makes it extremely unlikely that precontact resources remain in the area of the subway tunnel, and only moderately likely that any resources exist beneath the basements of the lots mentioned above.

Historical Sensitivity:

The first historical mention of the APE places it within an area later to be called Smith's hill plus eight small farm tracts whose boundaries were planned in 1625 and were administered by the Dutch West India (Stokes 1928:70-71). Subsequently during the 17th century, the APE falls within a farm tract referred to as Bouwery No. 8, that occupied the area west of Bowery Road and north of what would later become Broome Street. By 1638 it was occupied by Dr. Hans Kierstede, whose house probably lay around four blocks to the west of the APE (Stokes 1928:73, 435). Within Bouwery No. 8, a short grant was given to "Jan Negro" in 1647. The grant was 200 paces "along the wagon road [Bowery]" and "extended back from the Wagon road 325 paces to the house of Mr. Hans." (Stokes 1928:73), but was later revoked. As the land parcel appears to abut Broome Street to the south, it would have encompassed the entire APE. The precise locations of structures associated with this parcel are not clear, and neither do we know how many structures may have existed on this parcel. For example, it is not clear, if Jan Negro occupied the house of Dr. Kierstede to the west, or if another house was constructed. Structures or shaft features from the 1700s may then exist in the APE, but would be associated with structures for which we have no documented evidence.

Block 478 was located within the farmlands attributed directly to Nicholas and Stephen Bayard during the 18th century. The Bayard Mansion (four blocks outside of the APE) was constructed in 1735 and destroyed in 1821 (Grim 1744; Bayard Farm Map 1869; Stokes 1928 70-71, 435). The Bayard farmlands fronted onto the Bowery Road to Boston. The APE was actually closer to the residence of the Delancey Farm, that was located directly across the street on the east side of Bowery. One structure, possibly associated with the Delancey farmstead, is shown on Block 478 (Montresor 1766), here it appears to be located to the south of the APE. On Holland 1776, however, a structure is shown fronting onto Bowery that seems to fall within the APE. It is possible these are the same structure represented differently in the two maps. The nature of this structure is unknown; specific activities related to its function that would leave archaeological traces can only be assumed. During the British occupation from 1776 to 1783, maps show fortification walls running east-west approximately between the current location of Broome Street and Grand Street (British

Headquarters Map 1782). These fortifications most likely were outside of the current APE, situated to the south by approximately 300'.

Block 478 was at least partially developed by 1797 (Taylor Roberts), and was fully developed between Broome Street and Spring Street by the mid-19th century (Dripps 1852). By the turn of the century, lots were in an arrangement similar to current (Sanborn 2001) lot configurations (Sanborn-Perris 1894; Bromley 1897, 1902; Sanborn 1905). Lots were largely medium to light manufacturing or mixed commercial/residential use. While the tax and directory table for the block lacks information for several lots and years (see above), information shown indicates that many of the occupants were working class, and that some lots housed apartments although several housed single occupants or families. The working class may have been less likely to pay to have their utilities hooked up, although plumbing would have been available by 1842 (Endicott). This would have necessitated the continued dependence on privies, even wells, during the 19th century.

Most of the APE was completely destroyed in the process of the construction of the subway tunnel under what is now Kenmare Street, only areas that escaped 20th century development could still hold archaeological resources. The only undisturbed areas that currently exist are beneath the basements in Lots 27, 28 and 12. As the water table is located approximately 30' below the surface (Soil Borings C6-19 and C6-17, Raymond International, Inc., 1974), wells would have had to penetrate to roughly equal depths. If the 19th century basements were less than 30' deep, or especially if they were constructed over a layer of fill, then the bottom of pre-19th century wells could still exist beneath basements in Lots 27, 28 and 12. It is very unlikely that any other type of resource would be present, and the likelihood of truncated wells is low.

Kenmare Street was a planned extension of Delancey Street west to Lafayette (then Elm) Street, crossing over four blocks located between Broome Street and Spring Street. This was to accommodate the "Centre Street Loop," a subway tunnel that would ultimately link Brooklyn with downtown Manhattan by way of the Williamsburg Bridge, planned by the Rapid Transit Commission and later used by the Brooklyn-Manhattan Transit Company (Engineering News 1910). The city purchased the land necessary for the extension, laying out the new street in 1903, construction begun in 1907 and completed by 1911 (Brennan 2001b; Manhattan Borough Presidents Office records). The cut and cover methods used in the construction of Kenmare Street would have completely destroyed any archaeological resources that might have existed from ground surface to the base of the subway tunnel, including former Lots 9-11, 29-31, and parts of Lots 8, 28 and 32 (Figures 5.1-12 and 5.1-20).

According the Works Progress Administration (WPA) Project No. 665-97-3-32 Subsurface Conditions Map No. 75 (1939), the subway tunnel beneath Kenmare Street on Block 428 is wider than the street bed and sidewalks, narrowing slightly as it heads west. In the intersection of Kenmare Street and Elizabeth Street, the tunnel widens by about 5' for a length 5', then continues narrowing along the same trajectory. Electric lines are the only utilities shown, located on both sides of the street. In 1929, Kenmare Street was made of

granite block over 6" of concrete; it is erroneously shown on WPA maps as having been laid out in 1795 (Ibid.), when it was not laid out until the beginning of the 20th century. Elizabeth Street was laid out in 1750, made of sheet asphalt over concrete in 1914. Bowery is listed as having legally opened in 1762, made of granite block over 6" of concrete in 1917 (WPA Map No. 85). Any of the sidewalks could also contain sidewalk vaults as outside access ways to any structure that had a basement, but these vaults are not documented.

Research found that not all WPA Subsurface maps are readily available. The WPA Subsurface Map (No. 75) that could be located does not show the east end (about 50') of the block, but shows around 160' from Elizabeth Street towards Bowery. The tunnel outline on the WPA map corresponds with that shown in the Bromley Atlas and on the Sanborn Insurance Maps after the tunnel's construction (Bromley 1955, 1974; Sanborn 2001). In all cases, the subway tunnel encompasses the width of the entire Kenmare Street streetbed, both north and south sidewalks, as well as what remains of Lot 11 and Lot 28, both on the north part of the block facing Kenmare Street to the south. The remaining Lots within the APE unaffected by the construction of the subway tunnel are 12, 27, and the very north of 28.

MTA/SYSTRA Consulting maps show the base of the existing tunnel to be 45' below ground surface at Bowery and 40' below ground surface at Elizabeth Street (MTA/SYSTRA 2001, Drawing No. CT-514). Two soil borings by the Works Progress Administration, one at the intersection of Bowery and Kenmare Street (1.20.18, ca. 1935), one at the intersection of Kenmare and Elizabeth Street (1.20.17, ca. 1935) show fill levels of 6' and 10', respectively, on top of the what appears to be the natural surface. One WPA boring located mid-block on Kenmare on the south side of the street is identified as having a 5' layer of sand at the surface, then a 20' level of "fill clay sand gravel" over another 35' of sand (1.20.4, ca. 1935). Given that other, nearby borings from the same era (e.g., WPA boring 1.20.9 at the corner of Chrystie Street and Delancey Street) show many layers of mixed sand, gravel and clay as natural layers, the identification of the aforementioned 20' layer as fill may be suspect, especially as it lies beneath a layer of plain sand. Alternatively, a sterile later of sandy fill may have been redeposited over fill. However as previously stated, the accuracy of the WPA soil borings is somewhat questionable. Three more recent borings from Raymond International, Inc. (C6-15, C6-19, C6-20, 1974) located at Chrystie Street and Delancey Street, Chrystie Street between Rivington and Delancey Streets, and Rivington Street and Chrystie Street show fill levels of 9', 3', and 10.5', respectively. This information suggests that the layer of fill in the general area ranged at least from 3-10.5', a range within which the first two WPA borings mentioned here fall.

Bedrock (micaceous schist) is located 112.6' below the surface in Boring 1.20.9, and the closest water levels (about 30' below surface) are recorded in more recent borings located on Chrystie Street between Delancey Street and Rivington Street (Raymond International, Inc., 1974: Borings C6-17 and C6-19), where the bedrock is slightly lower (see MTA/SYSTRA 2001, Drawing No. CT-514).

As mentioned earlier, lots within the APE not affected by the subway tunnel include 12, 27 and 28. Prior to the construction of Kenmare Street, Lot 12 had a structure with a basement

that covered most of the lot and Lot 27 had a structure with a basement that covered the front half of the lot; the structures in Lot 28 were not indicated as having basements (Sanborn 1905). After the construction of Kenmare Street, Lot 28, as one of the entrances to the Delancey Street Subway Station, gains a basement (Sanborn 1922/23). Additionally, the structures in Lot 12 and 27 (with basements) now cover the entire lots.

Previous construction of the original subway tunnel plus the excavation of basements for the remaining structures over lots within the APE make it unlikely that precontact or historical remains have survived. There is a minimal possibility that the lower portions of more deeply buried historical features, specifically wells, could have survived in some areas. Given the current depth of the subway tunnel at 40-45' below the current surface (which may be below the water table, at 30' below the surface one block away), there is no chance that archaeological resources would exist beneath the tunnel. But given that the past surface may have been located up to 10'.5 or more below the current surface, it is still possible that remains may exist associated with structures beneath the basements in remaining Lots 12, 27 and 28.

The area of the APE was farmland during the 17th century, but no specific structures are shown in the APE. It is possible, however, that unmarked structures existed in the area of the APE, possibly because it was close to Bowery, that served as the main road from Lower Manhattan up to Boston and Albany. In the 18th century when the area is part of Bayard's Farm, an unmarked structure is shown in two different maps (Montresor 1766; Holland 1776) that appears to be located at the future location of Kenmare Street on the west side of Bowery, or just to the north (however the location is slightly different on each of the maps). While surface features from these times would have been obliterated during later landscape use and modification, subsurface features such as foundations, cellars, wells, cisterns or privies may still exist. Shallower features such as privies, cisterns or foundations are less likely to exist depending on the depth of 19th century fill. Features associated with early farming (after 1625; Stokes 1928:71) or the Bayard Farm (1735-1821; Stokes 1918:981) would be located beneath this fill layer. Wells are likely to have existed near dwellings and would have reached depths of around 30' to reach the water table (Soil Borings C6-17 and C6-19, Raymond International, Inc., 1974). Thus, even beneath the basements in Lots 12, 27 and 28, it is still possible that 17th and 18th century historical resources exist, if undocumented structures were present within the APE.

By the late 1800s, Lot 12 was covered entirely by part of a provisions store (Robinson 1885; Sanborn-Perris 1894). Lot 27 had small yards open behind it through most of the historical past along with small back buildings until Kenmare Street was constructed; Lot 28 also had a very small yard still existing prior to Kenmare Street's construction (Figures 5.1-12 and 5.1-13, Bromley 1902). Water and sewer lines were available to the APE by the 1840s (Endicott 1842), but it cannot be assumed all houses were hooked up and many may have continued to rely on privies, cisterns and wells. Some of these shaft features are likely to have been constructed from the top of the modified (filled) surface. The more recent excavation of basements in the remaining Lots 27, 28 and 12 would have more seriously affected post-fill, 19th century remains than earlier historic remains, except for wells, which would have been

as deep as the water table, currently around 30'. Historic sensitivity is moderate only in the lots just mentioned.

Kenmare Street between Elizabeth Street and Mott Street:

The APE itself includes only the street bed and sidewalks on Kenmare Street between Elizabeth and Mott Streets that runs over former Lots 4, 27, 28, southern sections of Lot 5 and 26, and the north of Lot 29 on Block 479, according to Sanborn's *Insurance Maps* 2001. No other lots in Block 479 itself are included in the APE.

Cartographic History:

Grim 1744: This APE is located approximately 2,800' northeast of the city wall, northeast of the Collect, probably within what appears to be fields and/or orchards associated with Nicholas and Stephen Bayard's Farm, roughly east of the main Bayard residence. Note that the calculation of the location of Block 479 was determined using distances and orientations from then-established city blocks (below Beekman Street) that have current counterparts and may not be entirely correct when extrapolated to outside of the city wall.

Maerschalck 1755: The "High Road to Boston" (later Bowery) is present, gridding to the west of it includes Elizabeth Street running north-south that forms the eastern boundary of Block 479, Winne's (later Mott) Street that forms the western boundary, and St. Steven's Street (later Broome Street) that forms its southern boundary.

Holland 1757: The "High Road" (Bowery) is present, the APE is located west of Bowery, north of the lane to Bayard's farm (later, the approximate location of Broome Street) in vacant lands. A knoll a few hundred feet to the southwest is labeled "Bayard's Hill commanding over all the high Ground."

Montresor 1766: The APE is located within the area labeled as Bayard's farm. The knoll ("Bayard's Hill") is present a few hundred feet to the southwest and two rises are just west of the APE. The larger rise forms straight bluffs to the northeast, northwest and southwest and appears to contain agricultural fields. An irregular rise to the southwest of the first rise forms a gully between the two. The Bayard Farm house, associated structures and gardens are located on this second rise, with irregular bluffs to the northeast, northwest, southwest, and the knoll to the southeast. Block 479, and the APE, appears to be where the gully between rises was once located, in vacant farmlands.

Ratzen 1767: Figure 5.1-2. The road to Boston is now called Bowry Lane (sic), and what will become Block 479 is clearly located within farmlands on the west side of Bowery, across from the Delancey Farm.

Holland 1776: The APE is shown west of Bowery Lane (sic) and north of the lane that leads to Bayard's Farm that will later become Broome Street. The area is not gridded north of this lane.

British Headquarters Map1782:	This map shows Bowery Lane (sic) present, and a British Fortification wall that winds east-west between Grand Street and Broome Street, about one half block south of Block 479 that otherwise is located in vacant farmland.
McComb 1789:	Bowery Lane/Road to Boston is indicated, as is Elizabeth Street, Mott Street and Byards (sic) Lane (later Broome Street), not to be confused with Byard (sic) Street located four blocks to the south. Block 479 is shown as vacant farmlands, as Elizabeth Street and Mott Street are not shown to extend north past Broome Street.
Hayward 1797:	The area is shown to be completely gridded south of Houston Street. Block 479 is present, bounded by Elizabeth Street, William (Broome) Street, Winne (Mott) Street, and Oliver (Spring) Street. One small structure is shown in the northwest corner of the block, outside of the APE. Otherwise, the block is shown as vacant farmland.
Taylor Roberts 1797:	Same as Hayward 1797.
Bridges 1807:	Block 479 is defined by Elizabeth Street, Broom (sic) Street, Mott Street, and Spring Street. Few structures are indicated on the map, none are indicated on Block 479.
Hooker 1829:	Block 479 is defined by Elizabeth Street, Broome Street, Mott Street and Spring Street, and is shown under development at this time, the nature of which is unknown. No public structures or structures of note are indicated on Block 479.
Hooker 1833:	The APE is unchanged from Hooker 1829.
Colton 1836:	The APE is unchanged from Hooker 1829.
Bradford 1838:	The APE is unchanged from Hooker 1829.
Burr 1839:	The APE is unchanged from Hooker 1829.
Endicott 1842:	This map of the Croton water pipes shows pipes in Elizabeth Street and Mott Street.
Mitchell 1846:	The APE is unchanged from Hooker 1829. Additionally, a transportation line is shown turning north onto Bowery from Broome Street.
Dripps 1852:	Block 479 is shown fully developed with approximately 43 unnumbered lots with structures. The general orientation of lots is similar to current lot configurations, although sizes of current lots are considerably different. Within the APE (where Kenmare will eventually bisect the block) there are approximately seven lots: four on Elizabeth Street, three on Mott Street, each with structures. All lots within the APE have substantial structures in back (the center of the lot); two-thirds have substantial structures facing Elizabeth or Mott Street. The largest open yard is located in the lot in the southwest corner of the APE, where there are no structures fronting on to Mott Street.
Colton 1856:	A transportation line is shown on Broome Street. Few structures are indicated on this map, and none appear in Block 479.

Perris 1857: Figure 5.1-6. Lots are shown here in the same configuration as in Dripps 1852, although some have been consolidated. Within the APE, structures and lots appear as follows (lot numbers are in parentheses):
149 Elizabeth Street (26) This lot has a large commercial/residential building in front, an open yard, and another brick structure in back of the lot.
147 Elizabeth Street (27) This lot is nearly entirely covered with brick structures that present "special hazards." Only a very small square open yard remains mid-lot on the south side.
145 Elizabeth Street (28) This lot has a wood frame structure in front with an alley leading down its south side to an open yard in back with a small structure on the north side of the lot, and a brick structure at the very back.
143 Elizabeth Street (29) A wood frame structure is located at the front of this lot as well, with an additional narrow wood frame structure abutting it behind on the north side. A narrow alleyway passes along the south side of the main structure to a large open yard that takes up about 2/3rds of the interior of the lot.
192 through 188 Mott Street (5) These lots are part of the south side of a large brick "Sewing machine Manufactory" that covers all of several conjoined blocks
186 Mott (4) This lot has a mixed commercial/residential brick structure facing the street and another large brick structure behind it with a small yard separating the two. A narrow alleyway passes along the southern edge of the entire lot.

Mitchell 1860: The APE is unchanged from Colton 1856.

Dripps 1863: The APE is unchanged from Colton 1856.

Vielé 1865: The APE is shown as relatively level meadowland. Sewers/canals are indicated in the Mott Street and Elizabeth Street roadbeds. Fresh water (the Collect) is located six blocks (about 2,400') southwest of the APE, and large knolls in the area of "Bayard's Hill" (Holland 1757) are shown one block away to the southwest.

Dripps 1867: The APE is similar as portrayed on Perris 1857.

Bayard Farm Map 1869: This map appears to show proposed subdivisions, and so lots are shown schematically without actual development. The map confirms this block as the location of prior farmland. No indications of past structures associated with the farm are shown on the block or within the APE.

Vielé 1874: This map is similar to Vielé 1865, but a transportation line is indicated on Broome Street.

Robinson 1885: One transportation line (horse or cable car) is present on Broome Street and a fire hydrant is located on Elizabeth Street within the APE (near the southwest corner of future Kenmare and Elizabeth Streets). The dimensions of Block 479 are noted as follows: Elizabeth Street–

487.5', Broome Street–189.11', Mott Street–498.4', Spring Street–190.3'. Elizabeth Street and Mott Street are about 50' wide. These dimensions remain stable through time. Lots begin to roughly approximate their current (2001) divisions.

Within the APE, changes to structures and lots appear as follows (lot numbers are in parentheses):

161 (formerly 149) Elizabeth Street (26) This lot is shown in the same configuration, only the street number has changed.

159 (formerly 147) Elizabeth Street (27) The entire lot is covered with brick structures and the back half is indicated to be a stable.

157 (formerly 145) Elizabeth Street (28) Only the street number has changed.

155 (formerly 143) Elizabeth Street (29) The wood frame structure has been replaced with a brick structure that takes up more than 2/3rds of the lot.

192 through 186 Mott Street (5,4) These lots are part of the "H. Herrmann Furniture Factory," brick with iron facing that covers all of several conjoined blocks.

Sanborn-Perris 1894: The APE is shown in greater detail. Elizabeth Street is depicted 49.6' wide, and Mott Street is 50' wide. The hydrant on Elizabeth Street shown on the Robinson 1885 atlas is still present, between what will be Lots 27 and 28. Lots and structures are detailed below, with lot numbers in parentheses:

161 (formerly 149) Elizabeth Street (26) The lot houses a five story residential/commercial structure, with a yard separating it from a smaller three story structure in back.

159 (formerly 147) Elizabeth Street (27) The lot houses a four-story residential/commercial structure, with a very small yard separating it from a two-story structure in back.

157 (formerly 145) Elizabeth Street (28) This lot has a part two story part one story frame structure that was mixed residential/commercial facing the street while the back brick structure is three stories.

155 (formerly 143) Elizabeth Street (29) The residential/commercial main structure is five stories and covers most of the block.

192 through 186 Mott Street (5,4) The "Hermann Manufactory of Furniture" is four stories in the south part of the APE (Lot 4) while the larger, iron-fronted structure "of superior construction" that takes up the majority of the APE is six to seven stories.

Bromley 1897: The street widths and dimensions are unchanged from 1885. Elizabeth Street has 12" (west side) and 6" (east side) utility pipes, Mott Street has 36" (east side) and 6" (west side) pipes. Kenmare Street had not yet been laid out. Lot numbering matches modern Sanborn's (2001). Labeled lots that fall within the APE include sections of Lots 5, 26 and 29, and all of Lots 4, 27 and 28. Details are listed here (lots in parentheses):

161 (formerly 149) Elizabeth Street (26) There is a medium to small yard in back of this lot.
159 (formerly 147) Elizabeth Street (27) There is only a very small open space in the back of the lot.
157 and155 (formerly 145 and 143) Elizabeth Street (28, 29) These lots have medium sized back yards.
192 through 186 Mott Street (5,4) "Herman's Furniture Mfy." is shown over this lot, and the larger section of Lot 5 has a basement.

Bromley 1902: Figures 5.1-12 and 5.1-14. Within the APE, lots and the water/sewer pipes are the same as on the 1897 Bromley Atlas and hydrants are same as on the 1894 Sanborn-Perris map. Details of structures are listed here (lots in parentheses):
161 (formerly 149) Elizabeth Street (26) The structure fronting the street is five stories and has no basement, while the structure at the back of the lot is three stories with a basement.
159 (formerly 147) Elizabeth Street (27) The lot is almost entirely covered with a four-story building.
157 (formerly 145) Elizabeth Street (28) This lot still has a wooden structure facing the street with a three story structure in the back yard with a basement.
155 (formerly 143) Elizabeth Street (29) The lot is mostly taken up by a five-story structure with a very small back yard.
192 through 186 Mott Street (5,4) Lot 5 is six stories with a basement, Lot 4 is four stories with a basement.

Sanborn 1905: The APE is broadly similar to Bromley 1902. Changes and further details are noted below (lots in parentheses):
161 through 155 (formerly 149 through 143) Elizabeth Street (26 through 29) These lots are all occupied by stores with dwellings above. The street-facing structure on Lot 28 is indicated as a two-story building with a basement and attic; no structure is indicated in the back yard as had been in previous maps.
192 through 186 Mott Street (5,4) These lots now appear to be vacant, but lots to the south outside of the APE are still indicated as "Estate of H. Herrmann Furniture Fac."

Bromley 1911: Figures 5.1-20 and 5.1-21. Kenmare Street, as a western extension of Delancey Street, appears for the first time, along with the Delancey Subway Station for Brooklyn Cars, running along Kenmare Street and Delancey Street at its intersection with Bowery towards Brooklyn. Kenmare Street is approximately 80' wide, bisecting the block east to west midway, taking out all of Lots 4, 27, 28, the south halves of Lot 5 and 26, and the north of Lot 29.

Hyde 1913: Kenmare Street is present and 4' by 2' 8" brick sewers are shown running down both the Elizabeth Street and Mott Street roadbeds in addition to the earlier water mains. The sidewalks on Kenmare Street are shown to be quite wide: from 15' to 20' on the south side, to 20' to

25' on the north side. Kenmare Street itself is shown as being 25' wide at Elizabeth Street and 20' wide at Mott Street.

Bromley 1916: Kenmare Street is shown as 80' wide including sidewalks, while the sidewalks themselves on either side of the street are shown approximately 15' to 20' wide. The hydrant shown on earlier maps (Sanborn-Perris 1894) is still present at the southwest corner of Kenmare Street and Elizabeth Street.

Sanborn 1922/23: This map is similar to Bromley 1916 within APE. Kenmare Street, including sidewalks, is 80' wide.

Bromley 1925: The APE is similar to Sanborn1922/23. However, an extension of the subway is shown beneath Kenmare Street heading west from the Delancey Street Station. The subway tunnel is shown to be approximately 40' wide, not quite extending as far as the sidewalk edges.

Bromley 1932: The APE is unchanged from Bromley1925.

Sanborn 1951: The APE is unchanged from Sanborn 1922/23.

Bromley 1955: The APE is similar to Bromley 1932, except that subway tunnel is shown to be wider than on previous maps and atlases. At Elizabeth and Kenmare Street, the subway tunnel is shown extending under the sidewalks to the corners of the developed lots. Approximately 80' west on Kenmare Street, the tunnel gradually narrows so that it runs underneath the sidewalks about 5' in from the curb for the rest of the block.

Bromley 1967: The APE is unchanged from Bromley1955.

Bromley 1974: The APE is unchanged from Bromley 1955.

Sanborn 1984-85: The APE is unchanged from Bromley 1955.

Sanborn 2001: The APE is unchanged from Bromley 1955.

Street Elevation Table:

Data Source (maps)	Spring x Elizabeth	Spring x Mott	Broome x Elizabeth	Broome x Mott	Kenmare East side	Kenmare West Side
1865 Vielé	39.0'	41.0'	35.0'	34.0'	--	--
1885 Robinson	38.4'	40.3'	34.6'	36.0'	--	--
1897-1974 Bromley (9 atlases total)	38.4'	40.3'	34.6'	36.0'	--	--
1922/23 Sanborn	39'	40'	35'	36'	36'	38'
2001 Sanborn	38.4'	40.3'	34.6'	36.0'	--	--

Tax and Directory Table:

Note: Lot numbers are shown in parentheses after the street address.

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 479: Kenmare between Elizabeth and Mott Streets								
149 Elizabeth St. (26)	No Reels	No Reels	T. Hunt	Thomas Hunt	James Brittain, *brassfinisher* Michael Tobin, *porter* Mary Fitzpatrick, *tailoress* **Rear** Thomas Riely, *waiter* Michael Cahill, *clerk* Patrick Hines, *tailor* Alexander Toland, *baker*	Thomas Fanning	Thomas Fanning	Mortimer

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
149 Elizabeth St. (26) continued					Patrick Branigan, *laborer* Margaret Ahern Robert Leatch, *brassfinisher* Michael Kilmartin Judith West			

147 Elizabeth St. (27)	No Reels	No Reels	Widow Romaine	Widow Romaine	Joseph Francis, *painter* George Wood Henry Daly, *Bootmaker* John Abel, *Upholsterer* Mary Ruite, *Sewing* J.D. Post, *bootmaker* Henry Jackson Daniel Scanlan, *Tailor* Bridget Kelly, *bookfolder* Mary Scanlan, *sewing* John Cotter, *Tailor* T.P. Derbishire, *clerk* **Rear** Thomas Hennessy, *smith* Thomas Clifford	Isaac Underhill	Philip R. Underhill	Philip R. Underhill
					George Knall, *bootmaker* Stephenson Henry, *turner*			
145 Elizabeth St. (28)	No Reels	No Reels	Thomas Fanning	Thomas Fanning	Catherine Fanning, *sewing* Julian Fash, *Salve for burns and scalds* R.E Potts **Rear** John McGovern, *laborer* Patrick Cassidy, *porter* Patrick Tigh, *pedler* Elizabeth Harbison, *Tailorist* Martin Reardon, *distiller* Thomas Reagan, *Cardmaker* **Rear** Michael Grogan Catherine Walsh Patrick Manning, *Tailor* William McGuirke, *Laborer*	W. H. Spencer	Lorillard Spencer	Lorillard Spencer

143 Elizabeth St. (29)	No Reels	No Reels	Isaac Underhill	Isaac Underhill	John Johnson, *brass finisher*	A. Demerest	D. Sturcke	D. Sturcke
192 Mott St (5)	No Reels	No Reels	Rob. Guire	Adam Dolmage	(stable)	Isaac M Singer	Not for this Yr.	Not for this Yr.
190 Mott St (5)	No Reels	No Reels	Est. of Gardener	John McCartey	(stable)	Isaac M Singer	Not for this Yr.	Not for this Yr.
188 Mott St (5)	No Reels	No Reels	Arnest Fink	Arnest Fink	Eraviste Dastugue, *smith*	Isaac M Singer	Not for this Yr.	Not for this Yr.
186 Mott St (4)	No Reels	No Reels	James Gloat?	Alfred Flock	**Rear** Henry Jones, *Carpenter*	Thomas Hassett	The Singer Manf Co.	Not for this Yr.

Note: No Reels for 14th Ward prior to 1828

Precontact Sensitivity:

This APE was portrayed as slightly undulating meadowland prior to historic development and fell within 2,200' of a fresh water source (the Collect). These factors suggest it would have been a habitable location (see Vielé 1865). However, the APE exclusively consists of the current Kenmare Street roadbed and sidewalks, which has experienced much prior disturbance (Figure 5.1-1). Kenmare Street was constructed over Block 479 that had been at least partially developed for over 100 years (Taylor Roberts 1797) and prior to that, the lands had probably been farmed for up to 150 years (Stokes 1928:70; Grim 1744; McComb 1789).

The majority of the APE consists of an extant subway tunnel (originally the B.R.T. then B.M.T. Centre Street Loop, now the J/M/Z line) that runs beneath Kenmare Street. The remaining APE consists of narrow areas on either side of the subway tunnel, underneath the remaining streetbed and the surrounding sidewalks. While the subway tunnel extends from building line to building line at the intersection of Kenmare Street and Elizabeth Street, the tunnel narrows by about ten feet on each side by the time the tunnel reaches Mott Street, leaving long, thin triangles along each building line that extend ten feet (about half-way) into the sidewalks. Additionally, several feet of fill appears to lie above the precontact ground surface. But overall, the degree of disturbance throughout the historic to modern period in the area makes it only moderately likely that precontact era resources remain in this APE.

Historical Sensitivity:

This APE falls within Nicholas Bayard's farm, which in the 18th century included an area later known as "Smith's Hill" (south of the APE) plus eight other land tracts (Stokes 1928:70). During the 17th century the APE was located within one of these tracts that was administered by the Dutch West India Company, called Bouwery No. 8 (Ibid.). This tract was located west of Bowery Road and north of what would later become Broome Street. It was initially occupied by Dr. Hans Kierstede, in 1638, whose house probably lay around

three blocks to the west of the APE (Stokes 1928:73). A short grant was later given to "Jan Negro" in 1647 that was 200 paces "along the wagon road [Bowery]" and "extended back from the Wagon road 325 paces to the house of Mr. Hans." (Ibid.), but was later revoked. This grant would have also encompassed the APE. The precise locations of structures associated with Bouwery No. 8 are not clear, except for the house of Dr. Kierstede which was close to the later location of Bayard's Mansion (Ibid.). If other undocumented structures from the 1600s existed, they would have had associated shaft features including wells and privies. These could exist in the APE, but again, there is no documented evidence for other structures in the APE from the 17th century.

Block 479 was located within the area directly identified as farmlands of Nicholas and Stephen Bayard during the 18th century (Grim 1744; Bayard Farm Map 1869; Stokes 1928:70-71, 435), west of the Bowery Road to Boston. The Bayard Mansion, outside of the APE, was constructed in 1735 (Stokes 1928:435). The block was located between the residence of the Delancey Farm, that was situated directly across from the block on the east side of Bowery, and the Bayard residence. No farm-related structures are shown on maps in the area of Block 479. During the British occupation from 1776 to 1783, maps show fortification walls running east to west approximately between the current location of Broome Street and Grand Street (British Headquarters Map 1782). These fortifications most likely were outside of the current APE, situated to the south by approximately 300'.

Block 479 had at least one structure on it outside of the APE by 1797 (Taylor Roberts), and was fully developed between Broome and Spring Streets by the mid-19th century (Dripps 1852). By the turn of the 20th century, lots were in an arrangement similar to current (Sanborn 2001) configurations (Sanborn-Perris 1894; Bromley 1897, 1902; Sanborn 1905). Lots were largely used for medium to light manufacturing or mixed commercial/residential use. The Directory of 1851 shown in the tax and directory table above indicates that the APE was occupied by working class people, and some structures appear to have been large apartment buildings with many units, although over half appear to house single families. Although there may have been plumbing available (Endicott 1842), occupants may not have had plumbing hooked up for some time, leaving them to depend on privies, which would have been located in the open yards at the time.

Farm-related artifacts and features from the 17th and 18th century are likely to have been present in the past, but surface remains such as agricultural fields or yard scatter would have been destroyed by continuing use of the land and subsequent development. However, shaft features, especially deeply buried features such as wells, could still exist, presuming they were not destroyed during block development or the construction of the subway tunnel. Lots in the APE that were not affected by the construction of the subway tunnel and Kenmare Street include small sections of Lots 4, 5, 26 and 29. Lots 4 and 5 occupy the west side of the APE, the area that was least affected by the tunnel. However, these lots were fully developed with basements in the 19th century. Lot 26 had no basement in its front structure, but the unaffected APE in this area is very small. A yard separated this structure from one in back that did have a basement. Lot 29 was mostly comprised of a large structure with no basement with a small yard behind it. The areas most likely to have any historic remains

would be the yard areas and areas without basements in Lots 26 and 29. However, WPA soil borings (1.20.16 and 1.20.17, ca. 1935) show fill levels from four to ten feet, which is suggestive of a fill episode during 19th century development. This fill could have covered earlier 17th and 18th century resources and protected them, while later 19th century features would be present in the fill layer. Even basements, if not too deep, could have left truncated shaft features from earlier historic times. Additionally, the closest water levels (about 30' below surface; Borings C6-17 and C6-19, Raymond International, Inc., 1974), imply that any wells, from 17th through the 19th century, would have to be around the same depth to reach the water table.

Kenmare Street was a planned extension of Delancey Street west to Lafayette (then Elm) Street, crossing over four blocks located between Broome and Spring Streets. This was to accommodate the "Centre Street Loop," a subway tunnel that would ultimately link Brooklyn with downtown Manhattan by way of the Williamsburg Bridge, planned by the Rapid Transit Commission and later used by the Brooklyn-Manhattan Transit (B.M.T.) Company (Engineering News 1910). The city purchased the land necessary for the extension, laying out the new street in 1903, with construction begun in 1907 and completed by 1911 (Brennan 2001b; Manhattan Borough Presidents Office records). Cut and cover construction was used to create the subway tunnel that eradicated all archaeological potential within the tunnel's effect area.

According the Works Progress Administration (WPA) Project No. 665-97-3-32 Subsurface Conditions Map No. 75 (1939), the width of the subway tunnel beneath Kenmare Street on Block 479 reaches from building line to building line where Kenmare meets Elizabeth Street. The tunnel narrows slightly as it heads west, until the intersection of Kenmare and Mott Streets, where the tunnel has narrowed by ten feet on each side. As the sidewalks on either side of Kenmare Street are 20' wide, the subway tunnel intersects the mid-point of each sidewalk at the west end of the block. In both the intersection of Kenmare and Elizabeth and Kenmare and Mott Streets, the tunnel widens by about 5' for about 5', and continues narrowing along the same trajectory. While the intersection of Kenmare and Elizabeth is completely encompassed by the subway tunnel, the intersection of Kenmare and Mott has narrow open spaces between the subway and the building lines that fall within the APE that are about ten feet wide on each side. Thus only two narrow triangles of unaffected areas remain against each building line, widening from 0' at Elizabeth Street to ten feet at Mott Street on each side of Kenmare Street, entirely under the current sidewalk. Sidewalk vaults, outside access ways to buildings with basements that would affect the APE against the building line, are not shown on the available maps.

On Kenmare Street, electric lines are the only utilities shown, located on both sides of the street within this narrow space. More utilities including water, sewer, electric and gas lines are shown on Elizabeth Street, but these did not affect the APE. Similar utilities are shown on Mott Street, and are rather shallow. Kenmare Street itself was made of granite block over 6" of concrete in 1929, most of the utilities are but a few feet beneath the concrete, save for the sewer line that is approximately 12' beneath the surface. Also on this figure, Kenmare Street is erroneously labeled as having been laid out in 1795. While both Mott and Elizabeth

Streets were laid out in 1750, Mott was made of granite over concrete (1932), and Elizabeth Street was sheet asphalt over concrete (1914).

As just mentioned, the areas of the APE over former Block 479 that were not disturbed by the subway tunnel are narrow triangles of sidewalk abutting the building lines on both sides of Kenmare Street, from the building line at the east end of the block, narrowing to ten feet out towards the road from the building line on each side at the west end of the block. The lots within the APE that formerly lay on Block 479 that were not disturbed by the tunnel include Lot 4 (northern section), part of Lot 5 (center section of large former factory), Lots 26 (southern section), and 29 (northern section).

MTA/SYSTRA Consulting maps show the base of the existing tunnel to be 40' below ground surface at Elizabeth Street, 36' below ground surface at Mott Street (MTA/SYSTRA 2001, Drawing No. CT-514). Two soil borings by the Works Progress Administration (ca. 1935), one at the intersection of Kenmare Street and Elizabeth Street (1.20.17), one at the intersection of Kenmare Street and Mott Street (1.20.16) show fill levels of ten and four feet, respectively, on top of what appear to be natural deposits, identified as fine and coarse sand, respectively. Bedrock (micaceous schist) is located 112.6' below the surface in Boring 1.20.9 (on Kenmare Street between Bowery and Elizabeth Street), the closest water levels (about 30' below surface) are recorded in more recent borings located on Chrystie Street between Delancey Street and Rivington Street (Borings C6-17 and C6-19, Raymond International, Inc., 1974), where the bedrock is slightly lower (see MTA/SYSTRA 2001, Drawing No. CT-514).

As mentioned earlier, Lots within the APE not affected by the subway tunnel include parts of Lots 4, 5, 26 and 29. Prior to the construction of Kenmare Street, Lots 4 and 5 were both part of a large furniture factory (e.g. Figure 5.1-14, Bromley 1902). The lots were completely developed with large structures that had basements. Lots 26 and 29, each with combined residential and commercial structures, had small yards throughout their developed history that may have been used for a variety of purposes (Robinson 1885; Figure 5.1-14, Bromley 1902; Sanborn 1905). The structure that took up the front half of Lot 26 did not have a basement, but the smaller structure at the back of the lot did, with a small yard in between the two structures. The main structure in Lot 29 had no basement and took up most of the lot; there was a very small yard behind the structure.

Previous construction of the original subway tunnel plus the excavation of basements for the 19th century structures over most of the lots within the APE make it unlikely that precontact or historical remains have survived in those areas. There is the possibility that the lower portions of more deeply buried historical features from the 17th through 19th centuries, such as wells, cisterns or privies could have survived on the historic lots, but the areas these could exist on are minimal. Given the current depth of the subway tunnel at 36 to 40' below the current surface, there is little possibility that any archaeological resources would have survived beneath the tunnel. But given that the past surface may have been located up to ten feet or more below the current surface according to soil borings, it is still possible that pre-19th century remains may exist, especially in former open areas or beneath the structures

without basements on Lots 26 and 29, located at the northwest and southwest corners at the intersection of Kenmare Street and Elizabeth Street.

Prior to the construction of Kenmare Street, only Lots 26 through 29 still had vacant yards of small to medium size. These yards may have held deep wells, cisterns or privies, either from the 19th century times or earlier, the lower levels of which could still survive beneath later structures. If 19th century shaft features were associated with development, then they would be located closer to the modern surface. Pre-development (i.e., early 19th century or before) remains are more likely to be found beneath grade, beneath fill. Additionally, truncated remains of deeply buried historical features such as wells or perhaps privies associated with early farming (after 1625; Stokes 1928:71) or the Bayard Farm (1735 through 1821; Stokes 1918:981) could exist beneath structures as well, although the excavation of basements in the past would have seriously affected if not completely destroyed such remains. However, nearby water levels are shown to be about 30' below surface (Borings C6-17 and C6-19, Raymond International, Inc., 1974), and imply that any wells, from 17th through the 19th century, would be at least as deep and as such, could be found beneath even basements, especially if the features were originally buried under fill.

Overall, the archaeological potential is estimated to be moderate, given the breadth of past disturbances within the APE and probable more recent disturbances involving utility lines, etc. If any archaeological remains do exist, they would be found between the subway walls and the building lines, beneath the sidewalks. The relatively undisturbed west half of this APE was entirely covered by development with basements, and so it is unlikely archaeological resources would be found there; the undisturbed east half of the APE consists of two very narrow triangles of Lots 26 and 29 that did have open yards and largely no basements. While small, these are the most likely areas where any remains, 19th century or earlier, could still exist.

Kenmare Street between Mulberry Street and Mott Street:

The APE includes the Kenmare Street roadbed and sidewalks that were formerly Lots 6 through 8 and 30 through 32, the northeast corners of Lots 5 and 33 and the southwest corners of Lots 9 and 29 on Block 480.

Cartographic History:

Grim 1744: The APE is located approximately 2,800' northeast of the city wall, northeast of the Collect, probably within what appears to be fields and/or orchards associated with Nicholas and Stephen Bayard's Farm, roughly east of the main Bayard residence. Note that the calculation of the location of this APE was determined using distances and orientations from then-established city blocks (below Beekman Street) that have current counterparts and may not be entirely correct when extrapolated to outside of the city wall.

Maerschalck 1755: The "High Road to Boston," later Bowery, is present, gridding to the west of it includes Winne's (later Mott) Street running north-south that forms the eastern boundary of Block 480, Rynder's (later Mulberry) Street that forms the western boundary, and St. Steven's (later Broome) Street that forms its southern boundary.

Holland 1757: The "High Road" (Bowery) is indicated, the APE is in vacant lands west of Bowery, north of the lane that leads to Nicholas Bayard's farm. This lane is approximately the future location of Broome Street. A large knoll labeled "Bayards Hill commanding over all the high Ground" is located a few hundred feet to the southwest. A lane runs south from the lane to Bayard's farm, in the roughly estimated location of future Mulberry Street. The residence and other structures associated with Bayard's farm are located a few hundred feet west of the APE along the lane.

Montresor 1766: The APE is located within area labeled as Bayard's farm. The knoll ("Bayard's Hill" on Holland 1757) is shown and two rises face the northwest. The larger rise forms straight bluffs to the northeast, northwest and southwest and appears to contain agricultural fields. An irregular rise to the southwest of the first rise forms a gully between the two. The Bayard Farm house, associated structures and gardens (west of the APE), are located on this second rise, with irregular bluffs to the northeast, northwest, southwest, and the knoll to the southeast. This section of the APE appears to be located in the gully between the rises, in an area with substantial topographical variation.

Ratzen 1767: Figure 5.1-2. The road to Boston is now called Bowry Lane (sic), and what will become Block 480 and Kenmare Street is clearly located on farmlands between the Delancey and Bayard Farms.

British Headquarters Map 1782: This map shows Bowery Lane (sic) and a British Fortification wall winding east to west between Grand Street and Broome Street, possibly crossing the southwest corner of Block 480 (not within the APE) that otherwise is located in farmland. The knoll to the southeast mentioned in Montresor (1766) is shown with a fortified walled structure on top, outside of the APE.

McComb 1789: Bowery Lane/Road to Boston is indicated, as is Mott Street, Mulberry Street and Byards (sic) Lane (later Broome Street), not to be confused with Byard (sic) Street located four blocks to the south. The APE is depicted as vacant farmlands, as Mott and Mulberry Streets are not shown to extend north past Broome Street.

Hayward 1797: The area is shown to be completely gridded south of Houston Street. Block 480 is present, bounded by Winne (Mott) Street, William (Broome) Street, Catherine (Mulberry) Street, and Oliver (Spring) Street. One small structure is shown in the northwest corner of the block, outside of the APE. Kenmare Street has not yet been laid out over Block 480. Two knolls formerly described as Bayard's Hill

(Holland 1757) are shown one block away, one at the south end and the other in the southeast corner of what is now Block 471 west of Mulberry Street.

Taylor Roberts 1797: The APE is portrayed exactly as it is on Hayward 1797.

Bridges 1807: Block 480 is defined by Mott Street, Spring Street, Mulberry Street, and Broom (sic) Street. Few structures are indicated on the map and none are indicated in the APE.

Hooker 1829: Block 480 is defined by Mott Street, Spring Street, Mulberry Street and Broome Street. Few structures are indicated overall on map; none are indicated on Block 480.

Hooker 1833: The APE is similar to Hooker 1829. However, a T-shaped structure is indicated in the northern one-third of the block, fronting onto Mulberry Street. It appears to fall outside of the APE.

Colton 1836: The APE is similar to Hooker 1833, but the T-shaped structure is no longer present.

Bradford 1838: The APE is similar to Colton 1836.

Burr 1839: The APE is similar to Colton 1836.

Endicott 1842: This utilities map shows water pipes on Spring Street, Broome Street, Elizabeth Street and Mott Street.

Mitchell 1846: The APE is similar to Colton 1836, but a transportation line is now shown on Broome Street. Few structures are indicated on map, and none are on Block 480.

Dripps 1852: By this time Block 480 is shown as fully developed, with approximately 41 unnumbered lots with structures. The general orientation of lots is similar to current lot configurations, although sizes of some current lots are somewhat different. Within the APE (where Kenmare Street will eventually bisect the block) there are approximately seven lots, four facing Mulberry Street and three facing Mott Street plus small sections of two additional lots on the east side. All have structures facing onto the surrounding streets and all but one lot in the southeast corner of the APE have smaller structures in the interior of the lots that abut. Yards occupy approximately one third to one fifth of each lot.

Colton 1856: A transportation line is shown on Broome Street, but this map lacks details of development.

Perris 1857: Figure 5.1-7. Lots are shown in the same configuration as in Dripps 1852. Details of structures and lots are listed here, with lot numbers in parentheses:

193 Mott Street (29) The lot has a brick structure in front with a yard separating it from another brick structure at the back of the lot. What appears to be a wooden shed abuts the back of the main structure.

191 Mott Street (30) A frame structure is located at the front of the lot with an alley passing along its north edge to a yard in back. A brick structure occupies the back of the lot.

189 Mott Street (31) The lot has a brick structure in front with a

wooden shed attached in back, a yard, another brick structure at the back.

187 Mott Street (32) A frame structure is located at the front of the lot with an alley passing along its north edge to a medium sized yard in back. A brick structure occupies the back of the lot.

185 Mott Street (33) This lot has an open yard in front and along its southern edge. A row of several different sized frame structures are located along its north edge towards the back.

196 Mulberry Street (9) This lot is the southern end of the "Methodist Book Concern" that is housed in a large brick structure that occupies several conjoined lots. It is labeled a "special hazard."

194 Mulberry Street (8) This lot has two smaller wood frame buildings in front with an alleyway passing along the south side to a large open yard.

192 Mulberry Street (7) This lot has two wood frame buildings and a very small brick building in front with an alleyway passing along the south side to an open yard. Another frame building occupies the back of the lot, this one labeled a "special hazard."

190 Mulberry Street (6) This lot has a frame structure then a brick structure in front with an alley along the south edge passing to the yard in back with another structure at the back of the lot.

188 Mulberry Street (5) This lot has a variety of structures that abut the northern edge, beginning with a frame structure in front, a very small wood structure, a small "special hazard" frame structure, another small structure, a small open yard, and a brick structure at the very back. An alley passes along the first structure that opens onto the yard.

Mitchell 1860: The APE is unchanged from Colton 1856.

Dripps 1863: The APE is unchanged from Colton 1856. The area is indicated as formerly part of Bayard's Farm.

Vielé 1865: The APE is shown as gently sloping meadowland, and sewers/canals are portrayed on the Mott Street and Mulberry Street roadbeds. Fresh water (the Collect) is located four blocks away to the south and large knolls are located less than one block south. of the APE

Dripps 1867: Bayard Farm The APE is similar to that shown on Perris1857.

Map 1869: In this proposed subdivision map, lots are shown schematically, without actual development. The APE falls within what was formerly farmland. No structures associated with the farm are shown on the block or in the APE.

Vielé 1874: This is similar to Vielé 1865. A transportation line is indicated on Broome Street, but no sewers/canals are indicated on this map.

Watson 1874: A transportation line is present on Broome Street. Few structures are indicated on this map, and none are in the APE.

Robinson 1885: Lot configurations approximate current (2001) ones. One fire hydrant is present on Mulberry Street at the southeast corner of future Kenmare Street. The dimensions of Block 480 are noted as follows: Mott Street–488.5', Spring Street–208.3', Mulberry Street–490.4', Broome Street–202.4'. Mulberry Street and Mott Street are around 50' wide. These dimensions remain stable through time.

Changes or details of lots and structures are as follows (lots in parentheses):

189 Mott Street (31) The lot now is almost entirely covered with a brick structure with only a very small L-shaped yard along the north side near the back of the lot.

187 Mott Street (32) A small yard is portrayed here behind the back structure.

185 Mott Street (33) This lot now shown with a large brownstone building with a back yard.

196 Mulberry Street (9) This lot is still the southern end of the "Methodist Book Concern," but two small open areas are shown at the back and mid lot.

192 Mulberry Street (7) The frame buildings at the front of the lot are now shown as brick.

188 Mulberry Street (5) This lot is now shown with a large brick structure covering most of it, leaving a small back yard.

Sanborn-Perris 1894: Mott Street is 50' wide and Mulberry Street is 49' wide, but Kenmare Street has not yet been laid out. A fire hydrant is located on Mulberry Street in the middle of the APE. Within the APE, the following details are noted (lot numbers in parentheses):

193 Mott Street (29) The front structure is four stories, mixed commercial/residential, and the back structure is three stories, with a yard in between the two structures.

191 Mott Street (30) The front structure is two stories, the back structure is three stories, with an alley on the north side of the lot and a yard between the structures.

189 and 187 Mott Street (31, 32) The lots have been combined into one five story brick warehouse.

185 Mott Street (33) This brownstone is five stories high, mixed commercial/residential.

196 Mulberry Street (9) The "Methodist Book Concern" is now part of the "Hermann Furniture Factory," a large six-story structure that takes up several lots.

194 Mulberry Street (8) This commercial/residential structure is five stories, with small open areas on either side of the middle of the structure as well as a very small yard in back.

192 Mulberry Street (7) The front structure is shown as commercial/residential, three stories, as are two smaller structures that are directly behind it. Another structure is four stories, and a final

three-story structure is separated from the others by a small yard. An alley on the south side of the front structure opens onto open space on the south side of the lot.

190 Mulberry Street (6) The residential/commercial structures on this lot are shown as three stories. An alley on the south still opens onto an interior yard.

188 Mulberry Street (5) The lot has a large five-story commercial/ residential structure with a small back yard.

Bromley 1897: This atlas nearly repeats Robinson's 1885 street widths and dimensions: Mott Street–488.5', Spring Street–202.11', Mulberry Street–499.4', Broome Street–203.8'. Within the Mott street bed there are 6' pipes closest to the block, and 36' pipes on the east side of the street. Along Mulberry Street, 12' pipes are close to the block, 6' pipes on the west side of the street. Lot numbering matches modern Sanborn's (2001). Lots that fall within the APE include all of Lots 6 through 8 and 30 through 32. Partially affected lots include 5, 9, 29 and 33.

Within the APE, the following added details or changes are seen (lot numbers in parentheses):

193 Mott Street (29) The front structure has a basement.

191 Mott Street (30) The front structure is shown with two and a half stories, the back structure is now gone.

194 Mulberry Street (8) This structure is now shown as six stories.

192 Mulberry Street (7) The front wood frame structure is shown with a basement.

190 Mulberry Street (6) The front wood frame structure is shown with a basement.

Bromley 1902: Figure 5.1-15. Pipes and lots within the APE are the same as on the 1897 Bromley atlas as are the block dimensions. However, Lot 30 now has a six-story brick building with smaller open spaces on each side and a very small yard in back. The fire hydrant on Mulberry Street observed on the Robinson 1885 atlas is located between Lots 6 and 7 within the APE.

Sanborn 1905: Within the APE, the following changes and details are noted (lot numbers are shown in parentheses):

193 Mott Street (29) The back structure is indicated as a dwelling with a basement.

191 Mott Street (30) The lot is now occupied by a six-story commercial/ residential structure with a basement, small open areas are located on the north and south sides of the structure mid-lot and a small yard is located at the back of the lot.

189 and 187 Mott Street (31, 32) The structure is labeled "Boarding." It has a basement and a stable on the first floor.

185 Mott Street (33) This brownstone is not shown with a basement.

196 Mulberry Street (9) The "Hermann Furniture Factory" is now labeled "N.Y. Desk & Dining Room Furniture Co."
194 Mulberry Street (8) The structure is now shown with six stories and a basement.
192 Mulberry Street (7) The front structure has a basement, the structure immediately behind is shown as light manufacturing and does not have a basement. At the back of the lot, a one-story structure is labeled "Wheel-Wright."
190 Mulberry Street (6) The front structure has a basement and was used as a store and for light manufacturing. The small structure at the back of the lot was a dwelling. There is a small one story structure in the middle of the yard, probably a garage or shed.
188 Mulberry Street (5) This structure does not have a basement.

Bromley 1911: Figures 5.1-20, 5.1-21 and 5.1-22. Kenmare Street, as a western extension of Delancey Street, appears for the first time, bisecting Block 480, that was wholly occupied according to the Sanborn 1905 map. Kenmare Street is approximately 80' wide including sidewalks, and runs over former Lots 6 through 8 and 30 through 32, the northeast corners of Lots 5 and 33 and the southwest corners of Lots 9 and 29. Pipes remain the same on adjacent streets.

Hyde 1913: This atlas is similar to Bromley 1911. Kenmare Street is indicated to be 80' wide, sidewalks on either side are shown 15' to 25' wide. Pipes are the same, the 12" pipeline running along Mulberry Street is labeled as a Salt Water High Pressure line. There are 4' by 2' 8" brick sewer lines running down both Mulberry Street and Mott Street.

Bromley 1916: The APE is similar to Hyde 1913, Kenmare Street is shown to be 80' wide, and sidewalks are indicated to be around 15' to 20' wide. There is a fire hydrant located at the northeast corner of Kenmare Street and Mulberry Street, around 20' north on Mulberry Street (just outside of the APE).

Sanborn 1922/23: The APE is unchanged from Bromley 1916.

Bromley 1925: The APE is similar to Bromley 1916. However, an extension of the subway is shown beneath Kenmare Street heading west from the Delancey Street Station located at Kenmare/Delancey Street and Bowery. The subway tunnel is shown to be approximately 40' wide, not quite reaching the sidewalk edges, and turns to the south, west of Mulberry Street.

Bromley 1932: The APE is unchanged from Bromley1925.

Sanborn 1951: The APE is similar to Sanborn 1922/23. There is a fire hydrant located on Mott Street at the northwest corner of Kenmare Street and Mott Street, just north of the APE.

Bromley 1955: The APE is similar to Bromley 1932, except that subway tunnel beneath Kenmare Street appears wider. The tunnel is shown to run about 5' in from the sidewalk curb until about 40' from Mulberry Street, when the tunnel begins to turn to the south, turning slightly into

the street bed on the north side of Kenmare Street and Mulberry Street and cutting a little further across the sidewalk on the south side.

Bromley 1967: The APE is unchanged from Bromley 1955, but no fire hydrant is depicted at Kenmare Street and Mott Street.

Bromley 1974: The APE is unchanged from Bromley 1967.

Sanborn 1984-85: The APE is unchanged from Bromley 1967.

Sanborn 2001: The APE is unchanged from Bromley 1967.

Street Elevation Table:

Data Source (maps)	Spring x Mott	Spring x Mulberry	Broome x Mott	Broome x Mulberry	Kenmare East side	Kenmare West side
1865 Vielé	41.0'	30.0'	34.0'	36.0'	--	--
1885 Robinson	40.3'	36.0'	36.0'	32.0'	--	--
1897-1974 Bromley (9 atlases total)	40.3'	36.0'	36.0'	32.0'		
1922/23 Sanborn	40'	36'	36'	32'	38'	34'
2001 Sanborn	40.3'	36.0'	36.0'	32.0'	--	--

Tax and Directory Table:

Note: Lot numbers are in parentheses after the street address.

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 480: Kenmare between Mott and Mulberry Streets								
193 Mott St (29)	No Reels	No Reels	J. Chase	James J. Roosevelt	Levy White Robert White	Levy White	Levy White (crossed out)	M Scriber
191 Mott St (30)	No Reels	No Reels	Not for this Yr.	James J. Roosevelt (includes 191 ½ Mott St)	Thomas Farren, *policeman* Frederick Meyering, *musicians* Hammond Meyering, *musician* MA	Jacob Valentine	Jacob Valentine	Henry Ruppolt ?

					Lobenstein, *Musician*			
189 Mott St (31)	No Reels	No Reels	Not for this Yr.	James J. Roosevelt	TC Lyon Richard Burton James O'Brien, *carpenter*	James Lewis	Michael Kunzc-mann	M. Runge-man?
187 Mott St (320	No Reels	No Reels	Gilbert Fowler	Gilbert Fowler	Sylvester Chandler Nehemiah Pratt, *baker*	Joshua Geriune	Joshua Geriune	Joshua Geriune
185 Mott St (33)	No Reels	No Reels	William Boarden	Alfred Flock	No listing	Benjamin Sands	Benjamin Sands	Ben-jamin Sands
196 Mulberry St (9)	No Reels	No Reels	No for this yr.	Methodist book Concern	*No listing*	Methodist book Concern	Methodist book establish-ment	J.C Tillotson
194 Mulberry St (8)	No Reels	No Reels	Widow Smith	Widow Smith	Thomas McCaslin W.D. Hughes	J.C Tillotson	JC Tillotson	J.C Tillotson
192 Mulberry St (7)	No Reels	No Reels	Hugh McBride	Hugh McBride	Henry McBride	Henry McBride	Heugh McBride	Heugh McBride
190 Mulberry St (6)	No Reels	No Reels	Widow Harris	Widow Harris	R.A McKinley	H. Harrison	John Rooney	John Rooney
188 Mulberry St (5)	No Reels	No Reels	Alex Dikon ?	Estate of Thomas Mason	Ann Naughton, dressmaker	Estate of Thomas Mason (crossed out)	George Kracht	George Kracht

Note: No reels for 14th Ward Prior to 1828

Precontact Sensitivity:

This APE was once undulating meadowland, within about 1,700' of a fresh water source, from which it was separated by several low-lying knolls and bluffs (see Montresor 1766, Vielé 1865). The location would have been habitable, perhaps desirable due to its protected nature within range of water. However, the APE exclusively consists of the current Kenmare Street roadbed and sidewalks, which has experienced extensive disturbance. Kenmare Street was constructed over blocks that had been developed for over 100 years (Taylor Roberts 1797) and prior to that, the lands had probably been farmed for up to 150 years (Stokes 1928; Grim 1744; McComb 1789).

The majority of the APE consists of an extant subway tunnel (originally the B.R.T. then B.M.T. Centre Street Loop, now the J/M/Z line) that runs beneath Kenmare Street (Figure

5.1-1). The remaining APE consists of narrow areas on either side of the subway tunnel, underneath the remaining streetbed and the surrounding sidewalks, but these are areas that were developed historically. Borings from the 1930s suggest that the precontact surface may be buried beneath four to six feet of fill (WPA ca. 1935, see below), however, the excavation of 19th century basements would have destroyed this surface. Of the lots within the APE that were not completely destroyed by the construction of the subway tunnel, only Lot 5 did not have a basement. Additionally, Lots 29, 30, 8, 6 and 5 still had extant yards of very small to medium size before Kenmare Street was laid out, but these yards would have also been the site of continued activity throughout the historic period. The degree of disturbance throughout the historic to modern period in the area makes it only moderately likely that precontact resources remain at all, however there is a moderate possibility that precontact archaeological resources may exist beneath the lots just mentioned above.

Historical Sensitivity:

This APE falls within an area of eight small farms whose boundaries were planned in 1625, that together with an area later called "Smith's Hill" to the south, was later the farm of Nicholas Bayard by 1735 (Stokes 1928:70-71, 435). The APE fell within a tract called Bouwery No. 8, that was administered by the Dutch West India Company (Ibid.) . Its first documented occupant was Dr. Hans Kierstede in 1638, and his house is said to lay around two blocks to the west of the APE (Stokes 1928:73). The land was later granted to "Jan Negro" in 1647, and the area was 200 paces "along the wagon road" [Bowery] and "extended back from the Wagon road 325 paces to the house of Mr. Hans." (Ibid.), and would have covered the APE. The documents only mention the presence of one house, that of Dr. Kierstede that was said to be close to the later location of Bayard's Mansion, outside of the APE (Ibid.). If other undocumented structures from the 1600s existed within the area of the APE, they would have had associated shaft features including wells and privies. These could exist in the APE, but there is no documented evidence for any 17th century structures other than Dr. Kierstede's house in the APE.

During the 18th century, this section of the APE was then located within the farmlands of Nicholas and Stephen Bayard (Stokes 1928:70; Grim 1744, Bayard Farm Map 1869), to the west of the Bowery Road to Boston. The location of the Bayard residence, erected in 1735 and demolished in 1821, appears to have been a few hundred feet to the northwest, outside of the APE, in what will later become Block 473 (Stokes 1928:435). No farm-related structures are shown on maps in the area of this APE. During the seven year British occupation, maps show fortification walls running east to west approximately between the current location of Broome and Grand Streets (British Headquarters Map 1782). But these fortifications most likely were outside of the current APE to the south by at least a block. Remains of sheet scatter or agricultural fields would no longer be present due to later surface disturbance, but there is the possibility that unmapped outbuildings may have existed within the APE. If such structures existed, shaft features such as wells or privies which are invariably located near houses are could have survived.

Block 480, where Kenmare Street now runs, began to be developed at the turn of the 19th century and was fully developed between Broome Street and Spring Street by the mid-19th century (Taylor Roberts 1797; Hooker 1929; Dripps 1852). By the turn of the 20th century, lots were in an arrangement similar to current (Sanborn 2001) lot configurations (Sanborn-Perris 1894; Bromley 1897, 1902; Sanborn 1905). Lots were largely occupied by medium to light manufacturing structures or by mixed commercial/residential structures. Throughout the 19th century, the structures in the APE appear to be largely individual or single family use, and most are occupied by laborers or service providers (see the Directory of 1851 in the above tax and directory table). Some of these individuals may have been able to afford plumbing, which was available by 1842 (Endicott), but this does not rule out the possibility that there may have been a continued reliance on privies or wells, that would have been located in the yards at the time.

The only lots within the APE that were not disturbed by the construction of the subway tunnel and Kenmare Street include small sections of Lot 5, possibly a small southwestern corner of Lot 6, Lot 8, the very south of Lot 9, the south of 29, Lot 30, and Lot 32 (Figure 5.1-15, Bromley 1902). Within these lots, small open yards remained behind Lots 5, 6, 29 and 30, and on either side of Lot 8. The structure on Lot 5 was the only structure not to have a basement. These areas that had open yards or no basements are most likely to hold archaeological remains from the 19th century, or earlier. Soil borings (1.20.15 and 1.20.15, WPA ca. 1935) suggest the area may have a layer of fill from four to six feet deep, which would have been created or laid down during 19th century development. This possible fill layer would serve to protect pre-development features and separate them from mid to later 19th century features. As the closest water levels are about 30' below surface (Borings C6-17 and C6-19, Raymond International, Inc., 1974), any wells, 19th century or earlier, would probably be at least as deep. Truncated wells from the 17th and 18th centuries could possibly be found beneath structures without basements, and the slight possibility remains that the very bottom of well shafts would be found beneath current basements, but again, there is no direct evidence for pre-19th century structures in the immediate vicinity of the APE.

Kenmare Street was a planned extension of Delancey Street west to Lafayette (then Elm) Street, crossing over four blocks located between Broome and Spring Streets. This was to accommodate the "Centre Street Loop," a subway tunnel that would ultimately link Brooklyn with downtown Manhattan by way of the Williamsburg Bridge, planned by the Rapid Transit Commission and later used by the Brooklyn-Manhattan Transit (B.M.T.) Company (Engineering News 1910). The city purchased the land necessary for the extension, laying out the new street in 1903, construction began in 1907 and completed by 1911 (Brennan 2001b; Manhattan Borough Presidents Office records). The subway tunnel was constructed using the cut and cover technique, effectively destroying all possible archaeological resources within the APE from the ground surface to the base of the tunnel, leaving only small sections of Lot 5, possibly a small southwestern corner of Lot 6, Lot 8, the very south of Lot 9, the south of Lot 29, Lot 30, and Lot 32 (Figure 5.1-15, Bromley 1902).

According the Works Progress Administration (WPA) Project No. 665-97-3-32 Subsurface Conditions Map No. 75 (1939), the width of the subway tunnel beneath Kenmare Street on

Block 480 is from mid-sidewalk to mid-sidewalk (around ten feet from the building lines) where Kenmare meets Mott Street. The tunnel narrows slightly as it approaches the intersection of Kenmare and Mott Street from the east, until the intersection of Kenmare and Mott Streets, where the tunnel widens by about 5' for about 5' in the middle of the intersection, and appears to begin to widen west of the intersection. At the intersection of Kenmare Street and Mott Street, open spaces were left between the subway and the building lines that fall within the APE. On Kenmare Street, electric lines are the only utilities shown, located on both sides of the street. Kenmare Street itself was made of granite block over 6" of concrete in 1929, and Kenmare Street is erroneously shown as having been laid out in 1795. Utilities including water, sewer, electric and gas lines are shown on Mott Street, but are rather shallow, save for the sewer line that is about 12' beneath the surface. Mott Street was laid out in 1750, made of granite over concrete in 1932; Mulberry Street is not shown on the available WPA maps. Sidewalk vaults, outside access ways to buildings with basements that would affect the APE, are not shown on the available maps.

The available WPA subsurface map only shows the easternmost 25' of Block 480, therefore the remainder of the subway tunnel width is extrapolated from a Sanborn Insurance Map (2001), Bromley Atlases (1955, 1974) that identify the subway tunnel in dashed lines and appear to roughly correspond with the WPA maps, and that further are confirmed by (SYSTRA, Drawing NL-05:2002). The subway tunnel continues west on Kenmare Street spanning from mid-sidewalk to mid-sidewalk until the west end of the block at the intersection of Kenmare Street and Mulberry Street, where the tunnel begins to turn to the south. It appears that the tunnel may narrow slightly as it turns. Near the northern intersection of Kenmare Street and Mulberry Street, the tunnel turns south as much as ten feet away from the curb while at the southwest corner, the tunnel just skirts the building line.

In sum, the possible areas of the APE between Mott Street and Mulberry Street not disturbed by the subway tunnel are roughly ten-foot wide strips of sidewalk abutting the building lines on both sides of Kenmare Street, and slightly broader near the northwest corner. The lots formerly on Block 480 that fall within the APE that were not disturbed by the tunnel include small sections of Lot 5, possibly a small southwestern corner of Lot 6, Lot 8, the very south of Lot 9, the south of Lot 29, Lot 30, and Lot 32 (Figure 5.1-15, Bromley 1902).

MTA/SYSTRA Consulting maps show the base of the existing tunnel to be about 36' below ground surface at Mott and about 33' below ground surface Mulberry Streets (MTA/SYSTRA 2001, Drawing No. CT-514). Two soil borings by the Works Progress Administration (ca. 1935), one at the intersection of Kenmare and Mott Street (1.20.16), one at the intersection of Kenmare and Mulberry Street (1.20.15) show fill levels of 4' and 6', respectively, on top of what appear to be natural deposits of sand. Bedrock (micaceous schist) is located 112.6' below the surface in Boring 1.20.9 (on Kenmare between Bowery and Elizabeth Streets), the closest water levels (about 30' below surface) are recorded in more recent borings located on Chrystie between Delancey and Rivington Streets (Borings C6-17 and C6-19, Raymond International, Inc., 1974), where the bedrock is slightly lower (see MTA/SYSTRA 2001, Drawing No. CT-514).

Previous construction of the original subway tunnel plus the excavation of basements for the remaining structures over lots within the APE make it unlikely that precontact or historic remains have survived in those areas. As mentioned earlier, Lots within the APE not affected by the subway tunnel include small sections of Lots 5, 6, 8, 9, 29, 30 and 32. All lots had mixtures of commercial, residential and light manufacturing in the 19th century except for Lot 30, that was part of a boarding house with a stable on the ground floor and/or possibly basement (Sanborn 1905). All structures on the lots had basements except for Lot 5 (Sanborn 1905). Within the APE, an open yard remained in the back of Lot 5 (about 20'), an alley on the south and yard took up over half of Lot 6, Lot 8 had small open areas on each side of the structure but otherwise the lot was completely developed. Lot 9 was covered by structures within the part of it that fell within the APE. Lot 29 had a small yard of about 20' in back between the main structure and a smaller structure at the very back of the lot. Lot 30 had small open areas on either side of the structure that took up all but the back five to ten feet of the lot. Lot 32 was entirely developed.

There is a small possibility that the lower portions of more deeply buried historical features such as wells through the 19th century could have survived in areas that had extant yards or buildings without basements. There is a very slight chance that truncated 17th and 18th century shaft features still exist beneath current basements, if any undocumented structures existed in the APE at the time. Given the current depth of the subway tunnel at 36' to 33' below the current surface, there is virtually no possibility that archaeological resources exist beneath the tunnel. Given that the past surface may have been located about 5' below the current surface (WPA Borings 1.20.15 and 1.20.16, ca. 1935), it is still possible that archaeological remains may exist, especially in former open yard areas associated with Lots 29, 30, 8, 6 and 5, or beneath the developed areas on Lot 5 that had no basement between the subway tunnel and the building lines.

In sum, prior to the construction of Kenmare Street, Lots 29, 30, 8, 6 and 5 still had extant yards or open areas of very small to medium size. These yards may have held deep wells, cisterns or privies, the lower levels of which could still survive beneath current structures. These may be associated with early 19th century development, and if there was an early fill episode, would extend through that fill level. Additionally, the lower remains of deeply buried historical features such as wells or privies from the 17th or 18th century, associated with early farming (after 1625; Stokes 1928:71) or the Bayard Farm (1735 through 1821; Stokes 1918:981), could exist beneath yards and structures as well, although the excavation of basements in the past may have seriously affected if not completely destroyed such remains. Lot 5 is the exception, as there is no evidence that a basement was ever excavated prior to Kenmare Street. If a fill episode occurred in the 19th century, however, such early remains would be located beneath that fill, possibly even below basements. In general, it is most likely that if remains exist, they would be found between the sidewalks up to the building lines. Thus, the APE is moderately sensitive for historic remains in the limited areas described above.

Block 481:

Block 481 is located between Kenmare Street and Broome Street to the north and south, and Cleveland Place (formerly Orange Street, then Marion Street) to the west, and Mulberry Street to the east. The block was divided into northern and southern halves by the construction of Kenmare Street between 1905 and 1911. The APE includes the southern section of Block 481, that includes current Lots 31 through 40 and 1 through 4, and the sidewalks and roadbed of Kenmare Street, that include the following former lots: the very southwest corner of Lot 27, all of Lots 28 through 30, the northeast corner of Lot 31, the southwest corner of Lot 7, all of Lots 6 and 5, and the northeast corner of Lot 4. The surrounding sidewalks and street beds of Broome Street and Cleveland Place are also included in the APE, as is the west sidewalk on Mulberry Street. The APE does not include the intersection of Kenmare Street and Cleveland place; neither does it include the section of Block 481 north of Kenmare Street.

Cartographic History:

Grim 1744: The APE is located about 2,500' north of the city wall, northeast of the Collect. It appears to be just northeast (outside) of the Bayard Farm; the lane leading to the Bayard Farm from Bowery is in the approximate current location of Broome Street. A small structure of unknown use is indicated on this map to the northeast of the Main Bayard Farm Structure that could be located within this APE, or just south of it. However, the precise locations or difficult to determine on the current landscape. The determination of the location of this APE was based on distances and orientations from then-established city blocks from Lower Manhattan (below Beekman Street), and thus may not be completely precise when applied outside of the city wall.

Maerschalck 1755: The region is shown gridded only as far north as St. Steven's (later Broome) Street (one block south of Kenmare Street), and as far west as Rynder's (later Mulberry) Street. The area that will be Block 481 (the APE) is located just northwest of the gridded map area.

Holland 1757: The APE is directly north of the lane leading to Nicholas Bayard's farm (later Broome Street, approximately) in vacant farmland. The APE is shown with a small bluff on its west side, and a large knoll labeled "Bayard's Hill commanding over all the high Ground" is shown approximately one block south of the APE. A path running south from the lane to Bayard's is shown in the approximate location where Mulberry Street will be located. What appears to be the main Bayard residence is shown at the end of the lane, within 100' of the southwest corner of the APE, based on calculations of it's distance from Bowery using the map scale (by which the structure is 1,089' west of Bowery).

Montresor 1766: The APE is shown as undeveloped fields or pasturage directly northeast of Bayard's Farm, within a small gully between two small plateaus. The Bayard Farm house, associated structures and gardens

are located on the southern plateau. The small structure to the north of the main residences portrayed on the Grim Plan is not indicated on this map, although a complex of six structures are located on the west side of the residence, outside of the APE.

Ratzen 1767: Figure 5.1-2. The road to Boston is now called Bowry Lane (sic). The APE is located within the Bayard Farm, largely on the northern side of the lane that passes from Bowery to the Bayard residence. The small structure adjacent to the residence noted on the Grim Plan (1744) is indicated on this map but further to the northwest, and given its placement on this map, could lie within the northwest corner of the APE, near the current intersection of Cleveland Place and Kenmare Street. Otherwise, the APE lies directly north of an area divided into small parcels of land, in undeveloped farmlands. Rynder's (later Mulberry) Street only extends north as far as the lane to the Bayard residence (later Broome Street), just south of the APE.

British Headquarters Map1782: Bayard's Farm is shown roughly west of the APE. Fortifications appear to wind between the farm and what will eventually become Block 481. It appears if these fortifications cross the southwest corner of the APE, but given the small scale of the map, it is hard to tell if they head north of Broome Street within this APE or if they cross further south on Centre Street in the following APE. The knoll to the southeast of the block and the Bayard Farm outside of the APE ("Bayard's Hill" in Holland 1757) appears to be the location of a fortified structure. The APE is otherwise shown in undeveloped farmland.

McComb 1789: Byard's (sic) Lane is shown; this later became Broome Street. This is not to be confused with Byard (sic) Street several blocks south of the APE. The area that eventually becomes Block 481 is shown as a vacant field, directly north of the large hill noted in previous maps as "Bayard's Hill". Three structures are indicated on this map in the vicinity of Bayard's Farm residence, about one block to the west of the APE.

Hayward 1797: The area surrounding Block 481 has been gridded. The project block is surrounded by Oliver (Spring) Street, William (Broome) Street, Mary Street (Orange/Cleveland Place), and Catherine (Mulberry) Street, but Kenmare Street has not yet been laid out. A structure is located in the northeast corner of the block but appears to be outside of the APE, close to Spring Street. Two large knolls previously identified as Bayard's Hill (Holland 1757) are located one block to the south of the APE and a large residence (probably Bayard's) is shown less than one block west of the southwest corner of the APE.

Taylor Roberts 1797: The APE is very similar to Hayward 1797.

Bridges 1807: The street grid of Lower Manhattan is now in place. Block 481 is surrounded by Spring Street, Broom Street, Orange Street, and Mulberry Street. The entire block is shaded, indicating development,

the nature of which is unknown. Few specific structures are indicated on this map, none are shown within the APE.

Hooker 1829: The APE is unchanged from Bridges 1807.

Hooker 1833: The APE is unchanged from Bridges 1807.

Tanner 1836: The APE is unchanged from Bridges 1807.

Colton 1836: The APE is unchanged from Bridges 1807.

Bradford 1838: The APE is unchanged from Bridges 1807.

Endicott 1842: This map shows water pipes on Spring Street, Broome Street, Mulberry Street, and Centre Street.

Mitchell 1846: The APE is similar to Tanner 1836. A red line indicates a trolley line that runs north on Centre Street, turns east on Broome Street, and then north on Bowery.

Dripps 1852: This is the first map to show Block 481 completely developed. There are about 77 structures located within about 44 lots on the entire former block (prior to the construction of Kenmare Street). Approximately 26 lots fall within the APE, of which ten are located entirely or partially on the future location of Kenmare Street, 20 are located entirely or partially on what will later be the southern half of Block 481, south of Kenmare Street. There are back yards present on all of the lots and structures in many of the back yards. There appear to be alleys or empty spaces that run from the street through to the inner part of the block. The street bordering on the west is now called Marion Street, and a streetcar is shown running on Broome Street.

Colton 1856: This map is similar to Mitchell 1846. Orange Street below Grand Street is now called Baxter Street.

Perris 1857: Figure 5.1-8. Lots and structures are shown in a similar configuration as in Dripps 1852. Details of structures are listed below, from north to south and east to west. Lot numbers are in parentheses.

197 Mulberry Street (27) This lot is occupied by a by a brick structure facing the street with a yard, then a brick Methodist Church in the back of the lot that extends into the lot to the north. Only about the southern ten feet of each structure is located in the APE.

195 Mulberry Street (28) A brick structure with a store occupies the front half of the lot, with open yard space and another smaller brick structure at the back of the lot.

193 Mulberry Street (29) There are three frame structures along the north side of the lot, with a wide alley leading to a yard separating them from a final frame structure occupying the back of the lot.

191 Mulberry Street (30) The two frame structures along the south edge of the lot are set back from the street by about 25', with a wide alleyway passing along the north side leading to an open yard. The back of the lot houses a brick structure identified as a "special hazard".

189 Mulberry Street (31) There are several structures of varying sizes on this lot, beginning with a larger frame structure, followed by a very small, then medium sized brick structure with a frame structure in back, possibly a shed. An alley along the north side of the lot leads to

an open yard in back with two additional structures at the very back of the lot.

187 Mulberry Street (32) This lot is similar to Lot 31, with the exception that there are no structures at the back of the lot and there is a small brick structure separating the alleyway from the back yard.

185 Mulberry Street There is no such address shown on this atlas.

183 Mulberry Street (33) A large brick structure covers more than half of this lot, with a back yard.

181 Mulberry Street (34) This lot houses two adjacent structures that front onto Mulberry Street; the northern structure is brick, the smaller southern structure is identified as a "special hazard". There is an open yard behind them. A small open area just south of this lot is possibly associated with 392 Broome Street, or may be associated with conjoined yards behind this lot, and 390 through 392 Broome Street.

179 Mulberry Street/390 Broome Street (35) This lot has a residential/commercial brick structure with a back yard.

390 1/2 Broome Street (36) This lot is the same as Lot 35.

392 Broome Street (37) This lot is the same as Lot 35, an alleyway appears to pass from Mulberry Street into its back yard that it may share with Lots 35 through 37.

394 Broome Street (38) The brick structure on this lot has a very small wooden shed behind it in the southeast corner of the yard that takes up more than half of the lot. The main structure is portrayed with a semi-circular protuberance facing the street, possibly a bay window?

396 Broome Street (39) This lot is the same as Lot 38, except that the back yard is larger and there is no small wood structure.

398 Broome Street (40) This lot is the same as Lot 38.

400 Broome Street (41) This lot has a brick structure occupying a little more than one third of the lot, with a smaller structure in the northwest corner.

402 Broome Street (42) The commercial/residential brick structure in front has a smaller extension along the west side of the lot with an open yard behind.

404 Broome Street (43) This lot has a brick structure apparently fronting onto Broome Street and a small commercial brick structure fronting onto Marion Street that is surrounded by open yard on its north, east and south sides.

15 Marion Street (7) This lot houses two brick structures separated by a yard, the front structure used for commercial purposes.

13 Marion Street (6) Frame structures occupy most of this lot, except some open yard space in back surrounded by what appear to be sheds. One small structure in the back northeast corner is indicated to be a smokehouse.

11 Marion Street (4) A brick structure occupies less than half of this lot, with a back yard.

9 Marion Street (4) Same as 11 Marion Street.

7 Marion Street (4) Same as 11 Marion Street.
5 Marion Street (1) This narrow lot is mostly covered with structures, the first of which is a brick building indicated as having commercial uses. A very small yard separates it from a series of frame structures indicated as "special hazards".
3 Marion Street (1) This lot also has a many structures. Two front onto Marion Street, the first of which is a very small commercial brick structure. South of it is a commercial frame structure that juts out slightly into the street. Along the south edge of the lot are a brick structure and two frame structures that extend to the back of the lot, leaving an open yard on the north side.
1 Marion Street (1) This lot is covered entirely by structures, with frame structures in front (commercial/residential) and a "special hazard" brick building in back.

Mitchell 1860: This is similar to Mitchell 1846. There are no specific details on Block 481.

Dripps 1863: The APE is unchanged from Mitchell 1860.

Viele 1865: The APE is shown as level meadowland, with a ring of small knolls and plateaus a few blocks away to the west and south. The Collect Pond is about four blocks south beyond swampy lands. Sewer lines are shown running on Marion Street and Mulberry Street, and partially on Spring Street.

Dripps 1867: The APE is very similar to Perris 1857.

Bayard Farm Map 1869: This map shows probably proposed but never implemented subdivisions, and lots within Block 481 are portrayed schematically without actual development. Generally, the APE is shown as former Bayard farmland. No indications of past structures associated with the Bayard Farm are shown within the APE. Lots directly west of Block 481 are assigned to particular families or heirs of families, with the notation "In May 1823 by order of the Court of Common Pleas a Partition was made of the following 6 lots, viz." Only two of these assigned lots (one to the heirs of Catherine Johnson and one to Gerard Rutgers and wife Margaret) front onto the APE (the Cleveland Place street bed), with an additional unassigned lot located at the southeast corner of Broome Street and Cleveland Place.

Vielé 1874: This is similar to Vielé 1865. A transportation line is indicated on Broome Street, and no sewers/canals are indicated on this map.

Watson 1874: This is similar to Mitchell 1846.

Robinson 1885: This atlas indicates that the block widths are as follows: Kenmare Street 202.7', Broome Street 204.10', Cleveland Street 491.2', Mulberry Street 501'. A fire hydrant is present at the southeast corner of the block. The transportation system running on Broome is designated either a horse or cable car line.
Details for lots and structures that have changed since the previous atlas (Perris 1857) are listed here, with lot numbers in parentheses:

197 Mulberry Street (27) The structures on the lot are the same, but the back structure that was previously labeled a Methodist Church is not labeled as such.
193 Mulberry Street (29) The frame structure facing the street is set back by around ten feet.
189 Mulberry Street (31) The frame structure facing the street is shown extending to the north side over what had previously been shown as an alley. A smaller brick building adjoining it is located on the north side of the lot, whereas earlier a brick building was shown on the south side of the lot. The two outbuildings previously shown at the back of the lot are no longer present.
187 Mulberry Street (32) The multiple frame and brick structures have been replaced by a single brick structure that takes up the front half of the lot.
181 Mulberry Street (34) Of the two structures facing the street on this lot, this street address appears to be associated specifically with the southern structure. If so, the northern structure may have been known at this time as 183 Mulberry Street, and what was previously known as 183 Mulberry Street would then be 185 Mulberry Street. The map is not detailed enough to know for certain, however. In the subsequent detailed map (Sanborn-Perris 1894), the southern structure will be shown as 179 Mulberry Street, the northern structure will be shown as 181 Mulberry Street, and no 185 Mulberry Street exists.
The smaller southern structure is shown here with only a very small open area in its southwest corner. Additionally, the back yard area associated with these structures appears to be truncated: only the northern structure has a large back yard, while the smaller southern structure has lost its back yard to the northern structure and the yards behind 390 1/2 and 392 Broome Street.
390 1/2 Broome Street (36) This lot has a larger back yard, extending on its west side over what had been the yard behind the southern structure at 181 Mulberry Street.
392 Broome Street (37) Same as 390 1/2 Broome Street.
394 Broome Street (38) The small wooden shed behind the main structure is no longer present, neither is the front of the main structure portrayed as semi-circular, as it was in Perris 1857.
396 Broome Street (39) The main structure no longer is shown with a semi-circular front and most of the back of the lot is taken up by a larger brick structure, leaving only a small yard in between.
398 Broome Street (40) This lot is now almost entirely taken up by a brick structure (again, no semi-circular front portrayed), with a small, narrow yard against the east side in the back.
400 Broome Street (41) The outbuilding is no longer shown, and the lot is nearly entirely covered by a brick structure, except for a narrow yard along the west side in back.

402 Broome Street (42) Only the main front brick structure remains on this lot.
404 Broome Street (43) This lot is now shown with a brick structure covering the entire lot.
13 Marion Street (6) This lot is entirely covered with a brick structure.
5 Marion Street (1) A brick structure now covers the entire lot
3 Marion Street (1) This lot is now almost entirely covered by a brick structure, except a very tiny open space on its south side. The lot is now shown as narrowing at the back by several feet, forming the small yard. The main structure is not shown jutting out past the building line, as it had been on the previous atlas (Perris 1857).
1 Marion Street (1) This lot is now covered entirely by a brick structure.

Sanborn 1894: The APE is similar to Robinson 1885. Mulberry Street is shown to be 49' wide, Cleveland Place (shown as Marion Street) is 48.6' wide. A fire hydrant is found at the southeast corner on Broome Street. Additional details are listed below (lots in parentheses).
197 Mulberry Street (27) The front structure is three stories and the back structure is four stories. An alleyway along the north side of the front structure leads to a yard in between the structures.
195 Mulberry Street (28) The front structure is six stories, the back structure is 5 stories, and they are separated by a small yard.
193 Mulberry Street (29) This lot is now shown with a five-story structure with mixed residential/commercial use over most of the lot, with narrow open spaces on either side of the building without street access, and a small yard in back.
191 Mulberry Street (30) This lot is also now shown with a five-story structure over most of the lot, with narrow open spaces on either side of the building without street access, and a smaller yard in back.
189 and 187 Mulberry Street (31 and 32) These two lots have a large shared four-story structure in most of the back labeled "Stable & c.". The very back of it is only one-story. The front of the lot is occupied by a four-story structure on the north side and a three-story structure on the south side. Both are mixed commercial/residential. A narrow one-story structure connects the front buildings and the stable.
185 Mulberry Street Still, there is no such address.
183 Mulberry Street (33) The lot has a four-story structure with a back yard.
181 and 179 (once just 181) Mulberry Street (34) The two adjacent structures are now indicated with separate addresses. What is currently shown as 179 Mulberry Street was indicated to be 181 Mulberry Street on the Robinson Atlas of 1885. 181 Mulberry Street has a four-story structure, while 179 Mulberry Street has a two-story structure in the front of the lot that connects to a one-story structure that fills the back of the lot.
390 Broome Street (35) The structure on this lot used to have the

address of 179 Mulberry Street also associated with it (Perris 1857). The three-story commercial/residential structure in front has a good-sized yard and a small one-story structure in back.

390 1/2 Broome Street (36) This lot has the same configuration and details as Lot 35.

392 Broome Street (37) This lot is the same as Lot 35.

394 Broome Street (38) The lot is portrayed similarly as in Perris 1857. The main two-story brick structure is here shown with a semi-circular front, although it does not portrayed jutting out past the building line. Two smaller one-story frame structures abut the front structure. The front structure is mixed residential/commercial.

396 Broome Street (39) The front three-story structure is mixed residential and commercial, and the back of the lot is now entirely covered by a one-story brick structure except for a very narrow, long alley on the east side.

398 Broome Street (40) The majority of the structure on this lot is a four-story brick warehouse, the back of the structure is one-story. The alley along the east side is not shown extending into the back of the structure.

400 Broome Street (41) The four-story brick structure on this lot is a warehouse, with a small one-story structure in back that houses a steam boiler. The narrow alley on the west side does not extend into the back.

402 Broome Street (42) The mixed commercial/residential structure on this lot is three stories, as is a smaller structure abutting the main building on the west side.

404 Broome Street (43) This lot is taken up by a three-story residential/commercial structure in the front that connects to a four-story structure behind that fronts onto Marion Street. The map indicates two structures with the street address of 1 Marion Street. The first is the back, four-story half of this lot and the second it just north of it, the now-combined 1, 3, and 5 Marion Street (Lot 1).

15 Marion Street (7) The four-story mixed commercial/residential structure in front is separated from the back three-story structure by a yard.

13 Marion Street (6) Most of the structure that covers this lot is a four-story warehouse, while the very back is only one-story. A steam boiler is indicated in front of the lot.

11 through 7 Marion Street (4) These three addresses are now taken up by a single six-story brick warehouse with a steam boiler in front of 7 Marion Street.

5 through 1 Marion Street (1) These three addresses are almost entirely covered by a four-story "Picture-frame Factory", with a small boiler at the back of 1 Marion Street, and narrow yards on the southeast. The lot is truncated behind 1 Marion Street.

Bromley 1897: Street widths and street bed elevations remain the same from Robinson 1885. Sewer pipes are shown on all of the surrounding streets, both 6" and 12". Further details about structures and lots within the APE are as follows (lot numbers in parentheses):

197 Mulberry Street (27) The front structure is shown with a basement.

195 and 193 Mulberry Street (28, 29) These structures have no basements.

191 Mulberry Street (30) This structure has a basement.

189, 185 (formerly 189 and 187) Mulberry Street (31, 32) The smaller two structures in front of the lot are wood frame and have basements. The two structures still appear to share a common, large structure in back. The southern of the two front structures is labeled 185 Mulberry Street where it had been labeled 187 Mulberry Street on Sanborn-Perris 1894. No 187 Mulberry Street is shown on this map.

183 Mulberry Street (33) This structure has a basement.

181 and 179 (once just 181) Mulberry Street (34) The northern of the two structures has a basement, it is unknown if the smaller southern structure has one.

392 and 390 Broome Street (35, 36, 37) No structures are shown with basements and the small structures in back indicated on Sanborn-Perris 1894 are not indicated here.

394 Broome Street (38) The front structure has a basement.

396-402 Broome Street (39, 40, 41, 42) None of these structures has a basement. There is no yard indicated for Lot 39, small yards behind 40 and 41 where there were once structures, and the small structure behind Lot 42 is not shown.

404 Broome Street (43) This structure is shown with a basement.

15 Marion Street (7) There are no basements on this lot.

13 Marion Street (6) The entire lot is covered by a structure with a basement.

11 through 7 Marion Street (4) These lots are shown as a stable, with a very small open area in the back and no basement.

5 through 1 Marion Street (1) There is no basement shown for the structure covering these addresses.

Bromley 1902: Figure 5.1-16. Sewers are in all of the surrounding streets, both 6" and 12" pipes. There are three hydrants: one each on the southwest corner, the southeast corner, and halfway up the western side of the block on Cleveland Place (shown here as Marion Street). Surrounding street widths including sidewalks are about 45', except Broome Street at approximately 60' wide. The sidewalks themselves appear to be around ten to 15' wide.

Within the APE, open yard areas and basements are the same as Bromley 1897. There are two labeled structures in the APE: "Candy manufacturing" occupies Lot 4 and a "Picture-frame factory" covers all of Lot 1.

Sanborn 1905: An additional hydrant is located at the southwest corner of Cleveland and Broome Streets. Street-facing structures within the APE are all mixtures of commercial, residential and light to medium manufacturing, with the exception of Lot 31 that is exclusively a dwelling. Additional specifics about structures and lots are as follows, with lot numbers in parentheses:

18 and 187 Mulberry Street (31, 32) The northern front structure is shown housing light manufacturing as well as a store and a dwelling. The southern of the two front structures was previously labeled 185 Mulberry Street on Bromley 1897. The large back structure is shown as a stable, labeled "Boarding", also with a basement. Between the front two buildings and the back structure is a vaulted yard.

185 through 179 Mulberry Street (33, 34) These lots have been reconfigured into four addresses among two identical structures, each six stories with a basement. There are alleys on each side of the lots that do not extend onto the street and there are small back yards. Small one-story structures abut the northwest corners of each main structure.

390 through 394 Broome Street (35 through 38) These lots are now covered by a structure with a bakery that is six stories for most of it, except for the furthest west edge that is only one-story. A large oven is present at the back of Lot 37.

396 Broome Street (39) This structure houses "medium"-level manufacturing.

398 Broome Street (40) This structure is now shown with a basement and houses light manufacturing. A "hoistway" is located in the front, southeast corner of the building.

400 Broome Street (41) This lot houses "medium"-level manufacturing and the building has a basement.

402 Broome Street (42) This lot is indicated with a basement and houses a drug store on the ground floor.

404 Broome Street (43) This structure has a basement and is used for light manufacturing as well as a store.

15 Marion Street (7) There is a basement in the back three-story structure, and three smaller one-story structures are shown in the yard between the front and back structures.

13 Marion Street (6) This structure is used for light manufacturing exclusively, with a stable and a basement. A hoistway is located in the northeast corner of the structure. There is a steam boiler located in front of the structure

11 through 7 Marion Street (4) This structure is shown with an independent electric plant. The structure is labeled "Cocoa Mills & Roasting Bst., Candy Factory". There are two steam boilers located in front of the structure.

5 through 1 Marion Street (1) This structure now houses a tailor shop on the fourth floor and "Manufacturing Printers Inks" on the basement

through the third floors. A steam boiler is located at the back of 1 Marion Street.

A summary of yard space in the APE is as follows: Lots 33 through 38 have reduced yard areas behind these structures from over half of the available lot space to approximately a quarter. Open yard areas remain in the middle of Lot 7, the middle of Lot 29, and the back of Lots 30-31, 33-34, 36-38 and 42.

Bromley 1911: Figure 5.1-22. This is the first atlas or map showing the presence of Kenmare Street, bisecting Block 481 and running east to west. Marion Street is now called Cleveland Place. The remaining section of Block 481 within the APE has had most of the buildings on it razed, due to subway construction. The tunnel turns from Kenmare south to Centre Street underneath this part of the block. The structures on Lots 28 through 43 and 1 through 7 were destroyed during the construction of the subway; the very southwest corner of Lot 27, all of Lots 28 through 30, the northeast corner of Lot 31, the southwest corner of Lot 7, all of Lots 6 and 5, and the northeast corner of Lot 4 were razed and covered by Kenmare Street. About half of the remaining Block 481 within the APE is empty at this time. Sewer lines remain the same; hydrants are not marked.

Four brick structures are shown remaining in Lots 33 through 40. Small yards remain behind the structures in Lots 33 through 38. A smaller brick structure marked 'FAN' is present towards the back of Lot 41, above the subway tunnel.

Hyde 1913: The APE has been nearly fully redeveloped. Lot numbers are in parentheses in the following:

190 Mulberry Street (32) This lot now takes up the entire northeast corner of Block 481 south of Kenmare. It is almost entirely covered by a seven-story commercial brick building, with two very small yards along the south side on the interior of the lot.

189 through 181 (formerly 185 through 179) Mulberry Street (33, 34) These lots have the same structures as on Sanborn 1905.

179 Mulberry Street/390 through 394 Broome Street (35, formerly 35 through 38) The structure covering most of the lot is six stories, formerly shown as a bakery (Sanborn 1905). The smaller structure at 394 Broome Street is only one-story. Open yard spaces exist in the middle of the six-story structure and in the northwest corner of the lot. 390 Broome Street (formerly 390 1/2 and 390 Broome Street) is shown with a brownstone façade.

396 Broome Street (39) A three-story commercial brick structure occupies less than half of the lot, with an open yard behind.

398 Broome Street (40) This lot is entirely covered by a six-story commercial brick structure, although a portion at the back is one-story.

9 Cleveland Place (4) All that remains of this lot is a thin triangle with no development.

1 through 7 Cleveland Place/400 through 404 Broome Street (1, formerly 1,41,42 and 43) This very large combined lot is now entirely covered by a seven-story brick structure. The structure marked 'FAN' in former Lot 41 is not shown.

Both Mulberry Street and Cleveland Place are shown with 4' by 2' 8" brick sewer lines. Between Block 481 and the sewer line, Mulberry Street has a 12" salt water high pressure line, a 6" line, and a 12" line. Cleveland Place has a 36" line and a 6" line west of the sewer. Broome Street has a 20" salt water high pressure line and a 6" line on the north side, a branch of the sewer pipe extending east on the south side of the street. Kenmare Street is not shown with any utilities. Both Mulberry Street and Cleveland Place are shown as 50' wide. Sidewalks widths are shown as follows: 25' on both sides of Kenmare Street, ten to 15' on Mulberry Street and Cleveland Place, and approximately 20' on Broome Street. From building line to building line, Kenmare Street is 80' wide.

Bromley 1916: The APE is similar to Hyde 1913. The subway tunnel is shown as a dotted line curving across Block 481 within the APE, but the tunnel is not shown under the street beds. It appears to run beneath Lots 1 through 3, 32, and 40 through 43.

New construction in Lot 39 (396 Broome Street) extends up to the subway tunnel boundary. The large building on the southwest corner (Lot 1) is indicated as the "Geo. W. Loft/Factory". There are still some back yard areas in the eastern half of the block that were not affected by the subway tunnel, although they have been reduced in size by the construction of the building on Lot 39.

Street bed elevations remain the same from Bromley 1897, but are still not listed for Kenmare Street. Sewer lines include 6" and 20" pipes on Mulberry and Broome Streets, and 6" and 36" pipes on Cleveland Place. No utilities are marked on Kenmare Street. There is a hydrant located on the southeast corner of the block.

Sanborn 1922/23: The APE is similar to Bromley 1916. All structures on the east half of the block are shown to have basements (*note: the condition of the microfilm is such that the west half of the block is largely illegible*). The structure in the southeast corner is a drug store (Lot 35). A subway vent shaft is shown directly over the subway tunnel in the middle to west side of the block, within the Geo. W. Loft/Factory. All structures on the east half of the block are mixed commercial/residential. No utilities are shown on Kenmare Street.

Bromley 1926: The APE is similar to Bromley 1916, although the subway tunnel is now shown under both Kenmare and Centre Streets. A two-story brick building has been constructed on the small triangle (Lot 4) in the northwest corner of the block and the building on Lot 40 is now eight versus six stories.

Bromley 1932: The APE is unchanged from Bromley 1926, but the building on Lot 1 that housed factories on the southwest corner now houses the Police College, City of N.Y.

Sanborn 1951: The APE is similar to Bromley 1932 and Sanborn 1922/23. The large structure on Lot 1 that was indicated as the Police College in Bromley 1932 is indicated as a garage and offices, with a basement and subcellar. The structure on Lot 4 in the northwest corner of the block also has a basement. The subway vent shaft is still present over the center of the subway tunnel. There are two hydrants located on Cleveland Place and two on Broome Street.

Bromley 1955: The APE is unchanged from Bromley 1932.

Bromley 1967: The APE is unchanged from Bromley 1932.

Bromley 1974: The APE is unchanged from Bromley 1932.

Sanborn 1984-85: The APE is unchanged from Bromley 1932.

Sanborn 1990-91: The APE is unchanged from Bromley 1932.

Sanborn 2001: The APE is unchanged from Bromley 1932.

Street Elevation Table:

Data Source (maps)	Spring x Mulberry	Spring x Cleveland	Mulberry x Broome	Cleveland x Broome	Kenmare East side	Kenmare West Side
1865 Vielé	30.0'	30.0'	36.0'	31.0'	--	--
1885 Robinson	36.0'	36.6'	32.0'	30.9'	--	--
1897 Bromley	36.0'	36.6'	32.0'	30.9'	--	--
1922/23 Sanborn	36'	37'	32'	31'	34'	32'
2001 Sanborn	36.0'	36.6'	32.0'	30.9'	--	--

Tax and Directory Table:

Note: Lot numbers are shown in parentheses after the street address.

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 481: Kenmare, Mulberry, Grand, and Marion (now Cleveland Place) Streets								
195 Mulberry St (28)	No Reels	No Reels	William McPher-son	John Riley	Bridget Donnelly, *liquors*	Methodist Book Concern	William Doland	William Dolan
193 Mulberry St (29)	No Reels	No Reels	John Bulger	John Bulger	Hugh McCave	James Dolan	H? Espin-shuld?	N? Espin-shuld
191 Mulberry St (30)	No Reels	No Reels	Limeon Van Beuren	Limeon Van Beuren	John Higgius, *furniture*	Est of John Bulger (semi-crossed out)	B. Ackinma n ? Bros.	C.Y. Ackinma n
189 Mulberry St (31)	No Reels	No Reels	Edward Arrow-smith	Edward Arrow-smith	Edmund Arrowsmith Sharp Tordoff	B. Ackerman & Brother	Emit Black	Emit Black
LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
187 Mulberry St (32)	No Reels	No Reels	John Banker	Hugh W. Mc-Donald	Patrick Dolan, *coal*	E. Arrowsmith	William Grand	William Grand
185 Mulberry St (32/33)	No Reels	No Reels	Chester Clarke	Not for this Yr.	No listing	Hugh W. McDermitt	Huegh Sweeny	E.O. Brinck-enhoff
183 Mulberry St (33)	No Reels	No Reels	Not for this Yr.	Chester Clarke	W.K Schenck	Hugh Sweeney	Not for this Yr.	E.O. Brinck-enhoff
181 Mulberry St (34)	No Reels	No Reels	Not for this Yr.	Mark Herenson ?	S.D Eytinge	Mark Stephenson	Mark Stephen-son	
179 Mulberry St (35)	No Reels	No Reels	Not for this Yr.	Not for this yr.	Hester Bell, *boarding*	Not for this Yr.	Not for this Yr.	Not for this Yr.
390 Broome St (35)	No Reels	No Reels	Timothy Baldwin	Marck Stephen-son	R.J Dusenburg, *physician* William Smith, *refectory*	Marc Stephenson	E.O Brincken -hoff	

					Maria Robinson, *fancy store* James Morris, *musician* Thomas McCormick *ploughs* James Norris			
390 ½ Broome St (36)	No Reels	No Reels	Not for this Yr.	Marck Stephen-son	No listing	Marc Stephenson	Not for this Yr.	Isaac Walton
392 Broome St (37)	No Reels	No Reels	Timothy Baldwin	Marck Stephen-son	Samuel Rosenfelt, *dry goods* Thomas Wheeler, *boarding*	Marc Stephenson	E.O Brincken -hoff	Isaac Walton
394 Broome St (38)	No Reels	No Reels	Chester Clarke	Chester Clarke	S.H Tone	H. A Chedsey	E.O Brincken -hoff	E.O. Brincken-hoff
396 Broome St (39)	No Reels	No Reels	J. R. Hamilton	J. R. Hamilton	J. R. Hamilton	Estate of James Hamilton	A. P. Mann. Trustee	A.P. Mann
LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
398 Broome St (40)	No Reels	No Reels	Moses *Wauser ?*	Chester Clarke	Joseph Cox	Chester Clarke	Chester Clarke	Est. Chester Clark
400 Broome St (41)	No Reels	No Reels	Widow Brown	Widow Brown	Nathaniel Brown	Mrs. Widow	Moses Eley	LJ White
402 Broome St (42)	No Reels	No Reels	A.C Baldwin	A.C Baldwin	J.W. Gilebrist, *grocer* J.W. Garside	J.W. Gilchrist	J.W. Gilchrist	LJ White
404 Broome St (43)	No Reels	No Reels	A.C Baldwin	A.C Baldwin	F. W. Strong	A.C Baldwin	S.D. Bellows	S. D. Bellows
15 Marion St (7)	No Reels	No Reels	Not for this Yr.	American Insurance	Daniel Cary, *liquors*	A. Smith	A. Smith	A. Smith
13 Marion St (6)	No Reels	No Reels	Not for this Yr.	Joseph R. Woolsey	*Lawson* Jones, *provisions*	Joseph R. Woolsey	E.M. Firth	Chs. Whittock
11 Marion St (4)	No Reels	No Reels	Not for this Yr.	William Mook	Lawson Jones	William Mook	William Mook	Wm. Mook
9 Marion St (4)	No Reels	No Reels	Not for this Yr.	William Mook	James Collard,	William Mook	William Mook	William Mook

					silversmith Charles Lord			
7 Marion St (4)	No Reels	No Reels	Not for this Yr.	William Mook	Israel Sackett, *Printer*	William Mook	William Mook	William Mook
5 Marion St (1)	No Reels	No Reels	Not for this Yr.	Walter Leggatt	Thomas Donaldon, *sexton*	Walter Leggatt	Emit Black	William Grimm
3 Marion St (1)	No Reels	No Reels	Not for this Yr.	Walter Leggatt	Owen Riley, *liquors* Charles Devine, *cooper* James Reynolds, *slater* John Long, *tailor* Thomas Fleming, *painter*	Walter Leggatt	Emit Black	William Grimm?
1 Marion St (1)	No Reels	No Reels	Not for this Yr.	Austin Baldwin	Lewis Inglee, *leather findings* Robert S. Armstrong, *Paints* BA Hart, *gunsmith* T.J. Mitchell and Co., *carvers* *Edward Connelly *William White	Est E. Baldwin	Emit Black	William Grimm?

Note: No Reels for 14th Ward Prior to 1828

Precontact Sensitivity:

Prior to the historic period, this APE was located close to a fresh water source, the Collect Pond. As relatively level meadow area in close proximity to a number of knolls, it would have been suitable for settlement, providing both protection and water. The location of the area within the Bayard Farm, however, indicates that if precontact resources existed on the natural surface, they were likely disturbed in part by farming in the 17th and 18th century, leased by the Dutch West India Company and later part of the Bayard Farm (Stokes 1928:70; Grim 1744; Montresor 1766). By the 19th century, the area became fully developed with a series of structures, causing further effect through the construction of buildings and

excavation of basements. The subway construction (cut-and-cover) in the early 20th century was also a major source of subsurface disturbance.

There are areas that have been untouched since the 18th century, particularly in the southeast corner of Block 481 where back yard areas were maintained and none of the buildings had basements. Under the Kenmare Street roadbed, there is also potential for preservation of cultural resources just west of where the subway turns to go down Centre Street. Most notably, Broome Street may have not seen much subsurface disturbance if in fact it has been a road since the 1800s, and not farmed or developed (Stokes 1928:70-73). Surrounding WPA soil borings from the 1930s suggest that the area may be covered with four to six feet of fill (WPA Borings 1.14.6, 1.20.15 and 1.20.16, ca. 1935), that would serve to further protect archaeological resources if the precontact surface is in fact substantially buried. The least disturbed areas include the Broome Street roadbed, yard areas behind former Lots 28, 29 and 7 that are currently under Kenmare Street, and extant yard areas behind Lots 33 through 38 in Block 481, all of which have remained open throughout history. Precontact sensitivity is thus moderate for these areas that did not experience historic or modern disturbances from the precontact surface (4-6' below grade) to an additional depth of about 5 feet.

Historical Sensitivity:

This APE falls within a 17th century farm tract, Bouwery No. 8, located west of Bowery Road and north of Broome Street. Dr. Hans Kierstede was the original occupant in 1638, whose house probably lay around three blocks to the west of the APE (Stokes 1928:73). "Jan Negro" was later given a grant to the land in 1647 that was defined as being 200 paces "along the wagon road [Bowery]" and "extended back from the Wagon road 325 paces to the house of Mr. Hans." (Ibid.). This grant would have encompassed the APE. The precise locations of structures associated with Bouwery No. 8 are not clear, except for the house of Dr. Kierstede that was described as being approximately in the subsequent location of Bayard's Farm (Ibid.). Other, undocumented structures from the 1600s could have existed, and they would have had associated shaft features including wells and privies, any of which may fall within the APE.

The APE was located within the Bayard Farm land during the mid-18th century and it most likely would have been farm fields (Stokes 1928:70; Grim 1744; Montresor 1766). Notably, the Broome Street streetbed appears to be the approximate location of the former road leading to the Bayard Farm from the Bowery Road to Boston (Maerschalck 1755; McComb 1789). The residence was erected by Nicholas Bayard in 1735 and occupied by Stephen Bayard; later was rented to a Jacques Delacroix in 1798, who ran a tavern that was called Vauxhall Gardens in the residence until 1805 (Stokes 1928:473; 1918:981). It appears an amphitheater was additionally constructed in 1801 (Stokes 1918:981). The structure was demolished in 1821 (Stokes 1928:435).

During the British occupation from 1776 to 1783, maps show fortification walls running east to west approximately between the current location of Broome and Grand Streets (British Headquarters Map 1782). These fortifications most likely were outside of the current APE to

the south. It cannot be ruled out that artifacts or features from these eras exist within the APE, although likelihood is low. Deeply dug features such as wells or privies are more likely to have survived subsequent development, although it is not likely they would be found beneath Broome Street, given it appears to have been portrayed on maps as a road for the majority of the historic era (e.g., Maerschalck 1755; McComb 1789; Hooker 1833; Robinson 1885).

By the mid 19th century Block 481 was covered with structures, both residential and commercial in nature. The tax and directory table for the block (above) show that structures were more likely shown to be occupied by individuals or single families, with some apartment-style housing. While the majority of occupants were laborers or worked in the service sector, there were also some higher class merchants or craftsmen (one with a "fancy store" and a silversmith) and a physician who occupied the block within the APE at 390 Broome Street and 9 Marion Street. The mixed nature of the block indicates a range from working to possibly more middle class. Wealthier individuals may have been more likely to have their plumbing hooked up, which would have been available by 1842 (Endicott). Others may have continued to rely on privies or wells in their back yards at the time.

It is possible that at this time the block was partially filled over, given changes in street elevations (see e.g. Vielé 1865; Bromley 1897), also attested to by the presence of a four to six foot layer of fill in WPA soil borings (Borings 1.14.6, 1.20.15 and 1.20.16, ca. 1935). Many of the original structures within the APE were razed during the construction of Kenmare Street and the Centre Street Loop subway tunnel in the early 1900s. These include structures on former Lots 1 through 7 and 28 through 43. Currently, the APE includes extant Lots 31 through 40 and 1 through 4 on Block 481, and former Lots 28 through 30, 6, 5, and sections of Lot 27 and Lot 4 that are now under Kenmare Street. These areas could hold 17th or 18th century resources under fill or even 19th century structures, or 19th century resources within and beneath the fill layer, most likely in the associated open yard space, depending on the degree of subsurface disturbance, discussed below.

Broome Street was the site of transportation lines from the first half of the 19th century that may have begun as horse or cable-cars; a line later identified as the Harlem Railroad is shown running north on Centre Street, turning east on Broome and then north again on Bowery (Mitchell 1846; Dripps 1852).

Kenmare Street was a planned extension of Delancey Street west to Lafayette (then Elm) Street, crossing over four blocks located between Broome and Spring Streets. This was to accommodate the "Centre Street Loop", a subway tunnel that would ultimately link Brooklyn with downtown Manhattan by way of the Williamsburg Bridge, planned by the Rapid Transit Commission and later used by the Brooklyn-Manhattan Transit (B.M.T.) Company (Engineering News 1910). The city purchased the land necessary for the extension, laying out the new street in 1903, construction completed between 1907 and 1911 (Manhattan Borough Presidents Office records). Cut-and-cover construction methods were used to make the tunnel that resulted in the thorough disturbance of any archaeological resources that would have existed within and above the tunnel area.

In the process of constructing Kenmare Street and the subway beneath, Lots 1 through 6, 28 through 43, the southwest half of Lot 7 and the southwest half of Lot 27 were specifically affected through cut and cover excavations. Lot 6, the southwest corner of 7, the southwest corner of 27, Lots 28 through 30, and the northeast of Lot 31 were replaced by Kenmare Street itself, while many of the remaining lots were razed and rebuilt through the process of the subway tunnel construction. The tunnel itself runs through the intersection of Kenmare and Mulberry Streets and curves gradually to the intersection of Broome Street and Centre Street, where it continues south on Centre Street. The extant lots that are directly above the tunnel or parts of it, and thus would have been affected by its construction, include Lots 1 through 3 and 41 through 43 that currently house a single large structure in most of the west and southwest of the block; Lot 31 and 32, that houses a single structure in the northeast corner of the block; and the back of Lots 4, 33, 39 and 40.

According the Works Progress Administration (WPA) Project No. 665-97-3-32 Subsurface Conditions Map No. 73 (1939), the width of the subway tunnel beneath the intersection of Cleveland Place (Centre Street) and Broome Street is about 50'. The tunnel is shown curving gradually from the middle of Block 481 that is not shown in its entirety on the map. Only the western 12' to 18' of the block is portrayed on the available map.

The subway tunnel itself is shown in outline on several atlases and maps (Bromley 1916, 1926, 1932, 1955, 1974; Sanborn 2001). Its maximum width as it turns to the south appears to be about 80'. It crosses beneath the east half of Kenmare Street on the north side of the block and crosses again at the corner of Cleveland Place and Broome Street. The areas in the APE under Block 481 that remain undisturbed by the subway tunnel include the front portions of (former) Lots 2 through 4, 32, 33, 39 through 42, and all of Lots 34 through 37. Lots in the APE under Kenmare Street undisturbed by the subway tunnel include Lots 6, 5, and sections of Lots 27, 28, 29, 7 and 4.

The WPA maps (Map 73 unless otherwise noted) hold the following information about streetbeds: Kenmare Street is shown with minimal utilities, only electric lines on either side of the street just off of the sidewalk curbs. The street itself is 40' wide from building line to building line, and the sidewalks are ten feet wide each. Kenmare Street itself was constructed of granite block over 6" of concrete in 1929, and is erroneously shown as having been laid out in 1795 (WPA Map 75). Cleveland Place possesses a variety of utilities within its streetbed, including sewer, water, gas, electric and telephone lines. The utilities appear to have been installed beneath the entire streetbed as opposed to either side of the street. The specific depths of these utilities is unknown, but within a block's radius, other utilities tend to be buried at least 5' deep, while sewers are up to 12' below the surface. The street is 25' wide at its north end, 30' wide at its south end, with sidewalks 6' wide in all corners except the northeast corner of Cleveland Place and Broome Street, where the sidewalk gradually widens to 11'. Cleveland Place is shown constructed of granite block on 6" of concrete in 1919, having legally opened July 31, 1912.

Broome Street contains many utilities, including electric, gas, water, telephone, and sewer lines. The utilities are largely beneath the streetbed itself on the north side of the street, however, on the south side several electric lines are shown under the sidewalk as well. The

street is shown as granite block over 6" of concrete in 1927, and the street itself legally opened in 1795. While most utilities are clustered within 5' of the surface, the sewer line that runs under the north side of the street probably reaches depths of up to ten feet below the surface.

No detailed information about Mulberry Street subsurface disturbances is available through WPA maps; however, an atlas (Hyde 1913) shows a 12" salt water high pressure line, additional 6" and 12" water lines, and a 4' x 2'8" brick sewer line running beneath the streetbed. The Mulberry streetbed itself is not within the APE, however the west sidewalk is part of the APE and these utilities are all represented on the west side of the street and may have affected the area. Sidewalk vaults, which are outside access ways to buildings with basements that could affect the APE, are not shown on the available maps for any of the streets.

MTA/SYSTRA Consulting maps show the base of the existing tunnel to be about 35' below ground surface at Mulberry and Kenmare Street and about 30' below ground surface at Broome Street and Centre Street (MTA/SYSTRA 2001, Drawing No. CT-514). One soil boring by the Works Progress Administration (ca. 1935) at the intersection of Kenmare Street and Mulberry Street (1.20.15) shows fill levels of 6' on top of what may be natural deposits of sand. Nearby borings at Kenmare Street and Mott Street (1.20.16) and Centre Street and Grand Street (1.14.6) show fill layers of 4' and 5', respectively. Bedrock (micaceous schist) is located 112.6' below the surface in Boring 1.20.9 (on Kenmare between Bowery and Elizabeth Streets), and the closest water levels (about 30' below surface) are recorded in more recent borings located on Chrystie between Delancey and Rivington Streets (Borings C6-17 and C6-19, Raymond International, Inc., 1974), where the bedrock is slightly lower (see MTA/SYSTRA 2001, Drawing No. CT-514). It is likely that this recorded fill is covering the predevelopment and early historic period surface, given the undulating nature of this block as recorded in early maps (see e.g. Montresor 1766; British Headquarters Map 1782).

Of the lots that once stood on Block 481 or still exist on the block within the APE that remain unaffected by the construction of the subway tunnel, several of them had basements in historic times. These would include former Lots 2 through 7, 31 through 34, 37 and 40 through 42 (Sanborn 1905). Of these, Lots 5 through 7 and 31 are located within the Kenmare Street roadbed; the rest lie within the southern half of Block 481. Additionally, some yards were open throughout history in areas unaffected by the subway construction. These include smaller yards behind Lots 33 through 38 (within Block 481), and Lots 7, southern 28, and 29 (beneath Kenmare Street) (Sanborn 1905).

There appears to be a layer of fill averaging 5' over much of the APE, especially towards the north. This fill possibly covers the precontact/early historic surface and suggests that subsurface finds may still be possible in areas unaffected by subway or basement construction. This holds for 17th and 18th century historic remains such as wells or privies, or possibly even older remains in areas less disturbed. 19th century remains such as wells or privies would be more likely to extend through the layer of fill, depending on when they were constructed, and would most likely be found in open yard areas from the time.

One of the least disturbed areas is the Broome streetbed, especially under the north sidewalk where there may be few, if any, utilities. This area is also less likely to have more recent historic remains since it has been a roadbed since the 1700s, but it could be sensitive for early historic or precontact resources. Open yards behind houses are the next most likely area to find archaeological resources. Especially notable would be those under the west side of the Kenmare streetbed (behind Lots 7, southern 28, and 29), as this area appears to have few utilities. Also, smaller yards within the southern half of Block 481 (Lots 33 through 38) that have remained open throughout history have a likelihood to hold remains, but in all cases with the yards, they are more likely to have been affected by 19th century disturbances, including the later reuse or construction of wells, privies, or other subsurface features from earlier times.

The absence of sub-cellars and the presence of about 5' of fill suggests that it is possible that any deeply buried features from the early 1800s or earlier may have remaining traces beneath current structures, even those with cellars. However, it is less likely that there would be such deep features as wells in this location from very early times, given the proximity to a fresh water source. Overall, the most likely resources would be more recently used and found behind unaffected open yards and in streetbeds in the APE. Sensitivity for historic period resources in this APE is moderate for those unaffected areas outside of the subway tunnel described above, including particularly the Broome Street and Cleveland Place roadbeds.

Centre Street from Broome Street to Grand Street, and 60 feet south on Grand Street:

This APE includes the roadbed and sidewalks on Centre Street from Broome Street to Grand Street. The APE then continues south to include the northern section of the Centre Street roadbed and sidewalks between Blocks 234 and 235, approximately 60' south from Grand Street toward Hester Street. No developed lots are included in the APE.

Cartographic History:

Grim 1744: This APE is located approximately 2,500' northeast of the city wall, northeast of the Collect, probably within what appears to be fields and/or orchards associated with Nicholas and Stephen Bayard's Farm. The APE corridor crosses or heads south from the lane shown running to the northwest from Bowery, leading to the main Bayard residence, which is outside of the APE. The southern portion of the APE may cross into what appear to be large gardens associated with the Bayard residence, near the east side of the residence, but the precise locations are difficult to determine on the modern landscape. There is a small structure of unknown use indicated on the Grim Plan to the northeast of the main Bayard Farm structure that could possibly be within range of the APE. The approximation of the location of the APE was determined using distances and orientations from then-established city blocks (below Beekman Street) that have current counterparts and therefore may not be entirely correct when extrapolated to outside of the city wall.

Maerschalck 1755: The "High Road to Boston," later Bowery, is present, and gridding to the west of it includes Rynder's (later Mulberry) Street that is one block east of the APE, St. Steven's (later Broome) Street that forms its northern boundary and Judith (later Grand) Street. Both St. Steven's Street and Judith Street are not shown to extend west beyond Mulberry Street. No structures are shown in the vicinity of the APE.

Holland 1757: The APE is located directly north of a lane leading to Nicholas Bayard's Farm, in the approximate location of the future Broome Street. A path runs south from the lane approximately where Mulberry Street will be located (that will form the eastern edge of the APE north of Broome Street). The eastern edge of the Bayard farm compound falls approximately where Centre Street appears to be located and the APE may fall within developed gardens, otherwise it is vacant farmland. The Bayard residence is portrayed less than 100' from the north side of the APE. Four additional structures are shown surrounding the Bayard residence, but further away from the APE to the west. "Bayard's Hill commanding over all the high ground" is indicated just east to southeast of the APE.

Montresor 1766: The APE is located within the area labeled as Bayard's farm. "Bayard's Hill" is shown as a knoll and two bluffs face the northwest, outside of the APE. The larger rise forms straight bluffs to the northeast, northwest and southwest and appears to contain agricultural fields. An irregular rise to the southwest of the first rise forms a gully between the two. The Bayard Farm residence, associated structures and gardens are located on this second rise, with irregular bluffs to the northeast, northwest, southwest, and the knoll to the southeast. The APE appears to be located over the second rise, with the Bayard residence close by on the west side and passing over or south of the lane leading to the Bayard residence from Bowery. The small structure to the north of the main residence portrayed on the Grim Plan is not indicated on this map, although there are several additional buildings located to the west of the main residence along the road that leads to the main house from Bowery.

Ratzen 1767: Figure 5.1-2. The road to Boston is now called Bowry Lane (sic), and the APE is located within the Bayard Farm, passing south from the lane from Bowery to the Bayard Farm and through what appear to be fields or gardens closely associated with the residence that is immediately to the west, outside of the APE. The small structure to the north of the residence noted on the Grim Plan (1744) is indicated on this map, albeit it is shown further west than it appeared on the Grim Plan. It is still possible that it lies within the west edge of the APE. Structures are of different sizes and in slightly different places than in previous maps; thus, estimated locations may not be accurate based on this or prior maps, and must be considered approximate.

British Headquarters Map1782: This map shows Bowery Lane (sic) and a British Fortification wall winding east to west approximately along Broome Street, possibly crossing the APE in the northern section of Centre Street within Block 472 that is shown as farmland. Otherwise the fortifications probably cross the previous APE, through the southwest corner of Block 481; the map scale does not permit a precise determination of its location. The knoll observed on the Montresor map (1766) and identified as "Bayard's Hill" in Holland 1757 is shown with a fortified walled structure on top, located just outside of the APE to the southeast.

McComb 1789: Byards (sic) Lane (later Broome Street) is indicated, not to be confused with Byard (sic) Street located four blocks to the south. The APE is shown as farmlands, just northwest of the large knoll. Few structures are indicated on the map; three possibly associated with Bayard's Farm are depicted on the area to the extreme northwest of Block 472, outside of the APE. These structures appear very small and further northwest than in previous maps.

Hayward 1797: The area is shown to be completely gridded south of Houston Street. Block 472 is not yet entirely present in its current form. It is bounded by William (Broome) Street and Ann (Grand) Street to the north and south, respectively. Rynder Street is shown approximately where Centre Street (the APE) is currently located. Pit (Lafayette) Street to the west does not exist yet between Broome Street and Grand Street. Mary Street is shown roughly between where Centre Street is now located and where Centre Market Place currently bounds the block to the east. The APE itself appears to be vacant farmland, with a large residence (presumably Bayard's) shown on the south side of Broome Street a block west of Centre Street, outside of the APE. Two large knolls identified as Bayard's Hill in earlier maps (Holland 1757) are portrayed on the south to southeast side of the APE.

Taylor Roberts 1797: The APE is very similar to Hayward 1797.

Bridges 1807: Block 472 is defined by Broom (sic) Street, Orange Street (later Centre Market Place, shifted slightly east), Grand Street, and Elm (Lafayette) Street. Rynder's Street is shown where Centre Street (the APE) is currently located.

Hooker 1829: Broome Street, Grand Street, and Centre Street are all present on this map. Surrounding development is only indicated on the east side of Centre Street at Grand Street, the nature of which is unspecified. It is suggested later (Bayard Farm Map 1869) that Centre Street is widened when the next street east (Centre Market Place) is shifted to the east (see Dripps 1852). Therefore, the structure indicated on this map may now lie within the APE.

Hooker 1833: The APE is the same as portrayed on Hooker 1829. However, all surrounding blocks are shown developed.

Colton 1836: The APE is unchanged from Hooker 1833.

Tanner 1836: The APE is unchanged from Hooker 1833. The Centre Market is

located just outside of the APE to the east of Grand Street between Broome Street and Grand Street.

Bradford 1838: The APE is unchanged from Hooker 1833.

Burr 1839: The APE is unchanged from Hooker 1833.

Endicott 1842: This map of the Croton water pipes shows pipes on Broome Street, Grand Street and Centre Street.

Mitchell 1846: The APE is unchanged from Hooker 1833. However, a transportation line is indicated turning east onto Broome Street from Centre Street to the south.

Dripps 1852: The general area is shown with developed blocks. Orange Street (one block east of Centre Street) has been renamed Centre Market Place and has shifted east by around 30 to 40' at it's north end at Broome Street. It is implied in a subsequent map (Bayard Farm Map 1869) that Centre Street is widened at the time that Centre Market Place is moved. However, there are no earlier maps detailed enough to compare street widths, and the Centre Market is still located along Centre Street, as it has been located for many years (see Tanner 1836). There are no lots shown within the APE, only roadbeds and sidewalks. However, there is the probability that some structures bordering the APE would have been hooked up to utilities laid down under the APE (the Centre Street roadbed), contributing to subsurface effects within the APE. All sidewalk areas along Broome Street and Centre Street are shown with structures fronting onto them, the most significant of which is the Centre Market, taking up nearly all of Block 472 facing Centre Street from the east.

Colton 1856: Transportation lines are indicated on Broome Street, Centre Street, and Grand Street.

Perris 1857: Figure 5.1-9. Blocks are shown fully developed, the Centre Market is shown in Block 472. A small structure extends west approximately 13' into the street from the Centre Market at the northern end, making the overall street width approximately 40'. This structure also extends a few feet north into Broome Street. Centre Street is 50; wide at Grand Street.

Mitchell 1860: The APE is unchanged from Colton 1856.

Dripps 1863: The APE is unchanged from Colton 1856. The APE is shown in the former area of Bayard's Farm.

Vielé 1865: The APE is defined as meadowland, rising steeply to a knoll-top in the southwest corner of Block 472 at a maximum rise of 15'. Sewers are indicated under the Grand Street, Centre Street, and Broome Street roadbeds. Fresh water (the Collect) is shown three blocks south of the APE, with considerable topographic variation (rises, knolls) located just southeast. "Bayard's Hill," shown on earlier maps (Holland 1757), appears to still partially exist.

Bayard Farm Map 1869: This map shows lots schematically, without detailed development, save for the Centre Market. The map confirms the location as former

farmland, but no structures associated with the farm are indicated in the APE. This map portrays Centre Street in dotted lines as formerly around 15' narrower and its east edge around 25' further west than the then-current street line. The map also implies that Grand Street was widened to the south by approximately 20'. Certain changes portrayed on this map did occur, such as the shift of Centre Market Place approximately 40' east of its previous location while it was known as Orange Street.

There is *little* hard evidence that there was ever actual development on the east side of Centre Street that was destroyed in a widening episode. This map suggests there were three original lots at the base of a triangular block on the east side of Centre Street between Broome Street and Grand Street prior to the supposed widening of Centre Street. If the map is taken literally, 25' of the first lot in the southwest corner extending around 100' north up Centre Street would currently be under the APE.

Vielé 1874: This is similar to Vielé 1865, but transportation lines are indicated on Grand Street and Broome Street.

Robinson 1885: Several transportation lines, depicted on the legend as horse or cable cars, fall within the APE. One line runs up Centre Street to turn east on Broome Street. Two lines run on Grand Street, while an additional line runs up Centre Street to turn east on Grand Street. Within the APE there are fire hydrants at the northeast, northwest and southwest corners of Grand and Centre Street. An additional hydrant is located on the east side of Centre Street near Broome Street. Centre Street from Broome Street to Grand Street is 386.2' long and around 75' wide.

Sanborn-Perris 1894 More detailed, this map shows a 6" pipe running down Centre Street and a 12" pipe running down Grand Street. Hydrants are the same as Robinson 1885. The Centre Market in the east half of Block 472 has "Manufactory of Paper Boxes on the 2nd and 3rd floors" and along the Centre Market facing Centre Street, narrow one-story structures (probably market/store fronts) lie directly against the larger structure, and appear to extend into the APE. Almost directly mid-block on the west side of Centre Street between Broome Street and Grand Street, two steam boilers are located on the sidewalk in front of a warehouse.

Bromley 1897: Centre Street between Broome and Grand Street is shown as 384.10' on the east side, 381.5' on the west side. No additional structures are shown abutting the Centre Market, as on the previous map. 6" pipes run down Centre Street and 12" pipes run down Grand Street. The APE is indicated as formerly within the Nicholas and Stephen Bayard East Farm.

Bromley 1902: Figures 5.1-17, 5.1-18 and 5.1-19. Lots, hydrants and utility pipes are virtually the same as on the Sanborn-Perris 1894 and Bromley 1897. A hydrant at the southeast corner of Grand Street and Centre Street is actually shown approximately 15' south of the corner. In the APE,

Centre Street is shown to be around 70' wide. The sidewalks on Centre Street are shown 12 to 13' wide south of Grand Street, and around ten feet wide between Grand and Broome Street.

Sanborn 1905: This map shows a much greater degree of detail. The APE is in the same basic layout, but now hydrants are shown at every corner of the intersection of Centre and Grand Street, two more hydrants on Centre between Grand and Broome Streets, one on the east side approximately two thirds down the block, and one on the west side between Lots 16 and 17. The former Centre Market that had occupied the east half of Block 472 is now a Police Headquarters. Water pipelines that run down Centre Street are 12" south of Grand Street and 6" north of Grand Street.

Bromley 1911: Figures 5.1-23. It is similar to Sanborn 1905.

Hyde 1913: The APE is similar to Sanborn 1905. Hydrants and water lines are the same, with the addition of a 12" salt water high pressure line running on Grand Street. A 4' by 2' 8" brick sewer line runs down Center Street, branching east on Broome Street. Trolley lines run as follows: one on Broome Street, one on Centre Street that continues north, one running up on Centre Street that turns onto Grand Street, and an additional line (Met. St. Ry. Co.) running on Grand Street.

Bromley 1916: The APE is very similar to Hyde 1913. Centre Street is shown to be around 75' wide and the sidewalks around ten feet wide.

Sanborn 1922/23: The APE is similar to Sanborn 1905. However, an extra hydrant is shown on the west side of Centre Street between Lots 16 and 17 and an additional 20" high-pressure water pipe is shown running on Centre Street. Centre Street is indicated to be 75' wide.

Bromley 1925: The APE is very similar to Bromley 1916 and Sanborn 1922/23.

Bromley 1932: The APE is unchanged from Bromley 1925.

Sanborn 1951: The APE is unchanged from Bromley 1925.

Bromley 1955: The APE is unchanged from Bromley 1925.

Bromley 1967: The APE is unchanged from Bromley 1925.

Bromley 1974: The APE is unchanged from Bromley 1925.

Sanborn 2001: The APE is unchanged from Bromley 1925.

Street Elevation Table:

Data Source (maps)	Broome x Centre Market	Broome x Lafayette	Grand x Centre Market	Grand x Lafayette	Centre North Side	Centre South Side
1865 Vielé	36.0'	31.0'	24.1'	22.3'	35.0'	20.0'
1885 Robinson	--	32.9'	23.0'	22.0'	30.9'	21.6'

1897-1974 Bromley (9 atlases total)	--	32.9'	23.0'	22.0'	30.9'	21.6"
Sanborn 1922/23	--	32'	22'	22'	31'	22'
2001 Sanborn	--	32.9'	23.0'	22.0'	30.9'	21.6"

Precontact Sensitivity:

The APE was once meadowland rising up towards a 15' knoll in the southwest corner of Block 472, within around 1,200 feet of a fresh water source (see Montresor 1766, Vielé 1865). The location would have been desirable during the precontact period due to its protected nature within close range of fresh water. However, the APE exclusively consists of the current Centre Street roadbed and sidewalks and the area has seen much disturbance. The lands were probably farmed since the 17th century (Stokes 1928:70), and during the 18th century while it was part of the Bayard Farm (Stokes 1928:70; Grim 1744; Holland 1757), after which the area was entirely developed (Taylor Roberts 1797; Dripps 1852) . The majority of the APE consists of an extant subway tunnel (originally the B.R.T. then B.M.T. Centre Street Loop, now the J/M/Z line) that runs beneath Centre Street, turning east under Kenmare Street to the north. The remaining APE consists of 5' areas on either side of the subway tunnel that are located under the surrounding sidewalks abutting the building lines. Overall, the earlier disturbances in the area make it unlikely that precontact resources remain, although the west side of the APE has a greater potential to hold resources, as it appears that fewer utilities were buried here, although the area is quite small. Therefore the APE is moderately sensitive for precontact resources which may lie between about six to ten feet below grade outside of the area of the existing subway tunnel.

Historical Sensitivity:

Documentation of the earliest occupation of the APE places it within a land tract administered by the Dutch West India Company called Bouwery No. 7, located south of current Broome Street and west of Bowery (Stokes 1928:70). Its first occupant was Evert Focken, who died before 1630, after which it was occupied by a Thomas Sanders, who was called "the mad smith" (hence the name "Smith's Hill") (Ibid., p. 70-72). This is probably the same hill referenced on Holland 1757 as "Bayard's Hill." Contracts were made to plant tobacco and construct a tobacco house, but there is no specific record of the existence or location of this structure or a residence. It cannot be discounted that a residence, farmhouse, or tobacco house fell within the APE.

This APE was located within the farmlands of Nicholas and Stephen Bayard (Stokes 1928:70; Grim 1744, Bayard Farm Map 1869), to the west of the "Bowery Road to Boston." The location of the Bayard residence (called the Bayard Mansion) appears to have been just east of the APE, in Block 473 (Stokes 1928:435). Constructed in 1735, rented out and used as a tavern from 1798 to 1805, the residence was demolished in 1821 (Stokes 1918:981; 1928 VI: 435). No farm-related structures are clearly shown on maps in the APE (although see

Grim 1744; Figure 5.1-2), but the APE does appear to cross what was once the main road that ran from Bowery to the Bayard residence (approximately Broome Street) (Figure 5.1-2; Stokes 1928:71; Grim 1744). The APE appears to fall within the fields or orchards associated with the farm. Yard scatter on the surface would not have survived, neither would have any traces of farmlands, gardens or orchards, due to later surface disturbances. But any shaft features such as old cellars, foundations, privies or wells may have survived at deeper, undisturbed levels. These features would have been associated with undocumented dwellings that had not been portrayed on historic maps but that may have existed from the beginning of the 17th century through the early 19th century, prior to development

During the brief period of British occupation from 1776 to 1783, maps show fortification walls running east-west approximately along the current location of Broome Street (British Headquarters Map 1782) that intersects with the APE at Centre Street. It appears these fortifications may cross the APE over the northern section of what is now Centre Street within Block 472. The knoll along the south side of the APE, between current Centre Market Place and Mulberry Street just north of Grand Street (seen in Hayward 1757; British Headquarters Map 1782) is shown with a fortified structure on top, but most likely lies outside of the APE. As the knoll appears to have been razed (cf. elevations, Vielé 1865; Robinson 1885), remains of these fortifications would not presently exist.

Blocks 234, 235 and 472 adjacent to the APE were intensively developed by the mid-19th century, but no structures fell within the APE (Dripps 1852). Rather, effects to the APE would have been from utility lines, water and sewer pipes, and intermittent local hook-ups that would have affected the APE between buried utilities within the roadbed or under the sidewalks and the structures they serviced. In particular, the entire east side of Block 472 was home to the Centre Street Market by the early 1830s (Hooker 1833; Mitchell 1846). The Bayard Farm Map (1869), suggests that Centre Street was widened to the east by around 25' over previously existing lots, but there is no indication on earlier maps that lots were developed and then razed in the current Centre Street roadbed, especially given the early development of the Centre Market (see below). At some point between 1865 and 1885, it appears that the land was leveled, particularly in the area of Centre and Broome Streets, where higher land was leveled off by about 4' (cf. street elevations, Vielé 1865; Robinson 1885). It is possible that structures intruded onto the APE along the east side of Centre Street near the end of the 19th century (Figure 5.1-9, Perris 1857; Sanborn-Perris 1894), but it is not likely that remains of these structures still exist, given they all appear to be insubstantial, one-story frame structures without basements. By the turn of the century (Sanborn-Perris 1894; Bromley 1897, 1902; Sanborn 1905), lots were in an arrangement similar to current lot configurations (Sanborn 2001). Lots were largely medium to light manufacturing or mixed commercial/residential use, with the addition of the Centre Market that operated until the beginning of the 20th century, when it became a Police Headquarters until recent times (for a more detailed history of Centre Market, see below).

The construction of the Centre Street Loop subway tunnel would have disturbed the majority of the APE, leaving only 5' strips of land beneath the sidewalks on either side of Centre Street against the building lines. This remaining area has also been disturbed by multiple utility lines. However, there may be a layer of fill over the area of the APE that may have

buried the original surface. As no 19th century development was present over the APE, only 17th or 18th century remains could exist here, if undocumented structures had been located in the APE. Only deeply excavated historical remains such as privies, foundations, cellars, or especially wells could exist, as surface remains such as yard scatter or fields would have been disturbed by later development such as street construction and utilities. As the closest water levels are shown to be around 30' below the surface (Borings C6-17 and C6-19, Raymond International, Inc., 1974), wells would have extended at least as far below grade.

By the 1830s, the Centre Market was as an L-shaped structure occupying most of the east half of Block 472 fronting directly onto the APE, bisected north-south by Centre Street (Hooker 1833; Colton 1836; Tanner 1836). By 1846, it was prominently located along the Harlem Railroad that ran up Centre Street, turning east onto Broome Street at the corner where the market was located (Mitchell 1846). It appears that narrow one-story structures once abutted the market, possibly intruding over what is currently the sidewalk on the east side of Centre Street, into the APE (Figure 5.1-9, Perris 1857; Sanborn-Perris 1894). The map that shows these structures shows more detail than any previous map, suggesting that although these structures may not have been substantial enough to merit recording on less detailed maps, they may have existed in earlier times. These structures were probably market stalls or other non-permanent commercial facilities. If they did intrude onto the APE, the effect was probably minimal, or if remains exist, they may have been destroyed through more recent intrusions of utilities under the sidewalk. Between 1902 and 1905, the large structure ceased to be used as a market. (Figure 5.1-18, Bromley 1902, 1905).

Several transportation lines including rail and horse and/or cable car lines were established in the 19th century on Centre, Grand and Broome Streets. By 1846, a transportation line was running north on Centre, turning east on Broome Street just past the Centre Market (Mitchell 1846). Dripps (1852) confirms this line was the Harlem Railroad. By 1856, transportation lines are indicated on Grand Street as well as Centre and Broome. By 1913, there were several lines still indicated: one on Broome Street, one on Centre Street that continues north, one running north on Centre Street that turns east onto Grand Street, and an additional line (Met. St. Ry. Co.) running on Grand Street.

The "Centre Street Loop" was a subway tunnel running under Centre Street turning east onto Kenmare Street and Delancey Street that would ultimately link Brooklyn with downtown Manhattan by way of the Williamsburg Bridge, planned by the Rapid Transit Commission and later used by the Brooklyn-Manhattan Transit (B.M.T.) Company (Engineering News 1910). It was completed via cut and cover construction in 1911 (Figures 5.1-20 through 5.1-23, Bromley 1911), after the city acquired the necessary lots between Broome and Spring Streets to form Kenmare Street, in order to extend Delancey to the west to meet Centre Street. The method of construction would have eliminated all potential archaeological resources within the tunnel area from the ground surface to the base of the tunnel.

According the Works Progress Administration (WPA) Project No. 665-97-3-32 Subsurface Conditions Map No. 73 (1939), the width of the subway tunnel beneath Centre Street on Block 472 and between Blocks 234 and 235 is from mid-sidewalk to mid-sidewalk (around 5-7' from the current building lines). The tunnel appears to be fairly uniform in width until

the intersection of Centre Street and Grand Street, where the tunnel widens by about 5' for about 5' in the middle of the intersection. There is also a slight widening on the east side of the intersection of Centre Street and Broome Street, and this is also where the tunnel curves onto Centre Street over Block 481 from the intersection of Kenmare Street and Mulberry Street. On Centre Street, the four-track subway line is shown as a rectangular tunnel reaching a depth of 25' below the surface. Utility lines on the east side of Centre Street are either above or within the tunnel, one the west side of Centre Street, a sewer line and high pressure water duct are buried around 12' below the surface between the subway tunnel and the building line. Centre Street itself is listed as having legally opened on May 4, 1836, and was constructed of sheet asphalt on 6" of concrete in 1910 (Ibid.).

Grand Street legally opened in 1819, made of granite block on 6" of concrete in 1919 (WPA Subsurface Conditions Map No. 73, 1939). Bundles of utilities including telephone, gas, electric, and water lines are present on either side of the street but were shallow (about 5' below the surface). A sewer line, possibly ten to 12' below the surface, is shown running down the east side of Centre that turns east onto the north side of Grand Street (Ibid.). Broome Street was legally opened in 1795, made of granite block over 6" of concrete in 1927. The subsurface of the streetbed on either side was filled with utilities including electric, gas and water lines plus a postal cable. These utilities were fairly spread out, reaching a maximum depth of 5'. A sewer was present under the street's centerline approximately 20' below the surface (Ibid.).

Specifically, the possible areas of the APE along Centre Street that were not disturbed by the existing subway tunnel are roughly 5' strips of sidewalk abutting the building lines on both sides of Centre Street within Block 472 and the northern 60' of Centre Street between Blocks 234 and 235. There are no actual lots within the APE disturbed by the tunnel. However, sidewalk vaults, outside access ways to buildings with basements that could affect the APE, are not shown on the available maps for any of the streets.

MTA/SYSTRA Consulting maps show the base of the existing tunnel to be around 30' below ground surface at Broome and Centre Street and about 20' below ground surface at Grand Street (extrapolated) and Centre Street (MTA/SYSTRA 2001, Drawing No. CT-514). One soil boring by the Works Progress Administration (ca. 1935) at the intersection of Centre Street and Grand Street shows a 5' layer of fill over a 33' layer of coarse sand. Two nearby soil borings at the intersection of Kenmare and Mott Street (1.20.16) and the intersection of Kenmare and Mulberry Street (1.20.15) show fill levels of 4' and 6', respectively, on top of what appear to be natural deposits of sand. As mentioned earlier, it appears the northern section of the APE was leveled by around 4' in the later 1800s, thus the natural deposits are not necessarily the original surfaces (cf. street elevations, Vielé 1865; Robinson 1885). Bedrock (micaceous schist) is located 112.6' below the surface in WPA Boring 1.20.9 (on Kenmare between Bowery and Elizabeth Streets), and the closest water levels (around 30' below surface) are recorded in more recent borings located on Chrystie between Delancey and Rivington Streets (Borings C6-17 and C6-19, Raymond International, Inc., 1974), where the bedrock is slightly lower (see MTA/SYSTRA 2001, Drawing No. CT-514).

As mentioned earlier, there are no existing lots within this section of the APE. It appears, however, that there were structures over the current sidewalks on the east side of Centre Street between Broome Street and Grand Street that were associated with the Centre Market (Figure 5.1-9, Perris 1857; Sanborn-Perris 1894). Although these structures are shown on only a few maps, it cannot be discounted that the structures may have existed for a longer period of time and were not portrayed on other maps. Nonetheless, these one-story structures were probably not very substantial in nature and any effect they might have had on the APE is very minimal and likely to have been destroyed by shallow utilities under the sidewalk.

Previous construction of the original subway tunnel within the APE has eradicated any precontact or historical remains within its path. However, there is the possibility that the lower portions of more deeply buried historical features associated with undocumented 17th or 18th century structures such as deep privies, foundations, or wells could have survived in beneath the subway. Given the current depth of the subway tunnel at 30 to 20' below the current surface and the probable historic surface of no less than 5' below the surface in the southern (but not northern) section of the APE, it is remotely possible that deeply buried archaeological resources exist beneath the tunnel, but again, this is only a remote possibility. 19th century features are unlikely to be found in this APE, as there was no 19th century development on the APE.

In sum, prior to the construction of the Centre Street Loop subway tunnel, the Centre Street streetbeds had been unaffected for some time. At some point, the block was leveled in the northern section, near Centre Street and Broome Street. Overall, only the five to seven foot wide areas beneath the sidewalks against the building lines that were unaffected by the tunnel construction or utility lines may still have archaeological potential. As of the 1930s, the utilities on the east side of Centre Street were all shallow, possibly within the four to six foot deep fill zone, while utilities on the west side affected most of the remaining area between the tunnel and the building line to a depth of around 12'.

The east side of Centre Street beneath the five to seven foot wide section of the sidewalk adjacent to the building line has the most potential for archaeological resources. Shallow utilities were installed in a layer of fill, that may have left archaeological resources intact which could historic remains from the 17th century Bouwery No. 7 farmstead (after 1625), the Bayard Farm (1735 to 1784) and the British Occupation (1776 to 1783) up to but not including 19th century development (Stokes 1928:70, 435; British Headquarters Map 1782; Hooker 1929). There may have been features such as deep wells, cisterns or privies, the lower levels of which could still survive beneath current grade. Recent disturbances are estimated to be relatively deeper on the west side of Centre Street (in the five to seven foot wide strip beneath the sidewalk between the building line and subway tunnel), given utility disturbances, namely the sewer line. It is most likely that if archaeological resources exist on the west side of Centre Street within the APE, they would be the truncated remains of deeply buried historic features such as privies or wells from undocumented 17th or 18th century structures which may have once stood there. In conclusion there is also the potential for 17th through 19th century wells and privies and possible Revolutionary War period fortification walls to exist from the surface down to a maximum depth of 35' below grade.

5.7.2 Site File Search Results, NYCLPC, NYSOPRHP and NYSM

SITE FILE SEAR[illegible] RESULTS

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

~~Village~~ City 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

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 SAPO
4064 X		1- A061.01.1271 X	was that NYAC did a
7248 X		~~2- A061.01.0014 D03~~	survey in the 1970's
		3- A061.01.0623 X D023	2nd found historic Remains.
		4- A061.01.06763 X	no other info was found)
		~~5- A061.01.0001~~	
	209 Water St. South Street Seaport HP	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 @ SHPO		A061.01.01286 X	
		A061.01.0541 X	
		A061.01.00542 X	
		A061.01.09531 X	

ATIONAL REGISTER E. GIBLE and LISTED ___X___ Eligible ___ ___1___ Listed ___ ___X___ Building Inventory

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

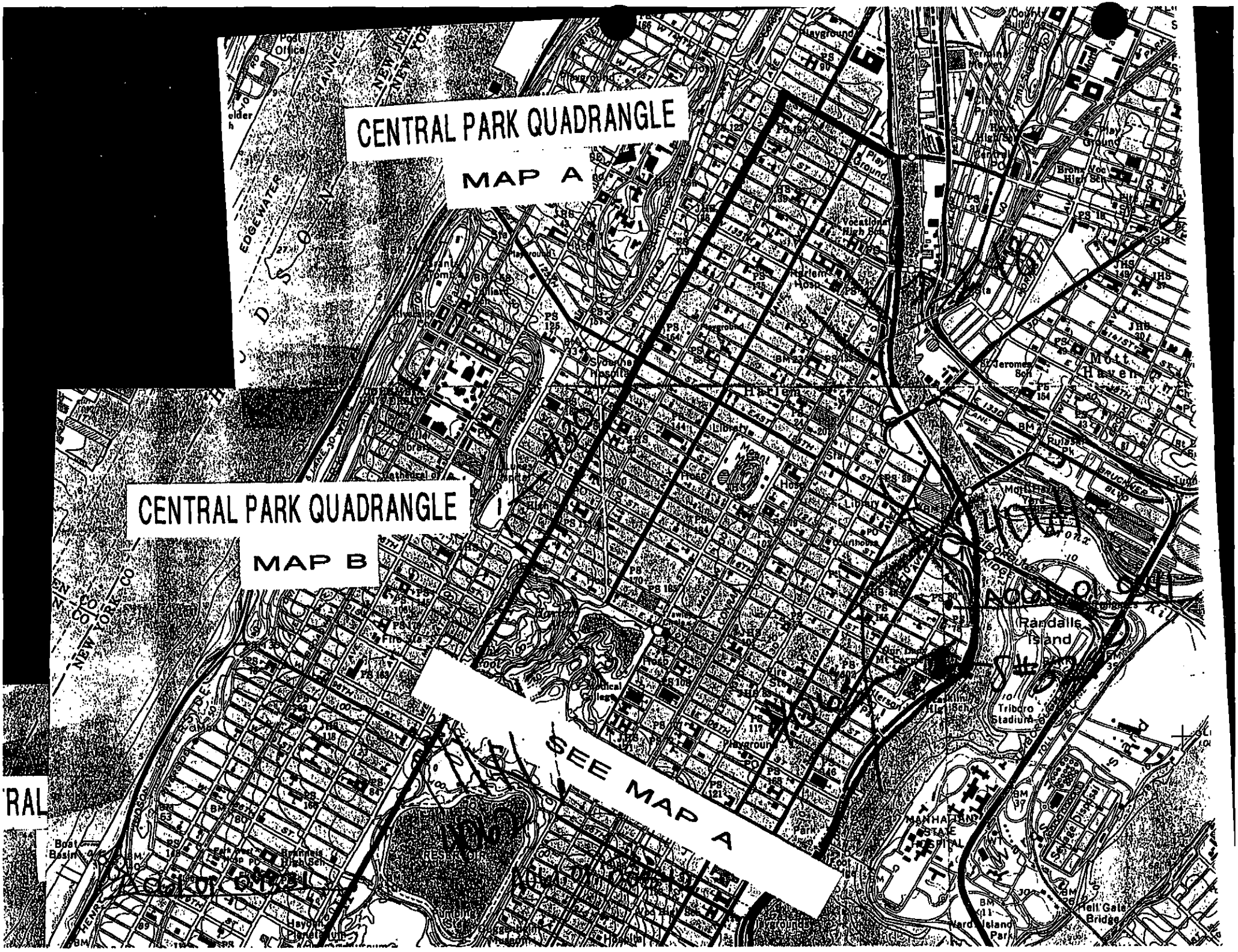
EVIOUS SURVEYS

<17 previous surveys w/in Radius>

8 Westside Highway Program – 1983
William O. Hersey – 1963 Castle Clinton at the Battery
Broad Street Financial Center Greenhouse January 1985
X
64th Pearl Street: 17th Landfill Arnold Pickman & Nan Kathschild May 1981
Stone Street Historic District 9/17/81 NYC Landmarks Pres. Comm. Tracker
9 Barclays Bank Site – 100 Water St. Berger – 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block. Kardon & Larrabee – Aug. 1991

5 209 Water St. – Schuyler – ? Date
East River Roads. New York Harbor Collection Kardon & Larrabee October 1977
10 Sheridan Square – 1983 – Rutgers University
Lower Eastside Service Center – Louis Berger Jan '98
27 750 Sixth Ave. HPI February 1998
Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1989 / December 1989
32 East River Plaza HPI Sept. 1988
Stone Street Historic District NYC Landmark Pres. Comm. February 1998

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


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A
Harlem
Randalls Island
Triboro Stadium
Manhattan State Hospital
Hell Gate Bridge
Ward Island Park
Mott Haven
Bronx
Boat Basin
Riverside Park
Hamilton High Sch.
Vocational High Sch.
Harlem Hosp.
Jerome Sch.
Fire Sta.
Post Office
Playground
Library
Medical College
Park
Pool
Tennis Courts
Reservoir
Planetarium
Grant Tomb
Cathedral of St. John
Fordham Hospital
Manhattan
Bronx
Queens
Randalls Island
Ward Island
Harlem River
East River
Hudson River
Spuyten Duyvil
Kill Van Kull
Newark Bay
Upper New York Bay
Lower New York Bay
Jersey City
Hoboken
Weehawken
Edgewater
Fort Lee
Fort Lee Ferry
Fort Lee Historic Park
Palisade Interstate Park
Palisades
Palisades Interstate Park
Henry Hudson Drive
Riverside Drive
Broadway
Amsterdam Ave.
Lenox Ave.
Fifth Ave.
Madison Ave.
Park Ave.
Lexington Ave.
Third Ave.
Second Ave.
First Ave.
Eighth Ave.
Ninth Ave.
Tenth Ave.
Eleventh Ave.
Twelfth Ave.
West Side Highway
Henry Hudson Parkway
Harlem River Drive
Major Deegan Expressway
Triborough Bridge
George Washington Bridge
Hell Gate Bridge
125th St.
116th St.
110th St.
96th St.
86th St.
72nd St.
59th St.
42nd St.
34th St.
23rd St.
14th St.
Canal St.
Houston St.
Delancey St.
Grand St.
Chambers St.
Fulton St.
Wall St.
Battery Park
Ellis Island
Liberty Island
Statue of Liberty
Governors Island
Brooklyn
Queens
Staten Island
Jersey City
Hoboken
Weehawken
Edgewater
Fort Lee
Palisades
Palisade Interstate Park
Boat Basin
Riverside Park
Hamilton High Sch.
Vocational High Sch.
Harlem Hosp.
Jerome Sch.
Fire Sta.
Post Office
Playground
Library
Medical College
Park
Pool
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Cathedral of St. John
Fordham Hospital
Mott Haven
Bronx
Randalls Island
Triboro Stadium
Manhattan State Hospital
Hell Gate Bridge
Ward Island Park
Harlem
Harlem River
East River
Hudson River
Spuyten Duyvil
Kill Van Kull
Newark Bay
Upper New York Bay
Lower New York Bay
Henry Hudson Drive
Riverside Drive
Broadway
Amsterdam Ave.
Lenox Ave.
Fifth Ave.
Madison Ave.
Park Ave.
Lexington Ave.
Third Ave.
Second Ave.
First Ave.
Eighth Ave.
Ninth Ave.
Tenth Ave.
Eleventh Ave.
Twelfth Ave.
West Side Highway
Henry Hudson Parkway
Harlem River Drive
Major Deegan Expressway
Triborough Bridge
George Washington Bridge
Hell Gate Bridge
125th St.
116th St.
110th St.
96th St.
86th St.
72nd St.
59th St.
42nd St.
34th St.
23rd St.
14th St.
Canal St.
Houston St.
Delancey St.
Grand St.
Chambers St.
Fulton St.
Wall St.
Battery Park
Ellis Island
Liberty Island
Statue of Liberty
Governors Island
Brooklyn
Queens
Staten Island


SEE MAP C
S#27
S#25
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0
DEPTH CURVES
SHORELINE SHO
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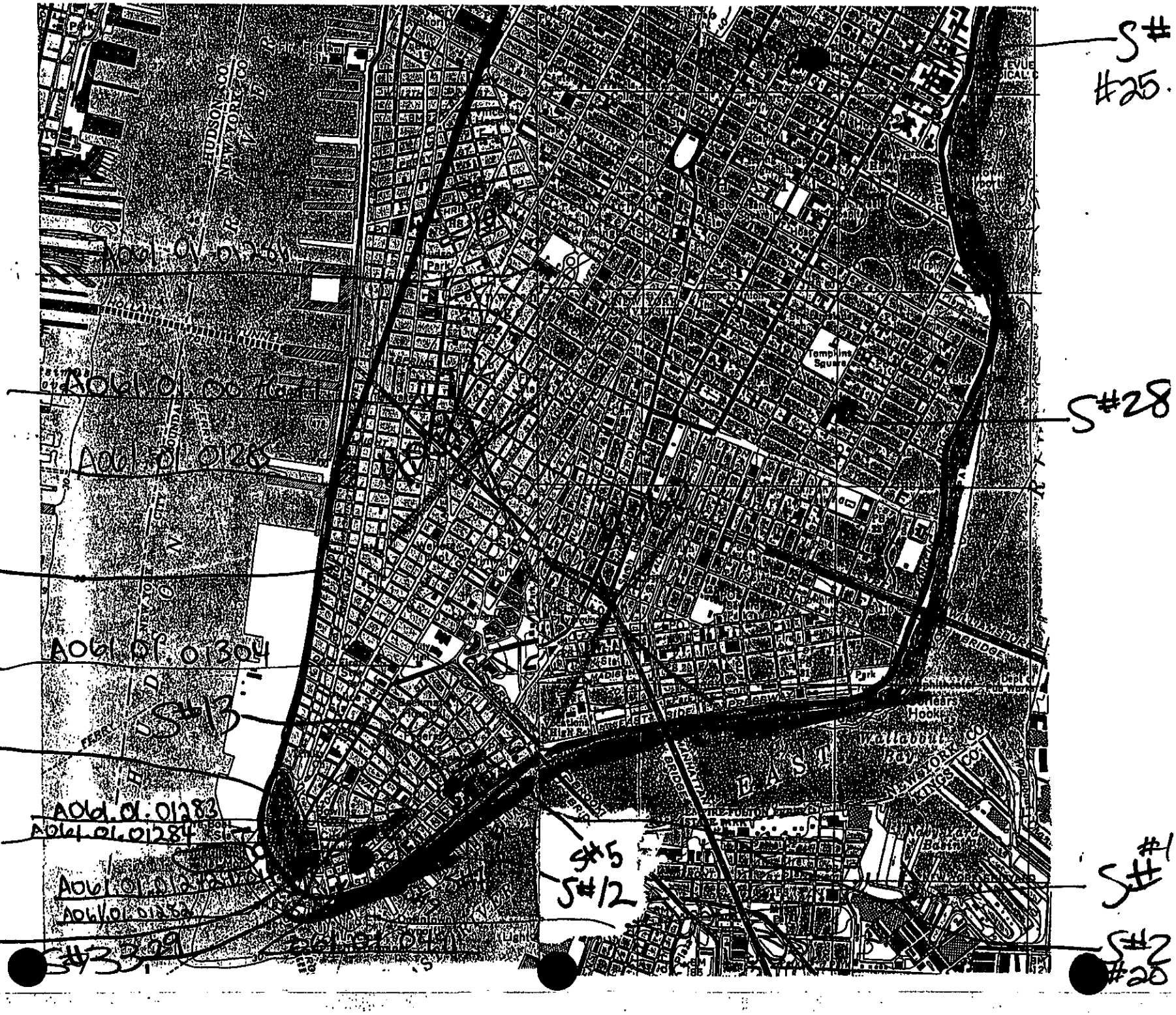
FOR SALE BY
OLDER DESCRIBING


CENTRAL
WEST NEW YORK
NEW YORK CITY BOUNDARY
LINCOLN TUNNEL 2.9 MI.
200 000 FEET
(N. Y.)
BROOKLYN-BATTERY TUNNEL 4.2 MI.
N.J. TURNPIKE 4.4 MI.
495
Boat Basin
Brannels High Sch
Hayden Planetarium
American Museum of Natural History
Metropolitan Museum of Art
N Y Historical Society
PS 199
Pharmacy College
Playground
Fire Sta
LINCOLN CENTER
FORDHAM UNIV
Roosevelt Hosp
Coliseum
Columbus Circle
Park
Carnegie Hall
The Lake
The Mall
Frick Collection
Library
Hospital
Aviation Trades High Sch
SEE MAP C
ROCKEFELLER CENTER
St Bartholomew Ch
Times Square
Main Library
Chrysler Bldg
Madison Sq Garden
Herald Sq
Tunnel
UNITED NATIONS
Castle Point
NEW JERSEY
NEW YORK
S#27


S# #25.
S#28
S#8
A061.01.01304
S#13
Area of S#4 (Castle Clinton)
A061.01.01283
A061.01.01284
S#5
S#12
S#1
#15
S#2 #20
Tompkins Square
Wallabout Bay
EAST
HUDSON CO
NEW YORK CO
KINGS CO
WILLIAMSBURG BRIDGE
Park

5.7.3 Soil Boring Logs

From the northern section of the APE heading south:

Boring: C6-20
Raymond International, Inc. 1974
Location: Rivington Street and Chrystie Street
Elevation at grade: Not provided
0-10.5' Brown medium/fine sand, concrete, brick and cinders fill.
10.5-28' Brown medium/fine sand, little gravel, little silt.
28-37' Dark reddish brown course/sand, some fine gravel, little silt.
No water observed.

Boring C6-19
Raymond International, Inc. 1974
Location: Chrystie Street, between Rivington Street and Delancey Street
Elevation at grade: Not provided
0-3' Fill.
3-13' Reddish brown coarse, medium fine sand, little silt, little medium/fine gravel.
13-28' Gray brown coarse medium/fine silt, fine silt, some medium/fine gravel.
23-28' Reddish brown coarse, medium/fine sand, little silt, little fine gravel.
28-33' Reddish brown medium/fine sand, little silt.
33-35' Reddish brown fine sand, some silt.
Water table at 32.5'

Boring C6-17
Raymond International, Inc. 1974
Location: Chrystie Street, between Rivington Street and Delancey Street
Elevation at grade: Not provided
0-30.2' Miscellaneous sand, gravel and brick fill.
28' Water table.
Note: Installed well point to 30'.

Boring C6-15
Raymond International, Inc. 1974
Location: Chrystie Street and Delancey Street
Elevation at grade: 140.00'
0-9' Miscellaneous fill.
0-15' Reddish brown medium fine sand, little silt.
15-28' Coarse, medium, fine sand, fine silt, little fine gravel..
28-37' Brown medium fine sand, little silt.
No water observed.

Note: The following soil borings were done by the Works Progress Administration in the mid-1930s and originally used the Manhattan Borough Datum, where 0' elevation is 2.653 above sea level at Sandy Hook. 100' has been added to reach the NYCT datum.

Boring 1.20.9
Works Progress Administration, ca. 1935
Location: Chrystie Street and Delancey Street
Elevation at grade: 139.6'
0-65' Sand.
65-75' Clay.
75-90' Sand, some clay.
90-100' Sand, clay.
100-125' Sand with clay.
125-135' Sand, clay, gravel.
135-141' Sand, bedrock at base.
141-425.1' Micaceous schist.

Boring 1.20.18
Works Progress Administration, ca. 1935
Location: Bowery and Delancey Street
Elevation at grade: 137.4'
0-6' Filled ground.
6-30' Coarse sand.
30-44' Fine sand.

Boring 1.20.4
Works Progress Administration, ca. 1935
Location: Kenmare Street, between Bowery and Elizabeth Street
Elevation at grade: 137.8'
0-5' Sand.
5-25' Fill, clay, sand, gravel.
25-60' Sand.
60-100' Sand, gravel.
100-112.6' Sand, bedrock at base.
112.6-131.6' Micaceous schist (bedrock).

Boring 1.20.17
Works Progress Administration, ca. 1935
Location: Kenmare Street and Elizabeth Street
Elevation at grade: 136.6'
0-10' Filled ground.
10-30' Fine sand.

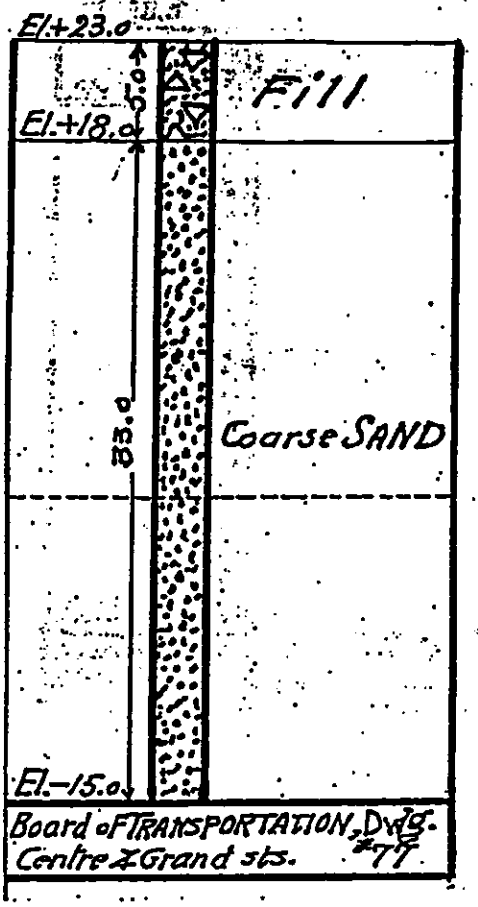
Boring 1.20.16
Works Progress Administration, ca. 1935
Location: Kenmare Street and Mott Street
Elevation at grade: 138.5'

0-4' Filled ground.
4-30' Coarse sand.

Boring 1.20.15
Works Progress Administration, ca. 1935
Location: Kenmare Street and Mulberry Street
Elevation at grade: 133.9'
0-6' Filled ground.
6-28.4' Sand.

Boring 1.14.6
Works Progress Administration, ca. 1935
Location: Centre Street and Grand Street
Elevation at grade: 123.0'
0-5' Fill.
5-38' Coarse sand.

1.14.6



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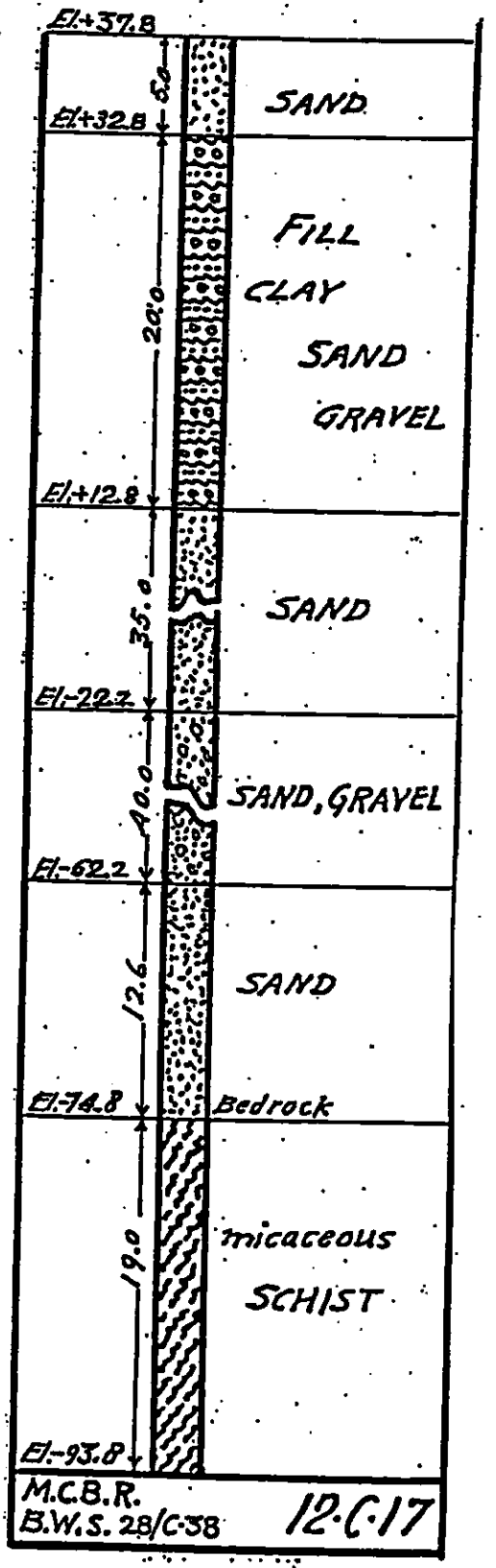

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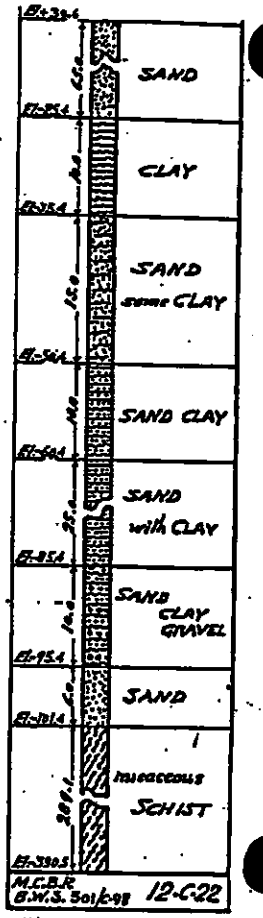
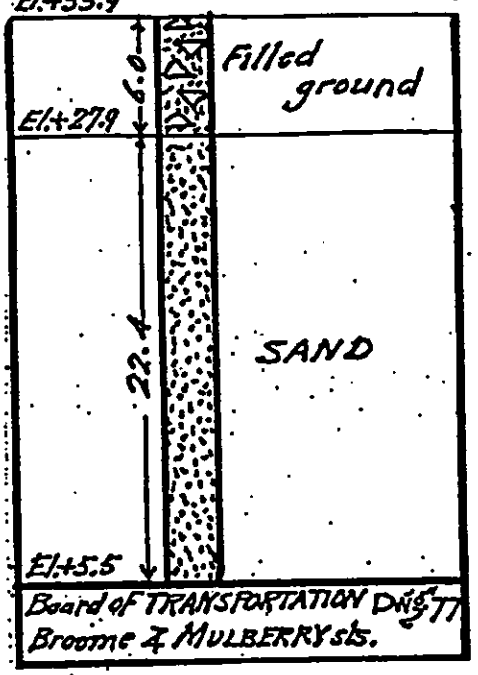


1.20.15



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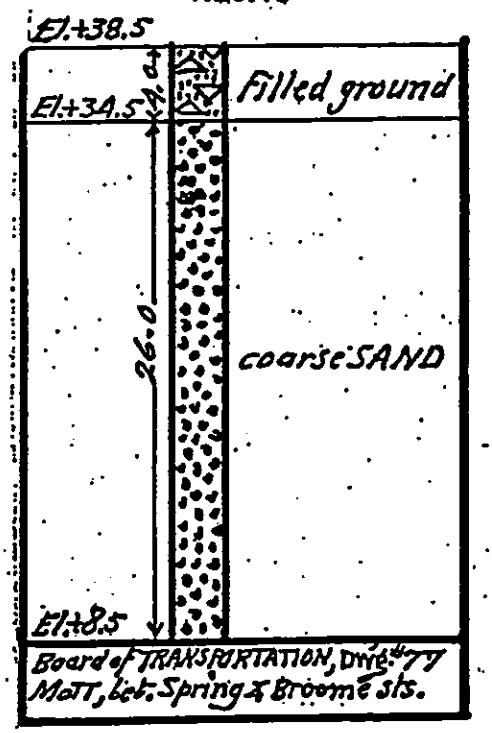

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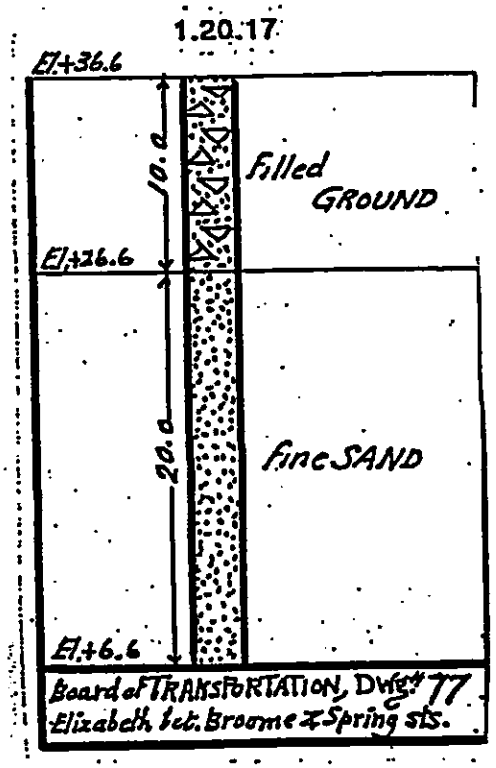

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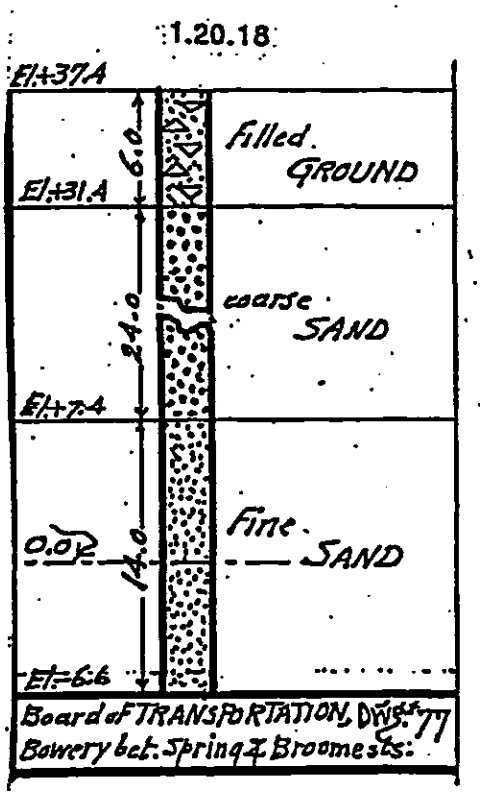

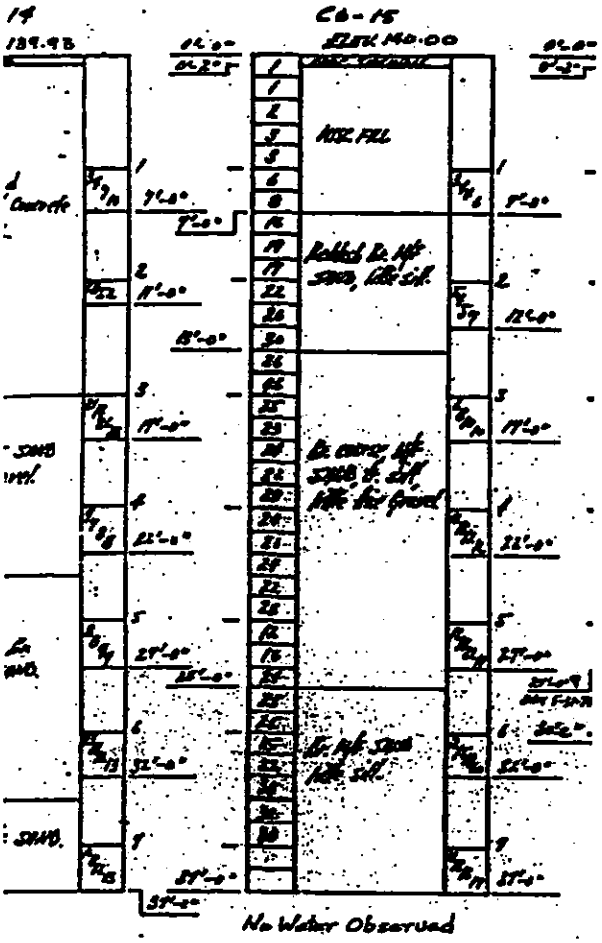

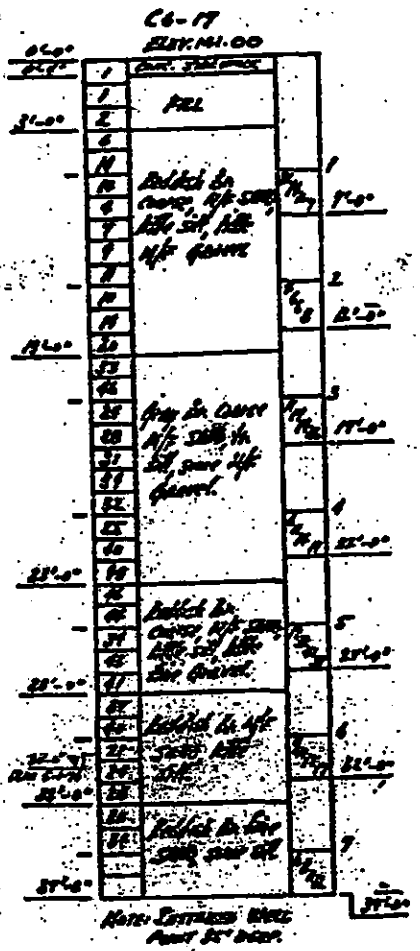

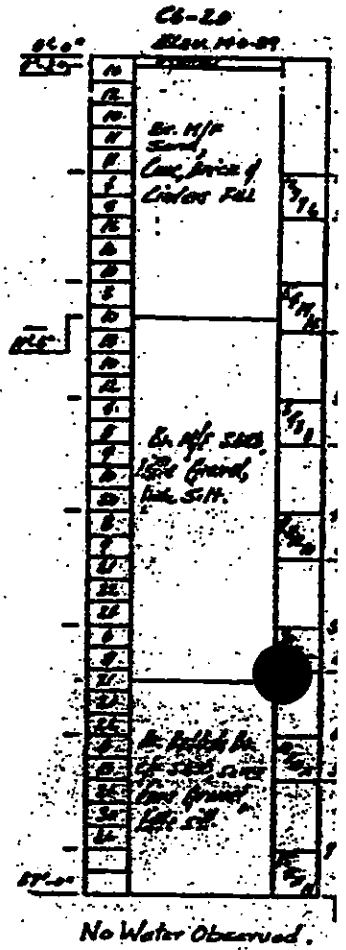

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6.0 WATER STREET ALIGNMENT ARCHAEOLOGICAL RESOURCE EVALUATION

6.1 EAST HOUSTON STREET TO STATE STREET

6.1.1 Study Area Description

Because there are several different alignments under consideration in this area, the northern section of the APE was conservatively defined to include the area between Chrystie and Forsyth Streets, and from East Houston to Delancey Streets, from building line to building line (this section is discussed in detail in Section 4.5). The Shallow Chrystie Option runs on Chrystie Street from the south side of Delancey Street south to Canal Street, from building line to building line and is included in this chapter. A second option, the Forsyth Street Option, would allow the tunnel to run beneath Sara Delano Roosevelt Park or Forsyth Street, between Delancey and Canal Streets. This second alternative was assessed in Section 4.6, *Forsyth Street Alignment, Delancey to Canal Street including Sara Delano Roosevelt Park.*

At Canal Street, the APE shifts slightly to the west to Bowery, crossing much of Block 289 (combined with Block 290). The APE then runs south down Bowery, from building line to building line, to St. James Place. Included in the APE is all of Chatham Square, formerly Kimlau Square, which includes a section of the Park Row streetbed and sidewalks as far south as the southern boundary of Worth Street and north to the start of East Broadway at Catherine Street. The APE continues south down St. James Place, from building line to building line, until it merges with Pearl Street, then continues south on Pearl Street until it reaches Fulton Street. At the Pearl Street and Fulton Street intersection, the APE is widened to encompass a large triangular vacant area of streetbed, that includes the Fulton Street roadbed between the west side of Pearl Street and the east side of Water Street. The APE then runs down Water Street south to State Street. The existing building line is consistently used as the outer boundaries on all roads (Photographs 6.1-1 through 6.1-37).

Most construction north of Peck Slip would be accomplished using an EPBM, or soft soil mining, and south of Peck Slip, mining through rock would be needed. Stations and other features would require cut-and-cover construction.

Although there is an existing subway tunnel beneath Chrystie Street between Delancey and Canal Streets, there is the potential for effects to occur outside of the existing tunnel that may affect potential resources where additional vent shafts or new tunnel construction may be required. Therefore, the entire Chrystie Street roadbed, from building line to building line, is included in this APE.

6.1.2 Existing Conditions

6.1.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

According to Grumet the very southern tip of Manhattan was called Kapsee in the 17th century (Grumet 1981:68). This was described as a ledge of rocks at the southernmost point of Manhattan Island, probably in the vicinity of what is now Battery Park (Ibid.:17). To the north, the landform termed Ashibic was probably a narrow ridge or ancient cliff north of Beekman Street in Lower Manhattan, that was bounded by marsh to the south (Ibid.:3). In addition, "Catiemuts" was the term probably used to describe a "fort or hill located near Pearl Street and Park Row," also several blocks west of the project site (Ibid.:8).

No precontact sites were identified within the project site. However, NYSM Site #4060 was reported northeast of the project site somewhere on the east side of Manhattan near the Manhattan Bridge. It was simply described as an unnumbered village on Arthur C. Parker's map, with no detail of age, location, or size (see Appendix 6.1.7.2).

The preservation of precontact sites in an urban environment is rare, because precontact deposits tend to be shallowly buried in non-alluvial environments and are vulnerable to disturbance from historical land use and development. This is particularly true in Lower Manhattan, where intensive development has occurred for more than three hundred years. Despite this, some precontact material has been recovered in recent years from archaeological excavations in Lower Manhattan. For example, in 1980 during the excavation of Stone Street, as part of the Staadt Huys block, aboriginal pottery and lithics were found in the lowest levels of the excavation (Baugher-Perlin et al. 1982:12). In the later Broad Street field investigation led by Joel Grossman, an *in situ* contact period feature was found in direct association with the Dutch West India storehouse (Karen Rubinson, personal communication to Cece Saunders, June 27, 1989). These artifacts are evidence of Native American occupation, but they do not represent habitation or midden sites with significant research potential.

When assessing site potential for Native American resources, archaeologists rely on several indicators: past environmental features of the site landscape, ethnographic accounts, published archaeological reports, and predictive models based on precontact settlement pattern data. Ethnographic accounts and archaeological material document the presence of Native Americans in Lower Manhattan. As reported in Bolton, Skinner and Parker's works, the southern tip of Manhattan, at the confluence of two major water systems, was probably exploited by pre-Colonial inhabitants for shellfish harvesting and perhaps even habitation (Bolton 1972; Skinner 1919; Parker 1920). West of the APE near Pearl Street, where the c.1600 shoreline ran, early chroniclers reported abundant shellfish remains and speculated that the area functioned as a canoe landing (Geismar 1986:7).

Archaeological Potential

The following discussion of the Water Street Alignment corridor assesses potential precontact sensitivity from Delancey Street at the north to Whitehall Street at the south (the portion of the APE between East Houston and Delancey Street is discussed in Section 4.5).

Chrystie Street from Delancey Street to Broome Street is depicted by Viele as meadowland situated about half a mile northeast of fresh water at the Collect Pond prior to historical development (Viele 1874). As such, prior to development, it was probably moderately sensitive for precontact resources. An analysis of soil borings completed in this area suggests that there is still the possibility that sensitive precontact strata exist beneath the fill (below six to 16') throughout this section of the APE, excluding the location of the existing subway tunnel and utility lines (Appendix 6.1.7.1).

Chrystie Street from Broome Street to Grand Street is depicted by Viele as meadowland situated about half a mile northeast of fresh water at the Collect Pond prior to historical development (Viele 1874). As such, prior to development, it was probably moderately sensitive for precontact resources. Soil boring logs suggest that if precontact resources were ever deposited within this section of the APE, they would now lie below four to 13' of fill, outside of the areas of prior effects by the Chrystie Street Connection subway tunnel and utility lines (Appendix 6.1.7.1).

Chrystie Street from Grand Street to Hester Street was also depicted as meadowland, not far from fresh water (Viele 1874). Like the rest of the APE on Chrystie Street, this APE has a moderate potential for precontact resources. Soil boring logs suggest that if precontact resources were ever deposited within this section of the APE, they would now lie below three to four feet of fill on the west side of the street and below 11' and 19' of fill on the east side of the street, outside of the areas of prior effects by the Chrystie Street Connection subway tunnel and utility lines (Appendix 6.1.7.1).

Chrystie Street from Hester Street to Canal Street has a moderate potential for precontact resources given its level topography and proximity to fresh water, as indicated on maps depicting predevelopment topographic conditions (Viele 1874). The subsurface data suggests that if precontact resources were present here, they would be disturbed both in the center of Chrystie Street and on its western side, where a deep sewer tunnel runs below relatively shallow fill levels (the fill extends to five feet, while the tunnel is at 12'). However, the east side of the road may be potentially sensitive below the deeper fill deposits recorded that extend to between 13' and 16' below grade (Appendix 6.1.7.1).

Bowery between Bayard and Division Streets Early topographic maps show this area as flat meadowland located about four blocks away from the nearest mapped fresh water source (Viele 1874). Soil borings indicate there is about 10.6' of fill below grade within the streetbed, and subsurface utilities are fairly shallow, with the exception of a deeper sewer pipe in the center of the street (Appendix 6.1.7.1). Therefore, outside of the existing section of the Second Avenue Subway tunnel, this APE may be sensitive for precontact resources below the depth of fill.

Chatham Square appears on historic maps as a gentle slope, located several blocks from the nearest mapped water course (Viele 1874). As such, it is considered moderately sensitive for precontact period resources. However, the lack of soil borings makes it difficult to assess current subsurface conditions. Since 1885, the elevations have not appeared to have changed substantially. The only real deviation observed is at East Bowery and Chatham Square where the elevation dropped from 35.8' in 1885 to its current 34.9' (Appendix 6.1.7.1). This suggests that if precontact resources did once exist in this area, there is the potential for them to still exist outside of and below the locations of utility lines.

St. James Place between James and Madison Streets is characterized on predevelopment topographic maps as meadowland situated just one block north of a stream that ran from the Collect Pond, a fresh water source, to the East River (Viele 1874). The close proximity of all of these resources would have made it an attractive site for precontact habitation. Soil borings taken in this area indicate that there is fill with sand, gravel, and brick from the surface to 12.5' below grade and that this section of the APE could be potentially sensitive for precontact resources below the fill (Appendix 6.1.7.1).

St. James Place at Madison Street was shown as meadowland situated adjacent to a stream that ran from the Collect Pond, a fresh water source, to the East River (Viele 1874). The close proximity of all of these resources would have made it an attractive site for precontact habitation. Soil borings taken in this area indicate that there is fill with sand, gravel, and brick from the surface to 19' below grade. However, these would be inundated due to the shallow water table at 14.6' below grade. Therefore, while this section of the APE may have a moderate potential for precontact resources, it appears that they would be immersed.

St. James Place between Madison and Pearl Streets is depicted as meadowland with a watercourse draining the Collect Pond running just north of the block (Viele 1874). Its proximity to fresh water and the nearby East River would have made it an attractive location for precontact habitation. A soil boring taken in this vicinity shows 14.6' of fill below grade, with the water table located at 17.4' below grade, suggesting there may be potential sensitivity beneath the fill, or below 14.6' below grade (Appendix 6.1.7.1).

Pearl Street from its junction with St. James Place to Peck Slip was directly on the East River shoreline at the time of European contact. It is possible that precontact encampments are located along this section of the contact period shoreline. Therefore, this area has a moderate sensitivity for precontact cultural resources. Boring logs indicate that just south of St. James Place there is 19.5' of fill underlain by brown course sand and gravel, with the water table encountered directly below the fill at 19.8' (Ibid.). Therefore, if precontact resources were located below the fill here, they would be submerged.

A boring taken beneath the Brooklyn Bridge Ramp just north of Dover Street indicates fill from the surface down to nine feet below grade, while the water table was reported at 20.2' below grade. Therefore, this section of the APE may be sensitive for precontact period resources below the nine feet of fill.

Another boring taken from the west side of Pearl Street, directly north of Peck Slip reported brick fill from the surface down to 21' below grade, with the water table located at 16' below grade. Again, if precontact resources existed beneath the 21' of fill, they would be inundated (Appendix 6.1.7.1).

In summary, for this section of the APE, potential precontact resources may lie beneath fill which was reported from the surface down to between 19.5' and 21' below grade. If potential resources extend another five feet below this, then they may be located between 19.5' and 26' below grade.

Pearl Street between Peck Slip and Beekman Street was directly on the East River shoreline at the time of European contact and may have been at the top of a bluff. Soil borings taken from this area show, from north to south, 15.5' and 15' of fill below grade, respectively. The water table was observed at 13.5' and 18' below grade respectively. Therefore, there is a possibility that precontact deposits exist beneath the ca. 15' of fill here, but if they do, they may be inundated near Peck Slip.

Pearl Street between Beekman Street and Fulton Street was depicted on early topographic maps as fast land, with the historic period shoreline running directly to the south and east, along what are now Water and Fulton Streets. The original topography of this APE was pasture/meadow land sloping downhill toward the river. An inlet ran along the course of what is now Peck Slip to the north and extended to an inland salt water pond. Soil borings show 18.5' of fill in this section of the APE, suggesting that levels sensitive for precontact resources may lie below this depth.

Fulton Street between Pearl Street and Water Street was mostly land under water at the time of European contact. Fulton Street near Pearl Street was elevated above the shoreline and may have been habitable. Therefore, this section of the APE is considered potentially sensitive for precontact cultural resources. Although the remainder of the APE was land under water at the time of European contact, prior to this there may have been sections that were exposed and habitable during the precontact period. These areas are now buried beneath layers of historical fill, introduced in the 18th century to allow for the creation of Fulton Street where Beekman's Slip once lay. While previously inundated areas may be flagged as potentially sensitive, historic dredging at Beekman's Slip most likely compromised precontact potential (Appendix 6.1.7.1). Therefore, only the section of Fulton Street at Pearl Street is considered potentially sensitive for precontact resources.

Water Street between Fulton Street and State Street is depicted on historic maps as outboard of the East River shoreline (Viele 1874). Despite this, there may have been times over the past several thousand years when water tables were lower and these areas were visible on the landscape. These "drowned shorelines" are a topic of research interest to archaeologists who postulate that precontact peoples would have been exploiting these areas and, therefore, their potential archaeological sensitivity should be addressed.

Previous research by Dennis Weiss on reconstructing Paleo-shorelines in the metropolitan New York area concluded:

> *The optimal evidence desired for the determination of past shoreline positions, in the New York-New England coastal zone, is the presence of tidal marsh peat lying immediately above bedrock or till....As a result of the absence of peat, the first or lowermost (deepest) occurrence of organic silt was used to mark former shoreline positions.* (Weiss 1988:3)

Weiss determined approximate estuarine and shoreline boundaries along sections of the Hudson River, his area of study, throughout the precontact period, flagging as potentially sensitive those areas that were between 20' and 30' *above* the estuarine surface at lower sea level (Weiss 1988:5). He concluded that ridges and sheltered coves would have been the preferred habitation locations.

Following deglaciation around 12,000 years ago, the water table slowly started to rise. Paleo-Indians and subsequent Early Archaic peoples occupying the region at this time had a demonstrated preference for upland and inland sites, with an economy based largely on hunting and gathering of interior food sources (Lavin 1988:104). Therefore, it is highly unlikely that low-lying sections of the project site, such as those in Lower Manhattan that may have been exposed but were subsequently inundated, would have hosted extensive occupations from either of these cultural periods. Furthermore, no precontact shell middens in the New York area have been dated to this period, so none would be anticipated along the contact period shoreline (that falls within the APE) in Lower Manhattan.

During the Paleo-Indian and Early Archaic time periods, shellfish beds were primarily located offshore at least several miles south of the project site. A broad band of oyster shell deposits were found on the continental shelf between 65' and 230' below present sea level dating to between 5,000 and 10,000 years ago (Funk 1991:55). The size and shape of oysters of this age imply that water temperatures were higher than they are today. Few oysters were found inshore from this main belt, possibly because of less favorable climatic conditions and erosion over the last 5,000 years (Ibid.). This suggests that even if water levels were lowered and sections of the project site were accessible during the Paleo-Indian and Early Archaic period, shellfish exploitation - if it did in fact occur - would have been far south of the Lower Manhattan shoreline where abundant oyster beds were present.

Subsequent Middle Archaic peoples, while known to exploit shellfish in the surrounding region, did not appear to live near their middens. Shell heaps in southern New England and New York dating to this period indicate they were utilized as temporary processing stations, with habitation sites situated elsewhere (Lavin 1988:104). This suggests that in the event that drowned shorelines were utilized for resource exploitation during this period, evidence of habitation would exist in distant upland areas. However, there is the possibility that middens that contain cultural deposits were deposited along the shoreline.

About 5,000 years ago, rising sea-levels stabilized and tidal marshes were established in many of the shallow embayments in New York Harbor (Squires and Bone 1997:26). The

Hudson River experienced a decline in oyster shell abundance and a reduction of ocean salinity, since greater quantities of fresh water flowed from the north than salt water flowed from the south (Funk 1991:56). The majority of oyster reefs at this time extended south and west of Staten Island, while in contrast, Manhattan's western shoreline was primarily a rocky bluff. However, tidal marshes were established along the eastern shore of Lower Manhattan within this APE (Squires and Bone 1997:27).

Excavated Late Archaic and Woodland period occupation sites show a marked preference for well-drained soils in proximity to fresh water resources. This suggests that elevated terrain in proximity to freshwater springs, streams, and ponds would be more likely to bear evidence of habitation than low-lying wetlands along the shoreline. This is consistent with the fact that Stokes reported a Native American village called Werpoes northwest of the Collect, a former fresh water pond in Lower Manhattan located several blocks west of the project corridor. However, there were sections of the East River shoreline in Lower Manhattan with established tidal marshes that could have been the location of resource acquisition and refuse discard.

The *southernmost* section of the East River shoreline did not appear to be estuarial at the time of European contact and, therefore, was probably not a site of shellfish gathering. Historic maps and documents dating between the 17th and 19th centuries depict the southernmost shoreline as somewhat rocky. For example, the 1916 Adams-Stokes' *Redrawing of the Castello Plan* shows rock along all of the southern and part of the eastern shoreline of Manhattan (Augustyn and Cohen 1997:38). In fact, the lower East River shorefront experienced more rapid and pronounced development than the Hudson River shoreline, because it was a natural "deep water harbor" (Buttenwieser 1987:27), not a shallow estuary.

In contrast, sections of the East River shoreline farther north within the Water Street APE were depicted as marshland on the 1874 Viele map, especially in the vicinity of Peck Slip, Maiden Lane, and just east of the former site of the Collect Pond in the vicinity of Pearl Street and St. James Place (Viele 1874). While these marshes or estuarial areas were not necessarily suited for habitation immediately preceding European contact, their locations probably influenced the selection of precontact settlements, and may have served for resource procurement and as deposition areas where middens were created. Furthermore, these locations could have been well drained and suitable for habitation at some point during the precontact period. These contact period salt water marshes were eventually filled to allow for historical development. Their remnants now lie beneath deep layers of fill.

In addition to the issue of archaeological presence, the integrity of potential resources must be considered when assessing sensitivity. If any precontact resources were once deposited along sections of the East River shoreline that were 1) later inundated; and, 2) subsequently buried by landfill, they would have been subjected to a variety of effects. These would vary from displacement by natural current and tidal action for perhaps thousands of years to later dredging for piers and slips along the shoreline. These factors suggest that the drowned shoreline of Lower Manhattan is probably only minimally sensitive for precontact resources with research potential that would meet the criteria

necessary for inclusion on the National Register of Historic Places, but it is not outside of the realm of possibility that midden deposits, however disturbed, may still exist.

The following sections of Water Street were reported to have potential precontact sensitivity based on environmental indicators (e.g., the presence of silt or peat) reported on soil boring logs.

Water Street between Fulton and John Street was land under water at the time of European contact. However, precontact potential may exist if this area was drained when watertables were lower during the precontact period. These potentially sensitive strata, if they exist, would be located beneath landfill added in the late 17th through mid-19th centuries. A soil boring taken here shows16' of fill below grade, underlain by a 3.5' deep level of gray silt and peat , with the water table at only 7.5' below grade. The presence of peat in the boring may be indicative of an estuarial environment, and, therefore, potential precontact sensitivity. Therefore, this section of the APE, outside of John Street that was formerly Lyons Slip and, therefore, dredged, is considered potentially sensitive for precontact resources below landfill between 16' and 19.5' below grade. However, if precontact resources do exist below the landfill, they are currently inundated.

Water Street between John Street and Maiden Lane was land under water at the time of European contact. However, precontact potential may exist if this area was drained when watertables were lower during the precontact period. These potentially sensitive strata, if they exist, would be located beneath landfill added in the late 17th through mid-19th centuries. Fill beneath this section of Water Street ranges from ten to 17' below grade. Organic silt was reported beneath the fill in two borings, suggesting that a precontact living surface may have once been present within this APE. If precontact resources do exist below the landfill, they are currently inundated since fill lies between ten feet and 17' below grade, while the water table lies about 7' below grade.

Water Street from Maiden Lane to Wall Street was land under water at the time of European contact. However, precontact potential may exist if this area was drained when watertables were lower during the precontact period. These potentially sensitive strata, if they exist, would be located beneath landfill in the APE added in the late 17th through mid-19th centuries. Fill beneath Water Street ranges from 14' to 23' below grade, with the water table ranging from six to nine feet below grade. One soil boring reported organic silt below the fill that could be indicative of a precontact living surface. Therefore, if a precontact living surface lies buried beneath the fill, it would be located below 14' to 23' of fill, and would be inundated since the water table lies above these depths. However, any potential resources within the APE where Maiden Lane crosses Water Street are probably disturbed, since the 17th and 18th century Fly Market Slip was probably dredged periodically.

6.1.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

While there are numerous historically important places in the vicinity, there are no archaeological sites in the project site currently listed on the National Register of Historic

Places, nor are there any with New York City Landmark status. A site file search at the New York State Museum (NYSM) in Albany, and the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) listed the following historic sites (see Appendix 1.6.1.2):

OPRHP #	Site Name and Date	Location
A061.01.0491	Municipal Ferry Pier ca. 1909	11 South Street
A061.01.0490	Battery-Castle Clinton pre-1812	Battery Park
A061.01.0604	209 Water Street cellar excavation	209 Water Street
A061.01.0623.DO.23	Telco Block (Block 74W)	John, Front, Fulton, Water Streets
A061.01.1271	175 Water Street Site	175 Water Street
A061.01.1272	Historic Landfill Site 17th c.+	64 Pearl Street
A061.01.01272.D0.14	Historic Landfill Site	64 Pearl Street & 34 Water Street
A061.01.1282	Ronson Project Site/Dutch West India Co. Warehouse, etc. 17th -20th c.	Pearl, Bridge, and Whitehall Streets
A061.01.1283	Barclays Bank Site	75 Wall Street
A061.01.1284	Block 35 - Assay Site	Old Slip between Front and South Streets
A061.01.1285	Site 1 Washington St. Urban Renewal Project 17th c., 1826	West & Hubert Streets
A016.01.1286	NYU Law Library Expansion	Sullivan Street near Washington Square
A016.01.01304	City Hall Park Site	City Hall Park
A061.01.006763	Schermerhorn Row	Fulton, Front, John and South Streets

Resource categories include a ferry landing, a foundry, Dutch living surfaces, and 17th through 20th century residential and commercial features and landfill. Only the first two sites listed above, the Municipal Ferry Pier and Castle Clinton at Battery Park, are currently listed on the National Register of Historic Places, although several of the sites listed fall within the South Street Seaport Historic District.

West of the project site is the Fraunces Tavern Block Historic District, designated by the New York City Landmarks Preservation Commission. The block, bounded by Broad, Pearl and Water Streets and Coenties Slip, contains mostly early 19th century buildings that escaped the fire of 1835. Eleven buildings within the district date between 1827 and 1833. Also within the district is the renovated 1719 Fraunces Tavern at 54 Pearl Street, now a museum. Although these are all standing structures rather than archaeological sites, their historic importance relates directly to the project area.

In addition to these inventoried archaeological and historic sites, much archaeological research has been undertaken in Lower Manhattan that is not reflected in the inventory. For example, archaeological salvage excavations were completed within Block 32 at 55 Water Street, when a relatively new building was constructed (Huey 1984:17). In addition to the extensive number of artifacts found in the remaining landfill within the block (most of the block has been affected by foundation excavations and little remained by the time archaeologists were permitted to proceed), the original log crib footing under

the northeast end of Cruger's Wharf, dating to 1740, was visible (Ibid.:18). Cribbing extended 175 feet southeast from Water Street, along the original line of Old Slip. Artifacts within the landfill were able to address research issues pertaining to colonial trade patterns and waterfront development (Ibid.:23).

Elsewhere in Lower Manhattan, archaeological research at Block 31, bounded by Pearl, Wall, and Water Streets, revealed that the site possessed landfill associated with a series of water lot grants dating to 1694-95 and some of the earliest commercial activities associated with the waterfront in that area. By the middle of the 18th century and into the early 19th century, the block was mixed residentially, with a cluster of chemist/druggists, artists and small scale merchants (Louis Berger & Associates 1987:11). The block was eventually used as brokerages and for warehousing; by the 1820s it was all commercial.

Stage IB testing performed at the site exposed extensive yard deposits, middens, privies, wells, cisterns, and house and outbuilding foundations. The rear yard areas were concentrated within the center of the block. Deposits along the street fronts were destroyed by late 19th and 20th century construction. Most of the deposits dated from between 1780 to1820. Home lot and commercial activities were reflected in the archaeological deposits (Louis Berger & Associates 1987:4).

Archaeological Potential

Research Issues: Many sections of the APE were once part of developed city blocks that were subdivided and developed from the 17th century onward. Most pre-1852 maps lack details of development on specific lots, so only a generalized assessment of the location of pre-19th century resources can be made. What later appear as developed lots (ca.1852), may have been the locations of earlier domestic and commercial activities, and thus have the potential for shaft features (wells, cisterns, privies, cesspools) that may have survived later development. However, these areas are difficult to discern on the landscape because of the lack of pre-1852 maps with detail. Therefore, any lots that were formerly on city blocks and now fall within the APE, and that appeared to have some development in the area prior to 1852, are potentially sensitive for earlier shaft features.

By 1852, many of the lots that fell within the APE were clearly portrayed with backyards that are now considered potentially sensitive for shaft and yard features. In some cases, the locations of these backyards fell outside of the APE, but side yards and narrow alleys between buildings in the APE were left undeveloped. While it is more likely that shaft features would have been located in the backyard behind these ca.1852 buildings, there is also the possibility that over development necessitated the creation, or relocation, of shaft features to these narrow alleys. This situation has been observed in the archaeological record within the City of New York. At the recent Stage 1B field investigation for the Hoyt-Schermerhorn site in Brooklyn, a narrow cistern about eight feet deep was found wedged between two building foundations (Sara Mascia, personal communication, November 2001). Its shape was modified to allow for its construction between two buildings. Therefore, areas where narrow alleys and yards were observed on maps are considered potentially sensitive for historic period resources.

The issue of the potential depth of historic resources in the Water Street section of this APE is a complex one. Archaeological studies of blocks directly adjacent to the APE indicate that fill in this area varies in depth. At the 55 Water Street site discussed above, 20th century construction encountered historic landfill to "an immense depth, below the original bottom of the river" (Huey 1984:17). A layer of red sand was interpreted as the original river bottom, and sloped upward toward Water Street, closer to the original shoreline. However, no depth of the sand in relation to the current grade elevation was provided. Shallower clay layers contained stratified deposits from the 18th century (Ibid.:19). Similarly, excavations at the Assay Site, located just north of Old Slip between Front and South Streets (one block east of the APE), cited soil borings that showed that the deepest cultural levels of clay, mud, and fill were directly underlain by layers of coarse sand and sandy clay. The deepest sand levels were considered "probably sterile" (Greenhouse Consultants Inc. 1983:26). Cultural levels were estimated to extend between 27' and 30' below grade on the western end of the block, closest to Front Street, and between 33' and 37' under South Street (Ibid.). Mud and clay deposits that lay above the sandy river bottom was interpreted as consistent with still or backwater sediments produced by slower currents such as those in and around piers, slips, and jetties (Ibid.). Based on these two examples, any stratum above the sterile sand of the original river bottom could contain historical period fill and cultural resources.

The following areas within the Delancey Street to State Street APE were found to be sensitive for one or more of the resource categories listed in Chapter 3.

Chrystie Street from Delancey Street to Broome Street was shown to have a structure in what is now the middle of the roadbed in 1766/67 (see Appendix 6.1.7.1). At the end of the 18th century when the route of Chrystie (then First) Street was continued north, the building was razed. Therefore, it is possible that shaft features associated with the structure, that was presumably a house, and the foundation of the structure itself, may lie within this APE, outside of the footprint of the existing Chrystie Street Connection subway tunnel. Furthermore, this block was at least partially developed by 1789, and by 1852 was clearly covered with a number of structures, some with small yards and alleys left undeveloped. These undeveloped narrow alleys and small yards, that now lie on the east side of Chrystie Street and east of the existing subway tunnel, are potentially sensitive for historical shaft and yard resources dating from ca.1789 and possibly earlier. Potential shaft features from either the mid-18th century structure or the late 18th century development of the block could be located from the surface down to the depth of the water table (32'-34') and perhaps deeper. Furthermore, structural foundations and other shallower shafts could exist within or directly below the fill, that ranges in depth from six to 16' below grade.

Chrystie Street from Broome Street to Grand Street appeared undeveloped on maps until the late 18th century. The 1789 McComb map shows the block east of Chrystie Street, that in part now falls within the APE, as shaded, indicating some degree of development. The earliest map that presents lot details (Dripps 1852) shows eight lots on the west side of the block that now fall within the APE, most developed (See Appendix 6.1.7.1). Some of the lots had vacant back yards on their eastern ends (Robinson 1885), that may now lie beneath the sidewalk on the east side of Chrystie Street. These undeveloped yard areas are potentially sensitive for historical shaft and yard resources

dating from ca.1789 and possibly earlier, particularly where a vacant lot stood next to the Episcopalian Church, and a narrow alley abutted 112 Chrystie Street (Appendix 6.1.7.1). West of these lots the roadbed itself is not considered potentially sensitive for historical period resources because of the extensive disturbance caused by the construction of a subway tunnel in 1967.

If wells were present within the APE, they would have been excavated at least 30' below grade, and possibly deeper, since this is the depth of the current water table. Fill levels extend only 10.6' to 13' below grade, suggesting that deep shaft features could exist either within or below it.

Chrystie Street from Grand Street to Hester Street may have had residential structures present within the APE by the mid-19th century on what was formerly Block 305. Since many of these buildings were shown on maps predating the availability of sewer in 1869 (Dripps 1852; WPA 1937:Plan No.5), sections of lots that were not developed have the potential for shaft features. Specifically, narrow alleys were left undeveloped at 90, 88, 86, and 78 Chrystie Street within the APE. If shaft features were present in these narrow alleys, there is the potential that they have remained undisturbed and may either be located within or beneath the fill. Since the water table was encountered between 35' and 37' below grade here, there is the potential for deep wells to extend to at least this depth (Appendix 6.1.7.1).

Chrystie Street from Hester Street to Canal Street may have been developed on its eastern side, at least in part, by ca.1789 and possibly earlier (McComb 1789; Dripps 1852). Fill ranges between 13' and 16' deep in this area, and utility lines are predominantly located on the west side of the street (Borings C6-5, C6-7, Raymond International Inc.1974; WPA 1937:Plan No.5). While the backyards of lots fell east of the APE, narrow alleys were left undeveloped at 90, 88, 86, and 78 Chrystie Street, although the alleys at 86 and 78 Chrystie Street were eventually covered by structures without basements (Robinson 1885). If shaft features were present in these narrow alleys, there is the potential that they have remained undisturbed and may either be located within or beneath the fill. Since the water table was encountered between 35' and 37' below grade here, there is the potential for deep wells to extend to at least this depth, and possibly deeper.

Chatham Square was historically an open area and was reportedly surveyed in 1790 (Stokes 1918:996). By 1812, it had been converted into a park, but by 1816 had been regulated and paved. The northern section of Block 281 was incorporated into the Square in 1952 and now lies in the APE. The earliest development around what is now Chatham Square can be observed on maps as early as 1744. Other structures appeared outside of the square, but several on its eastern side may fall within the APE (Appendix 6.1.7.1). Therefore, the eastern side of Chatham Square between Division Street and East Broadway at Block 281 is considered potentially sensitive for the footprint of the ropewalk (ca.1744), another unlabeled building (ca. 1744), a watch house (1796), and possibly the New Presbyterian Church (ca.1789). The anticipated depths of potential resources have not been determined due to a lack of soil boring logs for this area (Appendix 6.1.7.1).

St. James Place from Chatham Square to James Street is potentially sensitive for historic period resources dating from the 17th century onward. In addition to this location being the site of the Shearith Israel Cemetery, dating from ca.1656 to ca.1831, the block around the cemetery was also developed from at least the 1760s onward. In the 1850s, in addition to the cemetery, there were 16 city lots, almost all developed, within this APE (Appendix 6.1.7.1). Structures stood at 187 through 157 Chatham Street (odd only), 1, 3, and 5 Oliver Street, with the cemetery accessed through 13 ½ Oliver Street, and 10, 12, 14, and 18 James Street. By 1857, all of the buildings in the route of New Bowery, now St. James Place, were razed, bodies were removed from the cemetery, and the road was laid out.

This APE has the potential for both cemetery shafts and remains that were unintentionally left *in situ* when the road was widened. Although records report hundreds of bodies being reinterred (Appendix 6.1.7.1), there is always the possibility that some remains were left behind. Furthermore, the additional 13 lots that encircled the cemetery may be sensitive for 18th through 19th century domestic resources. In the 1860s, after St. James Place was cut through, adjacent lots left untouched by the street's construction had tenements, and some lots still had active privies. Therefore, all of this section of the APE is considered potentially sensitive for historic period resources. The anticipated depth of resources could be up to 8' below grade for burials. Deep well shafts could potentially extend to the depth of the water table at 26.5' below grade, and possibly deeper. It is anticipated that approximately the top three feet of any potential shaft features were truncated when the street was laid out with its surface elevation slightly lower than the block's original surface.

St. James Place between James and Madison Streets was once bisected by Roosevelt Street. The APE between what was historically James and Roosevelt Streets first experienced development by as early as 1766, with at least one structure that appeared to fall within the APE. By 1852, there were about 17 lots in the APE, some completely covered with structures and others having vacant yards. Vacant yards and alleys were observed at 21 through 20 James Street (odd only), 21 through 29 Madison Avenue (odd only) except for 23 Madison Avenue that was entirely covered by a structure, and 36 Roosevelt Street. In addition to these, a Gas House stood at 30 Roosevelt Street (Perris 1852). These vacant yards are potentially sensitive for historic resources ranging from the 18th through mid-19th centuries when St. James Place was cut through. Since the water table was reported at 16.5' below grade here, there is the possibility that wells extended to this depth, and possibly deeper (Appendix 6.1.7.1).

St. James Place at Madison Street crosses several lots on what was the northwest corner of Block 116. The earliest cartographically depicted development in this area dates to 1755 when a structure was shown in proximity to the APE, and by 1852 there were four lots within the APE. Two lots, at 16 and 18 Madison Street, either were vacant or had vacant yards prior to St. James Place being laid out between 1852 and 1857. Soil borings taken in this area depict fill to 19' below grade, whereas the water table is located at about 14.6' below grade. Therefore, if there were ever shaft features present on either of these lots, they may still exist within the fill, and possibly below it. Since the water table is only 14' below grade here, it may be that wells would have extended down to this

depth, but they may have extended deeper to access more potable water (Appendix 6.1.7.1).

St. James Place between Madison and Pearl Streets was historically bisected by Roosevelt and Chestnut Streets. Between these two cross streets there may have been two structures on Block 115 within the APE as early as 1755, and possibly earlier. By 1852, the block had been subdivided into smaller lots, and many of these fell within the APE. Vacant yards and alleys were present at the following addresses in 1852: 8 through 12 Madison Avenue (even only), 45 through 53 Roosevelt Street (odd only), and 8 through 24 Chestnut Street (even only) (Perris 1852). The buildings on the lots were all razed between 1852 and 1857 (Perris 1852, 1857-60). Soil borings suggest that this APE is potentially sensitive for homelot features potentially dating as early as 1755, and possibly earlier, up through at least 1852. While the depth of these features cannot be known with certainty, they may extend as deep as the water table at 17.4' below grade, or perhaps even deeper (Appendix 6.1.7.1).

St. James Place from what was historically Chestnut Street to Pearl Street was laid out across what was formerly Block 115 (the second half of this block) between 1852 and 1857. Development on or near this APE may date as early as 1744, and by 1755 there were four structures that may have been in the APE. By 1852, 17 lots, mostly developed, fell within the APE, located at 1 through 19 Chestnut Street (odd only), and 392 through 406 Pearl Street (even only). Fill here was reported to be about 14.6' below grade, while the water table was at 17.4' below grade. Therefore, if historic resources related to the 18th and 19th century use of this block exist beneath St. James Place, shaft features may be potentially located either within the fill or below it. Wells could potentially be at least 17.4' deep, and possibly deeper.

Pearl Street from its junction with St. James Place to Peck Slip was officially laid out in 1707, and by 1730 it was lined with numerous structures on both sides of the street, some of which may have stood in the APE. By 1852, Block 112 had four developed lots that now lie within the APE at 384, 386, 388 ½, and 390 Pearl Street. Each of these lots may have been developed as early as 1755 and were razed between 1852 and 1857 when St. James Place was created across them.

When Pearl Street was widened between Dover Street and Peck Slip after 1934, it incorporated the southern end of Block 105 into the streetbed, and therefore into the APE. Block 105 appears to have been developed as early as 1730. By 1852, at least 11 lots were shown within the APE, including an iron works - later to become Harper's Publishing - and several individual brick structures that could have been residential. These were all razed between 1934 and 1955. The fronts of the lots fell within what is now the Pearl Street roadbed, and none appear to have possessed vacant yards within the APE by 1852.

In addition to these structures, the Peck Slip Market stood on the west side of Peck Slip from 1763 to 1793. Subsequent widening of Pearl Street would have brought large sections of the market location into this portion of the APE.

Soil borings show about 20' of fill beneath Pearl Street near St. James Place, 9' of fill near Dover Street, and 21' of fill below grade near Peck's Slip. It is possible that historic resources are located within the fill at both Block 112 and Block 105 and within the roadbed, and that if early wells and deep shaft features were excavated here (either between earlier structures or in basements), they were dug at least as deep as the water table, that currently lies between 16' and 20' below grade along this route, and possibly deeper (Appendix 6.1.7.1).

Pearl Street between Peck Slip and Beekman Street was widened in the 20th century over lots on either side of the street. Block 98, both east and west of Pearl Street, had been at least partially developed by 1730, and both sections were shown as fully developed by 1852. Dally's shipyard was also present on Block 98 along the East River, but its exact location is unclear. East of Pearl Street, buildings were located at 312 through 288 Pearl Street (even only) and 106 and 108 Beekman Street. West of Pearl Street, these were located at 309 through 287 Pearl Street (odd only). All of these appeared to serve a mixed residential/commercial use, with the exception of a public school at 293 Pearl Street. While there were vacant yards and alleys on some of the lots east of Pearl Street in 1852, all of the lots west of the street were entirely developed. Most of the buildings lacked basements, probably due to the shallow water table here.

Utility disturbance is tightly clustered in the roadbed, and soil borings report about 15' of fill, with the water table located at 13.5' at the north, and 18' at the south. It is more than likely that historic resources relating to the 18th through 20th century occupation of Block 98 on either side of Pearl Street are located either within or below the fill. Deeper shaft features that may have been excavated to the depth of the water table, or deeper to access clean water, may also be present (Appendix 6.1.7.1).

Pearl Street between Beekman and Fulton Street may have been developed as early as 1730 and by 1744 may have contained eight or nine buildings. By 1852 there were 24 developed lots within the APE. Furthermore, one historic reference places a Revolutionary War period redoubt of earthwork in this APE. Between 1934 and 1955, Pearl Street was widened on its eastern side encompassing the western half of Block 95. In 1852, these were located at 111 and 109 Beekman Street, 286 through 268 Pearl Street (even only), 35, 34, 33, 31, and 29 Fulton Street, and 218, 212, 210, 208, and 206 Water Street (Perris 1852). None of the buildings on the block are depicted on maps and atlases as having basements.

In 1937, subsurface utilities were tightly clustered in an area about 20' wide in what was then the roadbed, leaving any historic period resources present on Block 95 undisturbed. A soil boring log taken from the center of what was formerly Block 95 indicates there is 18.5' of fill below grade. Therefore, there is the potential for 17th through 20th century resource to exist within the APE both in, and potentially below, the 18.5' of fill.

Fulton Street from Water Street to Pearl Street is potentially sensitive for 18th century fill. Specifically, the western section of the APE at Pearl Street is sensitive for fill that was deposited prior to 1728. Heading east on Fulton Street, filling episodes continued through the 1770s. Therefore, this section of the APE is sensitive for cribbing along the

edge of Beekman's Slip, for 18th century fill, which could include sunken ships, and for possible fill retaining devices.

Water Street from Fulton Street to State Street: General Discussion of Landfill

The Water Street section of this APE is located entirely on an area of landfill. The Castello Plan, depicting the year 1660, clearly shows the East River shoreline of Manhattan, with Pearl Street as the easternmost dry land (Castello 1670). Throughout the historic period the coastline of Manhattan along the East River has been altered extensively by landfilling episodes. The desire for new waterfront real estate spurred many politicians and businessmen to enthusiastically support landfilling activity along the East River. By the late 20th century, Manhattan had grown approximately 33 percent larger than when Europeans first established settlements on the island in the 17th century (Buttenwieser 1987: 21).

Beginning with the Dongan Charter in 1686, landfilling along the East River was considered the most expedient way to create more waterfront space. This charter, the Montgomerie Charter of 1730, the Outer Streets and Wharf Act of 1789, and the "Ch.172" of 1821, eventually allowed the recovery of up to 600' of river space for landfill activity (Buttenwieser 1987:25). The Outer Streets and Wharf Act of 1789 also represented municipal dissatisfaction with private owners controlling the city's waterfront. The Act called for the filling in of empty space between the private docks at the expense of the owners. This legislation also allowed the government to oversee any landfilling activity. The results of these actions are recorded in numerous documents and observed in the altered physical topography along the East River waterfront.

One difficulty when researching filled land is the inability to determine, in most cases, where the fill came from. Another problem is determining what features were left intact in the area as it was filled. In general, large features, such as piers and wharves, were not removed prior to filling in the area. As New York continued to expand in both size and population, sources for landfill were abundant. Numerous small hills on the island were cut down and the material deposited along the shoreline. In addition, the construction of streets and new buildings, especially those with cellars, provided soil, sand, rocks, and other debris for fill. Another source of fill was the immense amount of garbage generated by the inhabitants of the island. Some of the refuse was used to fill in swampy areas along the East River. The majority of the garbage was brought to dumping boards or to Blackwell's Island, the first organized landfill site in New York (Buttenwieser 1987: 43). Dumping Boards were older docks used to "dump" materials collected. The refuse was allowed to spill into adjacent slips. Because clean landfill was scarce this practice was an inexpensive way to rid the city of garbage and to fill in slips to create land for additional growth and construction.

Several waterfront structures were built specifically to retain landfill. Of these, wooden bulkheads are the most common in New York City. Archaeologists have recorded three types of wooden bulkheads constructed during the 18th century (Henn et al. 1985:3). The first is a simple bulkhead consisting of a wall of planks placed horizontally on their sides. The wall is typically supported by upright posts on the river side, and fill on the interior side. A second type of bulkhead identified consists of a wall of vertical planks set side-

by-side. The base of each plank is cut into a point and firmly imbedded into the clayey river bottom. The most complex of the wooden bulkheads identified is a reinforced structure consisting of six-inch squared wooden upright posts on the river side, placed about three and a half feet apart. Two sets of wall planks placed first horizontally, and then vertically, are located behind the posts helping to strengthen the wall. At present, there is very little information on 18th century waterfront technology, as the majority of the written descriptions and illustrations date from the 19th century (Ibid.:12).

The Water Street section of the APE was filled over a long period of time. Stokes' discussion of a painting portraying the East River shoreline in ca.1716 reports the following:

> *The Burgis View depicts the water front along the East River from the turn in State Street west of Whitehall to a point a little north of Catherine Street. The shore line, which, in 1679, corresponded to the north side of Pearl Street, had at the time of this picture (C. 1716-8) been extended a full block into the river, so that the street or wharf on which the houses in the foreground of our view are aligned is the present Water Street, which, in 1679, was the low-water line.*
>
> (Stokes 1922:366)

Detailed accounts of how Water Street was created are documented in the minutes of the Common Council. Apparently, it was first constructed as a wharf, parallel to the shoreline. In 1691 the Common Council directed builders to construct Water Street, between Whitehall Slip and Moore Street, as follows:

> *They shall build a good and substantial stone wall, 3½ feet broad at the bottom 'to batter one foote inwards on the outside.' They shall protect it from the rubbing of boats by driving 'spoiles or stockaedes' every 5 ft., and these shall be 7 in. in diameter, bound together at the top by a plate. When finished this wall shall be kept in good repair by the owners of the lots fronting the street or wharf, who, nevertheless, are not to claim any property or interest in the street or wharf, which, instead, is 'to remaine to the use of the Citty.' The owners of this land, to fill up their respective lots, are obliged to use 'the Dock Mudd Twenty foot into the Dock before their owne houses.' The street or wharf is to be completed in 12 months. The city agrees that no building shall be built in front of these lots.*
> (Stokes 1922:372)

When the wharf that became Water Street was created, openings - or slips - were left to allow for the passage of ships inland. As the shoreline pushed eastward, it had the effect of lengthening these slips. By 1728, fill was beginning to extend the "wharf" (Water Street) beyond its early 30-foot width, as docks and "keys" were constructed on what became the east side of Water Street. These are: the East and West Dock, at the foot of Broad Street; docks adjacent to Coenties Slip; Hunters Key, a large area of made land between William Street/Old Slip and the slip at Wall Street; and Burnets Key, an even larger area of filled land between the north side of the slip at Wall Street and the slip at Maiden Lane (then Crown Street).

Subsequent maps show the gradual filling of the east side of Water Street. By 1757, this had been completed from Coenties Slip to William Street/Old Slip, Wall Street to John Street, and John Street to Beekman Slip. Slips still interrupted the path of Water Street at Coenties Slip and Burling Slip at John Street (Holland 1757; Ratzer 1767). Eventually filling pushed Water Street inland and the shoreline westward.

The potential recovery of historic shipwrecks was also considered for this area. The number of ships owned by residents of Manhattan increased dramatically from approximately 60 ships in 1700 to 447 by 1760, and again nearly doubled to 709 by 1770 (Buttenwieser 1987: 35-36). Because of the immense amount of water traffic on the East River and the hazardous nature of shipping there were constant reports of ships and boats being lost in the river or along wharves and slips. It wasn't until the 19th century that active measures were taken to remove sunken ships that had long been nuisances to river traffic (MCC III:477; V: 616). These activities would not have affected any potential ships already buried in the late 18th century fill. The review of the archaeological literature indicates that several undocumented ships have been recovered and investigated beneath and adjacent to Water Street. Therefore, there is the possibility that undocumented ships lie buried beneath Water Street in the fill.

Currently, Water Street is approximately 90' to 100' wide from Broad Street to John Street, and 70' wide from John to Fulton Streets, although it was originally much narrower. The street widening undertaken in the late 1960s, facilitated by a general replacement of 19th century structures, took its additional land from lots on the eastern or shore side of Water Street (Kearns et al 2000:19). Therefore, previously developed lots on the east side of Water Street now lie within the roadbed, and, therefore, the APE.
The following sections of the Water Street section of the APE were found to be potentially sensitive for historical resources.

Water Street from Fulton Street to John Street is potentially sensitive for the pre-1730 wharf that allowed for the creation of Water Street and for fill dating from the early to mid-18th century. Lyon Slip at John Street was filled by 1761, so this area is also sensitive for fill, including potential sunken ships, and/or fill retaining devices as well as cribbing along the edges of the slip. The former locations of the lots on Block 74 (the eastern 20' of Water Street) are also sensitive for fill and/or fill retaining devices, as well as evidence of 18th through 20th century occupation. Given the depth of fill reported here, the depth of potential historic resources in this section of the APE is estimated to be at least 16' below grade, and possibly deeper.

Water Street from John Street to Maiden Lane is potentially sensitive for a variety of historic period resources. At Maiden Lane, the APE is sensitive for fill, cribbing, and fill retaining devices as well as foundations from the Fly Market. All of Water Street is sensitive for the ca.1730s wharf, fill, including sunken ships, and fill retaining devices. And finally, the eastern 50' of Water Street is also sensitive for 18th through 20th century structures and any associated features that once stood on Block 71. The depths of historic resources are anticipated to extend at least 17' below grade, the maximum depth of reported fill, although they may continue to greater depths. Organic silt deposits below fill may represent the early historic river bottom and, therefore, are also considered

sensitive for potential discard along the waterfront. Therefore, this APE is sensitive for historic period resources to at least 22' below grade, and possibly deeper.

Water Street from Maiden Lane to Wall Street was land under water until it was first filled sometime before 1730, when a wharf was built essentially creating Water Street. The Meal Market (a.k.a. Coffee House) Slip ran through what is now Maiden Lane, extending west to Pearl Street, but this appears to have been filled sometime between 1740 and 1744. When Water Street was widened on its east side, part of Block 38 was brought into the streetbed. This block was filled and partially developed by 1730. In 1852 it was depicted as entirely covered by structures located at 134 Maiden Lane, and 153 through 119 Water Street (odd only).

Soil boring logs clearly indicate that this section of the APE is potentially sensitive for historic period resources. At Wall Street, the APE is sensitive for fill, cribbing, and fill retaining devices. All of Water Street is sensitive for the pre-1730s wharf, fill, including sunken ships, and fill retaining devices. And finally, the eastern 50' of Water Street is also sensitive for 18th through 20th century structures and any associated features that once stood on Block 38. The depths of historic resources are anticipated to extend at least 23' below grade, the maximum depth of reported fill, and possibly deeper. Organic silt deposits below fill may represent the early historic river bottom and, therefore, are also considered sensitive for potential discard along the waterfront. Therefore, this APE is sensitive for historic period resources to at least 23' below grade, and possibly deeper.

Water Street from Wall Street to Old Slip was submerged at the time of European settlement, with maps indicating that it was filled prior to 1730 (Lyne 1730). Both Block 33 and a slip at Wall Street, that ran west to Pearl Street, were not portrayed as filled until sometime between 1766 and 1776. By 1852, Block 33 within the APE was covered by ten structures on individual lots, located at 117 through 77 Water Street (odd only).

Soil boring logs from either side of Water Street show fill to 10.6' below grade, and 20' below grade, respectively. Sand, silt and gravel were reported below the fill to a depth of 35' below grade where bedrock was encountered. The documentary research and boring logs clearly indicate that this section of the APE is potentially sensitive for historic period resources. At Wall Street, the APE is sensitive for fill, including sunken ships, cribbing, and fill retaining devices. All of Water Street is sensitive for the pre 1730s wharf, fill, and fill retaining devices. And finally, the eastern 50' of Water Street is also sensitive for 18th through 20th century structures and any associated features that once stood on Block 33. The depths of historic resources are anticipated to extend at least 20' below grade, the maximum depth of reported fill, and possibly as deep as the mud level that extended to 32.2' below grade (Appendix 6.1.7.1).

Water Street from Old Slip to Coenties Slip was found to be potentially sensitive for historic period resources (Appendix 6.1.7.1). At Old Slip, the APE is sensitive for fill, cribbing, and fill retaining devices from the surface down to the top of the IRT Subway tunnels, that were excavated by shield tunneling, and outside of their footprint. All of Water Street is sensitive for the pre-1730s wharf, fill, including sunken ships, and fill retaining devices. And finally, the eastern 50' of Water Street is also sensitive for Cruger's Wharf and 18th through 20th century structures and any associated features that

once stood on Block 33. The depths of historic resources are anticipated to extend at least 20' below grade, the maximum depth of reported fill, and possibly as deep as the bottom of silt levels that extended to a maximum depth of 40.8' below grade.

Water Street from Coenties Slip to Broad Street was found to be potentially sensitive for a number of historic period resources (Appendix 6.1.7.1). These could include 17th century fill, including sunken ships, and fill retaining devices beneath all of Water Street; evidence of the quay for the Great Dock and Basin beneath the east side of Water Street; cribbing, fill, and fill retaining devices at Coenties Slip; and, finally, 18th through 20th century occupation of the seven lots on former Block 7 on the east side of Water Street. Resources potentially extend from the surface down to the deepest reported fill, at 19.4' below grade, and possibly to what may have been the 17th century river bottom extending down to 23.7' below grade.

Water Street from Broad Street to Moore Street may be potentially sensitive for a number of historic period resources (Appendix 6.1.7.1). These could include the 17th century fill, including sunken ships, and fill retaining devices beneath all of Water Street; evidence of the quay for the Great Dock and Basin beneath the east side of Water Street; the Long Bridge wharf, fill, and fill retaining devices at Broad Street; and finally 18th through 20th century occupation of the nine lots on former Block 8 on the east side of Water Street. The anticipated depth of resources is assumed to extend to what may have been the 17th century river bottom that borings suggest could be located at 23.7' below grade.

Water Street from Moore Street to Whitehall Street was found to be sensitive for several historic resource types. Fill was deposited along the shoreline to allow for the creation of Moore Street by 1696 and for the creation of Water Street and Block 8 between 1730 and 1735. Therefore, this section of the APE is potentially sensitive for fill, including sunken ships, and fill retaining devices beneath all of Water Street and for 18th through 20th century structures that stood on seven lots on Block 8. The anticipated depths of these historic resources are unknown, given that no boring logs were available for review outside of one taken from an obviously disturbed area.

State Street may have been inundated when Manhattan was first settled by Europeans, but by 1660 it had been filled and functioned as a road. Both State Street and adjacent Peter Minuit Park (see Chapter 6.3) experienced subsurface disturbance with the construction of a series of subway and vehicular tunnels, as well as foundations for structures related to an elevated railway (Appendix 6.1.7.1). Closest to the State Street APE is the Battery loop of the IRT subway, but this runs towards the west end of State Street. Utility lines beneath the street are numerous, but there is still the possibility that, outside of the footprint of these, historic period resources related to the 17th and 18th century fill process could still be present.

6.1.3 Summary of Archaeological Potential

Within this section of the APE, there is the potential sensitivity for precontact and historic period resources from Delancey Street as far south as State Street, although sections of Water Street were found to lack sensitivity for precontact resources (Figure

6.1-6a through h). Based on an extensive review of documentary material and soil boring logs, the anticipated depths of resources vary considerably throughout this corridor. The potential depths of resources tend to be shallower in the northern section of the project site, relative to the southern end of the project site where three centuries of landfill have been added to allow for the creation of Water Street and adjoining blocks. However, it must be emphasized that the depths of potential resources estimated through this study would require field verification prior to adopting them as absolute. Absent of this, the anticipated depths must be considered approximate.

Most construction north of Peck Slip is anticipated to be accomplished using an EPBM, or soft soil mining. Depending on the depth of mining, potential resources may be affected. South of Peck Slip, mining through rock would be undertaken, which would probably occur below the depths of anticipated precontact or contact period resources, and thus would not cause potential effects. However, where stations and other features would be built through cut-and-cover construction, (the locations of these are still awaiting final determination), both precontact and historic resources may be affected.

Chrystie Street from Delancey Street to Broome Street. This APE is moderately sensitive for precontact resources below 6 to 16' of fill outside of the footprint of the existing subway and utility lines. Historic period resources may date from the ca. 1760s when a structure stood in the roadbed. Shaft features, and or the foundation of the structure, may be present in the APE. Potential 18th and 19th century resources may lie beneath the eastern 25' of Chrystie Street where undeveloped alleys and yards existed. Deep shaft features could potentially extend as deep as 32 to 34' below grade, and possibly deeper, but shallower shaft features and foundations could lie in, or below, the fill which ranges between 6 and 16' below grade.

Chrystie Street from Broome Street to Grand Street. This APE is also moderately sensitive for precontact resources below 4 to 13' of fill outside of the footprint of the existing subway and utility lines. Potential 18th and 19th century resources may lie beneath the eastern 25' of Chrystie Street where undeveloped alleys and yards existed. Deep shaft features could potentially extend as deep as 30' below grade, and possibly deeper, but shallower shaft features and foundations could lie in, or below, the fill which ranges between 10 and 13' below grade.

Chrystie Street from Grand Street to Hester Street. This APE is also moderately sensitive for precontact resources below 3 to 4' of fill on the west side of Chrystie Street, and 11 to 19' of fill on the eastern side of Chrystie Street, outside of the footprint of the existing subway and utility lines. Potential 18th and 19th century resources may lie beneath the eastern 25' of Chrystie Street where undeveloped alleys and yards existed. Deep shaft features could potentially extend as deep as 35 to 37' below grade, and possibly deeper, but shallower shaft features and foundations could lie in, or below, the fill which ranges between 11 and 19' below grade.

Chrystie Street from Hester Street to Canal Street. This APE is moderately sensitive for precontact resources that may lie below 13 to 16' of fill on the east side of Chrystie Street. Potential 18th and 19th century resources may lie beneath the eastern 25' of Chrystie Street where undeveloped alleys and yards existed. Deep shaft features could

potentially extend as deep as 35 to 37' below grade, and possibly deeper, but shallower shaft features and foundations could lie in, or below, the fill which ranges between 13 and 16' below grade.

Bowery from Bayard Street to Division Street. This APE is potentially sensitive for precontact resources, which may possibly exist below the depth of fill. Fill levels in the streetbed were reported at 10.6', so precontact resources may lie between 106' and 16.6' below grade. The presence of a deep sewer pipe in the center of the street indicates that precontact potential may only remain outside of its location.

Chatham Square. This section of the APE was found to possess a moderate potential for precontact resources outside of or below the existing utilities. Historical period resources may date from ca.1760s onward. On the eastern side of Chatham Square between Division Street and East Broadway, on Block 281, there is the potential sensitivity for the footprint of a rope walk (ca.1744), an unlabeled building (ca.1744), a watch house (ca.1796), and possibly the New Presbyterian Church (ca.1789). The current subsurface conditions and anticipated depths of resources are unknown since no soil boring logs were available for this section of the APE.

St. James Place between Chatham Square and James Street. Of particular concern for this section of the APE is the potential for burials associated with the 17th through 19th century Shearith Israel Cemetery (ca.1656-1831). While hundreds of bodies were reinterred from the cemetery when St. James Place was laid across it, there is always the possibility that burials may have been left *in situ*. While the grade elevation adjacent to what remains of the cemetery was reduced by about three feet, since burials tend to be deeper than this there could still be evidence of shaft features and/or burial remains within the APE to about 8' below grade. In addition to the cemetery, surrounding it in the 19th century were numerous structures. The APE is potentially sensitive for the footprints of these, as well as potential shaft features which could extend to 26.5' below grade, the depth of the water table, and possibly deeper. Shallower shaft features may also lie within, and below, the fill which is 9.5' below grade.

St. James Place between James and Roosevelt Street. This APE was found to be moderately sensitive for precontact resources, which may now lie buried below 12.5' of fill. The historic vacant yards and alleys which were present on the block that lay here prior to the opening of St. James Place in the 1850s, may be potentially sensitive for shaft features. If deeper wells were excavated here, they could extend to a depth of 16.5', the current reported depth of the water table, or more. Shallower shaft features and building foundations could lie within, and below, the 12.5' of fill.

St. James Place at Madison Street may have a moderate potential for precontact resource that could lie below 19' of fill. However, these would be inundated due to the shallow water table at 14.6' below grade. Therefore, while this section of the APE may have a moderate potential for precontact resources, it appears that they would be immersed. Historic period resources could lie where vacant yards once lay on Block 116. However, the shallow depth of the water table at 14.6' below grade may indicate that wells and other shaft features were not very deep. Fill is recorded to 19' below grade, and although historic resources could extend to this depth, or deeper, they may be inundated.

St. James Place between Roosevelt and Chestnut Streets may have a moderate potential for precontact resource that could lie below about 14.6' of fill. However, these may be just above the shallow water table at 17.4' below grade. Historic period resources on the block date to between the 18th and 19th centuries. The depths of potential features may extend as deep as the water table, at 17.4' below grade, and possibly deeper. Shallower shaft features may lie within the 14.6' of fill.

St. James Place between Chestnut and Pearl Street may have a moderate potential for precontact resource that could lie below about 14.6' of fill. However, these may be just above the shallow water table at 17.4' below grade. Historic period resources on the block date to between the 18th and 19th centuries. The depths of potential features may extend as deep as the water table, at 17.4' below grade, and possibly deeper. Shallower shaft features may lie within the 14.6' of fill.

Pearl Street from St. James Place to Peck Slip is moderately sensitive for potential precontact period resources. South of St. James Place 19.5' of fill is reported, while the water table lies at 19.8'. Therefore, while this section of the APE may have a moderate potential for precontact resources, it appears that they would be immersed. At Franklin Square, fill extends to nine feet below grade, and the water table is at about 20.2' below grade, indicating that there is precontact potential below the nine feet of fill. The west side of Pearl Street just north of Peck Slip has fill down to 21' below grade, with the water table located at 16' below grade. Therefore, if precontact resources exist here, they would be inundated.

Possibly in the roadbed, within the fill, there may be historic period resources at the intersection of Pearl Street and Oak Street, at former Block 112. Resources may also lie on the west side of Pearl Street between Frankfort Street and Ferry Street adjacent to Block 105. The water table is currently reported at 16' and 20' below grade in this section of the APE, so any potential wells on these lots could have been excavated to these depths, and possibly deeper. Shallower features may lie in the fill which extends between 19.5' to 21' below grade.

Pearl Street from Peck Slip to Beekman Street has a moderate potential for precontact resources. Currently there is between 15 and 15.5' feet of fill reported below grade, while the water table is located at 13.5 and 18'. Therefore, if precontact resources do lie within this APE they may be either directly above or within the water table. Historic resources dating to at least the1730s onward may be present in Pearl Street. Both the east and west sides of the street were once developed blocks, with structures razed for its widening. Shallow historic features may be located within the reported 15.5' of fill, although since the water table fluctuates between 13.5 and 18', some of these may be inundated. If wells were excavated within the APE, they would probably extend at least as deep as the water table, and possibly deeper.

Pearl Street from Beekman Street to Fulton Street is moderately sensitive for precontact resources. Fill here extends to 18.5' below grade, but the depth of the water table could not be established since the boring log was illegible. The water table is probably at a similar depth noted just to the north, where it ranges between about 13.5

and 18' below grade. Therefore, potential precontact resources may lie below the fill, but there is the possibility that they are inundated. The APE is also potentially sensitive for a Revolutionary War period redoubt, but it is questionable as to whether this fragile resource could have survived subsequent development. The APE was also found to be potentially sensitive for historic period resources on its eastern side, dating from the 17th century onward. These resources could potentially lie within the fill to at least 18.5' below grade, and possibly deeper.

Fulton Street between Pearl Street and Water Street was found to be sensitive for potential precontact resources only near the intersection of Pearl Street and Fulton Street. This is where early historic maps show this section of the APE elevated above the shoreline. No boring logs for this location were available, so the potential depth of resources is currently unknown. Since the remainder of Fulton Street served as Beekman's Slip and was periodically dredged, if precontact resources were present here they were probably disturbed. In contrast, the whole APE is potentially sensitive for 18th century fill (including potential sunken ships), cribbing, and possible fill retaining devices. Since fill at Water Street was reported to about 19' below grade, these historic period resources could extend from the surface down to this depth.

Water Street from Fulton Street to John Street has moderate to minimal sensitivity for precontact resources outside of the location of John Street (a former slip), which may lie below 16' of fill, and extending about another five feet to 21' below grade. However any potential resources would be inundated since the water table lies at 7.5' below grade. This APE is also potentially sensitive for the pre-1730 wharf that allowed for the creation of Water Street and for fill dating from the early to mid-18th century. Lyon Slip at John Street was filled by 1761, so this area is also sensitivity for fill and/or fill retaining devices as well as cribbing along the edges of the slip. The former locations of the lots on Block 74 (the eastern 20' of Water Street) are also sensitive for fill and/or fill retaining devices, as well as evidence of 18th through 20th century occupation. Given the depth of fill reported here, the depth of potential historic resources in this section of the APE is estimated to be at least 16' below grade, and possibly deeper.

Water Street from John Street to Maiden Lane has moderate to minimal sensitivity for precontact resources outside of the location of Maiden Lane (a former slip) below fill which lies about 10' to 17' below grade. However, like the block to the north, these would be inundated since the shallow water table lies about 7' below grade. The APE is also potentially sensitive for a variety of historic period resources. At Maiden Lane, the APE is sensitive for fill, cribbing, and fill retaining devices as well as foundations from the Fly Market. All of Water Street is sensitive for the ca.1730s wharf, fill, and fill retaining devices. And finally, the eastern 50' of Water Street is also sensitive for 18th through 20th century structures and any associated features that once stood on Block 71. The depths of historic resources are anticipated to extend at least 17' below grade, the maximum depth of reported fill, although they may continue to greater depths. Organic silt deposits below fill may represent the early historic river bottom and, therefore, are also considered sensitive for potential discard along the waterfront. Therefore, this APE is sensitive for historic period resources to at least 22' below grade, and possibly deeper.

Water Street from Maiden Lane to Wall Street has moderate to minimal sensitivity for precontact resources outside of the location of Wall Street (a former slip) below fill which lies about 14 to 23' below grade. However, like the block to the north, these would be inundated since the shallow water table lies about six to nine feet below grade. This APE is sensitive for fill, cribbing, and fill retaining devices at Wall Street, and all of Water Street is sensitive for the pre-1730s wharf, fill, and fill retaining devices. In addition, the eastern 50' of Water Street is also sensitive for 18th through 20th century structures and any associated features that once stood on Block 38. The depths of historic resources are anticipated to extend at least 23' below grade, the maximum depth of reported fill, and possibly deeper.

Water Street from Wall Street to Old Slip this section of the APE is potentially sensitive for historic period resources. At Wall Street, the APE is sensitive for fill, cribbing, and fill retaining devices. All of Water Street is sensitive for the pre-1730s wharf, fill, and fill retaining devices. And finally, the eastern 50' of Water Street is also sensitive for 18th through 20th century structures and any associated features that once stood on Block 33. The depths of historic resources are anticipated to extend at least 20' below grade, the maximum depth of reported fill, and possibly as deep as the mud level that extended to 32.2' below grade.

Water Street from Old Slip to Coenties Slip this APE at Old Slip is sensitive for fill, cribbing, and fill retaining devices from the surface down to the top of the IRT Subway tunnels. All of Water Street is sensitive for the pre-1730s wharf, fill, and fill retaining devices. And finally, the eastern 50' of Water Street is also sensitive for Cruger's Wharf and 18th through 20th century structures and any associated features that once stood on Block 33. The depths of historic resources are anticipated to extend at least 20' below grade, the maximum depth of reported fill, and possibly as deep as the bottom of silt levels that extended to a maximum depth of 40.8' below grade.

Water Street from Coenties Slip to Broad Street was found to be potentially sensitive for 17th century fill and fill retaining devices beneath all of Water Street; evidence of the quay for the Great Dock and Basin beneath the east side of Water Street; cribbing, fill, and fill retaining devices at Coenties Slip; and, finally, 18th through 20th century occupation of the seven lots on former Block 7 on the east side of Water Street. Resources potentially extend from the surface down to the deepest reported fill, at 19.4' below grade, and possibly to what may have been the 17th century river bottom extending down to 23.7' below grade.

Water Street from Broad Street to Moore Street may be potentially sensitive for 17th century fill, and fill retaining devices beneath all of Water Street; evidence of the quay for the Great Dock and Basin beneath the east side of Water Street; the Long Bridge wharf, fill, and fill retaining devices at Broad Street; and finally 18th through 20th century occupation of the nine lots on former Block 8 on the east side of Water Street. The anticipated depth of resources is assumed to extend to what may have been the 17th century river bottom that borings suggest could be located at 23.7' below grade.

Water Street from Moore Street to Whitehall Street was found to be sensitive for fill and fill retaining devices beneath all of Water Street and for 18th through 20th century

structures that stood on seven lots on Block 8. The anticipated depths of these historic resources are unknown, given that no boring logs were available for review outside of one taken from an obviously disturbed area.

State Street and adjacent Peter Minuit Park (see Chapter 6.3) experienced subsurface disturbance with the construction of a series of subway and vehicular tunnels, as well as foundations for structures related to an elevated railway. However, there is still the possibility that, outside of the footprint of these historic period resources related to the 17th and 18th century fill process could still be present. No borings were available for review, so the depth of potential resources is unknown.

6.1.4 Proposed Project Effects

All of the potential resources identified within the APE on Chrystie Street from Delancey Street south to Canal Street would be affected by cut and cover construction under the Shallow Chrystie Option (SYSTRA Drawing CR-04, March 8, 2002). The potential precontact and historic resources range in depth from zero to 37 feet below grade, whereas construction would extend from the surface down to between 25 and 40 feet below grade. In contrast, there would be no effect to any of these resources under the Forsyth Street Option, since construction for this option would not occur in this location (SYSTRA Drawing CT-01, Marcy 1, 2002). Should project plans change, potential effects on archaeological resources would be reassessed. If adverse effects to potential resources are identified, additional archaeological investigations, including the review of boring logs, additional documentary research, and subsurface testing, will be warranted, as described below under "Recommendations."

Potential precontact resources may lie between approximately ten and 16 feet below grade on Bowery between Bayard and Division Streets. Potential effects for the Shallow Chrystie Option would entail cut and cover construction to about 45 feet below grade on Bowery between Pell and Division Streets for the construction of the Chatham Square Station (SYSTRA Drawing CT-03, March 1, 2002). Proposed cut and cover construction for the Chatham Square Station on Bowery between Pell and Division Streets from the surface down to 70 feet for the Forsyth Street Option would also affect these resources.

Chatham Square is potentially sensitive for both precontact and 18th century resources to unknown depths. Proposed cut and cover construction to 45 or 70 feet below grade for construction of the Chatham Square Station under the Shallow Chrystie and Forsyth Street Options would affect these resources (SYSTRA Drawing CT-03, March 1, 2002).

St. James Place from Chatham Square to Pearl Street is potentially sensitive for precontact and 17th through 19th century historic resources, including potential burials related to the Shearith Israel Cemetery. Resources are estimated to extend from the surface down to approximately 27 feet below grade. Proposed cut and cover construction for the Chatham Square Station from Chatham Square to Madison Street from the surface down to 45 or 70 feet below grade and to build the Shallow Chrystie Option tunnel between Madison and Pearl Streets from the surface down to 45 feet below grade would affect potential resources (SYSTRA Drawing CT-03, March 1, 2002).

Between St. James Place and Peck Slip, Pearl Street is potentially sensitive for 18th and 19th century residential and domestic features between zero and 21 feet below grade and for precontact resources between approximately nine and 26 feet below grade. Proposed cut and cover construction to build the tunnel for the Shallow Chrystie Option from the surface down to 75 feet below grade would affect these potential resources. Cut and cover construction to build the Seaport Station from Dover to John Streets on Pearl Street and the Shallow Chrystie Option tunnel south to Fulton Street would also affect potential precontact and 17th through 19th century residential and commercial features, as well as a potential Revolutionary War redoubt (SYSTRA Drawing CT-02, March 1, 2002). These resource types are estimated to extend from the surface down to approximately 24 feet below grade, whereas effects could extend to 80 feet below grade. Proposed mining through soil to build the tunnel for the Forsyth Street Option between Madison and Dover Streets on Pearl Street at a depth of 50 to 85 feet below the surface would not affect potential precontact and historic period resources since the anticipated depths of these resources are located above the area of potential construction. Should project plans change, potential effects on archaeological resources would be reassessed. If adverse effects to potential resources are identified, additional archaeological investigations, including the review of boring logs, additional documentary research, and subsurface testing, will be warranted, as described below under "Recommendations."

Potential precontact resources may exist beneath Fulton Street at Pearl Street and beneath Water Street between Fulton and Wall Street. Resources are anticipated to lie between about 16 and 28 feet below grade. These would potentially be affected by proposed cut and cover construction of the tunnel, which would extend to 80 feet below grade under the Shallow Chrystie Option (SYSTRA Drawing CR-02, March 8, 2002). Cut and cover construction of the Seaport Station between Fulton and John Streets would also affect precontact resources. This APE was also found to be potentially sensitive for 18th to 19th century fill, cribbing, fill retaining devices, waterfront features, and 18th through 20th century residential and commercial features. These are estimated to extend from the surface down to about 23 feet below grade, with proposed effects extending to 80 feet below grade under the Shallow Chrystie Option (Ibid.). Under the Forsyth Street Option, proposed mining through soil from John Street to Wall Street would not affect potential resources since construction would occur at a depth of 70 to 80 feet below grade and potential resources are anticipated at shallower than 23 feet below grade (SYSTRA Drawing CT-02, March 1, 2002). Should project plans change, potential effects on archaeological resources would be reassessed. If adverse effects to potential resources are identified, additional archaeological investigations, including the review of boring logs, additional documentary research, and subsurface testing, will be warranted, as described below under "Recommendations."

From Wall Street to Coenties Slip, Water Street is potentially sensitive for a variety of historical resources, including fill, fill retaining devices, wharves, docks, cribbing, and 18th through 20th century residential and commercial features. These historical archaeological resources are estimated to extend form the surface down to a maximum depth of about 41 feet below grade. Proposed cut and cover construction of the Hanover Square Station from the surface down to 75 feet below grade would affect these historical resources (SYSTRA Drawing CR-01, March 8, 2002).

Construction plans (SYSTRA Drawing CT-01, March 1, 2002) currently indicate that the proposed subway does not extend south of Coenties Slip. In this scenario, potential historical resources between Coenties Slip and State Street will not be affected. Should project plans change, potential effects on archaeological resources would be reassessed. If adverse effects to potential resources are identified, additional archaeological investigations, including the review of boring logs, additional documentary research, and subsurface testing, will be warranted, as described below under "Recommendations."

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.

6.1.5 Recommendations

There is a possibility that sections of the APE were utilized at some time during the precontact and contact periods. Although the likelihood that resources would have survived the 19th and 20th century development of this part 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 throughout the APE.

While the probability of finding intact, significant precontact or contact period resources eligible for inclusion on the National Register of Historic Places is remote, the scant possibility should be corroborated, if possible, by evidence from additional soil borings and/or subsurface testing. The possibility that *in situ* precontact and contact period resources may exist in this part of Manhattan dictates the further investigation of subsurface conditions.

There is also a moderate to probable expectation of encountering intact, significant historical-period remains beneath the roadbed and sidewalks that line the APE where historical structures were noted, and where 17th and 18th century fill, fill retaining devices, cribbing, wharves, bulkheads, and other waterfront features were noted. Again, a subsurface testing plan will be warranted to test these potentially sensitive areas.

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] However, it is not anticipated that conclusions would change significantly, given that most of the borings referenced in this section of the APE were taken in the 1970s, a fairly modern date, except those in Lower Manhattan along Water

[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.

Street, many of which dated to the 1930s. Because one section of the APE (St. James Place between Oliver and James Streets) is potentially sensitive for burial shafts, soil borings are not recommended for that area. Instead, soil borings will have to be conducted in abutting areas.

Following the review of soil borings, some sites 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 prepared in consultation with SHPO. It is expected that the additional documentary research will aid in the formulation of a specific subsurface testing plan.

Where subsurface testing is indicated, its goal would be to establish the presence or absence of cultural resources, their horizontal and vertical extent, site integrity, and, their 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 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.

For areas sensitive for human remains, additional documentary research will be undertaken to establish, if possible, interment and reinterment data, and the horizontal and vertical extent of the burials. After this is completed, potential effects will be reassessed as construction plans become refined. In the event that avoidance of the resource is not possible, then field verification will be undertaken to establish the

presence/absence of burials, utilizing a field research plan created in coordination with SHPO and LPC. Unless complete site disturbance can be established with absolute certainty, additional measures may be necessary at the time of construction to ensure that undocumented burials are not disturbed. This could entail monitoring by a physical anthropologist during the construction phase. The Programmatic Agreement for the project will specify the protocol and treatment of any human remains in the event that any such remains are encountered during field investigations or project construction will be developed and in place prior to such work.

6.1.6 Figures and Photographs

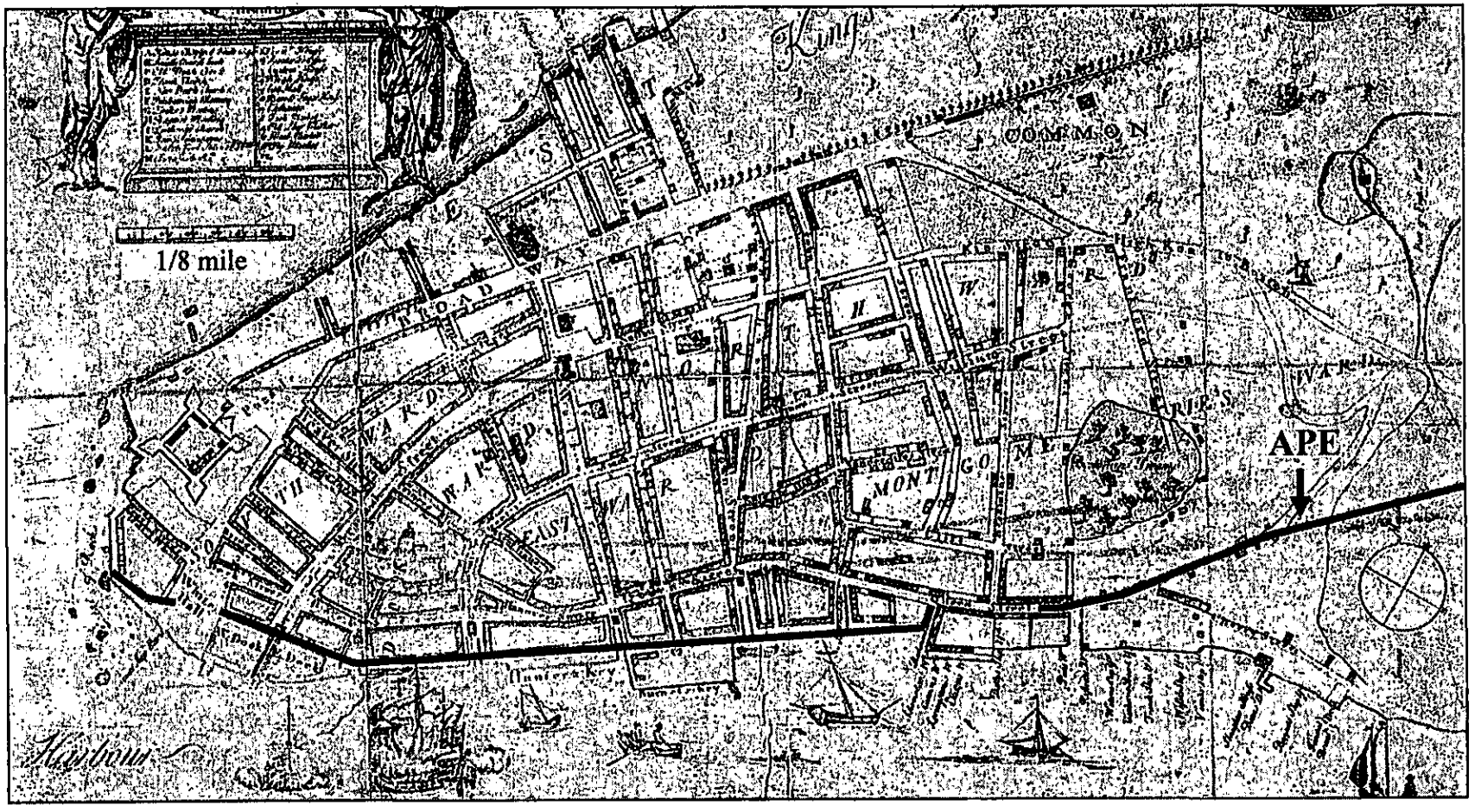


FIGURE 6.1-1

A Plan of the City of New York from an actual Survey. Lyne 1730.

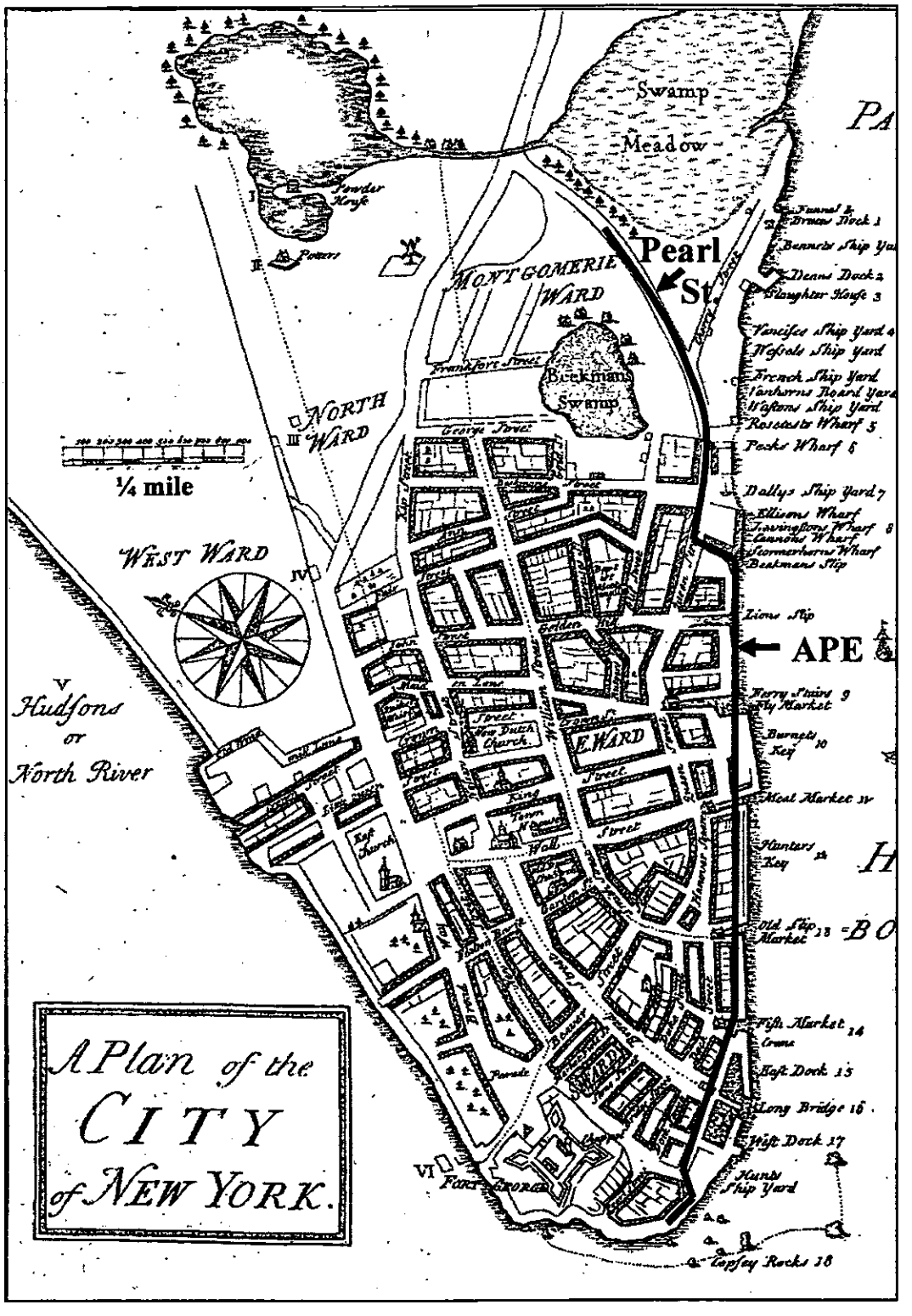


FIGURE 6.1-2

A Plan of the City of New York. Carwitham 1740.

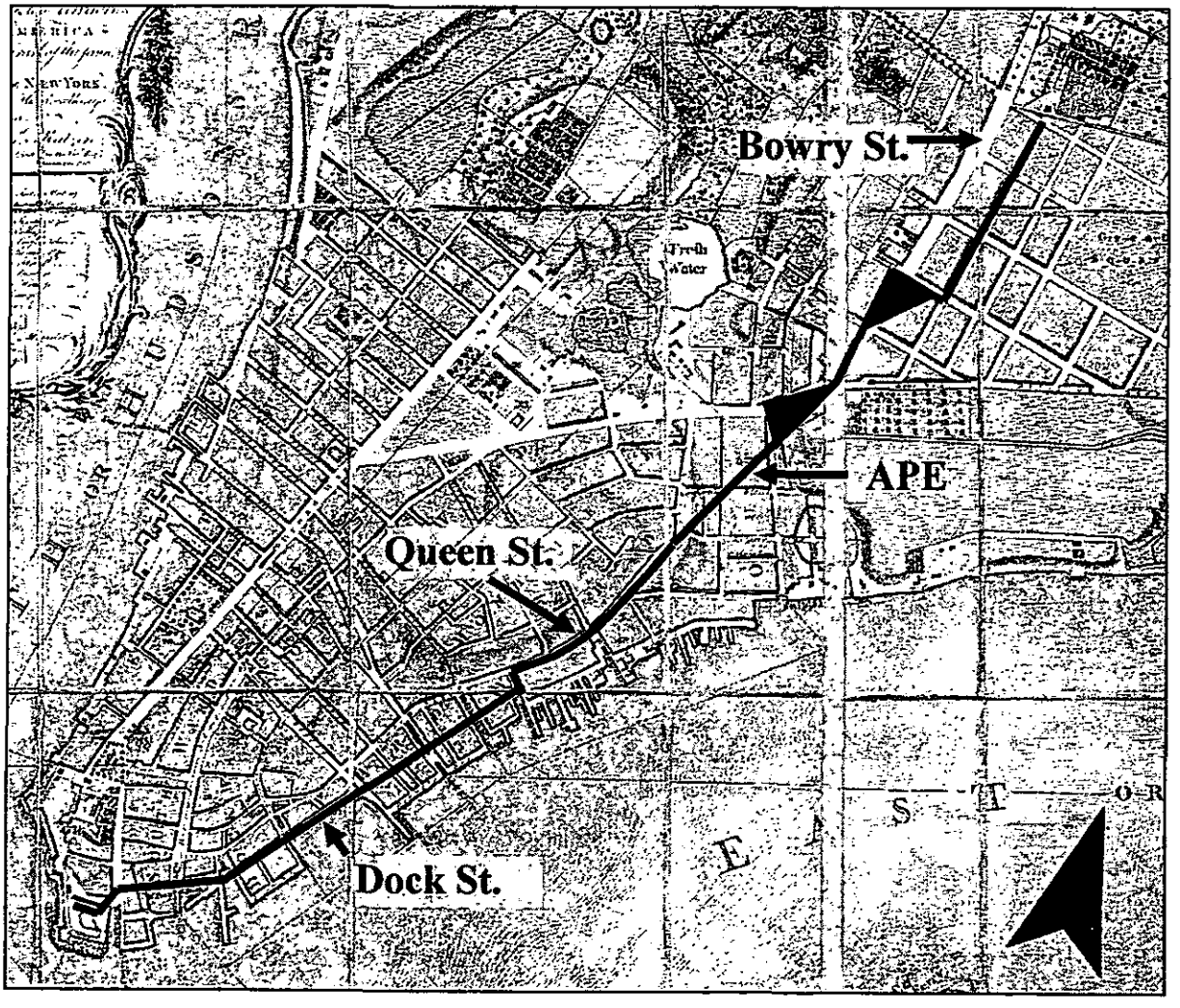


FIGURE 6.1-3

Plan of the City of New York. Ratzer 1766/67.

No Scale

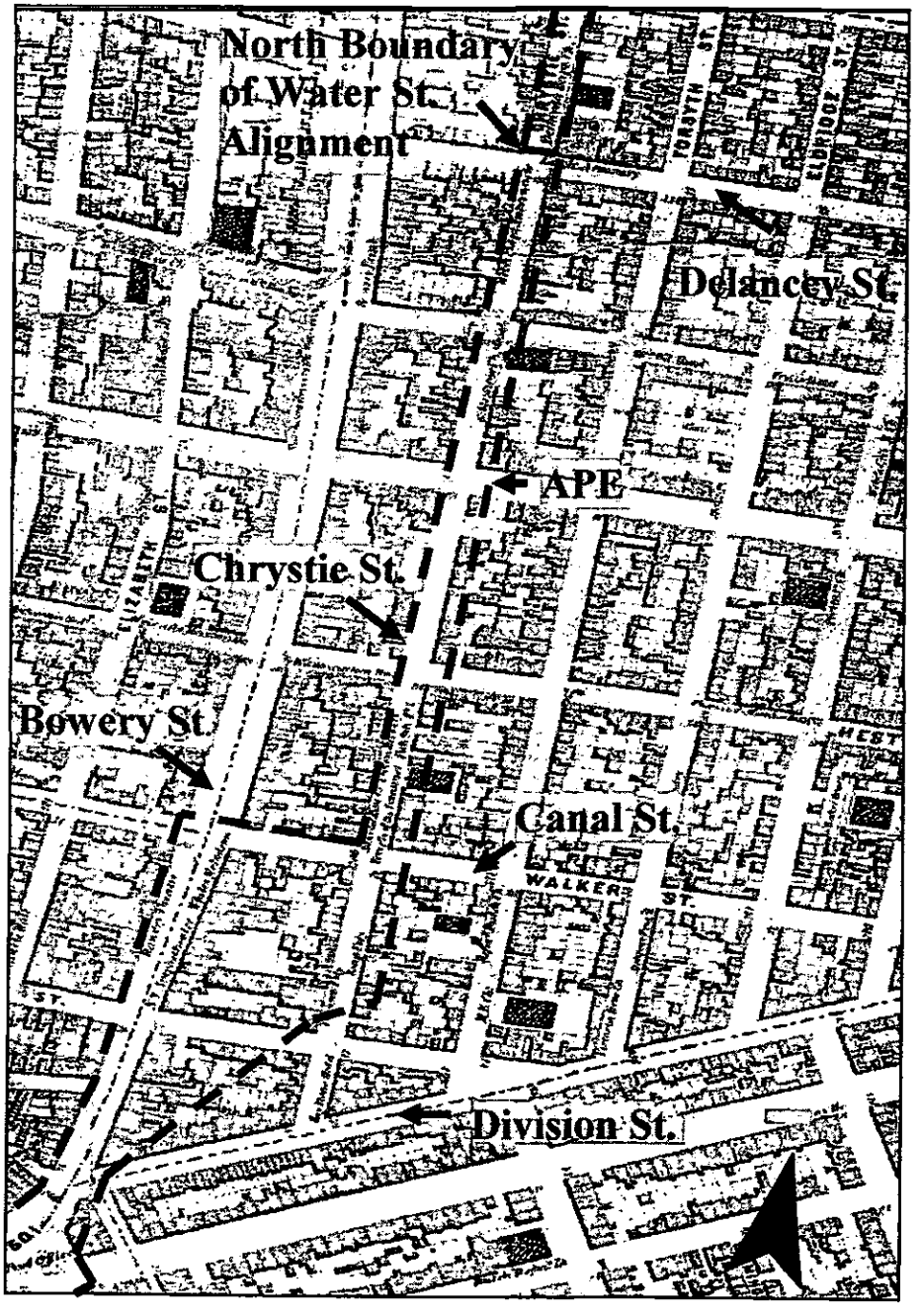


FIGURE 6.1-4a

Map of the City of New York Extending Northward to 50th Street. Dripps 1852.
Water Street Alignment, Delancey Street to Division Street.

Approximate Scale: 1/8 inch = 100 feet

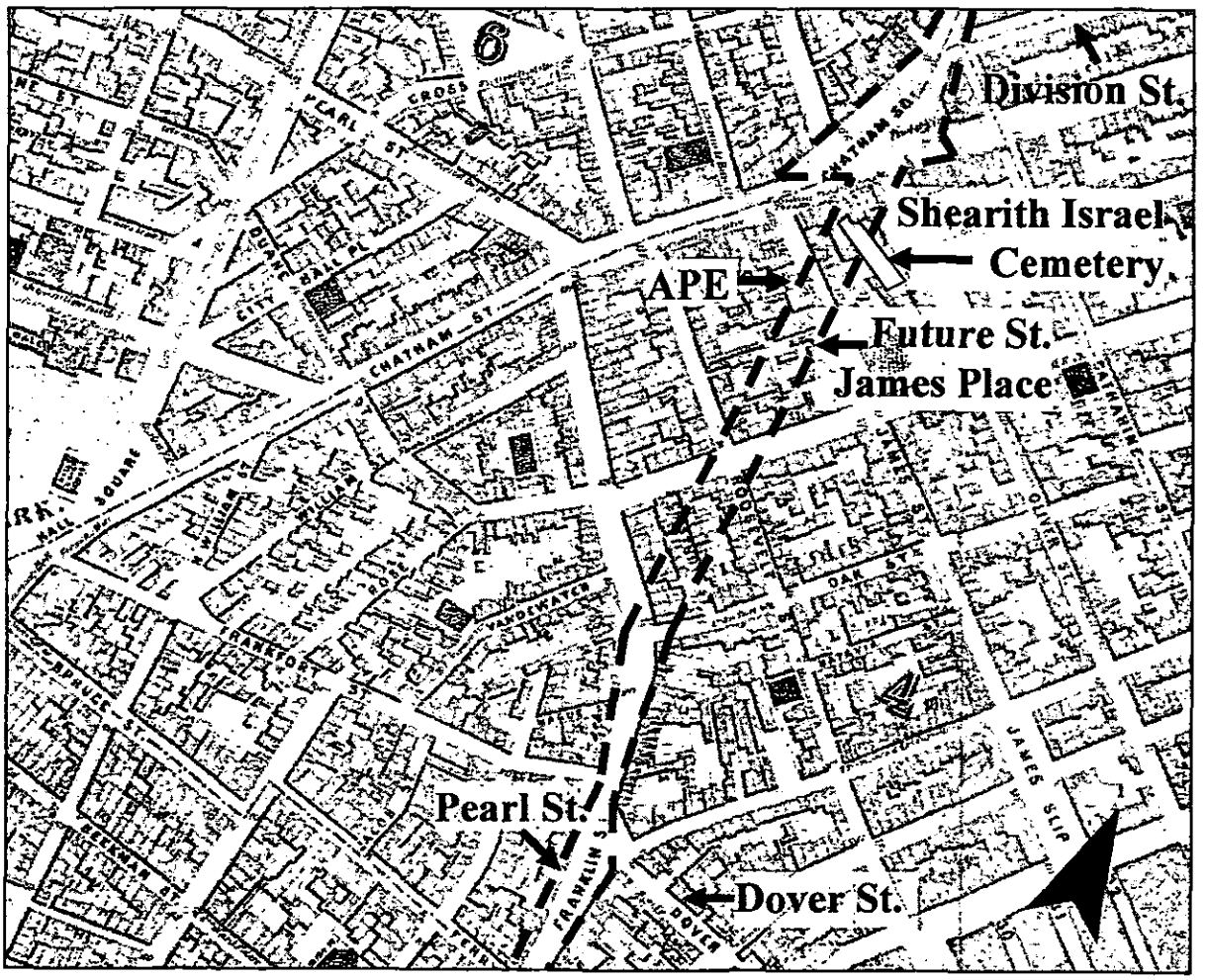


FIGURE 6.1-4b

Map of the City of New York Extending Northward to 50th Street. Dripps 1852.
Water Street Alignment, Division Street to Dover Street.

Approximate Scale: 1/8 inch = 100 feet

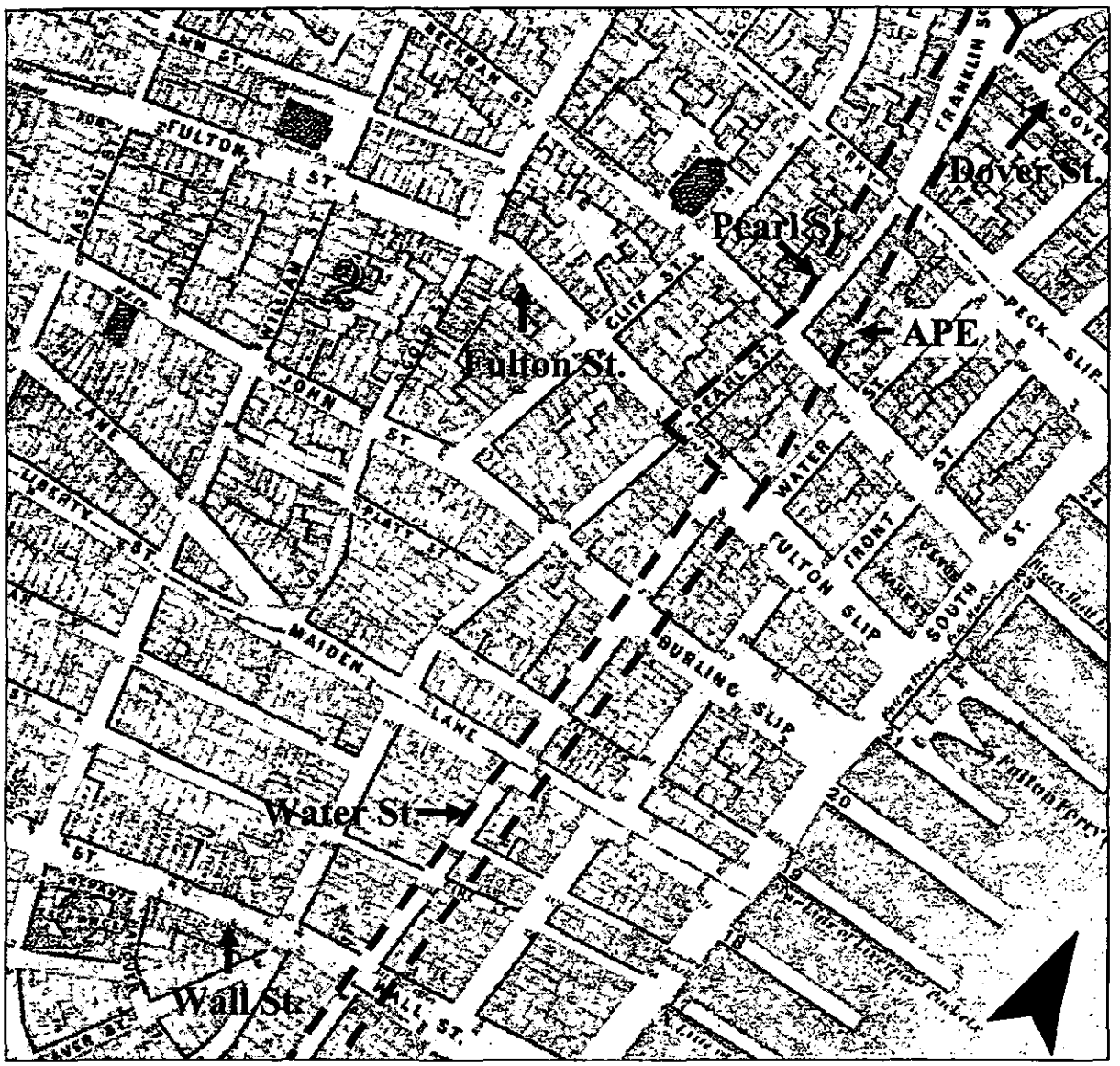


FIGURE 6.1-4c

Map of the City of New York Extending Northward to 50th Street. Dripps 1852.
Water Street Alignment, Dover Street to Wall Street.

Approximate Scale: 1/8 inch = 100 feet



FIGURE 6.1-4d

Map of the city of New York Extending Northward to 50th Street. Dripps 1852.
Water Street Alignment, Wall Street to State Street.

Approximate Scale: 1/8 inch = 100 feet

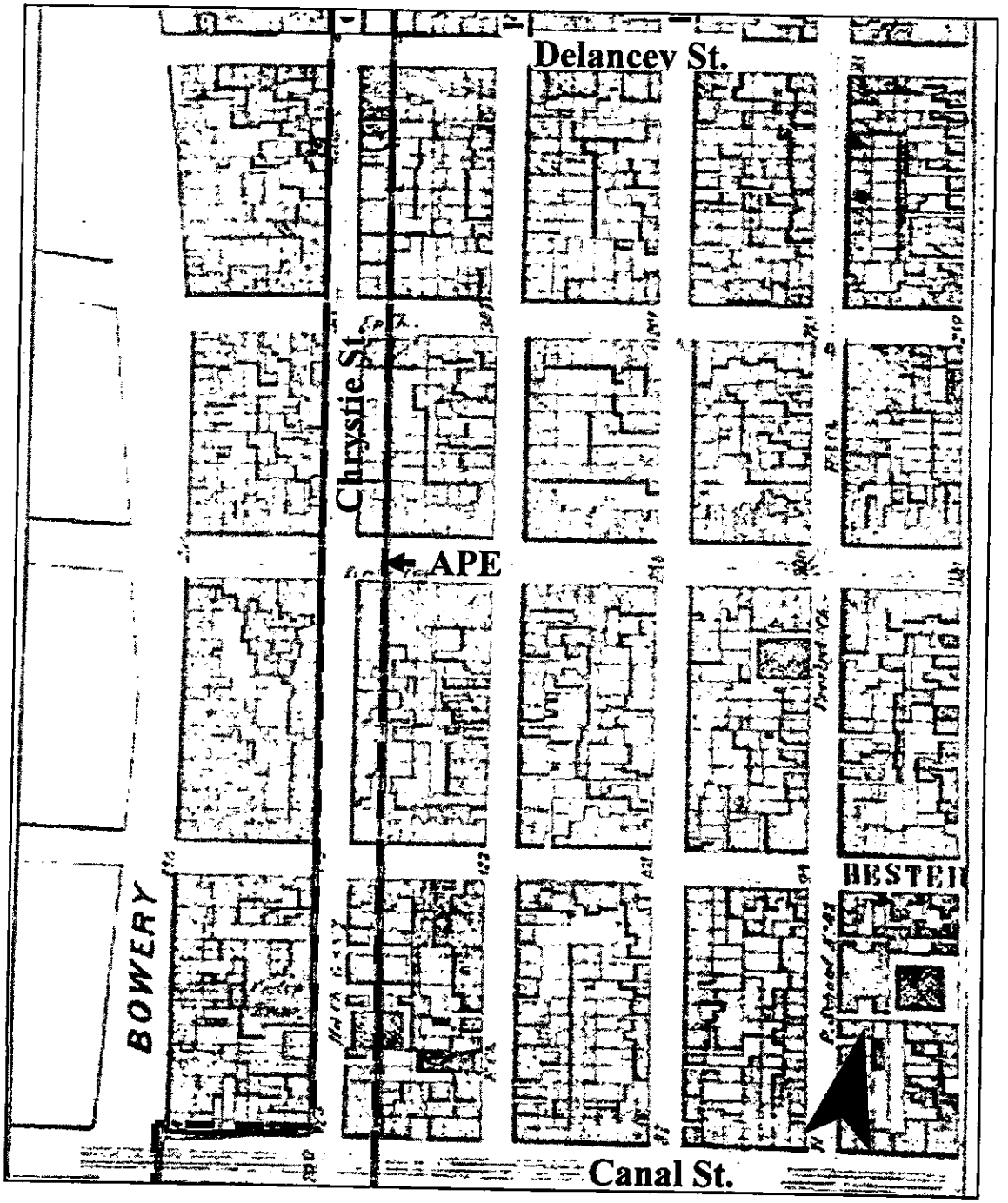


FIGURE 6.1-5a

New York City, County and Vicinity. Dripps 1867.
Water Street Alignment, Delancey Street to Canal Street.

Approximate Scale: 1/4 inch = 100 feet

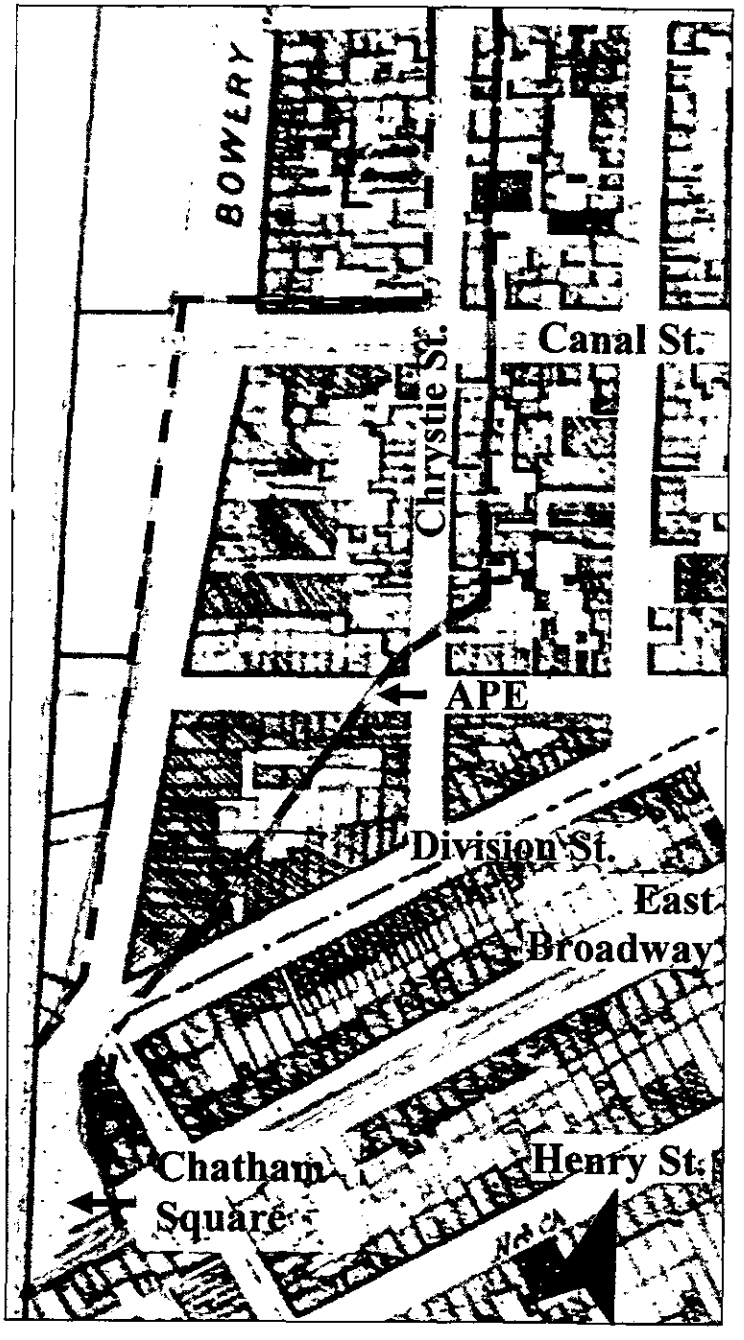


FIGURE 6.1-5b

New York City, County, and Vicinity. Dripps 1867.
Water Street Alignment, Canal Street to Chatham Square.

Approximate Scale: 1/4 inch = 100 feet

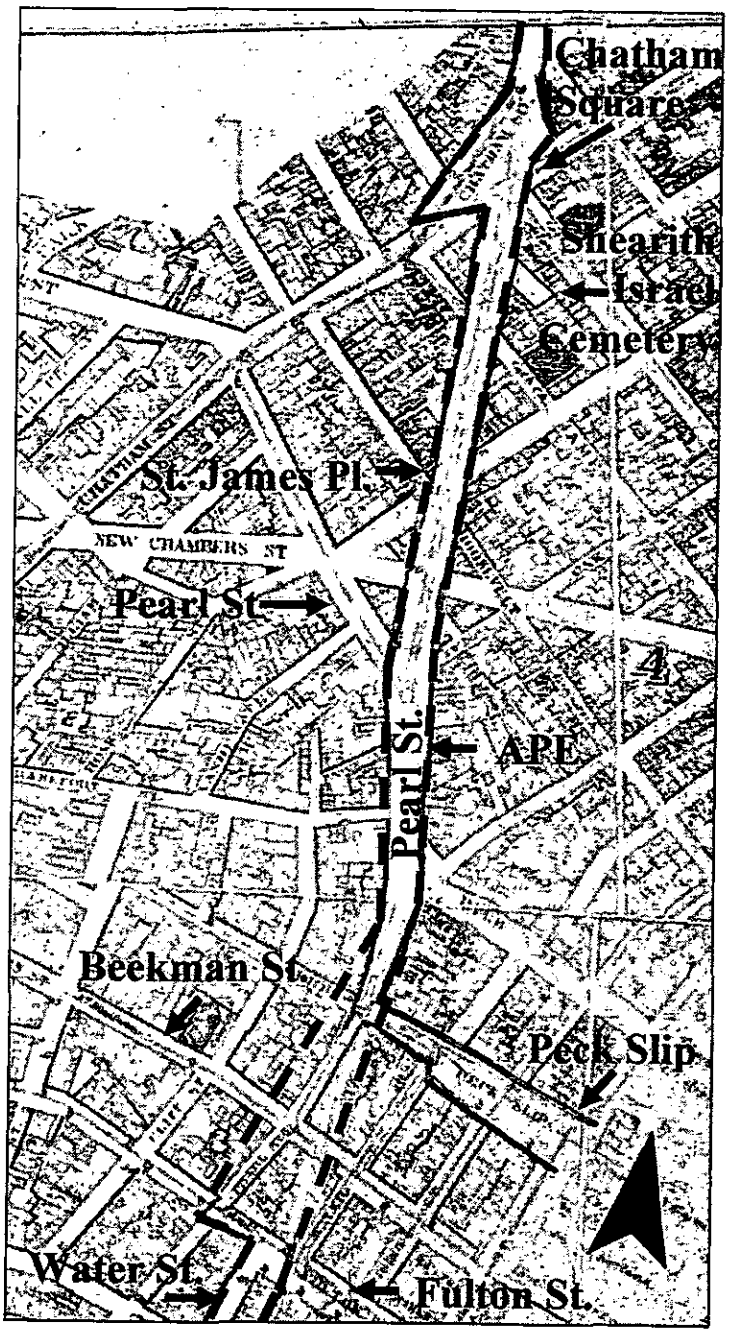


FIGURE 6.1-5c

New York City, County, and Vicinity. Dripps 1867.
Water Street Alignment, Chatham Square to Fulton Street.

Approximate Scale: ¼ inch = 100 feet

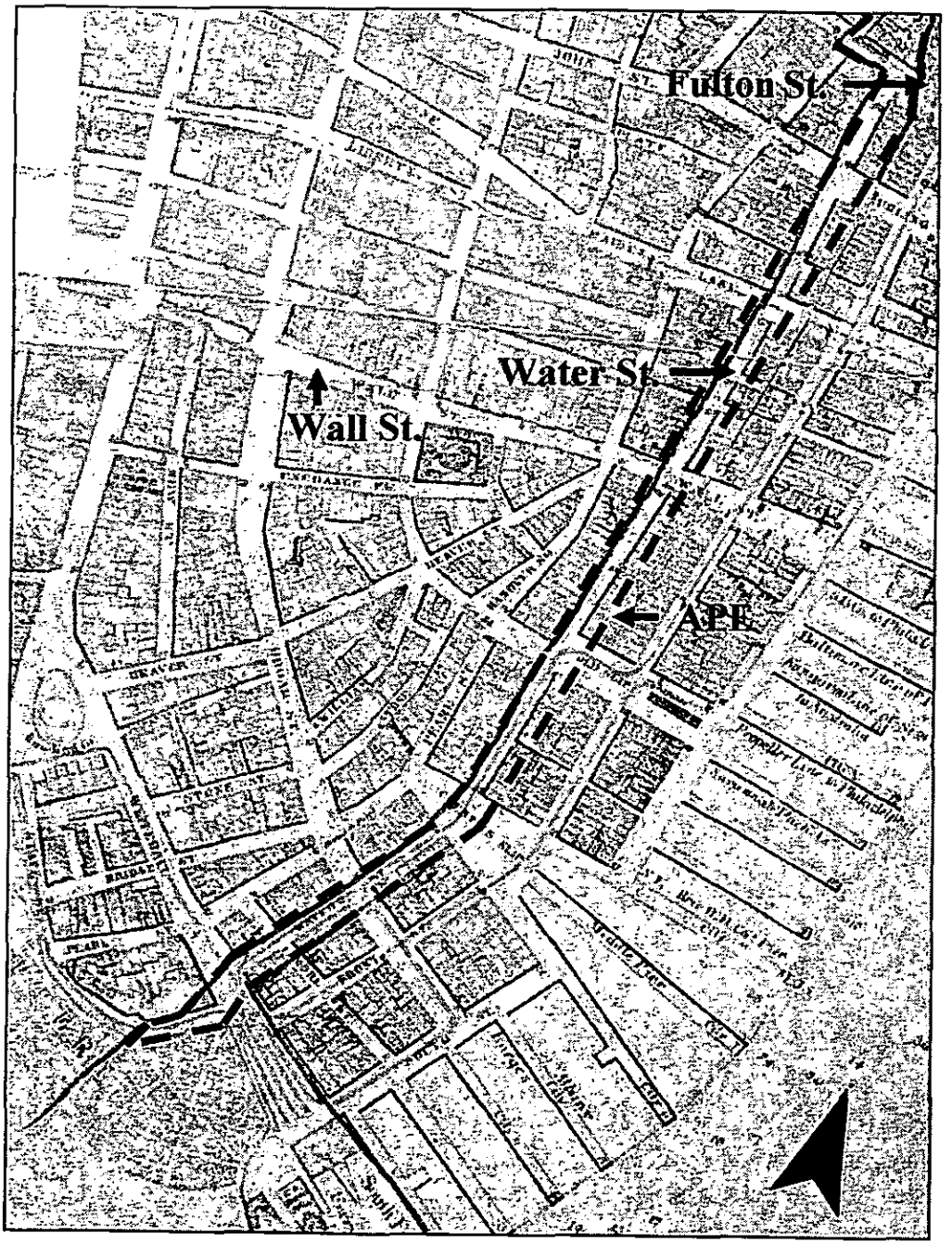


FIGURE 6.1-5d

New York City, County, and Vicinity. Dripps 1867.
Water Street Alignment, Fulton Street to State Street.

Approximate Scale: 3/8 inch = 200 feet

Legend:

- Historical Sensitivity
- Precontact Sensitivity
- Historical and Precontact Sensitivity

For areas of potential archaeological sensitivity for Sara D. Roosevelt Park, Forsyth Street, and Grand Street, see Chapter 4.6, Figure 4.6-10

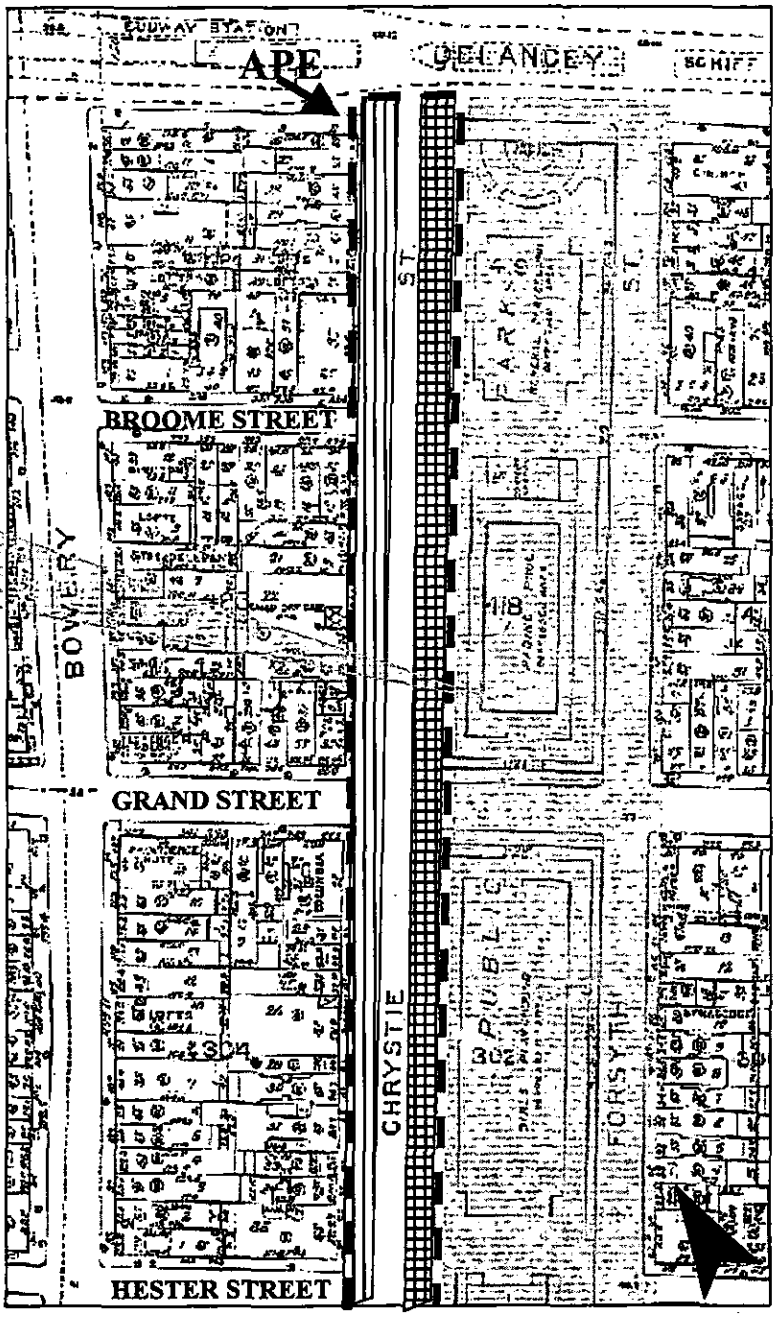


FIGURE 6.1-6a

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

Approximate Scale: ½ inch = 75 feet

Legend:

- Historical Sensitivity
- Precontact Sensitivity
- Historical and Precontact Sensitivity

For areas of potential archaeological sensitivity for Sara D. Roosevelt Park, Canal Street, and Forsyth Street, see Chapter 4.6, Figure 4.6-10.

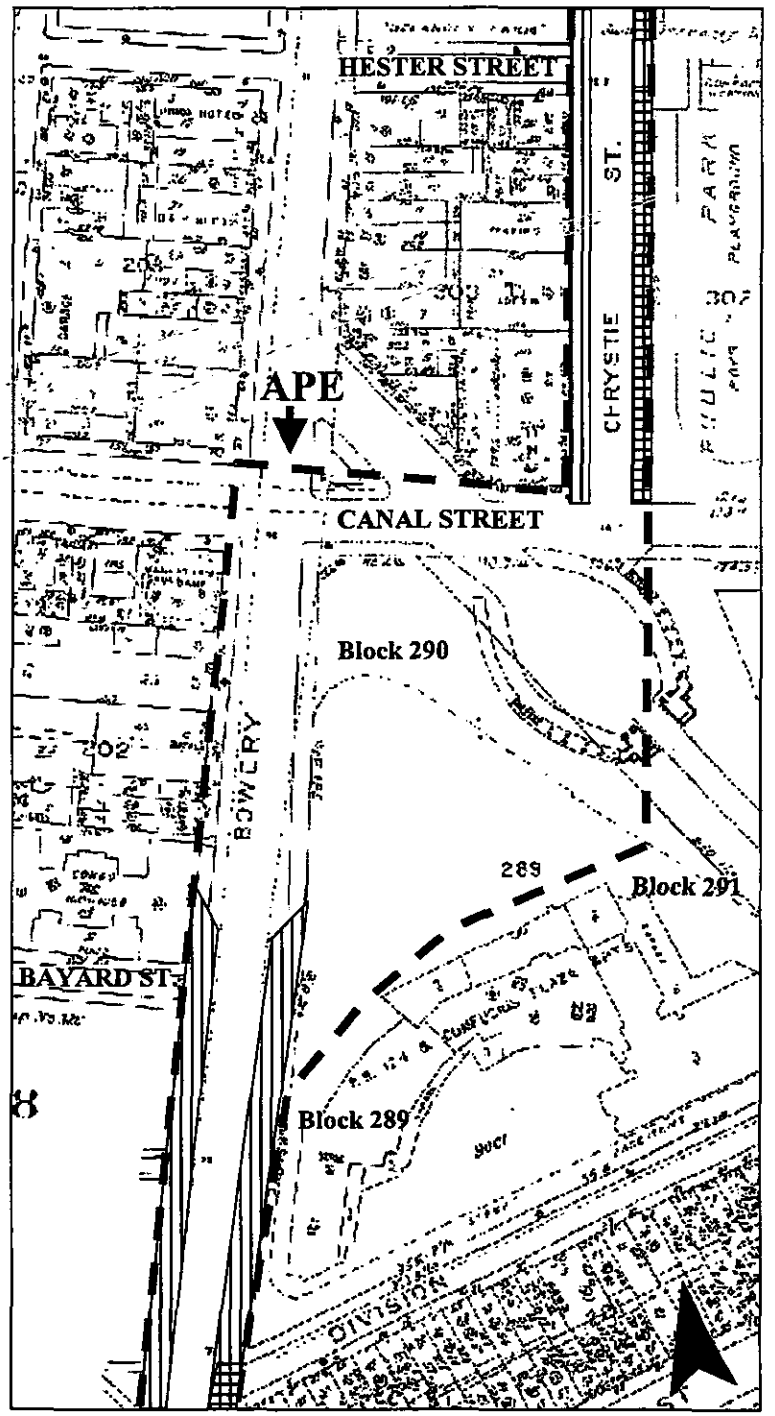


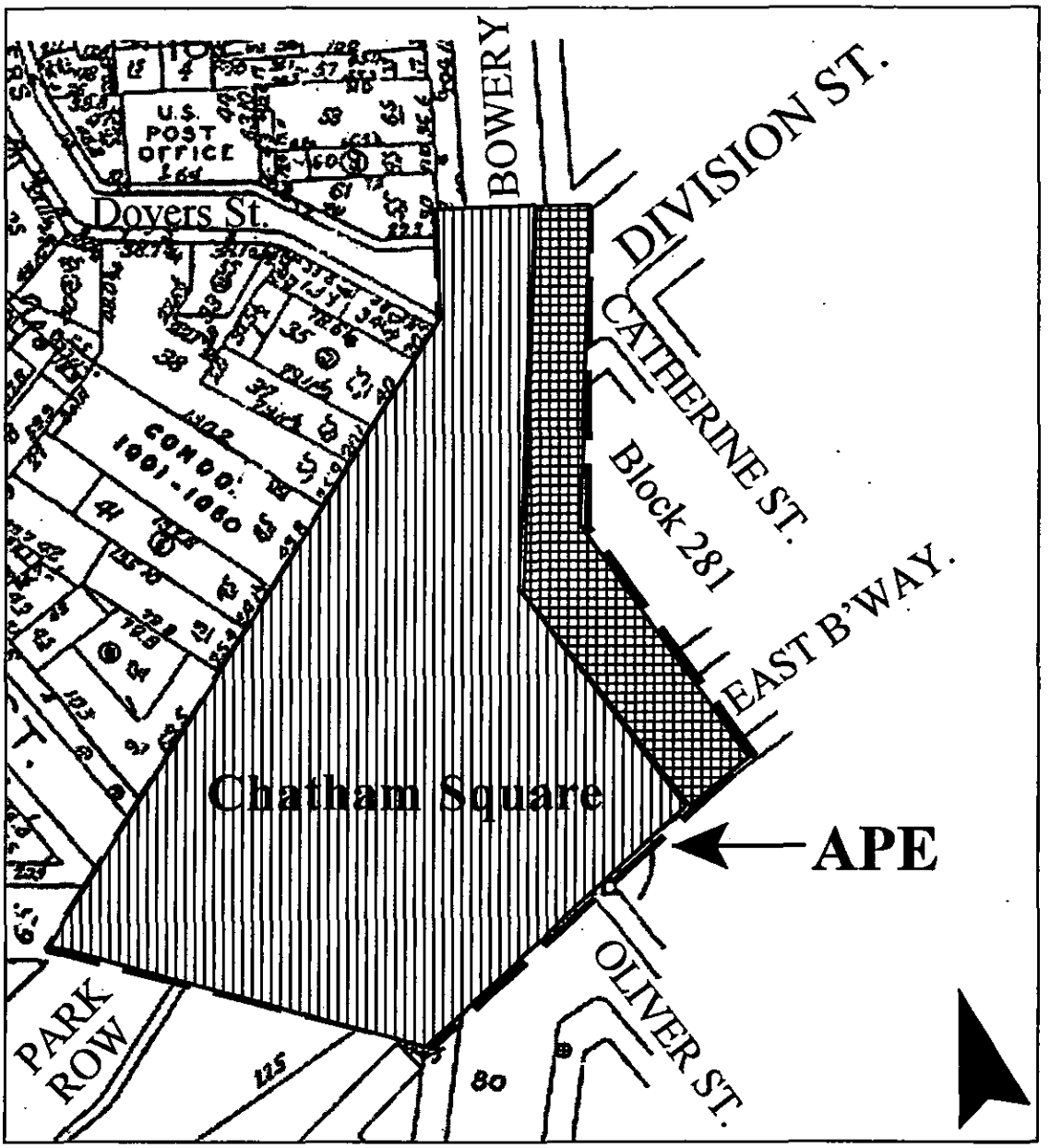
FIGURE 6.1-6b

Area of Potential Archaeological Sensitivity.

Chrystie Street, Hester to Canal Street, and Bowery, Bayard to Division Street.

Sanborn 2001.

Approximate Scale: ½ inch = 75 feet



Legend:

- Historical Sensitivity
- Precontact Sensitivity
- Historical and Precontact Sensitivity

FIGURE 6.1-6c

Area of Potential Archaeological Sensitivity.
Chatham Square. Sanborn 2001.

Approximate Scale: ½ inch = 50 feet

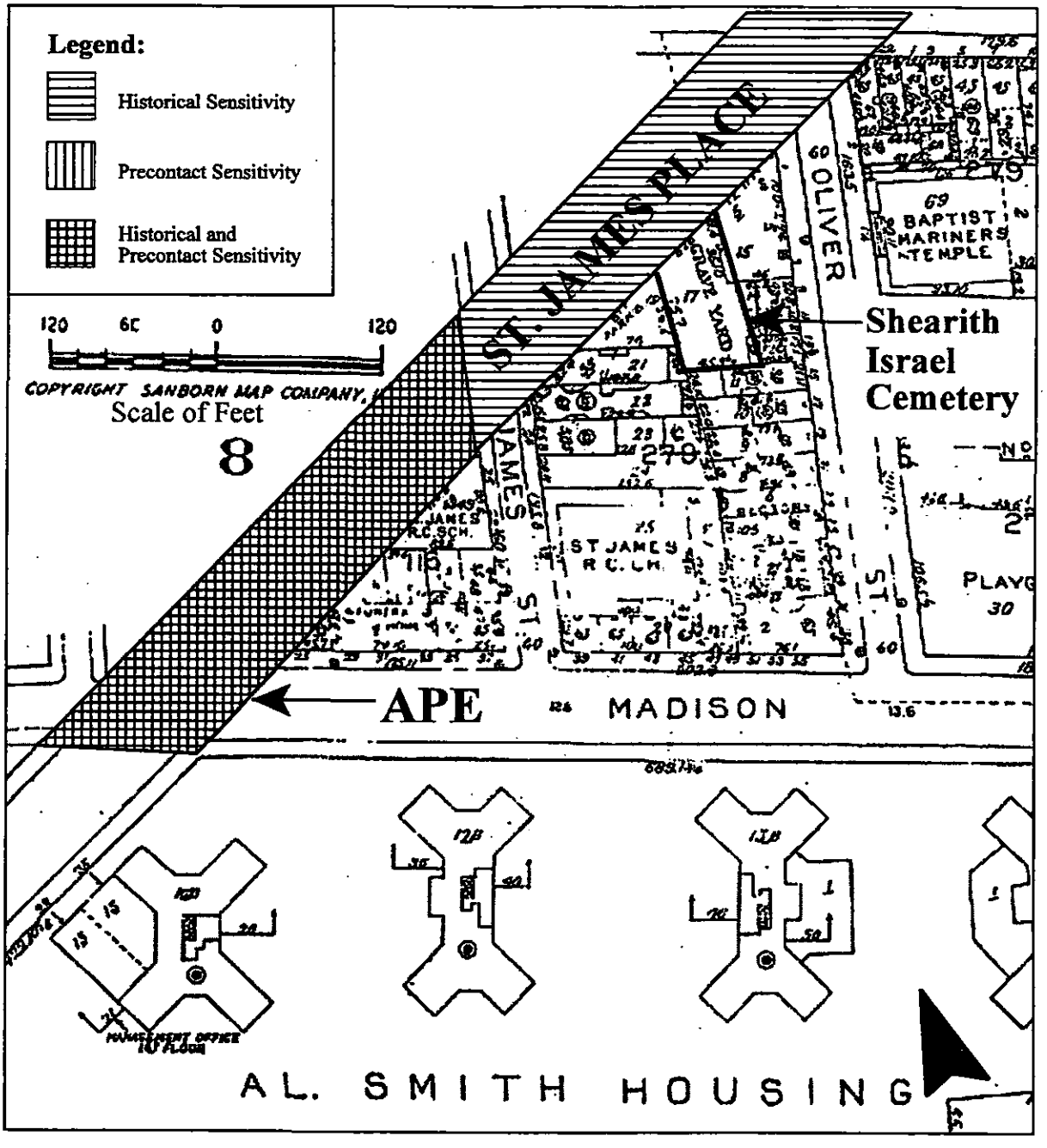


FIGURE 6.1-6d

Area of Potential Archaeological Sensitivity.
St. James Place, Chatham Square to Madison Street. Sanborn 2001.

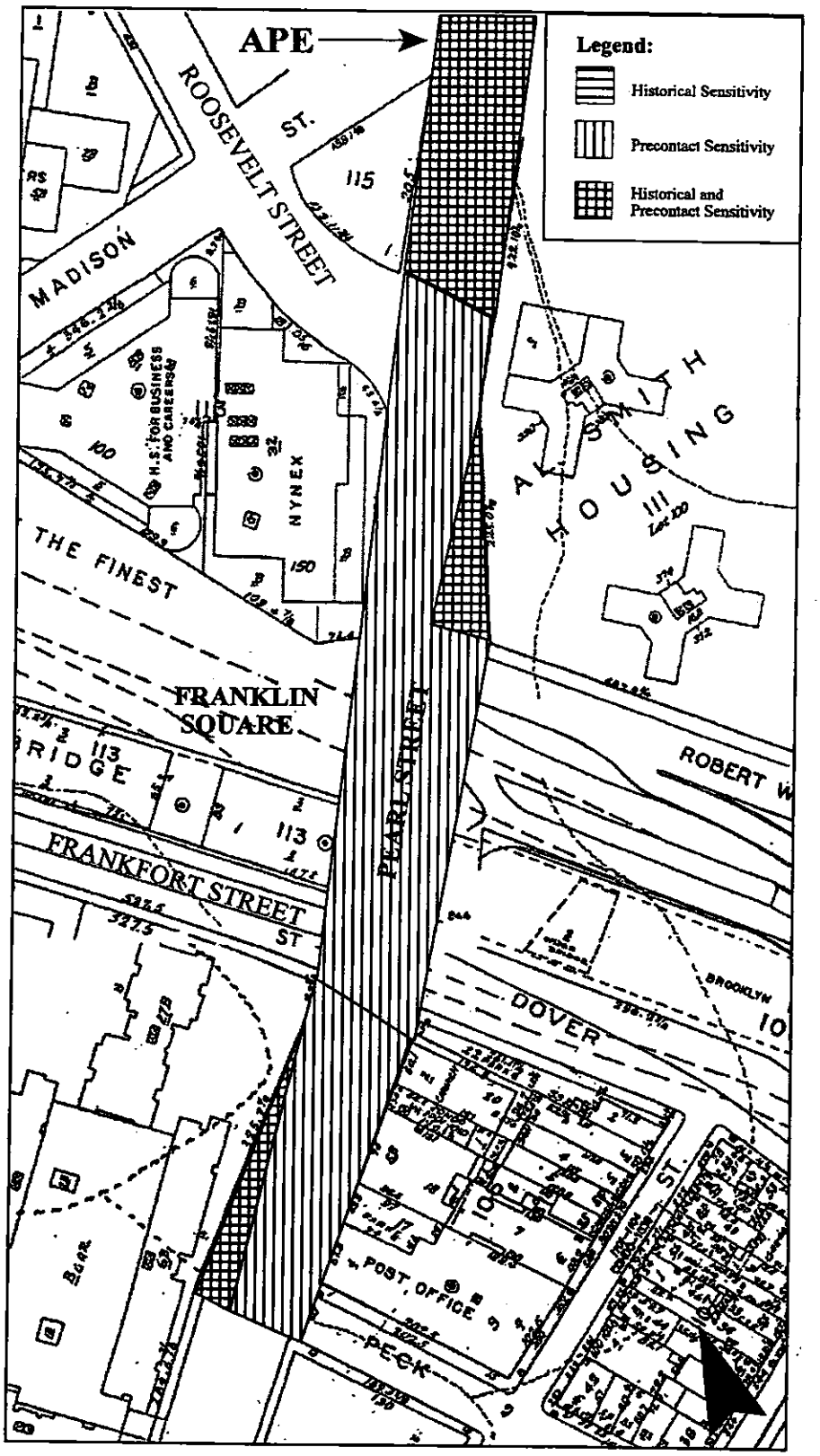


FIGURE 6.1-6e

Area of Potential Archaeological Sensitivity.

Pearl Street, Madison Street to Peck Slip. Sanborn 2001.

Approximate Scale: ½ inch = 90 feet

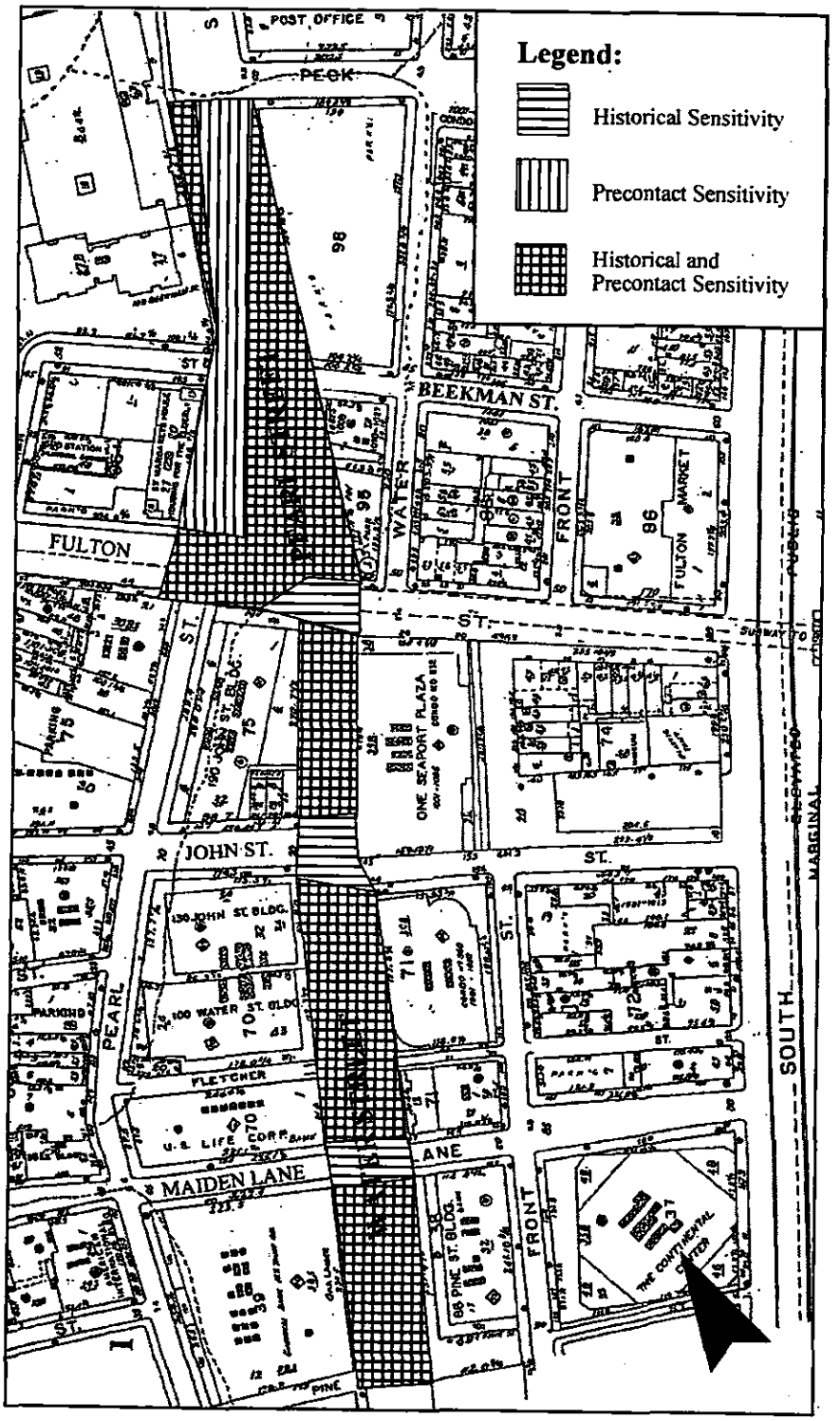


FIGURE 6.1-6f

Area of Potential Archaeological Sensitivity.
Pearl and Water Streets, Peck Slip to Pine Street. Sanborn 2001.

Approximate Scale: ½ inch = 100 feet

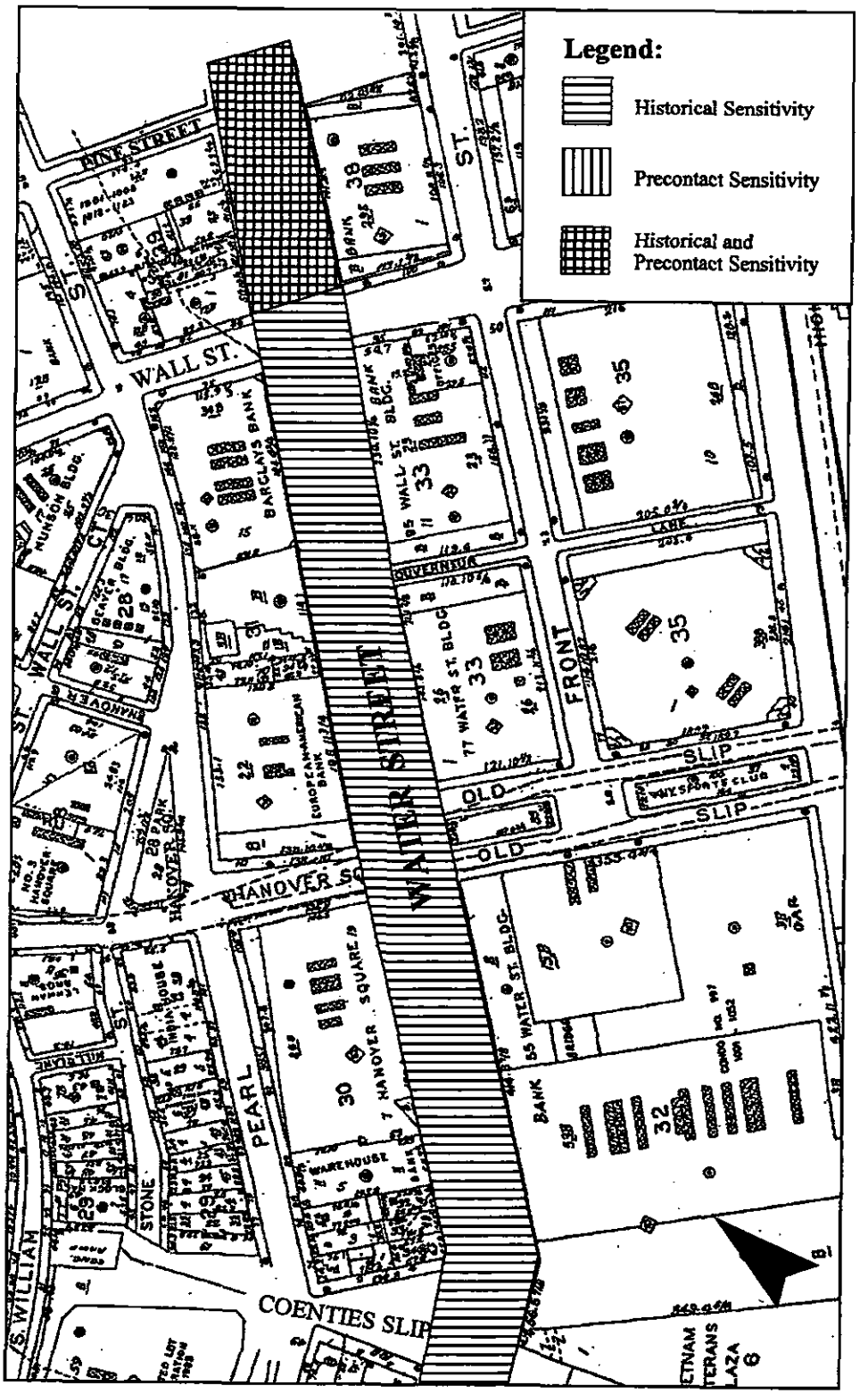


FIGURE 6.1-6g

Area of Potential Archaeological Sensitivity.
Water Street, Pine Street to Coenties Slip. Sanborn 2001.

Approximate Scale: ½ inch = 90 feet

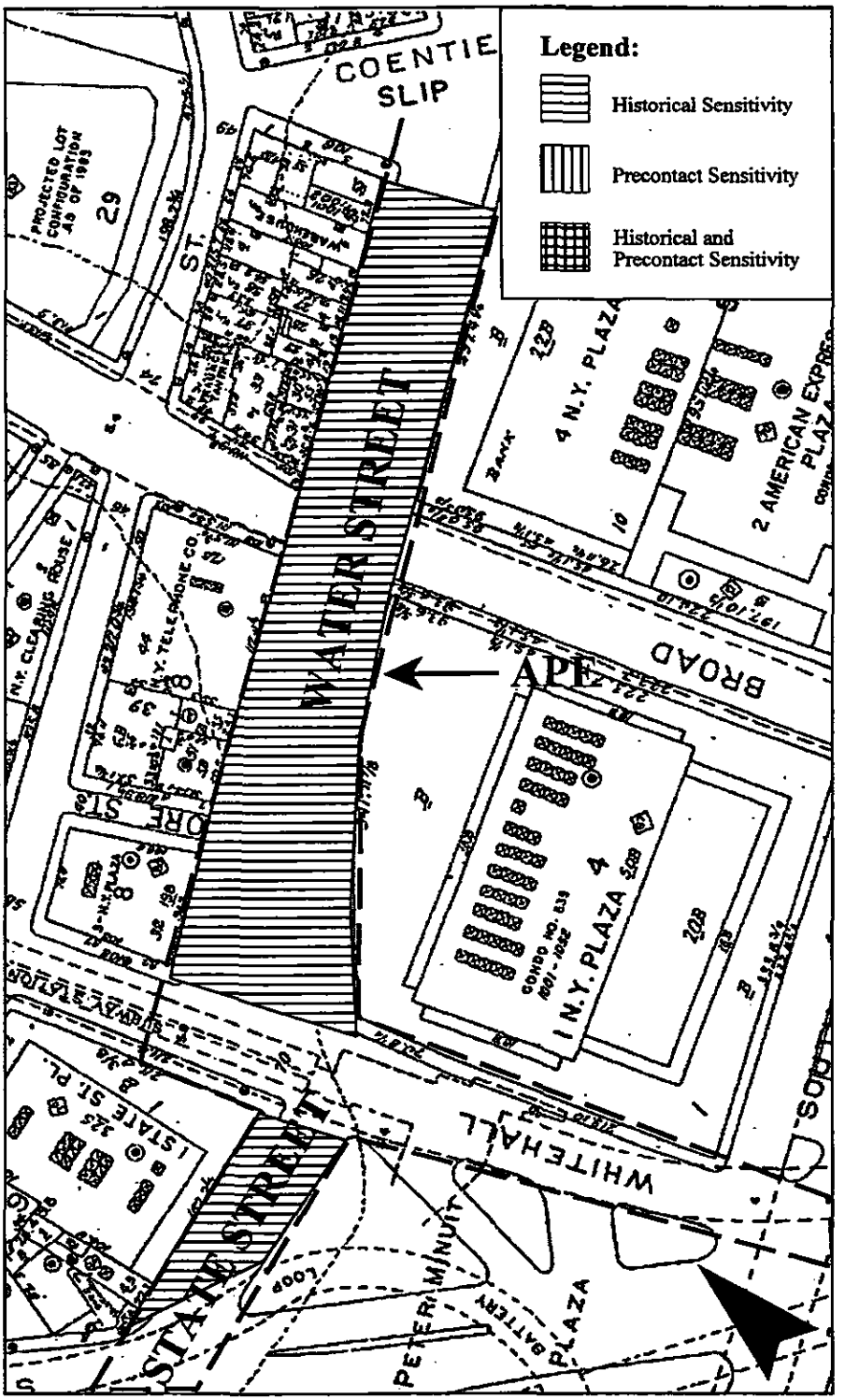


FIGURE 6.1-6h

Area of Potential Archaeological Sensitivity.
Water Street, Coenties Slip to Whitehall and State Street south of Whitehall.
Sanborn 2001.

Approximate Scale ½ =70 feet



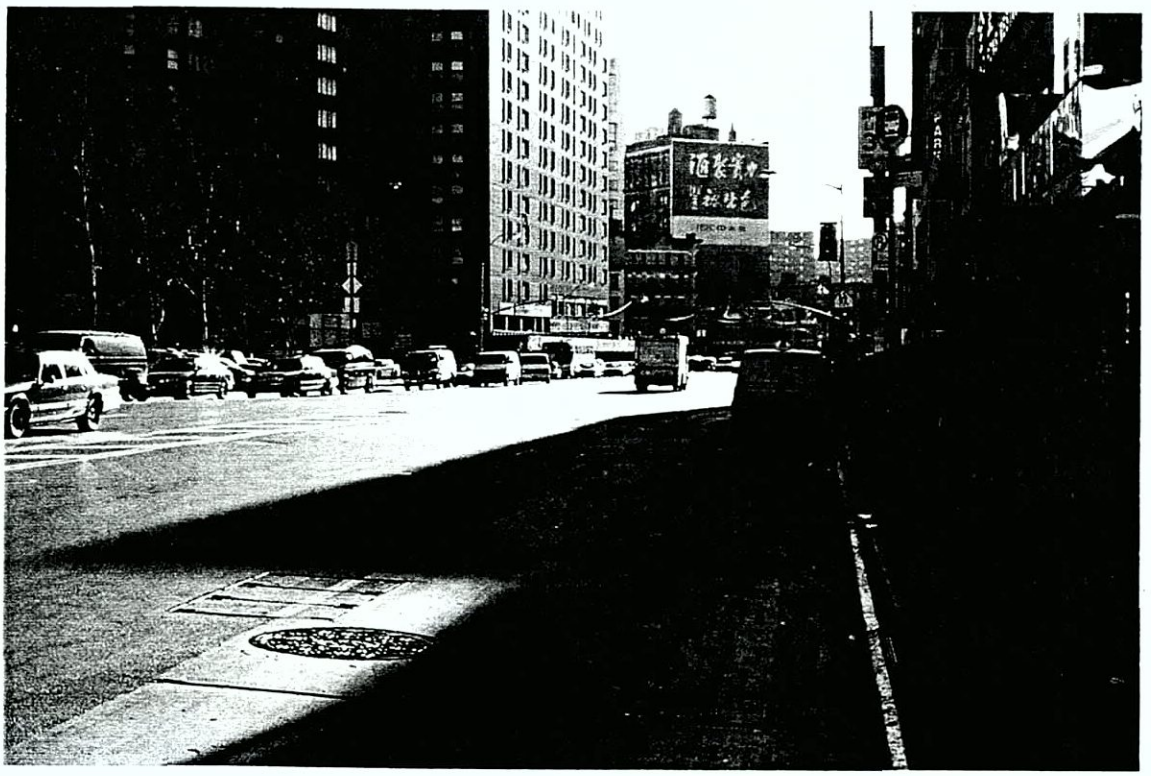
Photograph 6.1-1: Facing south on Chrystie Street from the west side corner of Delancy and Chrystie intersection. Note Sarah Delanory Roosevelt Park on left.



Photograph 6.1-2: Facing south on the east side of Chrystie Street between Grand Street and Canal Street



Photograph 6.1-3: Facing southeast on Canal Street between Chrystie and Bowery Street.



Photograph 6.1-4: Looking south down Bowery Street from Canal Street.



Photograph 6.1-5: Facing southeast on the corner of Bowert Street and Division Street towards Chatham Square.



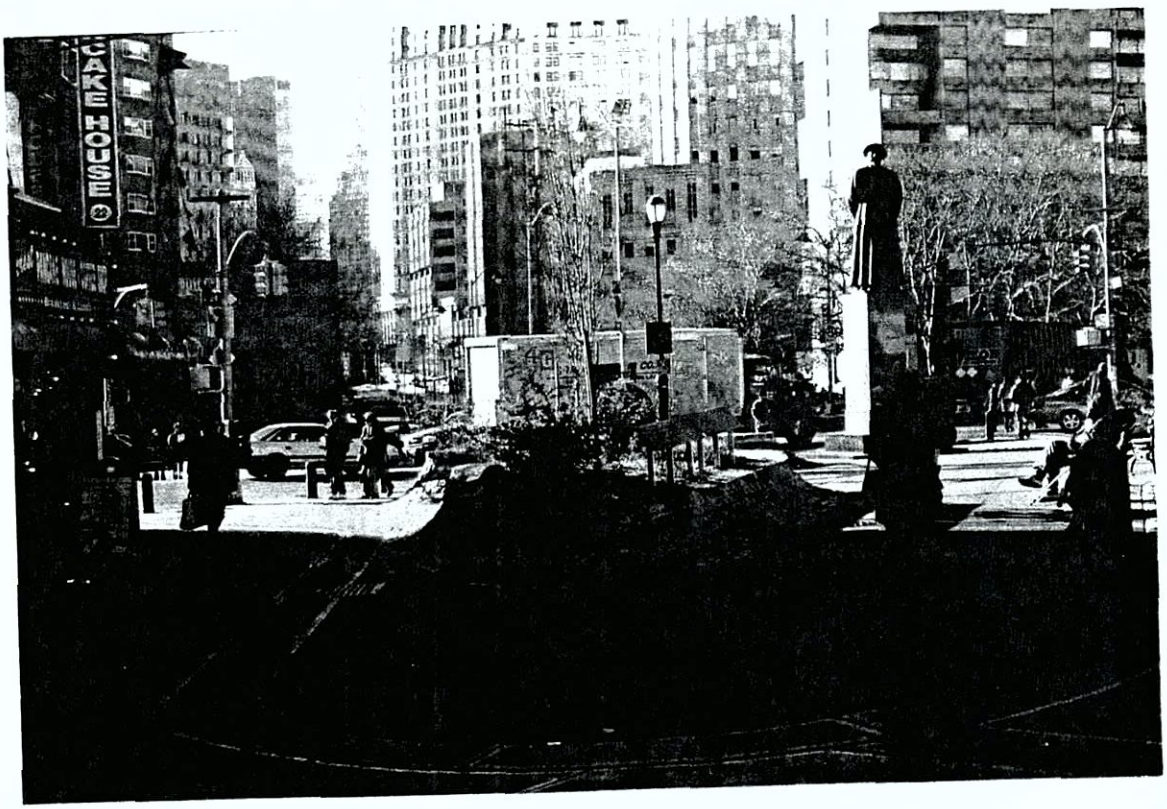
Photograph 6.1-6: Facing west on St. James Place towards the west side of Chatham Square.



Photograph 6.1-7: Facing southwest on Chatham Square on the corner of Catherine Street and Bowery Street on the west side of Chatham Square.



Photograph 6.1-8: Facing west to Kimlau Square from East Broadway and looking towards Chatham Square.



Photograph 6.1-9: Facing south on Chatham Square looking towards the east side of Oliver Street and Kimlau Square.



Photograph 6.1-10: Facing east towards the perimeter retaining wall of the cemetery that is shared with the St. James .05 Acre.



Photograph 6.1-11: Facing north, northeast on St. James Place toward the west side of the cemetery. View of southern perimeter of cemetery retaining wall.



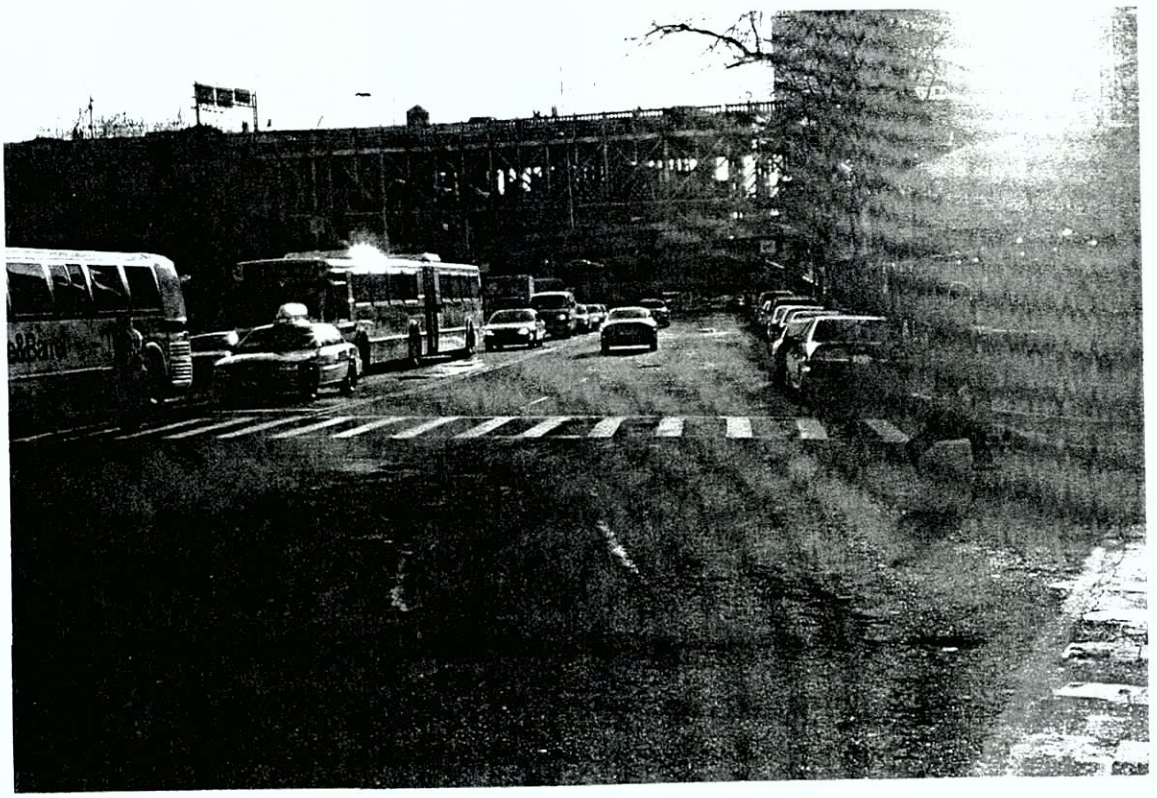
Photograph 6.1-12: Facing south along St. James Place towards the cemetery retaining wall. Note sidewalk slope in relation to the cemetery wall.



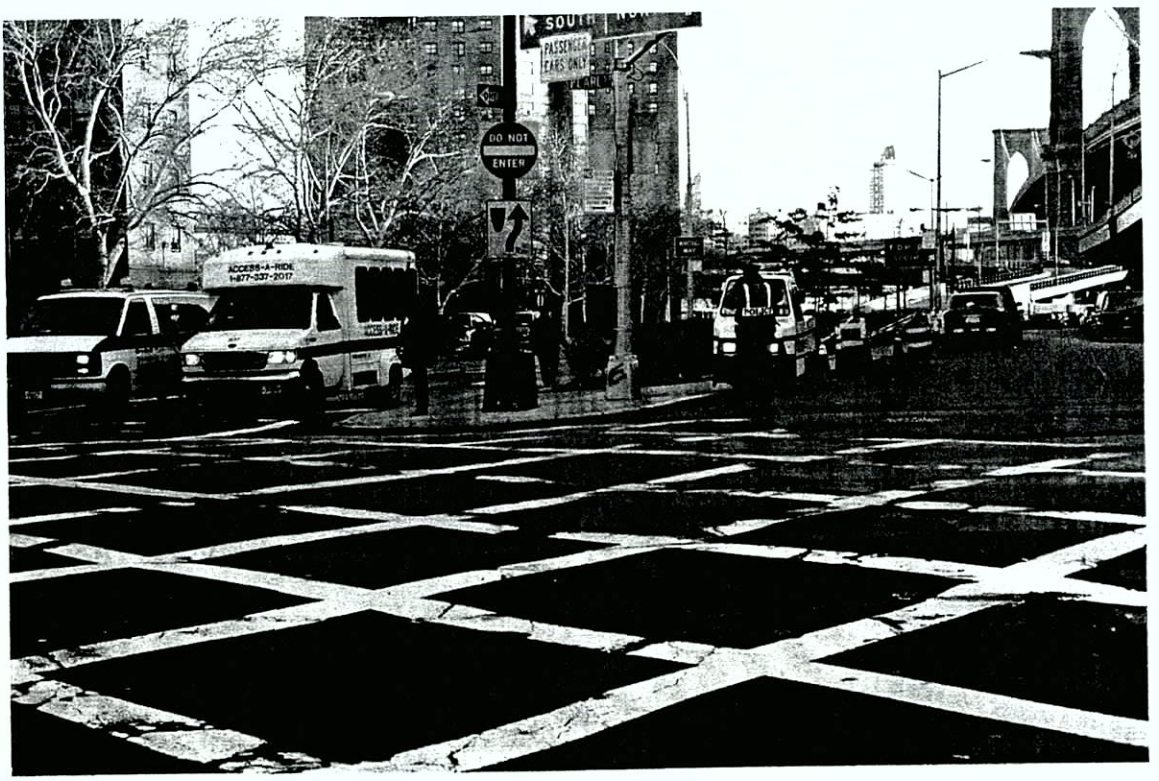
Photograph 6.1-13: Facing north on St. James Place with a view of the entrance. Note tablet over the arch and historical marker.



Photograph 6.1-14: Facing south down St. James Place almost near St. James Street.



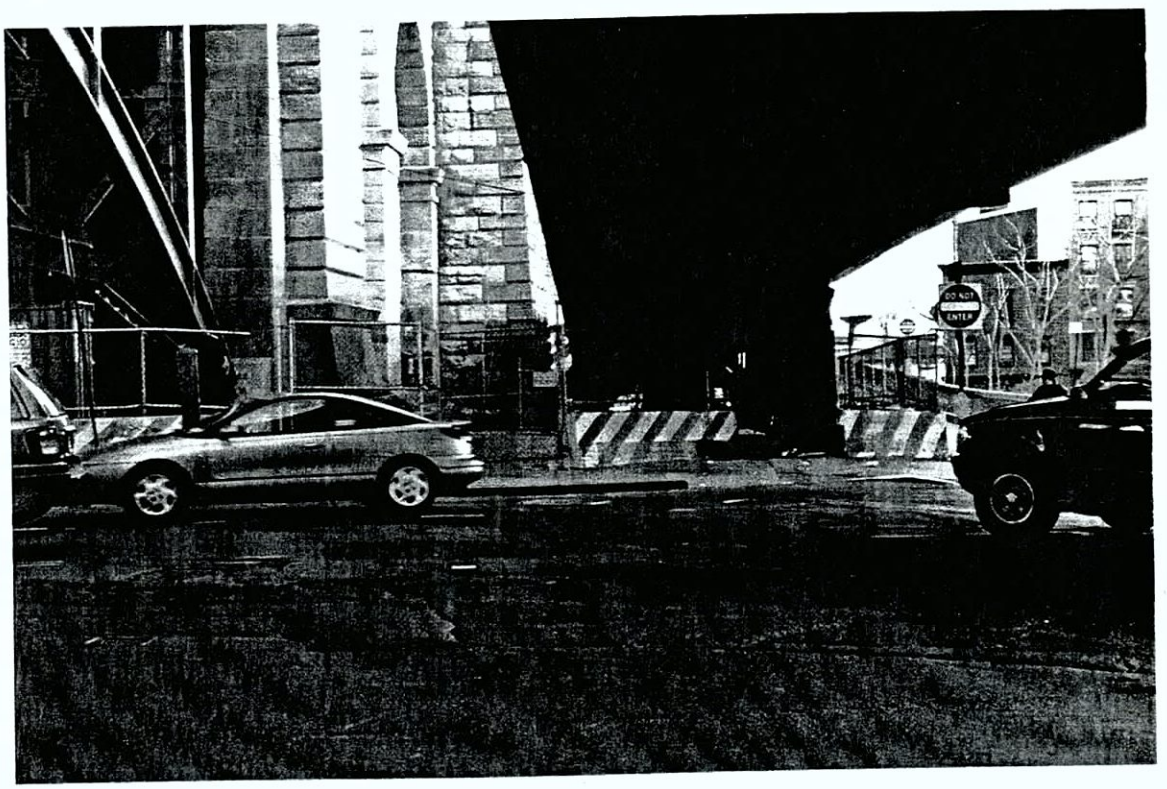
Photograph 6.1-15: Facing south looking down St. James Place from the Pearl Street intersection. Note the Brooklyn Bridge ramps over Pearl Street.



Photograph 6.1-16: Facing east at St. James Place and Avenue of the Finest.



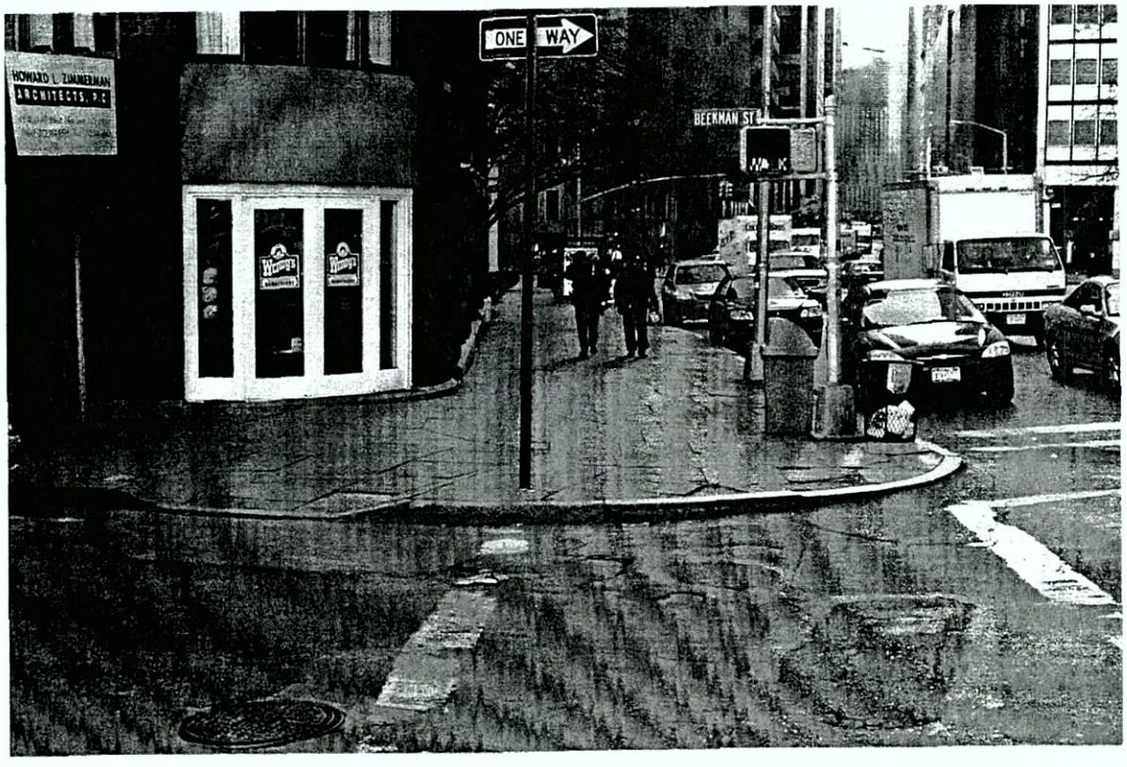
Photograph 6.1-17: Facing east on St. James Place and Avenue of the Finest towards Pearl Street.



Photograph 6.1-18: Facing East on Pearl Street under the Brooklyn Bridge.



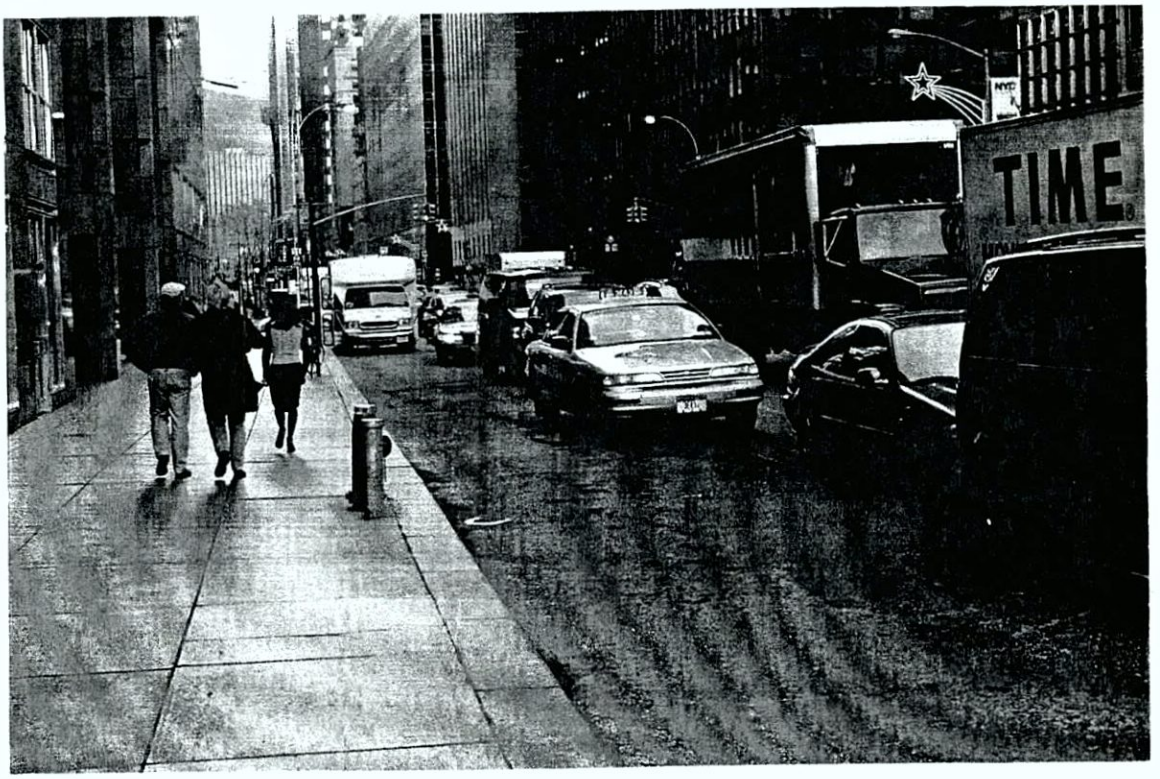
Photograph 6.1-19: Facing south from Dover Street towards Pearl Street. Note parking lot on left is Block 98.



Photograph 6.1-20: Facing south on the corner of Beekman Street and Pearl Street.



Photograph 6.1-21: Facing east between Pearl Street and Water Street towards the Fulton Street roadbed.



Photograph 6.1-22: Facing south on the east side of the Fulton Street corner toward the Water Street roadbed.



Photograph 6.1-23: Facing south on the east side Water Street between Fulton Street and John Street towards the Water Street roadbed.



Photograph 6.1-24: Facing south on the east side of Water Street between John and Fletcher Streets towards the Water Street roadbed.



Photograph 6.1-25: Facing south on the east side of Water Street between Fletcher and Maiden Lane.



Photograph 6.1-26: Facing south on the east side of Water Street between Maiden Lane and Wall Street.



Photograph 6.1-27: Facing south on Water Street on the corner of Governeur's Street.



Photograph 6.1-28: Facing south on the east side of Water Street between Old Slip and Veteran's Plaza or Coenties Slip.



Photograph 6.1-29: Facing southwest on the east side of Water Street just past the Vietnam Veterans Plaza or Coenties Slip.



Photograph 6.1-30: Facing southwest on the east side of Water Street, 50 yards past Broad Street.



Photograph 6.1-31: Facing east on the east side of Water Street towards State Street at the State Street change over.



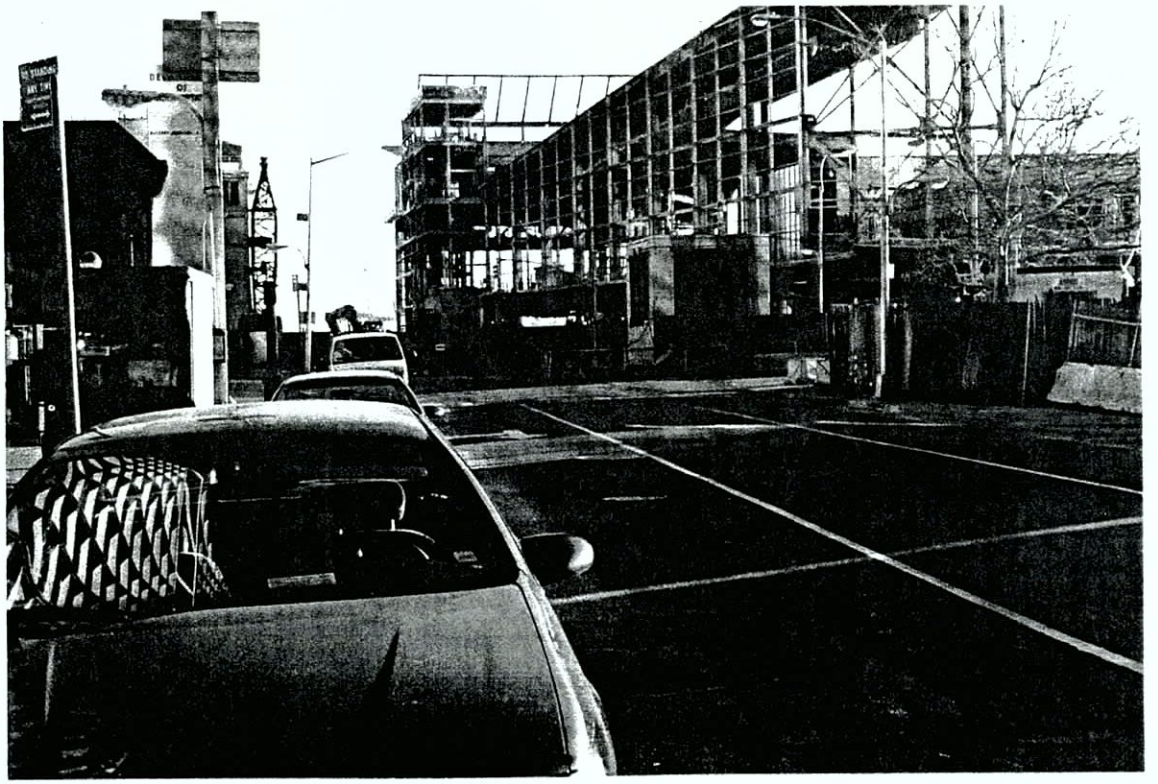
Photograph 6.1-32: Facing east from Water Street towards Battery Park.



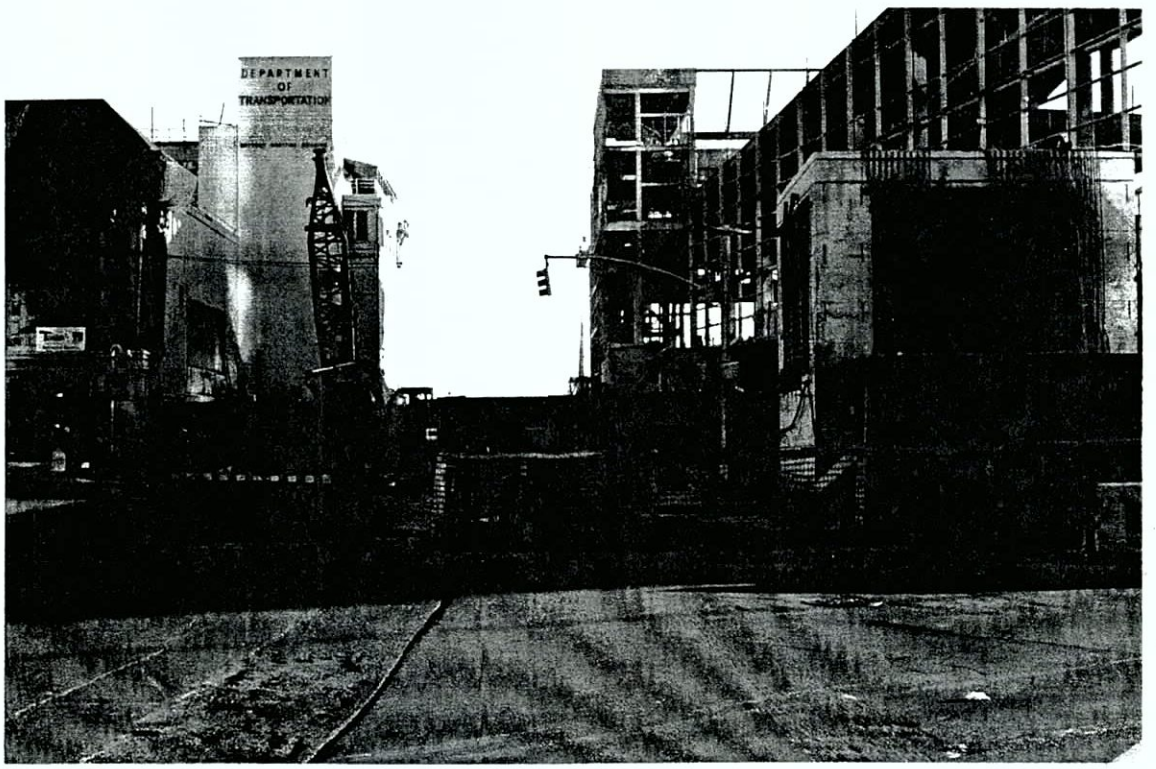
Photograph 6.1-33: Facing southeast towards Battery Park from the State Street and Water Street intersection.



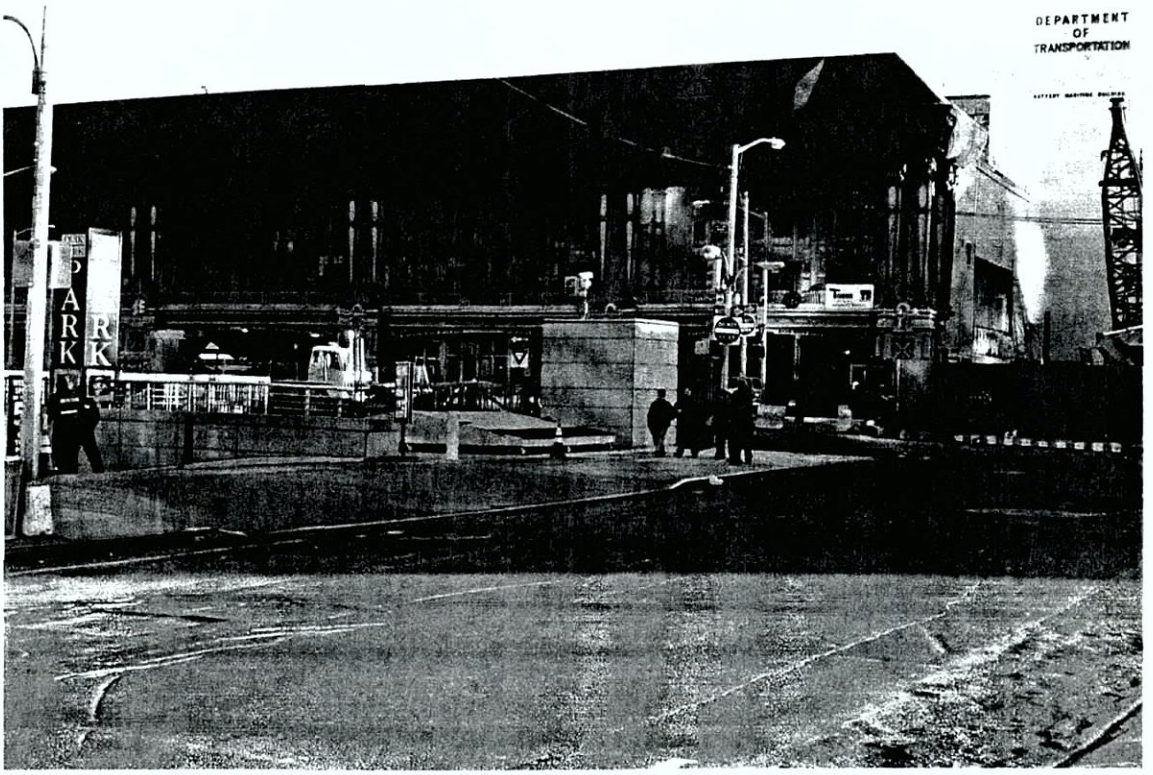
Photograph 6.1-34: Facing south from State Street towards Battery Park.



Photograph 6.1-35: Facing south toward Whitehall Street from between Water Street and South Street.



Photograph 6.1-36: Facing south on Whitehall Street from the South Street intersection.



Photograph 6.1-37: Facing east from Whitehall Street towards the Staten Island Ferries.

6.1.7 Appendices

6.1.7.1 *Documentary Assessment of APE*

Chrystie Street between Delancey and Broome Streets

Chrystie Street, between Delancey and Broome Streets, was widened in the 20th century. This was accomplished by razing structures on the western side of Block 419, and widening the road over the front 25' of their former locations.

Cartographic History

Castello 1660:	Chrystie Street between Delancey and Broome Streets is north of the northern boundary of this map.
Miller 1696:	Same as Castello 1670.
Lyne 1730:	Same as Castello 1670.
Carwitham 1740:	Same as Castello 1670.
Buchnerd 1735:	The Delancey Farmhouse is shown west of the project site, while the APE is depicted as vacant.
Grim 1744/1813:	The APE runs through the Delancey Farm complex, but its location in relation to specific structures is too vague to determine.
Maerschalck 1755:	Development is indicated west of this APE, but not within it.
Montresor 1766:	The APE runs through the Delancey Farm complex, but since Chrystie Street had not yet been laid out, it is not possible to determine if any structures fall within this APE.
Ratzer 1766/67:	By this time, Chrystie Street had been laid out as far north as Broome Street, but Delancey Street had not been created. Within the Delancey Farm complex, the APE is depicted as planted gardens or fields and a structure is shown directly in the path of what will become Chrystie Street, just north of Broome Street. However, the scale of the map makes it difficult to determine the exact location of the structure in relation to the current landscape.
Holland 1776:	Chrystie (then named First) Street, terminates at Broome Street, and the building shown on the Ratzer map is no longer present.
McComb 1789:	The block just east of Chrystie Street is depicted as shaded, suggesting some degree of development, but no specific structures are shown within the APE.
Taylor Roberts 1797:	Chrystie Street has been extended north to Delancey Street, and the building in its path is not shown. On the east side of Chrystie Street, former Block 419, that is now part of the roadbed within the APE, is not depicted as undeveloped.
Bridges 1803:	There is one structure shown at the southwestern corner of the block, near the intersection of Broome and Chrystie Streets that falls within the APE.
Mangin-Goerck 1803:	No structures are depicted within the APE.
Commissioners' 1811:	The APE is unchanged from the Mangin-Goerck 1803 map.
Hooker 1824:	Chrystie Street is no longer named First Street, and the entire block is shaded indicating some degree of development. Details are not shown.

Colton 1836: Block 419 that eventually becomes part of the APE is shaded indicating development.

Endicott 1842: Water pipes from the Croton Water system are shown on Chrystie, Delancey, and Broome Streets.

Perris 1849/50: Block 419 is still shaded, indicating development, and two small squares, possibly indicating hydrants, are shown at the northeastern intersection of Broome and Chrystie Streets.

Dripps 1852: Block 419 has clearly been subdivided into city lots, approximately 13 of which now fall within the APE. The northern end of the lot that fronts Broome Street is vacant, creating a gap in development on Chrystie Street. Almost the entire remainder of the APE is covered with structures, with the exception of several side yards that may partially lie within the APE.

Perris 1857-62: From north to south the following structures stood on Block 419 directly east of Chrystie Street, within the APE:
17 Delancey Street (a.k.a. 148 Chrystie Street) has a brick building with a vacant yard behind it within the APE.
146 to 142 Chrystie Street are covered by brick buildings, but 142 Chrystie Street has a vacant yard on its southern side.
140 and 138 Chrystie Street have framed buildings, each with a brick addition at the rear. Both have alleys on their southern sides.
136 Chrystie Street has a brick building covering the entire lot within the APE.
134 Chrystie Street has a framed building with a stone addition on the northeastern end of the building. There is a narrow undeveloped alley on the south side of the lot within the APE.
132 to 126 Chrystie Street have a series of brick or stone structures each covering the section of the lot that falls within the APE.
124 Chrystie Street (a.k.a. 324 Broome Street) has a brick structure fronting Broome Street with a vacant back yard fronting Chrystie Street within the APE.

Dripps 1867: The APE is unchanged from Perris 1857-62.

Viele 1874: The APE is shown as level meadowland. The closest fresh water source is the Collect Pond, shown about six blocks southwest of this section of the APE.

Bromley 1879: Development is indicated through shading along Chrystie Street, but lot details are not provided.

Robinson 1885: Horse or cable car lines are shown on Chrystie Street between Delancey and Grand Street. Street numbers on Chrystie, Delancey, and Broome have changed from their 1857 designations. From north to south the following development is shown:
19 *(formerly 17) Delancey Street* is unchanged from 1857.
144 (formerly 146) Chrystie Street is unchanged from 1857.
142 (formerly 144) Chrystie Street is now entirely covered by a brick structure.
140 (formerly 142) Chrystie Street is unchanged from 1857.
138 (formerly 140) Chrystie Street is now covered by a brick building.
136 (formerly 138) Chrystie Street has a brick building covering

the entire lot within the APE.
134 (formerly 136) Chrystie Street is now entirely covered by a framed building within the APE.
132 (formerly 134) Chrystie Street has two square brick buildings on it, at each the eastern and western ends of the lot. A small vacant yard lies between the two and may fall within the APE.
130 (formerly 132) Chrystie Street is entirely covered by a brick structure.
128 (formerly 130) Chrystie Street is no longer covered with a stone structure, but instead has a small brick building fronting Chrystie Street, that falls within the APE.
126 (formerly 128) Chrystie Street is unchanged from 1857.
124 (formerly 126) Chrystie Street was vacant in 1857, but is now covered by a brick building.
122 (formerly 124) Chrystie Street now has a brick building running east-west on the lot, that replaced the earlier structure that was angled north-south.

Robinson 1893: The lots are unchanged from their 1885 configurations, and the street addresses have also remained unchanged.

Hyde 1913: By this time, Delancey Street had been widened on its southern side. This was accomplished by razing the buildings from 142 Chrystie Street north (142, 144 Chrystie Street, and 19 Delancey Street).
138 and 136 Chrystie Street were previously shown with brick structures on them, but these were removed and replaced by a six-story brick building.
134 through 122 Chrystie Street remained unchanged, but the buildings are now depicted as five-story brick structures. The exception to this is the framed building at *124 Chrystie Street* that is one-story tall.

Bromley 1925: Delancey Street (a.k.a. Schiff Parkway) had a subway station built beneath it just northwest of Block 419. The tunnel for the subway ran along the northern side of the block. No basements are shown for any of the structures fronting Chrystie Street that now lie within the APE.
134 -130 Chrystie Street has been consolidated and the lot is now covered by a two-story garage.

Sanborn 1926: At this time Chrystie Street was 25' wide, and the sidewalks flanking either side of the street were 12' wide.

Bromley 1955: By this time all the buildings on this block were razed, and Chrystie Street was widened by 25' on its eastern side. While Chrystie Street was previously 50' wide, from building line to building line, it was widened to 75', from building line to building line. A park was created on its eastern side.

Bromley 1974: Same as the Bromley 1955.

Sanborn 2001: The APE is currently the Chrystie Street roadbed that is 60' wide, with sidewalks on either side that are roughly 7.5' wide.

Street Elevations of the APE are as follows:

Data Source	Chrystie at Delancey Street	Chrystie at Broome Street
1885 Robinson	40.9'	38.2'
1893 Robinson	40.9'	38.2'
2000 Sanborn	40.10'	38.3'

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 419								
148 Chrystie Street (a.k.a. 17 Delancey Street)	No street #'s...	No street #'s...	Not for this Yr.	INC	vacant lots	Charles L Noe	Charles L Noe	
146 Chrystie Street	No street #'s...	No street #'s...	Not for this yr.	INC	W. Carter, carpenter	Charles L Noe	Charles L Noe	Charles L Noe
144 Chrystie Street	No street #'s...	No street #'s...	James G Reynolds	INC	L. Tallman, harness maker E. Downes, shoes	Charles L Noe	Charles L Noe	Charles L Noe
142 Chrystie Street	No street #'s...	No street #'s...	Thomas Gegison	INC	E. Sigison H. Hathway, cooper	Mrs. E. Sigerson	E Sigerson	E Sigerson
140 Chrystie Street	No street #'s...	No street #'s...	Daniel Clark	INC	J. Scott, bootmaker A.Elliott, boarding	Charles Washburn	N. Washburn	N. Washburn
138 Chrystie Street	No street #'s...	No street #'s...	Peter D. Collins	INC	S. Browne F. Weldon (col'd)	Mr. Brown	George Dotzent ?	Charles Wise
136 Chrystie Street	No street #'s...	No street #'s...	Henry Harris	INC	S.R. & G.W. Tremley, tin roofers	S. R. & G. W. Trembley	John Simon	John Diamond
134 Chrystie Street	No street #'s...	No street #'s...	Joseph Smith	INC	J. Demenus E. Latham, carpenter M. Reilly, candies	Edward Latham	E. Latham	E. Latham
132 Chrystie Street	No street #'s...	No street #'s...	George A. Morril	INC	E. M'Manus, grocer	E.M Fanning	Mr. Fanning	Mr. Fanning
130 Chrystie Street	No street #'s...	No street #'s...	M. H. Underhill	INC	Stables	William Cogswell	William Cogswell	William Cogswell
128 Chrystie Street	No street #'s...	No street #'s...	T. Williams	INC	W. Miley, bookbinding E. Kendell, tailoress	Edward Brown	Ed Brown	Edward Brown

126 Chrystie Street	No street #'s...	No street #'s...	Not for this Yr.	INC	stables	Not for this Yr.	Not for this Yr.	W.B. Parsone
124 Chrystie Street (a.k.a. 324 Broome Street)	No street #'s...	No street #'s...	Peter Van-Arsdale	INC	E. S. Kelley	Peter Van-Arsdale (as 324 Broome St)	Peter Van-Arsdale (as 324 Broome St)	W.B. Parsone

Note: 1808 Chrystie St/First St: 3's disappear below #100 then pick up for the 'odd' side of the street at #93. INC indicates that names are illegible .

Precontact Sensitivity

Maps depicting the predevelopment topography of this area indicate it was relatively level and within about six blocks of fresh water (Viele 1865; 1974). However, major effects to this section of the APE occurred when the Chrystie Street line was constructed. The construction of the Chrystie Street connection tunnel, built by cut-and-cover, would have affected any potential resources within its path (Taylor 2001:2).

Soil boring logs indicate that outside of the footprint of the tunnel, beneath the sidewalks that lie on either side of Chrystie Street within this section of the APE, there is currently about 15' of fill below grade at the northeast corner of Delancey Street (Boring C6.14, Raymond International 1974). To the south, there is five feet of fill below grade on the west side of Chrystie Street and 16' of fill beneath the east side of Chrystie Street (Borings C6.13 and C6.12, Raymond International Inc. 1974). The water table was encountered between 32' and 34' below grade (Ibid.). These logs suggest that if precontact resources were ever deposited within this section of the APE, they would now lie below five to 16' of fill - outside of the route of the existing subway tunnel.

Chrystie Street was widened to the east in 1929 when a park was created bordering its eastern side. At that time all of the buildings on the block east of Chrystie Street were razed and approximately 25' of this leveled land was incorporated into the streetbed. Although effects from any basements of buildings that once stood within Chrystie Street probably did not extend more than about ten to 12' below grade, the fill on this side of Chrystie Street is reportedly about 16' deep. Effects from utility installation appeared to be confined to the eastern and western sides of the streetbed in 1937, and did not extend below about eight feet below grade, that is only about two feet more than the minimum depth of fill (WPA 1937:Plate 85). Therefore, there is still the possibility that potentially sensitive precontact strata may exist beneath the fill (below six to 16') on either side of Chrystie Street, outside of the location of the existing subway tunnel.

Historical Sensitivity

This APE was shown to have a structure in what is now the middle of the roadbed in 1766/67 (Ratzer; Figure 6.1-3). At the end of the 18th century when the route of Chrystie (then First) Street was continued north, the house was razed. Soil borings in this area indicate that the street lies over six to 16' of fill, and that the water table is about 32' to 34' below grade (Borings C6.12 through C6.14 Raymond International, Inc. 1974). While much of the streetbed was affected by the construction of the Chrystie Street Connection

tunnel, it is possible that shaft features associated with the house, and the foundation of the structure itself, may lie within this APE below the fill outside of the area of prior subway effect.

Late 18th century maps lack details of development, but Block 419 just east of Chrystie Street that now partially falls within the APE, was shaded on the 1789 McComb map indicating some degree of development. The earliest map to present lot details (Dripps 1852; Figure 6.1-4a) shows 13 lots, many developed, on the west side of the block that now fall within the APE. Several of the lots had vacant alleys shown on the 1857/62 and 1867 maps (Perris 1857; Dripps 1867, Figure 6.1-5a), but some of these were developed by 1885 (Robinson). These narrow alleys that remained undeveloped, possibly through the first half of the 19th century, might be sensitive for cisterns and/or privies that may now lie beneath the sidewalk on the east side of Chrystie Street. Specifically, in 1857 yards or alleys were observed within the APE at17 Delancey Street, 142, 140, 138, 134 and 124 Chrystie Street that in 1885 were 19 Delancey Street and 140, 138, 136, 132, and 122 Chrystie Street. However, the vacant alleys once present at 134 and 138 Chrystie Street were later replaced by a large structure, suggesting that their upper layers may have been disturbed.

Tax and directory research indicates that most of the structures in this APE were not owner/occupied. None of the occupants listed on the 1851 directory were listed as property owners on earlier or later tax assessment (see table above). What the records do suggest is that the occupants of the block in the mid-18th century were members of the working class, and that based on the low number of residents reported for each address, the structures were not overcrowded tenements.

The undeveloped narrow alleys and small yards, that now lie on the east side of Chrystie Street and east of the existing subway tunnel, are potentially sensitive for historical shaft and yard resources dating from ca.1789 and possibly earlier. The deepest of these potential shaft features could be located from the surface down to the depth of the water table (32'-34') and perhaps deeper.

Chrystie Street between Broome Street and Grand Street

Chrystie Street, between Broome and Grand Streets, was widened by 25' in the 20th century. This was accomplished by razing structures on the western side of Block 418, and extending the road over their former locations.

Cartographic History

Castello 1660:	Chrystie Street between Broome and Grand Streets is north of the northern boundary of this map.
Miller 1696:	The APE is unchanged from the Castello 1670.
Lyne 1730:	The APE is unchanged from the Castello 1670.
Carwitham 1740:	The APE is unchanged from the Castello 1670.
Buchnerd 1735:	The APE is unchanged from the Castello 1670
Grim 1744/1813:	The APE is unchanged from the Castello 1670.
Maerschalck 1755:	Development is indicated west of this APE, but not within it.
Montresor1766:	Broome Street appeared to have been laid out, and what eventually

becomes Grand Street is labeled as the "Road to Crown Point."

Ratzer 1766/67: By this time, Chrystie Street had been laid out as far north as Broome Street, and Broome and Grand had also been created. The APE was depicted as vacant at this time.

Holland 1776: Chrystie (then First) Street terminated at Broome Street.

McComb 1789: Block 418 on the east side of Chrystie Street is shown as shaded, that may mean some development has occurred.

Taylor Roberts 1797: A structure is shown on the east side of Chrystie Street at its southeastern intersection with Broome Street. No other buildings are depicted within the APE

Bridges 1803: No individual structures are shown on the block adjacent to Chrystie Street, but it is shaded to indicate it is developed.

Mangin-Goerck 1803: No structures are depicted within the APE.

Commissioners' 1811: The APE is unchanged from the Mangin-Goerck 1803.

Hooker 1824: Chrystie Street is no longer named First Street, and all of Block 418 is shaded indicating some degree of development. Details are not shown.

Colton 1836: Block 418 is shaded, indicating development.

Endicott 1842: Water pipes from the Croton Water system are shown running down Chrystie Street, and on both Broome and Grand Streets.

Perris 1849/50: Block 418 is still shaded, indicating development. The structure that appeared on the northwestern corner of the block, that now falls within the APE, is present.

Dripps 1852: Block 418 has been subdivided into city lots, approximately seven of which now fall within the APE. The structure at the northwestern corner of the block indicated on earlier maps is labeled as "St. Stephens Church (Episcopal)." To the south of this is a large vacant yard. Still further south are five structures within the APE fronting Chrystie Street, and two fronting Grand Street. Alleys exist between several of the structures, and back yards remained undeveloped behind most of them. Some of these vacant areas may now fall within the APE.

Perris 1857-62: From north to south the following structures were depicted on the block east of Chrystie Street within the APE:

120 Chrystie Street contains the large brick Episcopal Church, with a vacant yard on its western and southern sides within the APE.

116 Chrystie Street has a small framed building fronting Christie Street within the APE.

114 Chrystie Street has a brick building covering the entire lot within the APE.

112 Chrystie Street has a framed building that covers most of the lot within the APE. A narrow alley runs along its northern side.

110 Chrystie Street has a framed building that covers all of the lot within the APE.

108 Chrystie Street has a brick structure that covers all of the lot within the APE.

254 Grand Street has a framed structure that covers all of the lot within the APE.

Dripps 1867: The APE is unchanged from the Perris 1857-62.

Viele 1874: The APE is shown as level meadowland. The closest fresh water source is the Collect Pond, shown about five blocks southwest of this APE.

Bromley 1879: Development is indicated through shading along Chrystie Street, but details are not provided.

Robinson 1885: Horse or cable car lines are shown on Chrystie Street between Delancey and Grand Streets, and also on Grand Street. The street numbers on Grand Street have changed from their 1857 designations. From north to south the following development is shown:

120 Chrystie Street no longer has the Episcopal Church on it, that has apparently been razed and replaced by a row of brick structures that front Broome Street.

118 Chrystie Street, that was formerly a vacant area south of the church, now has a brick building on it fronting Chrystie Street within the APE.

116 Chrystie Street. The small framed building fronting Chrystie Street has been replaced by a larger brick building within the APE.

114 Chrystie Street is unchanged from 1857.

112 Chrystie Street has had a brick building replace the previous framed structure.

110 Chrystie Street is unchanged from 1857.

252 (was 254) Grand Street has been entirely covered by a brick structure.

Robinson 1893: The lots and structures on Block 418 are unchanged from their 1885 configurations, with the exception of *110 Chrystie Street* where an earlier frame structure was razed and replaced by a brick building that covered the entire lot. Street addresses have also remained unchanged.

Hyde 1913: The buildings at *116 through 120 Chrystie Street* remained unchanged, but it appears that the rest of the earlier buildings have been razed and replaced by five and six story structures, some with basements. These cover the entire APE. The alley at *112 Chrystie Street* is now covered by a structure.

Bromley 1925: The APE is unchanged from the Hyde 1913.

Sanborn 1926: At this time Chrystie Street was 25' wide, while the sidewalks flanking either side of the street were 12' wide.

Bromley 1955: By1955 all the buildings on Block 418 were razed, Chrystie Street was widened, and a park was created on its eastern side. While Chrystie Street was previously 50' wide, from building line to building line, it was widened to 75', from building line to building line.

Bromley 1974: The APE is unchanged from the Bromley 1955.

Sanborn 2001: The APE is currently the Chrystie Street roadbed, that is 60' wide, with sidewalks on either side that are roughly 7.5' wide.

Street elevations within this section of the APE are as follows:

Data Source	Chrystie at Broome Street	Chrystie at Grand Street

1885 Robinson	38.2'	35.5'
1893 Robinson	38.2'	35.5'
2000 Sanborn	38.3'	35.7'

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 418								
120 Chrystie Street	INC	William Arment	INC	Not for this Yr.	St. Stevens Church	Not for this Yr	Not for this Yr.	Not for this Yr..
116 Chrystie Street	INC	St. Stevens Church?	INC	Not for this yr.	J. Dean, undertaker	St. Stephens Church	Louis Vutenhimer	John Laser
114 Chrystie Street	INC	St. Stevens Church?	INC	Jay Jarvis	M. Hunt E. Frost, dry goods	Jay Jarvis	Mr. Spall	Mrs. Thucks
112 Chrystie Street	INC	St. Stevens Church	INC	William M Stillwell	(Rev) W.M. Stillwell	Est. of William Stillwell	Mr. Reinhart	Mrs. Thall (?)
110 Chrystie Street	INC	St. Stevens Church	INC	S. Burling	D. Mangarm, dry goods	Lancaster Burling	E. Burling	Mr. Thall (?)
108 Chrystie Street	INC	Andrew Wheeler	INC	Elizabeth Fink	M. Fink J. Jones	Margaret Fink	Margaret Fink	William Reinhart (Crossed out) Morris Alexander
254 Grand Street	No Street #'s...	INC	DJA Kingsland	D & A Kingsland	Nehemish Lounsbery, carpets J.L. Marsh, clerk Jomes Johnson Thomas Whitlock, sashmker	James Lounsbery	James Lounsbery	James Lounsbery (crossed out) John Wilkin

Notes: 'INC' depicts names that were illegible

Precontact Sensitivity

Maps depicting the predevelopment topography of this area indicate it was relatively level and within about six blocks of fresh water (Viele 1865; 1874). Four soil borings were taken from between these two cross streets in the 1970s. On the west side of Chrystie Street, from north to south, logs report 11' and 4' of fill, and on the east side of Chrystie Street, there was 10.6' and 13' of fill (Borings C6-8 through C6-11, Raymond International Inc. 1974). Therefore, this section of the APE has the potential for precontact resources to lie below the fill, that ranges from four feet to 13' in depth.

Chrystie Street was widened to the east in 1929 when a park was created bordering its eastern side. At that time, all of the buildings on the block east of Chrystie Street were razed and approximately 25' of this leveled land was incorporated into the streetbed. Effects from any basements of buildings that once stood in what is now Chrystie Street probably did not extend more than about 10 to 12' below grade, while the fill on the east side of Chrystie Street is reportedly between 10.6' and 13' deep. Effects to the streetbed itself occurred through the installation of utilities, but in 1937 these all appeared to be confined to the eastern and western sides of the streetbed, and did not extend deeper than about eight feet below grade, that is about four feet more than the minimum depth of fill (WPA 1937:Plate No. 5). Therefore, where the fill is shallow, potential precontact resources may have been disturbed by utility installation. Further effects occurred when a subway was constructed beneath Chrystie Street. However, outside of the footprint of utility lines and the subway tunnel, there is still the possibility that potentially sensitive precontact strata may exist beneath the fill (below 11' to 13') in this section of the APE.

Historical Sensitivity

Although late 18th century maps of this section of the APE lacked details, the block directly east of Chrystie Street that is now partially within the APE was shaded, indicating some potential development, by 1789 (McComb 1789). The 1852 Dripps map shows at least seven structures stood within the APE, one of which was an Episcopal Church (Figure 6.1-4a). A vacant yard adjacent to the church fell within the APE, but was eventually developed with a structure by 1885 (Robinson 1885). There was also a narrow alley left undeveloped at 112 Chrystie Street from at least 1852 through 1913 (Dripps 1852; Hyde 1913). These vacant yards and alleys have the potential to possess historical period resources relating to the occupation and use of these properties, especially since Chrystie Street was not sewered until 1869 (WPA 1937:Plate No. 5).

The 19th century tax assessments and directories show that St. Stevens (a.k.a. Stephens) Episcopal Church occupied, and owned, many of the lots on the block (see table above). Reverend Stillwell owned and occupied 112 Chrystie Street for at least twenty years, and other lots on the block were also occupied by their owners for equally long periods. The mid-19th century occupation of the lots within the APE did not appear to be transient in nature, nor did most of the structures appear to house multiple families.

As discussed above, soil boring logs from the east side of Chrystie Street, where the historic lots once existed, showed that fill ranged between 10.6' and 13' below grade (Borings C6-9, C6-11, Raymond International 1974). The water table was not encountered less than 30' below grade (Ibid.). This relatively thick level of fill could have preserved shaft features that may have once been present on the vacant lots and alleys in proximity to historic structures on the block. While the backyards of these structures fell east of the APE, alleys and yards between them are potentially sensitive for historical resources. Specifically, a yard adjacent to the Episcopal Church that remained vacant until at least ca. 1885 (Robinson 1885), and a narrow alley at 112 Chrystie Street, that remained vacant until ca.1913, may both be sensitive for potential shaft features especially since sewers were not present on Chrystie Street until 1869 (WPA 1937:Plate No. 5). Shaft features associated with these structures may exist both within and beneath

the fill. For example, if wells were ever utilized on these potentially sensitive lots, they would have had to extend at least 30' below grade, and possibly deeper.

Chrystie Street between Grand Street and Hester Street

Chrystie Street, between Grand and Hester Streets, was widened in the 20th century. This was accomplished by razing structures on the western side of Block 305, and extending the road over their former locations.

Cartographic History

Castello 1660:	Chrystie Street between Grand Street and Hester Street is north of the northern boundary of this map.
Miller 1696:	The APE is unchanged from the Castello 1670.
Lyne 1730:	The APE is unchanged from the Castello 1670.
Carwitham 1740:	The APE is unchanged from the Castello 1670.
Buchnerd 1735:	The APE is shown on this map as vacant land.
Grim 1744/1813:	The APE is unchanged from the Buchnerd 1735.
Maerschalck 1755:	Development is indicated west of this APE, but not within it.
Montresor1766:	What eventually becomes Grand Street appears to have been laid out as the "Road to Crown Point," and Hester Street had been created. Development is shown west of the APE but not within it.
Ratzer 1766/67:	The APE was depicted as vacant at this time.
Holland 1776:	It appears that there is some development on Block 305 east of Chrystie Street within the APE, but details are not shown.
McComb 1789:	Block 305 shown as shaded, that may mean some development has occurred.
Taylor Roberts 1797:	Four structures are shown on the east side of Chrystie Street on Block 305 within what is now the APE.
Bridges 1803:	No individual structures are shown on Block 305, but it is shaded to indicate it is developed.
Mangin-Goerck 1803:	No structures are depicted within the APE that is shown as undeveloped.
Commissioners' 1811:	The APE is unchanged from the Mangin-Goerck 1803.
Hooker 1824:	Chrystie Street is no longer named First Street, and all of Block 305 is shaded indicating some degree of development. Details are not shown.
Colton 1836:	The APE is unchanged from the Hooker 1824.
Endicott 1842:	Water pipes from the Croton Water system are shown running down Chrystie Street, and on both Grand and Hester Streets.
Perris 1849/50:	The APE is unchanged from the Hooker 1824.
Dripps 1852:	Block 305 has been subdivided into city lots, approximately 14 of which fall within the APE. From north to south, there is a structure at the northwest corner of the block at Chrystie and Grand Streets. Two vacant lots lie to the south of this. Further south are 11 structures within the APE fronting Chrystie Street. Alleys exist between several of the structures that may now fall within the APE.
Perris 1857-62:	From north to south the following structures were present on the

block east of Chrystie Street, within the APE:
100 Chrystie Street contains a stone structure covering all of the lot within the APE.
98 Chrystie Street also has a stone structure covering all of the lot within the APE.
96 Chrystie Street has a brick building covering the entire lot within the APE.

94 Chrystie Street has a framed building that covers all of the lot within the APE.
92 Chrystie Street has a brick building that covers all of the lot within the APE.
90 Chrystie Street has a brick structure that covers most of the lot, but there is a vacant alley on the northern side of the building within the APE.
88 Chrystie Street has a framed structure that covers the front of the lot, but an alley on the south side may fall within the APE.
86 Chrystie Street has a brick and stone structure that covers most of the lot within the APE. There is also a narrow alley on the southern side of the lot that may fall within the APE.
84 Chrystie Street has a brick structure that covers all of the lot within the APE.
82 Chrystie Street has a brick structure that covers all of the lot within the APE.
80 Chrystie Street has a brick structure that covers all of the lot within the APE.
78 Chrystie Street has a framed structure with a vacant alley on the southern section of the lot within the APE.
76 Chrystie Street has a brick structure that covers all of the lot within the APE.
74 Chrystie Street (a.k.a. 135 Hester Street) has a brick structure that covers all of the lot within the APE.

Dripps 1867: The APE is unchanged from the Perris 1857-62.

Viele 1874: The APE is shown as level meadowland. The closest fresh water source is the Collect Pond, shown about four blocks southwest of this APE.

Bromley 1879: Development is indicated through shading along Chrystie Street, but details are not provided.

Robinson 1885: The street numbers on Grand Street have changed from their 1857 designations. From north to south the following development is shown:
100, 98, 96 Chrystie Street have been consolidated and are now occupied by a large stone structure labeled "Lord and Taylor Dry Goods."
94, 92 Chrystie Street have been consolidated and there is a brick building covering all of the lot within the APE, labeled "W. H. Sitterhorn Pork Packers."

90 Chrystie Street has a brick structure that covers most of the lot, but there is a vacant alley on the northern side of the building within the APE.
88 Chrystie Street has a framed structure that covers the front of the lot, but an alley on the south side that may fall within the APE.
86 Chrystie Street has a brick structure that covers all of the lot within the APE.
84 Chrystie Street has a stone structure that covers all of the lot within the APE
82 Chrystie Street has a brick structure that covers all of the lot within the APE.
80 Chrystie Street has a brick structure that covers all of the lot within the APE.
78 Chrystie Street has a stone structure that covers the entire lot within the APE.
76 Chrystie Street has a brick structure that covers all of the lot within the APE.
74 Chrystie Street (a.k.a. 135 Hester Street) has a brick structure that covers all of the lot within the APE.

Robinson 1893: The lots and structures on Block 305 are unchanged from their 1885 configurations. Street addresses have also remained unchanged.

Hyde 1913: All of the structures are virtually unchanged from 1893, and a vacant alley still remains within the APE at *90 Chrystie Street.* There is now a small vacant yard at the southeastern end of the section of the lot at *98 Chrystie Street* within the APE where there was formerly a building. All of the buildings are shown as five and six-story structures.

Bromley 1925: The APE is unchanged from the Hyde 1913.

Sanborn 1926: At this time Chrystie Street was 25' wide, while the sidewalks flanking either side of the street were 12' wide.

Bromley 1955: By 1955 all of the buildings on this block were razed, Chrystie Street was widened, and a park was created on its eastern side. While Chrystie Street was previously 50' wide, from building line to building line, it was widened to 75', from building line to building line.

Bromley 1974: The APE is unchanged from the Bromley 1955.

Sanborn 2001: The APE is currently the Chrystie Street roadbed, that is 60' wide, with sidewalks on either side that are roughly 7.5' wide.

Street elevations within this section of the APE are as follows:

Data Source	Chrystie at Grand Street	Chrystie at Hester Street
1885 Robinson	35.5'	40.5'
1893 Robinson	35.5'	40.7'
2000 Sanborn	35.7'	40.7'

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 305								
100 Chrystie Street	James Brush	INC	Not for this Yr	Not for this yr.	A. Chruchill, smith J.R. Goungs, smith	Not for this yr.	Not for this yr.	Not for this yr.
98 Chrystie Street	Mann Gerarden	INC	Heirs of T. Hays	Deritt ? Bishop	building in process	Not for this yr.	Not for this yr.	Not for this yr.
96 Chrystie Street	Jacob Job	INC	John Baldwin	John Balwin	building in process	Simon Stiger	Simon Stiger	Henry Silverhorn
94 Chrystie Street	J. Frasher	INC	John Baldwin	Henry Silverhorn	H. Silverhorn, butcher	Henry Silverhorn	Henry Silverhorn	Henry Silverhorn
92 Chrystie Street	John Linder-man	INC	Hanna Linder-man	Hanna Linderman	A. Hammond	Henry Silverhorn	Henry Silverhorn	Henry Silverhorn
90 Chrystie Street	Alexander Lankeneau	INC	G. Shrady	John Shrady	C. Luby, grocer	John Schrady	John Schrady	John Schrady
88 Chrystie Street	Not for this yr.	INC	Heirs H. Betts G. Douglas	William Pinchback George Douglas	E. Gatty, boarding R.B. Calhoun, driver	W. Pinchback	William Pinch-back	William Pinch-back
86 Chrystie Street	Jacob Cocks	INC	Charles Anderson	Henry Kecham	E. Stone, fancy store	Amos Beldon (crossed out) Smith W. Devoe	SW Devoe H. Koenig	W. Koenig
84 Chrystie Street	Not for this yr.	INC	John Turner	John Turner	H. Wilhelm, physician H. Spangenberg, instr. Maker	Gamfrecth	L. Gam-frecth	H. Koenig
82 Chrystie Street	Not for this yr	INC	Mrs. Pattens	Mrs. Pattens	C. Wagner, boatman	T. Jackson (crossed out)	Thomas T. Jeremiah	Thomas T. Jeremiah
80 Chrystie Street	Gilbert Haighly	INC	Peter McCarthey Gorum	Andrew Gassner	R. Strickland, engineer A. Nicoley, clerk R. Mitchell, clerk	Est of Peter Gasner (crossed out) A. Gasner	John Rowe	John Rowe
78 Chrystie Street	Nicholas Conklin	INC	Nicholas Conklin	L. Conklin	J.B. Marvin, optician	John G. Henry	John G. Henry	J. Hestner
76 Chrystie Street	Not for this Yr.	INC	Not for this yr	INC	J. Neuschwander, bootmaker	William J. Syms	William J. Syms	William J. Syms
74 Chrystie Street	Widow Hoffman Henry Gable	INC	David Brom-bush	INC	A. Gockern, grocer	William J. Syms	William J. Syms	William J. Syms

Notes: 'INC' depicts names that were illegible

Precontact Sensitivity

This section of the APE has moderate potential for precontact resources given its predevelopment topography and proximity to fresh water. However, a large section of Chrystie Street was previously affected by the construction of a subway tunnel in the 1960s (see discussion above under the *Chrystie Street from Delancey Street to Broome Street* section). Therefore, if there is still precontact potential in this section of the APE, it would be for areas on either side of the existing tunnel.

Four soil borings taken between Grand and Hester Streets in the 1970s report, from north to south, four feet of fill and three feet of fill on the west side of Chrystie Street, and 19' and 11' of fill beneath the east side of the street (Borings C6-4 through C6-7, Raymond International Inc. 1974). Most of the buried utilities present in 1937 were located on the west side of the street within about four feet of the surface (WPA 1937: Plan No.5). Therefore, this suggests the potential for precontact resources to exist below the relatively shallow fill on the west side of the street, and below and deeper fill on the eastern side of the street.

Historical Sensitivity

Maps and atlases suggest that this section of the APE is potentially sensitive for historical resources dating from ca.1789, and possibly earlier, on the east side of Chrystie Street (McComb 1789; Dripps 1852; Figure 6.1-4a). Fill ranges between 11' and 19' deep in this area, and utility lines are predominantly located on the west side of the street (Borings C6-5, C6-7, Raymond International Inc.1974; WPA 1937:Plan No.5).

By the mid-19th century what was formerly Block 305 was predominantly covered by residential structures, the front foundations of which would now lie within Chrystie Street (Figures 6.1-4a, 6.1-5a). Since many of these buildings were shown on maps predating the availability of sewers in 1869 (Dripps 1852; WPA 1937:Plan No.5), sections of lots which were not developed have the potential for shaft features. While the backyards of lots fell east of the APE, narrow alleys were left undeveloped at 90, 88, 86, and 78 Chrystie Street - although the alleys at 86 and 78 Chrystie Street were eventually covered by structures without basements (Robinson 1885).

Tax assessment and directory data show that many of the lots on this block were occupied by their owners, and that many residents were professionals. Doctors, engineers, and opticians resided along side butchers, smiths, and grocers (see table above). Other residents did not own the structures they lived in, as some were clearly listed as boarders, and most lots were occupied by at least 1808.

If shaft features were present in these narrow alleys, there is the potential that they have remained undisturbed and may either be located within or beneath the fill. Since the water table was encountered between 35' and 37' below grade here, there is the potential for deep wells to extend to at least this depth.

Chrystie Street between Hester and Canal Streets

Chrystie Street, between Hester and Canal Streets, was widened by 25' in the 20th century. This was accomplished by razing structures on the western side of Block 302, and widening the road over their former locations.

Cartographic History

Castello 1660:	Canal Street between Chrystie Street and Bowery is north of the northern boundary of this map.
Miller 1696:	The APE is unchanged from the Castello 1670.
Lyne 1730:	The APE is unchanged from the Castello 1670.
Carwitham 1740:	The APE is unchanged from the Castello 1670.
Buchnerd 1735:	The APE is shown on this map as vacant land.
Grim 1744/1813:	The APE is unchanged from the Buchnerd 1735.
Maerschalck 1755:	Development is indicated west of this APE, but not within it.
Montresor1766:	The APE is unchanged from the Buchnerd 1735.
Ratzer 1766/67:	By this time Chrystie, Hester, and Canal Streets had been created. The APE was depicted as vacant at this time.
Holland 1776:	It appears that there is some development on Block 302, but details are not shown.
McComb 1789:	Block 302 is shown as shaded, that may mean some development has occurred.
Taylor Roberts 1797:	No buildings are shown within the APE.
Bridges 1803:	No individual structures are shown on the block adjacent to Chrystie Street, but it is shaded to indicate it is developed.
Mangin-Goerck 1803:	The APE is unchanged from the Bridges 1803.
Commissioners' 1811:	The block is shown as vacant.
Hooker 1824:	Chrystie Street is no longer named First Street, and the entire block is shaded indicating the potential for development. Details are not shown.
Colton 1836:	Two structures are shown mid-block fronting Chrystie Street on Block 302 within the APE.
Endicott 1842:	Water pipes from the Croton Water system are shown running down Chrystie Street, and on both Hester and Canal Streets.
Perris 1849/50:	The APE is unchanged from the Colton 1836.
Dripps 1852:	Block 302 has been subdivided into city lots, 13 of which appear to fall within the APE. Some of these are average sized lots (25'x100') while others are larger (e.g., 100'x100'). From north to south there are five small buildings shown fronting Chrystie Street. Just south of these is a vacant yard. The northernmost large building that appeared on the 1836 Colton map was labeled "Public School No. 7," and to the south of this was another vacant lot. To the south of the empty lot is another small building fronting Chrystie Street, with an adjacent alleyway. To the south, a second large building on the block, present on earlier maps, was labeled "Temple of the Imanuel." South of this is another building with an adjacent alley just south of it, followed by four structures that cover the rest of the APE.

Perris 1857-62: From north to south the following structures stood on Block 302 within the APE:
74, 72 and 70 Chrystie Street contain framed structures covering all of the lots within the APE. There is a narrow alley on the south side of *70 Chrystie Street.*
68 Chrystie Street has a brick building that covers all of the lot within the APE.
66 Chrystie Street has a frame building that covers most of the lot, but there is a narrow alley on its north side within the APE.
64 through 60 Chrystie Street is covered by a large brick building labeled "Grammar School No. 7." There is a vacant yard on both its northern and southern sides within the APE.
58 Chrystie Street has a stone structure that covers the lot, but an alley on the south side may fall within the APE.
56 Chrystie Street is now covered by the "Jews' Synagogue." A narrow vacant area is shown on its western facade fronting Chrystie Street.
54 Christie Street has a framed structure on most of the lot, with a vacant alley on its south side within the APE.
52 Chrystie Street has a brick structure that covers all of the lot within the APE.
50 and 48 Chrystie Street each have a frame structure that covers the APE.
46 Chrystie Street has a brick structure that covers all of the lot within the APE.

Dripps 1867: The APE is unchanged from the Perris 1857-62.

Viele 1874: The APE is shown as level meadowland. The closest fresh water source is the Collect Pond, shown about four blocks southwest of this APE.

Bromley 1879: Development is indicated through shading along Chrystie Street, but details are not provided.

Robinson 1885: The street numbers on Grand Street have changed from their 1857 designations. From north to south the following development is shown:
74, 72 and 70 Chrystie Street contain framed structures covering all of the lots within the APE. The alley on the south side of *70 Chrystie Street* is now longer shown.
68 Chrystie Street has a brick building that covers all of the lot within the APE.
66 Chrystie Street has a frame building that covers most of the lot, but there is a narrow alley on its north side within the APE.
64 through 60 Chrystie Street is covered by a large brick building labeled "Grammar School No. 7." There is a vacant yard on both its northern and southern sides within the APE.
58 Chrystie Street has been redeveloped with a brick structure that covers the entire lot.
56 Chrystie Street is now covered by the "Jews' Synagogue." A narrow vacant area is shown on its western facade fronting Chrystie Street.

54 Christie Street now has a brick structure that covers all of the lot within the APE.
52 through 46 Chrystie Street has a brick structure that covers all of the lot within the APE.

Robinson 1893: Grammar School No. 7 has been enlarged to cover the entire APE from *74 through 60 Chrystie Street,* with the exception of a narrow alley at its southern side. The remainder of the lots are unchanged from 1885.

Hyde 1913: All of the structures are virtually unchanged from 1893, except for the synagogue that appears to have been razed and replaced by a six-story brick building that covers the entire lot. The remainder of the buildings on Block 302 are depicted as four through six stories tall, and one has a basement.

Bromley 1925: All of the buildings on the block are unchanged, but the school has been renamed the East Side Continuation School.

Sanborn 1926: At this time Chrystie Street was 25' wide, while the sidewalks flanking either side of the street were 12' wide.

Bromley 1955: Sometime between 1926 and 1955 all the buildings on Block 302 were razed, Chrystie Street was widened, and a park was created on its eastern side. The park, directly east of the newly widened Chrystie Street, was occupied by the Boys Playground. While Chrystie Street was previously 50' wide, from building line to building line, it was widened to 75', from building line to building line.

Bromley 1974: The APE is unchanged from the Bromley 1955.

Sanborn 2001: The APE is currently the Chrystie Street roadbed, that is 60' wide, with sidewalks on either side that are roughly 7.5' wide, for a total of 75' in width

Street elevations were reported as follows:

Data Source	Chrystie at Hester Street	Chrystie at Canal Street
1885 Robinson	40.5'	46.8'
1893 Robinson	40.5'	46.5'
2000 Sanborn	40.7'	46.10'

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 302								
74 Chrystie Street	Widow Hoffman Henry Gable	Not for this Yr	David Brombus h	INC	Anthony Gokern, grocer	William J. Syms	William J. Syms	William J. Syms
72 Chrystie Street	David Brombush W. Gill	Not for this Yr	Joseph M. Miller	David Brombush (Mathins Benst owns	Mathins Benst, bootmaker Charles Ernenvine,	Jacob Neid-linger (Jacob Bochringer	Jacob Bochringer (Jacob Bochringer	Jacob Bochringer (Jacob Bochringer

				72 ½)	hatter	owns 72 ½)	owns 72 ½)	owns 72 ½)
70 Chrystie Street	Leonard Fisher John Bostwick	Not for this Yr	Heirs of Mrs. Fisher	L. Fisher	Patrick McCauly, tailor W.J. White, smith	M. N. Culloch	Jacob Bochringer	Jacob Bochringer
68 Chrystie Street	Henry Shearer	Not for this Yr	A. Willet	Amos Willet	Sarh Brown, boarding William Pennoyer, tailor	Jacob Bockringer	Jacob Bochringer	Jacob Bochringer
66 Chrystie Street	Martin Letenbock Mr. Tageh	Not for this Yr	RP Bunker **Public School**	Samuel F. Mott **Public School**	Jacob Nightlinger, carman J. Reilly, upholsterer M. Huddon	Samuel F. Mott	Samuel F. Mott	Clinton Grahaw
64 Chrystie Street	Mr. Berner	David Dreames	(public school)	(public school)	S.A. Bunker, school W.H. Reuck, school	(public school)	(public school)	(public school)
62 Chrystie Street	Widow Cline	John Kline D Dyke	(public school)	(public school)	same as 64 Chrystie St	(public school)	(public school)	(public school)
60 Chrystie Street	Jacob Harsh Michael Kruier	Jacob Hatch	(public school)	(public school)	vacant lot	(public school)	(public school)	(public school)
58 Chrystie Street	Peter Crawbuck	Peter Crowbuck	Mordica Mires **Methodist Church**	M. Mires **Methodist Church**	John Egan, boarding Rynard Vollmer, baker	John Eagan	Mr. Fatman Est of WB Miles	Est of W. Bellous
56 Chrystie Street	John Keyser	William Reynalds	(Methodist Church)	(Methodist Church)	Temple Imanuel G.W. Cohen (Rev) M. Tennent, school	(Jews Meeting House)	(Jews Meeting House)	(Jews Meeting House)
54 Chrystie Street	Nathaniel Trunk Henry Banks	N. Hunt	N. Hunt GH Claysman	Est of N. Hunt	E. Fitzgerald, machinist J. Barker, smith J. Perry, machinist	M. Miller	Mr. Miller	Mr. Miller
52 Chrystie Street	Widow How	Chasity Storo	Daniel Kingsland	H Cach (?) & Kingsland	Anne Gordon, boarding	John Schort	John Huff	John Huff
50 Chrystie Street	John Luackinbuch Cap Mufrey Mr.	Fuackinbush	William Lard	Lewis B. Reed	M. Wilson, confectionery J. Wilson, cutter P.P. Gibney, carpenter	Lewis Reed	Mr. Brannigan	Philip G?berg (crossed out)

	Thearman							
48 Chrystie Street	John Luackin-buch Cap Mufrey Mr. Thearman	Not for this Yr.	William Lard	Levy B. Reed	P.M'Keever, grocer	Lewis Reed	Fredrick R. Reichter	H. Lichter ?
46 Chrystie Street	James Danicrick	Not for this Yr.	Henry Kling	Not for this Yr.	P. Leahy, liquor	Not for this Yr.	Not for this Yr.	Not for this Yr.

Note: Chrystie Street is also known as 1st Street. INC indicates that names were illegible.

Precontact Sensitivity

This section of the APE has a moderate potential for precontact resources given its level topography and proximity to fresh water, as indicated on maps depicting predevelopment topographic conditions (Viele 1874). Three soil borings taken between Hester and Canal Streets report fill beneath the west side of Chrystie Street is only about five feet deep, while fill on the east side of the street ranges between 13' and 16' in depth (Borings C6-1 through C6-3, Raymond International Inc. 1974). Utilities present in 1937 were clustered on the west side of Chrystie Street and were fairly shallow, with the exception of a larger sewer tunnel with an invert (bottom) elevation about 12' below grade (WPA 1937:Plan No.77). Furthermore, a subway tunnel runs through the center of Chrystie Street.

The subsurface data suggests that if precontact resources were present here, they would be disturbed both in the center of Chrystie Street and on its western side where a deep sewer tunnel runs below relatively shallow fill levels (the fill extends to five feet, while the tunnel is at 12'). However, the east side of the road may be potentially sensitive below the deeper fill deposits recorded, that extend to between 13' and 16' below grade.

Historical Sensitivity

Block 302 was partially developed within the APE by 1776, and a school and temple stood on the block as early as 1836 (Holland 1776; Colton 1836). Several lots that were developed with residential structures (70, 66, and 56 Chrystie Street), were shown as having vacant alleys within the APE in 1852 (Dripps 1852; Figure 6.1-4a). These undeveloped alleys were eventually covered by structures between 1885 and 1893, as was a large play yard on both the north and south sides of the school (Robinson 1885; 1893).

In the mid-19th century, the majority of the residents on the block did not own the structures they occupied (see Tax and Directory Table above). Most of the lots were owned, and probably occupied, by at least 1808. A school occupied much of the block, as did a Synagogue which was formerly a Church. Residents in the 1850s were of mixed occupations, ranging from confectioners, to grocers and several tailors.

When Chrystie Street was widened on its eastern side, the front 25' of each lot on Block 302 was incorporated into the roadbed. Therefore, the vacant alleys and yards that once

fronted Chrystie Street and that could have been where shaft features associated with adjacent structures were once located, are potentially sensitive for historical resources. As discussed above, soil borings depict between 13' and 16' of fill in this area, and the water tables lies between 43' and 49.9' below grade. Therefore, if there were shaft features within the APE they could potentially lie within the fill, or extend below it, with wells potentially extending to about 50' below grade, and possibly deeper.

Canal Street between Chrystie Street and Bowery

Cartographic History

Castello 1660:	This APE is north of the boundaries of this map.
Miller 1696:	The APE is unchanged from the Castello 1670.
Lyne 1730:	The APE is unchanged from the Castello 1670.
Carwitham 1740:	The APE is unchanged from the Castello 1670.
Buchnerd 1735:	The APE is shown on this map as vacant land.
Grim 1744/1813:	The APE is unchanged from the Buchnerd 1735.
Maerschalck 1755:	Development is indicated west of this APE, but not within it.
Montresor1766:	By this time Chrystie and Canal Streets had been created, but the APE remained vacant. Structures bordered either side of Canal Street, but did not appear to fall within the APE.
Ratzer 1766/67:	No development is shown within the APE.
Holland 1776:	Blocks to the east and west of the APE at Canal Street are shaded to indicate development, but none appeared within the APE.
McComb 1789:	The blocks on either side of Canal Street are shaded, that may mean that some development has occurred, but no development is indicated within the APE.
Taylor Roberts 1797:	The APE is unchanged from the McComb 1789.
Bridges 1803:	The APE is unchanged from the McComb 1789.
Mangin-Goerck 1803:	The APE is unchanged from the McComb 1789.
Commissioners' 1811:	The APE is unchanged from the McComb 1789.
Hooker 1824:	The APE is unchanged from the McComb 1789.
Colton 1836:	The APE is unchanged from the McComb 1789.
Endicott 1842:	Water pipes from the Croton Water system are shown running down Canal (then Walker) Street.
Perris 1849/50:	The APE is unchanged from the McComb 1789.
Dripps 1852:	Development is shown on individual lots on either side of Canal Street, but the APE is vacant.
Perris 1857-62:	The APE is unchanged from the Dripps 1952.
Dripps 1867:	The APE is unchanged from the Dripps 1852. Although Stokes reports that Canal Street was widened by 25' on its northern side in 1855 (see below), the lots on the north side of Canal Street on the Dripps 1867 map are identical to those portrayed in 1852 and 1857-62. None of the lots on the block north of Canal Street appear to fall within the APE.
Viele 1874:	The APE is shown as level meadowland. The closest fresh water source is the Collect Pond, shown about three blocks southwest of this APE.
Bromley 1879:	The APE is unchanged from the Dripps 1867.

Robinson 1885:	Horse or cable car lines are indicated on Canal Street. Otherwise the APE is unchanged from earlier maps.
Robinson 1893:	Canal Street is depicted as 75' wide, and it is unchanged from earlier maps.
Hyde 1913:	The APE is unchanged from the Robinson 1893.
Bromley 1916:	Canal Street is shown as 70' wide, and an elevated train station has been constructed at the intersection of Canal Street and Bowery. The Manhattan Bridge Plaza has also been constructed on the block to the south, with an access ramp running across Canal Street within the APE.
Bromley 1925:	The APE is unchanged from the Bromley 1916.
Bromley 1955:	The APE is unchanged from the Bromley 1916, but the elevated train station has been removed.
Bromley 1974:	The APE is unchanged from the Bromley 1955.
Sanborn 2001:	The APE is currently the Canal Street roadbed, that is 70' wide, with a sidewalk on its northern side that is roughly 7.5' wide.

Street elevations within this section of the APE are as follows:

Data Source	Chrystie at Canal Street	Bowery at Canal Street
1885 Robinson	46.8'	46'
1893 Robinson	46.5'	46'
2000 Sanborn	46.10'	46'

Precontact Sensitivity

No precontact period resources were reported by the NYCLPC within this section of the APE (1982). A site file search identified one precontact site east of this area, NYSM #4060, that Parker identifies as a village site (Parker 1920:627), and Grumet places more precisely near the East River, on the line of Canal Street. Parker had reported "traces of occupation" there (Parker 1920:582). The precise location and horizontal extent of the reported village is speculative, but it appears to lie east of the APE.

Early topographic maps show this area as flat meadowland at least seven blocks away from the nearest mapped fresh water source (Viele 1874). This section of the APE maintained no distinctive topographic features that would suggest precontact sensitivity, but there is the possibility that it was occupied at some point during the precontact period.

A subsurface utility map of Canal Street, completed in 1937, shows an extensive network of water, gas, electric, and other utility conduits running through Canal Street. However, with the exception of a 4' x 2.8' sewer that was buried about 13' below grade, most of the utility lines are fairly shallow and extend across much of the roadbed. None appear to run beneath the sidewalks (WPA 1937:Plan No. 77).

A major subsurface disturbance to this APE was the construction of the Manhattan Bridge approaches between Chrystie Street and Bowery (completed 1909), and four subsequent subway tunnels, also on or crossing Canal Street between Bowery and Chrystie Street (Sanborn 1997; MESA Task 6 Engineering Report 1997: SLRT-04). With regard to the BMT subway system,

> *The Manhattan side of the subway tracks originally were connected as follows: The north side tracks to the BMT Broadway Subway at Canal Street; the south side tracks to the BMT Nassau Street subway north of Chambers Street. The south side tracks were used mostly during rush hour for services provided via the Nassau Street loop (which connected the BMT 4th Avenue and BMT Brighton Line to Manhattan via the Manhattan Bridge on the north end and the Montague Street tunnel on the south end). The configuration of the tracks at the Manhattan side was changed in 1967 as part of a large project known as the Chrystie Street connection. This project severed the connection to the under-used Nassau Street line on the south side. The south side tracks were then connected to the BMT Broadway Line, and the north side tracks connected via new construction to the IND 6th Avenue Line.*
>
> (New York City Subway Resources 1995-2001)

Current elevations from Canal Street between Chrystie Street and Bowery are little changed from the earlier available elevations, with Canal Street still sloping gradually downward toward the east (Robinson 1884; Sanborn 1997). No earlier, pre-development elevations were found. Only one soil boring log was available for review for this section of the APE, and this was taken just east of the existing Chrystie Street Connection subway tunnel (Boring C6-25, Raymond International Inc. 1970s). Here, 19' of fill was reported over 14' of sand and gravel. No bedrock or water table was encountered. The depth of fill within the APE between Chrystie Street and Bowery is unknown.

The construction of the Manhattan Bridge Approach as well as the cut and cover construction required for the multiple tunnels at this location would have eliminated any surviving archaeological resources in this section of the APE. The likelihood of recovering any precontact resources from this extremely compromised environment is minimal. Subsurface conditions at Canal Street, between Chrystie and Bowery Streets, were tremendously compromised by the construction of the subway tunnels, and the Manhattan Bridge Approach. While there may be small sections of the roadbed between the subway tunnels that were left undisturbed, these are likely to be extremely narrow pockets. Therefore, this section of the APE is considered to have little to no sensitivity for precontact resources.

Historical Sensitivity

Canal Street (first called Pump Street, and later Walker Street), from Chrystie Street to Bowery was laid out between 1757 and 1767, and shortly thereafter structures appear in an unbroken line along its perimeters (Holland 1757; Ratzer 1767, Figure 6.1-3). Shading on the 1811 map indicates that the blocks flanking either side of Canal Street in this section of the APE were a least partially developed (Taylor-Roberts 1797; Bridges 1811). Canal Street is presently 75' wide in this section of the project site (Sanborn 1997). William Bridges' notes on the Commissioners Map suggest that Canal Street (then Walker Street) was 60' wide or less in 1811 (Bridges 1811:32).

In 1855 Canal Street, still called Walker Street, was reportedly widened to 75', and a report on the progress noted that "nearly all of the houses beyond the line have been cut or removed back, and many new buildings are being erected" (Stokes 1926:1682,1861). It is unclear where the extra 15' came from since blocks on both the north and south sides of the street appeared to have survived the widening intact (Colton 1836; Dripps 1852. Figure 6.1-4a; Sanborn 1997). Perhaps the additional footage was taken from wide sidewalks. The detailed maps predating and post-dating this widening show the same number and location of lots on either side of Canal Street (Dripps 1852, Figure 6.1-4a; Perris 1857-62; Dripps 1867, Figure 6.1-5b). Therefore, the probable lack of initial deposition suggests that this section of the APE is not considered sensitive for historic period resources. Combined with the extent of prior subsurface disturbance, no historic potential remains.

Block 290 and Bowery Street from Canal Street to Bayard Street (Manhattan Bridge Approach)

All of Block 290 falls within the APE, but it was historically two separate blocks numbered 289 and 290. Only a small section of the original footprint of Block 290 may have remained undisturbed by the extensive effects from the construction of the Manhattan Bridge, its approach, the plaza, and the four subway tunnels built by cut-and-cover construction. Therefore, this cartographic review will only provide details for the lots that were potentially left undisturbed.

Cartographic History

Castello 1660:	This APE is north of the boundaries of this map.
Miller 1696:	The APE is unchanged from the Castello 1670.
Lyne 1730:	The APE is unchanged from the Castello 1670.
Buchnerd 1735:	This map depicts a Rutgers dwelling fronting what was then called "Bower Layne" directly across from the Bulls Head Tavern (on Block 202 as per Stokes, west of the APE). The Rutgers dwelling may fall within the APE on or near Block 290, but the lack of scale and detail on this map makes it difficult to determine.
Grim 1744/1813:	This map, created in 1813, shows that Bowery Lane turns west in a more severe angle than later and earlier maps depict, but it also shows at least one dwelling along Bowery within this APE.
Maerschalck 1755:	No development is shown within the APE.
Montresor1766:	There are four structures shown within the APE, two at the northeast corner of the block near the intersection of Chrystie and Canal Streets (now disturbed), and one to the south near what was the intersection of Chrystie and Bayard Streets (also disturbed). All along Bowery, up to and including the intersection with Canal Street, a row of structures are shown but individual buildings are not.
Ratzer 1766/67:	The block is shaded indicating development.
Holland 1776:	Development is shown along Bowery Lane and Bayard Street, but details are not provided.
McComb 1789:	The block is shown as shaded indicating some degree of development

Taylor Roberts 1797: The APE is unchanged from the McComb 1789.

Bridges 1803: The APE is unchanged from the McComb 1789.

Mangin-Goerck 1803: The APE is unchanged from the McComb 1789.

Commissioners' 1811: The APE is unchanged from the McComb 1789.

Hooker 1824: The APE is unchanged from the McComb 1789.

Colton 1836: The APE is unchanged from the McComb 1789.

Endicott 1842: Water pipes from the Croton Water system are shown running down Canal Street, Bayard Street, Chrystie Street, and Bowery surrounding Block 290.

Perris 1849/50: Block 290 has a structure shown at the corner of Bowery and Canal Streets, and a second building just south of mid-block is a long narrow building running east-west. No other details are depicted.

Dripps 1852: Development is shown on individual lots within Block 290. Approximately 33 lots fell within the APE outside of the footprint of the Manhattan Bridge subway tunnel and approach ramps, most of which were partially or fully developed with structures. Some of the structures were located at the rear of lots, detached from surrounding buildings. Included on the block is a Tobacco Factory on Chrystie Street near the intersection with Bayard. Whites Melodeon was located on Bowery Street near the intersection with Canal Street, and the New York Amphitheater was also located on Bowery Street on the southern half of the block.

Perris 1857-62: On Chrystie Street the following buildings fell within the APE that may have remained undisturbed:

21 Chrystie Street has one structure on it fronting Chrystie Street, and a second at the rear of the lot. A vacant yard exists between the two buildings.

19 Chrystie Street has one small structure on it with a small vacant back yard. A small vacant alley runs along the southern side of the building.

17 and 15 Chrystie Street have two adjoining buildings fronting Chrystie Street, each with a very small back yard.

13 Chrystie Street has four buildings on it, one fronting Chrystie Street, and three at the rear of the lot. There is a central back yard left undeveloped.

11 Chrystie Street has one structure fronting Chrystie Street, with a small attached outbuilding at its back. A vacant yard lies to the west of the structure, which partially fronts Bayard Street.

Fronting Bayard Street the following lots were shown from east to west:

20 Bayard Street has one building on it fronting Bayard Street that may share a backyard with *11 Chrystie Street.*

22 Bayard Street has two buildings on it, one fronting Bayard Street and one on the western side of the lot. The remainder of the lot is vacant back yard.

24 Bayard Street has one building on it fronting Bayard Street, and

the rest of the lot is vacant.
28 Bayard Street has a building with an attached outbuilding at the rear, with an open back yard.
30 and 32 Bayard Street have two adjoining structures fronting the road, and each has an undeveloped back yard.
34 Bayard Street has one building fronting Bayard Street, with a small vacant back yard.
36 Bayard Street has a building on it fronting Bayard Street, and may have a shared backyard with 33 Bowery Street.
38 Bayard Street (*a.k.a. 31 Bowery*) has one building on it fronting Bayard Street, with a very small vacant back yard.

Fronting Bowery, the following lots fell within the APE:
33 Bowery has one building on it with a small attached outbuilding and a possible shared back lot with 36 Bayard Street.
35 Bowery is a long lot that is almost entirely covered by a structure. There is a very narrow alley left undeveloped on the south side of the lot along the eastern half of the building.
37 Bowery has one structure on the lot fronting Bowery. At the rear of the building is the "New York Stadt Theater," formerly the New York Amphitheater. The theater borders the rear yards of most of the lots on the southern end of the block.
37 ½ Bowery has one building on it fronting Bowery that appears (on the 1852 Dripps map, Figure 6.1-4a)) to be the entranceway to the theater.
39 Bowery has two structures on it, one fronting Bowery Street, with the second at the rear of the lot. There is a small yard at the end of the lot bordering Volks Garden.
41 Bowery has one building on it fronting Bowery with a small yard at the rear of the lot that abuts the garden.

Dripps 1867: The APE appears virtually identical to its configuration on the 1857-62 Perris map.

Viele 1874: The APE is shown as level meadowland. The closest fresh water source is the Collect Pond, shown about three blocks west of this APE.

Bromley 1879: Development is indicated on the block by shading, but details are not shown.

Robinson 1885: Horse or cable car lines are indicated on Canal Street and Bowery, and the el also runs down Bowery. Block 290 is almost fully developed, with the following lots falling within the APE.
On Chrystie Street the following lots fell within the APE:
21 Chrystie Street has one structure on it fronting Chrystie Street, and a vacant yard at the western end of the lot.
19 and 17 Chrystie Street each have new attached buildings that cover almost all of each lot.
15 Chrystie Street is unchanged from 1857.
13 Chrystie Street has two buildings on it, one fronting Chrystie Street, and the second at the rear of the lot. There is a central back yard left undeveloped.

11 Chrystie Street has one structure fronting Chrystie Street, with a vacant yard west of the structure that partially fronts Bayard Street.

On Bayard Street, the following lots were shown in the APE:
20 Bayard Street has one building on it fronting Bayard Street that may share a backyard with *11 Chrystie Street.*
22 Bayard Street now has an L shaped building on it, with a small back yard.
24-34 Bayard Street have a row of brick buildings fronting Bayard Street, with vacant yards at the rear of the lot.
36 Bayard Street has a small building on it fronting Bayard Street, and may have a shared backyard with *33 Bowery Street.*
38 Bayard Street (*a.k.a. 31 Bowery*) has one building on it fronting Bayard Street that covers the whole lot.

The lots on Bowery were shown as follows:
33 Bowery is covered by a stone structure, attached to *35 Bowery.* A small vacant yard may be attached to *36 Bayard Street.*
35 Bowery is a long lot that is entirely covered by a stone structure that is attached to the building at *33 Bowery.* It is labeled "Tech (sic?) Bros. Paints."
37 and 37 ½ Bowery no longer have the theater on them. This was replaced by a large brick building that covers both lots. At the very eastern end of the lot is a small alley.
39 and 41 Bowery are completely covered with brick buildings. The Volks Garden, that was formerly behind these lots, is almost entirely covered with a separate building, except for the garden's former northeast corner that is shown as a small square vacant area in the interior of the block.

Sanborn 1894:

On Chrystie Street the following buildings fell within the APE:
21 Chrystie Street has one structure on it fronting Chrystie Street, and a vacant yard at the western end of the lot.
19 and 17 Chrystie Street each have new attached buildings that cover the front 2/3s of each lot, with the western 1/3 of each lot left vacant.
15 Chrystie Street is unchanged from 1857.
13 Chrystie Street now has three buildings on it. One of these is fronting Chrystie Street, and two are outbuildings near the back of the lot. Between the two ends of the lot is a vacant yard.
11 Chrystie Street has one structure fronting both Chrystie and Bayard Streets. There is a small building in the northwest corner of the back yard. There is still a narrow undeveloped alley present on the west side of the lot. The remainder of the lot fronting Bayard Street is now vacant.

Fronting Bayard Street the following lots were shown from east to west:
20 through 38 Bayard Street are unchanged from 1885.
Fronting Bowery Street the following lots were shown from south

to north:
33 Bowery is covered by a stone structure, and there is still a small vacant yard that may be attached to 36 Bayard Street. The structure is labeled as a warehouse.
35 Bowery is a long lot that is entirely covered by a stone structure. It is now labeled "Lodging House and Co." The building appears similar to its 1857 configuration (Perris).
37 and 37 ½ Bowery has a large hotel that covers both lots. At the very eastern end of the lot is a small alley.
39, and 41 Bowery are unchanged from 1885. Where the Volks Garden once lay, is now the Windsor Theater.

Hyde 1913: By this time all of the buildings on the block had been razed. The Manhattan Bridge terminal was constructed, with its approach and plaza covering most of this block. Despite this, Chrystie, Bowery, Bayard and Canal Streets were still open to traffic. Surface tracks for a streetcar terminal are shown covering the southern half of the block over the lots formerly fronting Bayard Street.

Bromley 1916: Canal Street is shown as 70' wide, and an elevated train station has been constructed at the intersection of Canal Street and Bowery. Chrystie Street is shown as 50' wide. The Manhattan Bridge Plaza has been constructed on the block, with an access ramp running diagonally across Block 290 within the APE. As a result, Chrystie Street between Canal and Bayard Streets was closed. No cable car terminal is depicted.

Bromley 1925: The APE is unchanged from the Bromley 1916.

Bromley 1955: The APE is unchanged from the Bromley 1916, but the elevated train station has been removed.

Bromley 1974: By this time Bayard Street had been closed between Canal and Forsyth Streets.

Sanborn 2001: Within the APE, that is now labeled as Block 289 as a result of block consolidations, the Manhattan Bridge Plaza appears unchanged. There is no additional development within the APE.

Street elevations within this section of the APE are as follows:

Data Source	Chrystie at Canal Street	Bowery at Canal Street	Chrystie at Bayard
1885 Robinson	46.8'	46'	46.8'
1893 Robinson	46.5'	46'	40.33' (1913)
2000 Sanborn	46.10'	46'	40.10' (1925)

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 290								
29 Chrystie Street	Not for this Yr.	Widow Glaser	Dutch reformed Church (inc.#'s 31 and 33)	Reformed Dutch Church	Charles Daniels, baker	James Carr	INC	James Corn
27 ½ Chrystie Street	Not for this Yr.	Not for this Yr	Dutch Ref. Church	Thomas Emmer-son	John Brookes, clocks	Victor Humbert	INC	Robt. McClay
27 Christie Street	Henry King	George Hordhand Stephen Wheaton Joseph Dakings Lawrence Weaver	Dutch Ref. Church	Doctor McClay	James Curry, cabinet makers	James Mulry	INC	Robt. McClay
25 Chrystie Street	D. Dawso n	Not for this Yr	Dutch Ref. Church	Frederick Matthews	Henry Breitens-tein, carpenter Frederick	James Mulry	INC	James Murey
23 Chrystie Street	Not for this Yr.	Not for this Yr	Dutch Ref Church	Frederick Matthews	Newmark Meyer, cabintmkr	Reinhard Bros & Reimer	INC	Reinhard Bros. W. Reihard
21 Chrystie Street	Not for this Yr.	Not for this Yr	Samuel Stilwell	Edward Doughly	No listing	Reinhard Bros & Reimer	INC	Reinhard Bros. W. Reihard
19 Chrystie Street	Baker	John W. Lise	Ann Brown	Cales S Angevine	Peter Bogert, butcher C.H. Vose, mason	Charles Francis	INC	Charles Fancir
17 Chrystie Street	Not for this Yr.	Kohler	L.S. Seymour	Cales S Angevine	Welle & Mayer, tobacco (including #15)	Charles Francis	INC	Charles Fancir
13 Chrystie Street	Not for this Yr.	Thomas Bings	Thomas Bings	Cales S Angevine	Martin Hammorsch mitt, bding	James Horn (including #15)	INC	James Horn
11 Chrystie Street	Not for this Yr.	House of Benj. Thurston	James Horn	James Horn	Frederick hoppe, grocer	Est of John Waydell (inc 11 ½)	INC	Keasler

20 Bayard Street	Not for this Yr.	No street #	John Wadle	Not for this Yr.	Margaret & Frederick Waydell Ann Poole, washing Frederick Hoppe, grocer	Not for this Yr.	Not for this Yr.	Not for this Yr.
22 Bayard Street	Not for this Yr.	No street #	JS Reynolds	JS Reynolds	JS Reynolds	Not for this Yr.	Not for this Yr.	Not for this Yr.
24 Bayard Street	Not for this Yr.	No street #...	JS Reynolds	JS Reynolds Edward King	No listing	Not for this Yr.	E. Johansen	J. Reynolds
28 Bayard Street	Not for this Yr.	Samuel Reynolds	W. C Dougherty	JS Reynolds	Edwin Stickney	Not for this Yr.	J. Reynolds	J. Reynolds
30 Bayard Street	Not for this Yr.	David B hikyes John Poule	James S Reynold	JS Reynolds	Zephaniah Frost	Not for this Yr.	J. Reynolds	J. Reynolds
32 Bayard Street	Not for this Yr.	Thomas Mastin	Thom. Martin W. Griffin	Thom. Martin Thos. Mudham	Alexander Just	Not for this Yr.	J. Reynolds	J. Reynolds
34 Bayard Street	Not for this Yr.	Not for this yr.	David Baker Doch Lynch	David Baker	A.W. Rogers, physician	Not for this Yr.	George Law	George Law
36 Bayard Street	Not for this Yr.	David Baker Joseph P. Simpson	David Baker W. Vouty	David Baker	I.F Payson	Not for this Yr.	Henry Bunill	Henry Bunill
38 Bayard Street (a.k.a. 31 Bowery)	Not for this Yr	Not for this Yr.	(listed as 31 Bowery) Dutch reformed Church (including #'s 23-29 all odds)	Est of John Rye	T.W. Hoffman, liquors Meyer Calish, capmaker J.D. Squire, exchange Casper Christman, boarding	Joel Oatman	Joel Oatman	Joel Oatman
33 Bowery	No Record	No Record	Dutch Ref. Church (inc.#'s 23-29 all odds)	Est David Baker	Leonard Fisher, bar room Edward Reynolds, boarding	Joel Oatman	Joel Oatman	Joel Oatman (listed as 31 Bowery)
35 Bowery	No Record	No Record	Dutch Ref. Church (inc.#'s 23-	John Drake	John Drake, physician	George Law	George Law	George Law

			29 all odds)					
37 Bowery	No Record	No Record	Albert Hennard	Bales S Angevine	Finch & Carter, plumbers *William Finch *Thomas Carter, fur man exchange Boowery Amphitheatre, J.M June & Co. proprietors *Sutton Angevine Daniel Terry, restaurant R. H . Platt, saloon	Charles Francis	Charles Francis	JW Allen
37 ½ Bowery	Not for this Yr	Not for this Yr	Not for this Yr	Not for this Yr	No listing	Not for this Yr	Not for this Yr	Not for this Yr
39 Bowery	No Record	No Record	John Mc Cake	Samuel Stilwell	Charles Francis, harness	Mrs. Doughty	M Doughty	W. Doty
41 Bowery	No Record	No Record	John Brown	Samuel Stilwell	Adam Stanley, stoves	Gertrude E. Ward	Gertrude E. Ward	Gertrude E. Ward
43 Bowery	No Record	No Record	Not for this Yr	Samuel Stilwell	Trall & Stow, botanic medicines S.D. Trall G. H. Stow	Gertrude E. Ward	Gertrude E. Ward	Gertrude E. Ward
45 Bowery	No Record	No Record	Samuel Stilwell	Samuel Stilwell	Richard Amermand, city sur	Reinhardt Bros. & Reimer	Edward Harman ("Volks Garden covering whole basement ")	Edward Harman (Hotel Theatres)
47 Bowery	No Record	No Record	Samuel Stilwell	Samuel Stilwell	Samuel Doughty	Reinhardt Bros. & Reimer Volks Garden covering whole basement	Herman Rosenberg Volks Garden covering whole basement	Not for this Yr.
49 Bowery	No Record	No Record	Heirs of Dock	Heir Thomas	P.F. & D. C. Mosehutt,	Mrs. Ann Seaman	Ann Seaman	Mrs. Ann D Seaman

			Drake J.S Dodge	Drake	oysters Edxward Carland, bowling sal'n G.W. Heath, boarding			
51 Bowery	No Record	No Record	Gabriel Cock	Samuel Bowen	Frederick Diez, restaurant M. A. Williams & Co segars Mrs H. E. Anderson, boarding Martin Mistler, barber	H.B Duryea Gardian	HB Duryea	KB Puryea
53 Bowery	No Record	No Record	W. M. Donnell	Edwin Fomsend	Meads & Touse, *cabntmakrs* *John Meads jr. *John Touse Melodeon, Chas, White Prplr.	Alice F. Swift	W.B Astor	W Astor
55 Bowery	No Record	No Record	Charles L Clusman John Basher	Charles S Clusman Thomas Johnson	Thomas Johnson, barroom Thompson Reilly James Callahan, rag carpets	Perkins & Bros.	Perkins Bros.	Perkins Bros.
57 Bowery	No Record	No Record	Isaac Ward	Isaac Ward	Jones & Bouton, hardware *Ebenezer Jones *Charles Bouton Tappan & Haggart, lockmakrs *George Tappan *James Haggart	George Tappen	George Tappen	George Tappen
59 Bowery	No Record	No Record	Heirs of L. Whilock Aaron Wolsey	Est of Higgins	John Ryan, rag carpets Hugh Hagarty, rag carpets	HW Monsus	HW Monsus	HW Monsus

					Christoval Helmholz, boots Henry Warendorf Charles Goldsmith Recruiting Office U. S. Army C. A. Baldwin, lamps			
61 Bowery	No Record	No Record	Heirs of L Whitlock W. Walsworth	Donger (?)	Jacob Lagowitz, trunks Samuel Betts, hotel	Peter Gaole	Peter Gaole	Peter Gaolet
142 Canal Street	Not for this Yr.	Not for this Yr.	Not for this Yr.	Not for this Yr.	Oliver Mowbray, drygoods	Not for this Yr.	Not for this Yr.	Not for this Yr.
140 Canal Street	Not for this Yr.	Not for this Yr.	Not for this Yr.	Not for this Yr.	PP Lyon, drygoods	Not for this Yr.	Not for this Yr.	Not for this Yr.
138 Canal Street	Not for this Yr.	Not for this Yr.	Not for this Yr.	Not for this Yr.	Alexander Clark, shoes George Whitlock	Not for this Yr.	Not for this Yr.	Not for this Yr.
131 Canal Street	Not for this Yr.	Not for this Yr.	Not for this Yr.	Not for this Yr.	Mrs June Feriu, apholstory Mrs June Davidson Milliner	James Drake	James Drake	James Drake
133 Canal Street	Not for this Yr.	Not for this Yr.	Not for this Yr.	Not for this Yr.	WP Sweet, plumber	Leonard Fisher	James Fisher	James Fisher
135 Canal Street	Not for this Yr.	Not for this Yr.	Not for this Yr.	Not for this Yr.	Bohman Goldsmith, segars James Dunn, painter SS Reilly, lamps	Leonard Fisher	James Fisher	James Fisher
137 Canal Street	Not for this Yr.	Not for this Yr.	Not for this Yr.	Not for this Yr.	James Kurly, Furniture	Leonard Fisher	James Fisher	James Fisher
139 Canal Street	Not for this Yr.	Not for this Yr.	Not for this Yr.	Not for this Yr.	Vacant Lot	Leonard Fisher	James Fisher	James Fisher

Notes: 'INC' depicts names that were illegible

Precontact Sensitivity

Despite the fact that this block may have been utilized by precontact peoples at some point, historical development has been extensive enough to have probably compromised any precontact potential. The block was developed from the mid-18th century on (Figures 6.1-4a, 6.1-5b), and subsequent to the demolition of structures on the block, had been affected by excavations for four subway lines (see discussion above for the *Canal Street, Chrystie Street to Bowery* APE). No soil boring logs were available for review for this block, and historic photographs of the construction of the Manhattan Bridge Plaza suggest that most of the block was affected by its construction (New York Public Library - Photograph Collection:2183-11). The six foot drop in elevation at the corner of Chrystie and Bayard Streets supports this observation (see elevation table above).

Currently a built section of the proposed Second Avenue Subway line runs from the east side of Bowery along Division Street to Chrystie Street. It passes in front of the Confucius Plaza Apartments and P.S. 124, under private property (there is a ventilation structure aboveground), and then under Manhattan Bridge plaza to near the north side of the plaza, ending a bit short of the Chrystie Street line. The tunnel structure underpins another subway coming off of the Manhattan Bridge, the existing "Canal Street Bridge Line" and the former connection to the Nassau Street loop (New York City Subway Resources 1995-2001).

Given the extensive subsurface disturbance to this block caused first by 18th and 19th century residential and commercial development, and second by the construction of the complex system of subways that runs beneath this block, this location is no longer considered to be potentially sensitive for precontact period resources.

Historical Sensitivity

While there were dozens of developed lots on this block, some probably developed as early as 1776 (Holland 1776), only a small section of the southern end of the block may have escaped disturbance by the construction of the Manhattan Bridge Approach. However, this area was probably affected when the four subway tunnels and the adjacent Confucius Plaza Apartments were built here. Currently an extant portion of the proposed Second Avenue Subway line runs from the east side of Bowery along Division Street to Chrystie Street. It passes in front of the Confucius Plaza Apartments and P.S. 124, under private property (there is a ventilation structure aboveground), and then under Manhattan Bridge plaza to near the north side of the plaza, ending a bit short of the Chrystie Street line (New York City Subway Resources 1995-2001).

Photographs taken at the time of the bridge's construction predominantly detail effects closer to the shore where major footings and piers were built. Few photographs of the construction of the Bridge Approach itself could be found. The approach was designed by Carrere and Hastings, with a triumphal arch and curved colonnade (WPA 1939:120).

Historical maps indicate that there was development on this block fronting Bowery by 1766, and that by 1852, when individual lots were first depicted, numerous structures stood within the APE (Figures 6.1-4a, 6.1-5b). The tax assessments and directory research shows that the lots within this block were probably occupied by 1808, and that

by the mid-19th century the block was covered with largely commercially occupied structures (see Tax and Directory Table above). However, the extensive 20th century construction on this block has negated any potential archaeological sensitivity for potential associated resources.

Historical documents also indicate that this section of Bowery was the site of intensive historic activity. In particular, Block 202 (outside of the APE and directly west of Block 290) was the site of the Bull's Head Tavern, the Bowery Theater, the Atlantic Garden, the Black Horse Inn and the first mile-stone (a highway marker indicating the one-mile point on Bowery from its terminus in Lower Manhattan) of 1796 (Stokes 1918:982). Of these, the oldest would be the Bull's Head Tavern, erected prior to 1763 (Ibid.:977). It, however, was replaced by the Bowery Theater, that reportedly burned to the ground and was rebuilt seven times (Ibid.:982).

Regardless of the historic activities directly west of Bowery, no historic structures were observed on maps within the Bowery roadbed itself. Although Bowery (a.k.a. Bowery Lane, Bower Layne, Bowry Lane, and Bowery Road) was a historic road that was establish in this area by at least 1710 (Stokes 1918:994), it is highly unlikely that remnants of the original streetbed have survived modern effects. The Third Avenue El's Canal Street station was built at the intersection of Bowery and Canal Street between 1878 and 1881, and the elevated railway originally ran on two separate tracks, one on each side of Bowery (over what are now the sidewalks). These were replaced in 1914 by a newer structure that spanned the entire street (Brennan 2001a:12). A utility map shows numerous subsurface utilities beneath the roadbed, most lying on the east or west sides of the street with the exception of a 4' x 2'8" sewer that was located 14' below grade in the center of the street (WPA 1937: Plan No. 77). Given the extent of subsurface disturbance it is highly unlikely that fragile remains of the original street remain undisturbed beneath the current roadbed.

The Manhattan Bridge Plaza ramp construction, as well as more recent subway construction, affected much of this block. The historic landscape outside of the footprint of the entrance and egress ramps was probably extensively compromised enough to have affected potentially deep shaft features (New York Public Library - Photograph Collection:2183-111). As per the elevation table above, the topography has stayed fairly consistent at the intersection of Canal and Bowery Street, and Canal and Chrystie Streets (despite extensive effects to this area). However, at the south end of the block near what was formerly the intersection of Chrystie and Bayard Streets, the elevation has been reduced by at least six feet.

In summary, it is probable that any historic resources that may have once been present on this historic block or on Bowery have since been disturbed or destroyed by the extensive construction undertaken for the subway tunnels, bridge access ramp, el stations, and streetcar depot.

Block 291 (now part of Block 289) between Canal, Bayard, Chrystie, and Forsyth Streets - Western Quarter Only

Only the western quarter of Block 291 falls within the APE. Of this small section of the block, only the very southern end remained undisturbed by the extensive effects from the

construction of the Manhattan Bridge, its approach, the plaza, and the below-ground subway tunnels. Therefore, this cartographic review will only encompass the lots that were potentially left undisturbed.

Cartographic History

Castello 1660:	This APE is north of the boundaries of this map.
Miller 1696:	The APE is unchanged from the Castello 1670.
Lyne 1730:	The APE is unchanged from the Castello 1670.
Carwitham 1740:	The APE is unchanged from the Castello 1670.
Buchnerd 1735:	Based on a comparison of this map to later more detailed maps, the APE is shown on this map as vacant land.
Grim 1744/1813:	The APE is unchanged from the Buchnerd 1735.
Maerschalck 1755:	Development is indicated south and west of this APE, but not within it.
Montresor1766:	There appears to be one structure on the southwestern corner of this block near the intersection of Bayard and Chrystie Streets, but it appears to be out of the APE. However, the scale of this map is difficult to pinpoint the location of this structure.
Ratzer 1766/67:	No specific development is shown within the APE, but it is shaded indicating some degree of development.
Holland 1776:	Development is indicated along Chrystie and Bayard Streets, but details of individual structures are not provided.
McComb 1789:	The block is shaded indicating some degree of development.
Taylor Roberts 1797:	The APE is unchanged from the McComb 1789.
Bridges 1803:	The APE is unchanged from the McComb 1789
Mangin-Goerck 1803:	The APE is unchanged from the McComb 1789.
Commissioners' 1811:	The APE is unchanged from the McComb 1789.
Hooker 1824:	The APE is unchanged from the McComb 1789.
Colton 1836:	The APE is unchanged from the McComb 1789.
Endicott 1842:	Water pipes from the Croton Water system are shown running down Bayard, Chrystie, Forsyth, and Canal Streets.
Perris 1849/50:	The APE is unchanged from the McComb 1789.
Dripps 1852:	It appears only three lots fall within the APE. From north to south, the first has a long L shaped structure covering the northern half of the lot. To the south of this are two more structures fronting Chrystie Street with vacant rear yards.
Perris 1857-62:	The following lots are shown within the APE: *20 Chrystie Street* has a building covering the entire lot. *18 Chrystie Street* has one structure on the lot, with a small alley on the north side of it and a small undeveloped back yard to its east. *16 Chrystie Street* has a small building fronting Chrystie Street with a small vacant yard behind it to the east.
Dripps 1867:	Lots 20, 18, and 16 appear unchanged from Perris 1857-62.
Viele 1874:	The APE is shown as level meadowland. The closest fresh water source is the Collect Pond, shown about four blocks west of this APE.
Robinson 1885:	*20 Chrystie Street* is unchanged from 1857.

18 Chrystie Street is unchanged from 1857.
16 Chrystie Street has a larger building that covers all of the lot within the APE.

Sanborn 1894: *20 Chrystie Street* is unchanged from 1857.
18 Chrystie Street now has an addition where the backyard formerly lay, but the vacant alley is still present.
16 Chrystie Street is unchanged from 1885.

Hyde 1913: By this time all of the buildings on the block had been razed, including the three that fell within the APE. The Manhattan Bridge terminal was constructed, with its approach and plaza covering the south half of this block. Despite this, Chrystie and Bayard Streets were still open to traffic. Surface tracks for a streetcar terminal on the adjacent block are shown covering the southern half of Block 291.

Bromley 1916: The Manhattan Bridge Plaza had been constructed on the block, and Chrystie Street had been closed.

Bromley 1925: The APE is unchanged from the Bromley 1916.

Bromley 1955: The APE is unchanged from the Bromley 1916.

Bromley 1974: By this time Bayard Street had been closed between Canal and Forsyth Streets.

Sanborn 2001: The APE is currently abutting the Confucius Plaza Apartments.

Street elevations within this section of the APE are as follows:

Data Source	Chrystie at Canal Street	Chrystie at Bayard
1885 Robinson	46.8'	46.8'
1913 Hyde	46.83'	40.33'
1925 Bromley	46.10'	40.10'
2000 Sanborn	46.10'	N/A

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 291								
20 Chrystie Street	Widow Marsh MW Provost Mr. Russell	Widow Marsh Nash	John S Higgins	George Adams	C.J. Howe, carpenter Levi Mabai, carpenter	Not for this Yr.	Edward Waring	JJ Donohae
18 Chrystie Street	Capt Dunkirk Capt. Howard Mr Moore	Widow Halsey	Mrs Halsey W. Seaman	Est of Henry Halsey	Gudlope Hyale, tinsmith	Not for this Yr.	G Elterich	G Elterich
16 Christie Street	Widow Tilford Mr. Riker	John Riker Catherine Tilford	Catherine Ricard	Cath-erine Ricard	James Welsh, carman Thomas Drung, officer Osten Lusher, jeweler	Not for this Yr.	John Dolger	John Dolger

Precontact Sensitivity

The predevelopment topography of this block, meadowland within four blocks of the Collect, suggests it may have been attractive for precontact period habitation. However, the narrow section of this block within the APE, that may have once been moderately sensitive for precontact resources, has experienced 18th through 20th century development. The small vacant yards behind and between historic structures may be considered potentially sensitive for precontact resources, but these narrow areas are relatively small and were probably disturbed by modern construction. No soil boring logs were available for review for this section of the APE so the potential depth of precontact resources is unknown.

Historical Sensitivity

There appeared to be some development in the general vicinity of these three lots by 1766 and by 1852 each of the lots was definitely developed (Figure 6.1-4a). Tax records indicate that each of these lots was probably occupied by at least 1808 (see Tax and Directory Table above). The owners of the lots did not appear to occupy them, at least by 1851.

In 1909 most of this block was extensively affected by the construction of the Manhattan Bridge Approach, and by associated subway tunnel excavations (see *Block 290* above). Three lots fronting Chrystie Street, that lie within the APE, may have not been disturbed by the bridge approach. However, these lots would be situated directly between the Manhattan Bridge Approach to the north and the Confucius Plaza Apartments to the south. While there is the small possibility that historic shaft features may exist here, it is more likely that they were compromised by these two construction episodes, and by the construction of a built portion of the proposed Second Avenue Subway line. Therefore, the extensive effects to this block have eliminated the potential for 18th and 19th century homelot resources and it has no further historic archaeological sensitivity.

Block 289 - between Bowery, Bayard, Chrystie, and Division Streets -Northwestern corner only - and Bowery between Bayard and Division Streets

The APE encompasses the northwestern corner of Block 289. Furthermore, when Bowery between Bayard and Division Streets was widened in 1952, the 25' of Block 289 fronting Bowery was incorporated into the roadbed. Therefore, this cartographic review will entail a discussion of only the lots that fall within the APE.

Cartographic History

Castello 1660:	This APE is north of the boundaries of this map.
Miller 1696:	The APE is unchanged from the Castello 1670.
Lyne 1730:	The APE is unchanged from the Castello 1670.
Carwitham 1740:	The APE is unchanged from the Castello 1670.
Buchnerd 1735:	Based on a comparison of this map to later more detailed maps, the APE is shown on this map as vacant land.
Grim 1744/1813:	The APE is unchanged from the Buchnerd 1735.

Maerschalck 1755: Development is indicated on this block fronting Bowery within the APE.

Montresor1766: One structure is shown within the APE at the intersection of Bayard Street and Bowery.

Ratzer 1766/67: No specific structures are shown within the APE, but it is shaded indicating some degree of development.

Holland 1776: Development is indicated along Bowery and Bayard Streets, but details of individual structures are not provided.

McComb 1789: The block is shaded indicating some degree of development.

Taylor Roberts 1797: The APE is unchanged from the McComb 1789.

Bridges 1803: The APE is unchanged from the McComb 1789

Mangin-Goerck 1803: The APE is unchanged from the McComb 1789.

Commissioners' 1811: The APE is unchanged from the McComb 1789.

Hooker 1824: The APE is unchanged from the McComb 1789.

Colton 1836: The APE is unchanged from the McComb 1789.

Endicott 1842: Water pipes from the Croton Water system are shown running down Bayard and Bowery Streets.

Perris 1849/50: The APE is unchanged from the McComb 1789.

Dripps 1852: It appears only portions of 12 lots fall within the APE, each with a structure on it. Only small sections of two lots have vacant yards within the APE.

Perris 1857-62: The following lots are shown within the APE:

35 Bayard Street has one structure on it with a vacant side yard within the APE that fronts on Bayard Street

37 Bayard Street (a.k.a. 29 Bowery) has one structure on it, and appears to share a vacant yard with *35 Bayard Street.*

27 Bowery has a single structure with only a small section of its back yard falling within the APE.

25 through 1 Bowery (odd only) each has a structure that covers the entire lot within the APE.

Dripps 1867: Lots within the APE are unchanged from Perris 1857-62.

Viele 1874: The APE is shown as level meadowland. The closest fresh water source is the Collect Pond, shown about three blocks west of this APE.

Robinson 1885: All of the lots within this APE are now covered by brick and masonry structures.

Sanborn 1894: The APE is unchanged from the Robinson 1885. Bowery Street is depicted as 74.6' wide near its intersection with Bayard Street, and 72' wide near its intersection with Division Street. An elevated train ran above Bowery Street at this time, and a station was located at Division Street.

Hyde 1913: The APE is unchanged from the Robinson 1885.

Bromley 1916: The APE is unchanged from the Robinson 1885.

Bromley 1925: The APE is unchanged from the Robinson 1885. Although basements are depicted on other structures nearby, none were reported for the buildings within the APE.

Bromley 1955: *35 Bayard Street* is now vacant. The four-story building with a basement that formerly stood on this lot had been removed.

The rest of the buildings on the lots within the APE are unchanged

from Robinson 1885.

City of NY 1952: In order to allow for the widening of Bowery, 25' of each lot bordering Bowery has been acquired.

Bromley 1974: By this time all of the buildings on the block had been razed, and the block was incorporated into what were formerly Blocks 290 and 291 to the north. Bayard Street had been closed between Forsyth Street and Bowery by this time, and Bowery Street was depicted as about 85' wide at Bayard Street, and 70' wide at Division Street.

Sanborn 2001: The APE is currently abutting the Confucius Plaza Apartments, and Bowery has maintained its width from 1974.

Street elevations within this section of the APE are as follows:

Data Source	Bayard Street at Bowery Street
1885 Robinson	40'
1937 WPA	40'
2000 Sanborn	N/A

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 289								
35 Bayard Street	Not for this Yr.	Charles Hohles	Not for this Yr	John Drake	I.F. Payson Isherwood	Not for this Yr	No record	George Law
37 Bayard Street	Not for this Yr	John W. Leifs	Not for this Yr	Bales S. Angevine	G.E. Wine, boarding J. Berriers, liquors	Not for this Yr	No record	JW Allen
27 Bowery	No Record	No Record	John Drake Matthew Reed	James Horn	H.A. Patterson, hrdware *W.T. Patterson	Joseph Drake	Joseph Drake	Joseph Drake
25 Bowery	No Record	No Record	William Cooper	James Horn	C.W. Seaman, hotel	E. Cooper	E. Cooper	Est. of William Cooper
23 Bowery	No Record	No Record	W. Wines John H. Woodgate	James Horn W. S. Carpender	John Newmark, auctioneer James Corcoran, stoves	W. Winans	W. Winans	W. Wayans
21 Bowery	No Record	No Record	John Mason	James Horn	Westchester Hotel Daniel Moss, hotel	Mrs Jones	Rebecca Jones	Rebecca Jones

Precontact Sensitivity

Early topographic maps show this area as flat meadowland located about three blocks away from the nearest mapped fresh water source (Viele 1874). Since this section of the APE was relatively level meadowland, it would suggest potential precontact sensitivity. The section of Block 289 that lies within the APE was historically developed, but none of the structures on the lots were shown with basements (Bromley 1925). However, the built section of the Second Avenue Subway, built via cut-and-cover construction over Block 289, has undoubtedly destroyed any precontact potential, and, therefore, Block 289 is not considered potentially sensitive for precontact resources.

The Bowery roadbed may be potentially sensitive for precontact resources outside of the location of the existing subway tunnel. A soil boring taken on the west side of Bowery near Bayard Street showed a cellar foundation down to ten feet below grade (Boring C5-5, Raymond International Inc. 1974). Below the basement was a 34' level of brown sand, with traces of gravel and silt (Ibid.). This log does little to elucidate subsurface conditions within the APE. A second boring taken near the intersection of Bowery and Division Street shows miscellaneous fill from the surface down to 10.2' below grade, underlain by a 57' stratum of course and fine reddish brown sand with traces of gravel and silt (Boring C5-2, Raymond International Inc. 1974). This suggests that precontact sensitive strata may exist below approximately ten feet of fill on Bowery.

A 1937 subsurface conditions map shows numerous utility lines beneath the roadbed, but these are fairly shallow. Most utilities lie on the east and west sides of Bowery, with the exception of a deeper sewer pipe in the center of the street measuring 4' x 2'8" (WPA 1937:Plan No.77). Since the utilities are almost all located within what is reported as a fill level, Bowery may be sensitive for precontact resources below the 10.6' of fill except for where the deep sewer pipe runs down the center of the street.

Historical Sensitivity

The northwest corner and western edge of what was historically designated Block 289 lies within the APE. The first development observed in this area was portrayed on a 1755 map when two structures were shown fronting Bowery (Maerschalck 1755). Later 18th century maps were shaded, indicating some development, and by 1852 there were 12 developed lots within the APE (Ratzer 1766/67, Figure 6.1-3). Structures at 37, 35, and 25 Bowery each had narrow yards and alleys that fell within the APE (Dripps 1852, Figure 6.1-4a; Dripps 1867, 6.1-5b). These undeveloped areas, that remained so through at least 1885 (Robinson 1885) may have been the location of associated shaft features.

The tax assessments and mid-19th century directory indicate that most of these lots were occupied by at least 1820 (see Tax and Directory Table above). Residents did not own their property, at least in the 1850s, and were probably middle-class renters and boarders. Several were employed at hotels, while others worked in the manufacturing industry.

Regardless of the potential resources that may have once been deposited on Block 289, the section of the block within the APE has since experienced extensive effects through the cut-and-cover construction of a segment of the Second Avenue Subway. Built in the 1970s, this extant segment runs in front of the Confucius Plaza Apartments just south of

the APE. Any potential historical period resources that may have once been present on Block 289 have since been destroyed. Therefore, this section of the APE has no potential historical period sensitivity.

Chatham Square

Included in this section is the northern end of what is designated Section 1 of Block 281 (hereafter referred to as Block 281). The northern half of this small block was acquired in 1952 for the widening of Chatham Square, and is now incorporated into the APE. What remains of Block 281 is not in the APE.

Cartographic History

Castello 1660:	This APE is north of the boundaries of this map.
Miller 1696:	The APE is unchanged from the Castello 1670.
Lyne 1730:	The APE is unchanged from the Castello 1670.
Carwitham 1740:	The APE is unchanged from the Castello 1670.
Buchnerd 1735:	Based on a comparison of this map to later more detailed maps, the APE is shown on this map as vacant land, but "Bower Layne" is shown running through the APE.
Grim 1744/1813:	Chatham Square is shown as open land with what was then Bowery Lane running through it. On the eastern side of the square is a small rectangular structure, and directly north of it is a long narrow structure, that on later maps is labeled as a ropewalk. Both are either within or directly abutting the APE.
Maerschalck 1755:	On what will later become Division Street, a ropewalk was built extending northeast from what will become Chatham Square. It is unclear, due to the scale of the map, whether the southwestern end of the ropewalk fell within the APE. The rest of Chatham Square is shown as vacant.
Holland 1757:	While Chatham Square is depicted as a broad undeveloped area, a "Rope Walke," that is actually two adjacent long rectangular structures, is depicted fronting the square. Its approximate location coincides with what is now Division Street. Other structures are shown flanking the area, but it is difficult to determine if any of these actually fell within the APE given the scale of the map.
Montresor1766:	The rope walk is still present abutting the northeastern corner of Chatham Square, and there is now an additional structure just southeast of it approximately where Block 281 is. The ropewalk appears to be just outside of the APE, however, there is the possibility that it extended into the APE.
Ratzer 1766/67:	Chatham Square is vacant. The ropewalk and structure are still shown, but they appear to fall several hundred feet east of the APE. Around the square, Mott Street, Bowery Lane, Division Street, and what will become Park Row have been established. The vacant square itself is depicted as sloping downward to the southwest.
Holland 1776:	There is a structure shown on the east side of Chatham Square near Block 281, but the remainder of the square is depicted as vacant. While the location of the rope walk is labeled, it appears to lie east

of the APE. Starting from the north and going clockwise around the square the following roads have been laid out: Bowery Lane, Division Street, James Street, what will become Park Row (then Chatham Street), and Mott Street.

McComb 1789: The ropewalk is not illustrated on this map, and Chatham Square appears to be vacant. However, Block 281 is clearly present and the New Presbyterian Church is located on it, fronting Chatham Square. The rest of the blocks surrounding Chatham Square are developed, but structures appear to fall outside of the APE. In addition to the previously listed streets, Catherine Street, East Bowery (then Harmon), and Oliver Street (then Fayette), are laid out.

Taylor Roberts 1797: The APE is unchanged from the McComb 1789, except the Presbyterian Church is not depicted.

Bridges 1803: The APE is unchanged from the Taylor Roberts 1797.

Mangin-Goerck 1803: The APE is unchanged from the Taylor Roberts 1797.

Commissioners' 1811: The APE is unchanged from the Taylor Roberts 1797.

Hooker 1824: The APE is unchanged from the Taylor Roberts 1797.

Colton 1836: The APE is unchanged from the Taylor Roberts 1797.

Endicott 1842: Water pipes from the Croton Water system are shown running in all of the street beds that extend out from Chatham Square.

Perris 1849/50: The APE is unchanged from the Taylor Roberts 1797.

Dripps 1852: By this time, all of Block 281 within the APE was covered with structures. Oliver Street has been widened on its western side, from Chatham Square south one block. Otherwise, Chatham Square appears undeveloped and unchanged.

Perris 1857-62: The structures on Block 281 in the APE are located at 1 and 4 Chatham Square, and are depicted as masonry buildings covering their entire lots.

Dripps 1867: The APE is unchanged from the Dripps 1852. In addition, horse car lines are shown on Park Row (then Chatham Street), Bowery, and East Bowery Streets.

Viele 1874: Chatham Square is shown as sloping downward from northeast to southwest. Fresh water at the Collect Pond was located only two blocks west of this APE.

Robinson 1885: By this time Worth Street was extended from the west to Chatham Square. Rail lines are shown on Park Row (then Chatham Street), and on Bowery, and horse car lines are shown on East Bowery and Worth Streets. The elevated train runs above Bowery. Chatham Square appears to be a central meeting point for several different rail lines. Block 281 is still covered with structures.

Sanborn 1894: The APE is unchanged from the Robinson 1885.

Hyde 1913: By this time there was an el station established at Chatham Square.

Bromley 1916: The APE is unchanged from the Hyde 1913.

Bromley 1925: The APE is unchanged from the Hyde 1913.

City of NY 1952: The northern half of Section 1 of Block 281, bounded by Catherine Street, Division Street, East Broadway, and Chatham Square, has been acquired for the widening of Chatham Square. What

remained of the formerly trapezoidal shaped block is now a small square outside the APE.

Bromley 1955: By this time the el station had been removed, as had all of the street tracks.

Bromley 1974: A small green or island had been established in the center of Chatham Square, which was also labeled as Kimlau Square.

Sanborn 2001: Chatham Square is unchanged from 1974, although road dividers have been placed on Park Row.

Street elevations within this section of the APE are as follows:

Data Source	Bowery x Division	East Bowery x Chatham Square	Park Row x Bowery
1885 Robinson	35'	35.8'	27.2'
1913 Hyde	35.8'	35.58'	27.17'
2000 Sanborn	35.8'	34.9'	N/A

Precontact Sensitivity

The predevelopment topography of Chatham Square shows it as a gentle slope, located two blocks from the nearest mapped water resource (Viele 1874). As such, it is considered moderately sensitive for precontact period resources. Utility maps for this area show that in 1937 there were numerous utility lines running under each of the streets that enters into Chatham Square, including Bowery and New Bowery, now St. James Place (WPA 1937:Plan No.55). Furthermore, an el station was constructed in the square by the early 1880s, and el lines ran down Division Street, Chatham Street (now Park Row), Bowery, and St James Place (Robinson 1885). No soil boring logs were reported for this section of the APE.

While this section of the APE is considered potentially sensitive for precontact resources, the lack of soil borings makes it difficult to assess current subsurface conditions. Since 1885 the elevations have not appeared to have changed substantially, with the only real deviation observed at East Bowery and Chatham Square where the elevation has reportedly dropped from 35.8' in 1885 to 34.9' currently (see table above). This reduction, less than a foot in depth, suggests that if precontact resources did once exist in this area, there is the potential for them to still exist outside of the location of utility lines.

Historical Sensitivity

Chatham Square was historically an open area (Maerschalck 1754; Holland 1757; Montresor1766; Ratzer 1766/67, Figure 6.1-3). The earliest development around what is now Chatham Square was observed on maps as early as 1744 when two structures appeared abutting the eastern side of the APE, one of these possibly falling on Block 281 within the APE (Grim 1744). Later maps indicate that one of these was a ropewalk (a long narrow rectangular structure in which fibers were twisted into rope) (Maerschalck 1754; Holland 1757; Montresor1766; Ratzer 1766/67. Figure 6.1-3; McComb 1789).

Chatham Square was reportedly surveyed in 1790, and a fence was placed around it in 1811 (Stokes 1918:996). By 1812, it had been converted into a park, but by 1816 had been ordered "regulated and paved" (Ibid.). Adjacent to the square on Block 281 a

watch-house was erected in 1796 (Stokes 1918:973). The structure was sold by the city in 1827 (Ibid.), and was presumably on or near the site of the New Presbyterian Church. Chatham Square remained devoid of structures after it was converted into a park (Dripps 1852, Figure 6.1-4b; Dripps 1867, Figure 6.1-5b and c).

Since the early maps on this area are of such a small scale that it is difficult to determine the precise footprint of these structures in relation to the existing borders of Chatham Square, they must be presumed to potentially fall within the APE. Therefore, the eastern side of Chatham Square between Division Street and East Broadway, and the former footprint of the northern half of Block 281 are considered potentially sensitive for the ropewalk (ca.1744), another unlabeled building (ca.1744), the watch house (1796), and possibly the New Presbyterian Church (ca.1789).

The lack of soil borings for Chatham Square makes it difficult to assess potential subsurface conditions. Although there are utility lines running beneath the streetbed, these tend to be fairly shallow (WPA 1937:Plan No. 77). Since the depth of fill and the water table are unknown, it is not possible to estimate the depth of potential resources. Therefore, this APE is potentially sensitive for the 18th century ropewalk, foundation s of an 18th century watch house, and foundations of the late 18th century New Presbyterian Church. These resources may extend from grade level down to an unknown depth.

St. James Place from Chatham Square to James Street

What is now St. James Place between Chatham Square and James Street was formerly city Block 279. The block was originally bounded by Chatham Square, Oliver Street, James Street, and Madison Street. Several of the formerly developed lots on this block fall within the APE, as does the historic location of what has since been renamed the First Shearith Israel Graveyard.

Cartographic History

Castello 1660:	This APE is north of the boundaries of this map.
Miller 1696:	The APE is not on this map.
Lyne 1730:	The APE is not on this map.
Carwitham 1740:	The APE is not on this map.
Buchnerd 1735:	Based on a comparison of this map to later more detailed maps, the APE is shown on this map as crossing the site of the "Jews Burying Place." Otherwise the APE is vacant.
Grim 1744/1813:	The APE is shown as vacant land.
Maerschalck 1755:	What is later designated as Block 279 has been laid out, but it does not appear to be developed within the APE.
Montresor1766:	The block is laid out and shaded indicating some degree of development, but details are not depicted.
Ratzer 1766/67:	One structure is shown on the block, east of the APE. No specific development is shown within the APE.
Holland 1776:	The APE is unchanged from the Ratzer 1766/67.
McComb 1789:	The APE is unchanged from the Ratzer 1766/67.
Taylor Roberts 1797:	The APE is unchanged from the Ratzer 1766/67.
Bridges 1803:	(Published in 1807). The APE is unchanged from the Ratzer 1766/67.
Mangin-Goerck 1803:	The APE is unchanged from the Ratzer 1766/67.
Commissioners' 1811:	The APE is unchanged from the Ratzer 1766/67.
Hooker 1824:	The APE is unchanged from the Ratzer 1766/67.
Colton 1836:	Two structures are depicted on the block, one in the northwest corner and the other in the southwest corner, both outside of the APE.
Endicott 1842:	Water pipes from the Croton Water system are shown in Oliver and James Street, and through Chatham Square to the north.
Perris 1849/50:	Two structures are shown on the block that may potentially fall within the APE.
Dripps 1852:	What will become the St. James Place roadbed crosses 16 city lots. Most of these are developed, and 12 have vacant yards that fall within the APE. The Franklin Theater, that fronts Chatham Square, extends into the APE. A large vacant lot in the center of the block extends eastward from Oliver Street. On later maps this is labeled as the "Jews Cemetery."

Perris 1852: The following lots and structures fell within the APE:
187 Chatham Street has a stone or brick structure at the corner of Chatham and Oliver Streets with a vacant backyard within the APE.
185 Chatham Street also has a stone or brick building on it with a vacant yard within the APE.
183 Chatham Street has a brick structure covering the entire lot within the APE.
181 Chatham Street has a brick structure that covers most of the lot within the APE, although there is a small vacant back yard.
179 Chatham Street has a brick building and a small vacant yard within the APE.
177 Chatham Street has a brick building labeled "Tradesmen's Bank." Only the vacant yard behind this building extends into the APE.
175 Chatham Street has a frame structure on it labeled the "Franklin Museum." The southern end of the building extends into the APE.
1 Oliver Street has a brick building with a vacant yard and a small warehouse on the northwestern end of the lot within the APE.
3 Oliver Street has a brick structure on it with a vacant yard within the APE.
5 Oliver Street has a brick building on it, but only the vacant yard behind this building extends into the APE.
13 ½ Oliver Street appears to be the access point to the "Jews Burying Ground" that occupies most of the center of the block within the APE.
10 James Street has a brick building with a vacant back yard, both of which fall within the APE.
12 James Street has a framed dwelling with a frame addition on its southeast side that extends into the APE. There is also a vacant back yard within the APE.
14 and 18 James Street each have a brick structure on them with a vacant yard behind. Both fall within the APE.
20 James Street has a frame dwelling on it within the APE.

Perris 1857-62: All of the buildings on the lots within the APE have been razed, and 'New Bowery," that eventually becomes St. James Place, has been laid out.

Pulling 1864: Although New Bowery had been laid out and the lots within the APE were vacant, this map provides details of other structures and lots on the block. For example, the "Jews Burying Ground" appears truncated and now fronts New Bowery. Five of the structures fronting James Street on the block have liquor stores, and south of these is the St. James Roman Catholic Church. Lots south of New Bowery show privies in "extremely offensive condition" on the backs of the lots. Only one house on the block had the "presence of typhoid fever within the last year." Many of

the structures on the lot housed large populations. For example a five-story building was occupied by 103 people (24 families, 24 domiciles), and a four-story building was occupied by 69 people (10 families, 10 domiciles). Fronting New Bowery and Oliver Street is the Atlantic Hotel, that backs up to the "Jews Burying Ground."

Dripps 1867: Rail lines are shown running down New Bowery, and structures front either side of the street, none falling within the APE.

Viele 1874: The block is depicted as meadowland, about two blocks east of fresh water at the Collect Pond.

Robinson 1885: The APE is unchanged from the Dripps 1867.

Robinson 1893: The APE is unchanged from the Dripps 1867.

Hyde 1913: The APE is unchanged from the Dripps 1867.

Bromley 1916: The APE is unchanged from the Dripps 1867.

Bromley 1925: The APE is unchanged from the Dripps 1867.

Bromley 1955: By this time the tracks had been removed from the street, and New Bowery had been renamed St. James Place.

Bromley 1974: The APE is unchanged from the Bromley1955.

Sanborn 2001: The APE is unchanged from the Bromley 1955.

Street elevations within this section of the APE are as follows:

Data Source	St. James Place at Chatham Square
1864 Pulling	29'
1893 Robinson	29'
1916 Bromley	29'
1955 Bromley	29'
2000 Sanborn	N/A

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 279								
187 Chatham Street	Not for this Yr	Not for this Yr	Andrew Farr	INC	Lewis & Mortimer, auctioneer *W.N. Lewis *John Mortimer	Not for this Yr	Not for this Yr	Not for this Yr
185 Chatham Street	Not for this Yr	Not for this Yr	John McKar	INC	John Mcintyre, auctioneer Terence Boyle, furniture	Not for this Yr	Not for this Yr	Not for this Yr
183 Chatham Street	Not for this Yr	Not for this Yr	Simon Husly Rick and Underhill	INC	J.C Baldwin, Furniture	Not for this Yr	Not for this Yr	Not for this Yr

181 Chatham Street	Not for this Yr	Not for this Yr	James C. Baldwin James Scott	INC	Jackson Orr, auctioneer James Hume, auctioneer	Est of Gardner	Est. of Gardner	Est. of Gardner
179 Chatham Street	Not for this Yr	Chat Byrnes	Mc Donald and Sterns	INC	Arthur Harrison, porterhouse	Thomas Giles	Thomas Giles	Thomas Giles
177 Chatham Street	Not for this Yr	E. D. Mott	F. Bank	INC	Tradesmane's Bank, W. H Falls, president Richard Berry, Cashier	F. Bank	Atlantic Savings Bank	Atlantic Savings Bank
175 Chatham Street	Not for this Yr	Widow Bell	Widow Montine	Vern Buck Chad Willing	John McCormick auctioneer	John Buxton	W.R. Foster	W.R. Foster
1 Oliver Street	James Buckley	Henry Blades	Nathan Harr (?)	Alexander Gardner	Howard Burras dentist	Not for this Yr	Not for this Yr	Not for this Yr
3 Oliver Street	Thomas Hemmells	Widow Merry	T. Pattison	E. Vodrun	Richard Davies P.D. Moran	Not for this Yr	Not for this Yr	Not for this Yr
5 Oliver Street	Owen Doberdron Drake Wead	W. Lucklin	Jonathan Patton	Edward Thorhill	Mary Deverna E.G. Sweet	Not for this Yr	Not for this Yr	Not for this Yr
13 ½ Oliver Street (Jewish Burial Ground)	Not for this Yr	Not for this Yr	Not for this Yr	James ?	No listing	Not for this Yr	Not for this Yr	Not for this Yr
10 James Street	Eleanor Smile (?)	Widow Ludlam	Widow Ludlam	Est. of Stephen Ludlam	J.I Rosenstein Lawyer August Barestein, goldsmith		Isaac Rosenstein	Not for this Yr
12 James Street	James Mead	W. Voorsily	William Philip	M. Meyer	Eliza McLaughlin, boarding Thomas Kelly, laborer William Nixon, seaman George Jennings, tailor Edward Buckley, locksmith		Not for this Yr	Not for this Yr
14 James Street	John Sewier	B. Demsouq	Daniel Dodge	Marble ? very faint	Charles Pfermin Conrad Baker	Not for this Yr	Not for this Yr	Not for this Yr
					Thomas			

18 James Street	Samuel *Franklin*	Rob *Bannan*	James J. Ryon	William Riley	Mullen, liquors JC McFaddin, carpenter Ralph Nixon, tailor	Not for this Yr	Not for this Yr	Not for this Yr
20 James Street	Not for this Yr	Sam Beach	Widow Bunce	S. Phurson	Patrick Perry, grocer Patrick Fox, sexton Patrick Fitzgerald, tailor Mary Doherty Rovert Whale, parter Charles Johnston, laborer Jane McArthy, seamstress James McCabe, laborer DW Clabby, engineer JJ Nicholson, rigger Robert Quall, carpenter	Not for this Yr	Not for this Yr	Not for this Yr

Note: *INC means the entry was not legible.*

Precontact Sensitivity

Maps of the topography of Manhattan prior to development show that this block was on meadowland situated just two blocks north of a stream that ran from the Collect Pond, a fresh water source, to the East River (Viele 1874). The close proximity of all of these resources would have made it an attractive site for precontact habitation. However, in the 17th century a cemetery was established in the APE, which gradually extended north as far as Chatham Square. Burials at the cemetery would have been excavated directly into the levels potentially sensitive for precontact resources since the site was not filled prior to the existence of the cemetery. When St. James Place was created in the 1850s, hundreds of bodies were exhumed and the grade elevation was reduced by about three feet. Therefore, this APE is not considered potentially sensitive for precontact resources.

Historical Sensitivity

The Congregation Shearith Israel cemetery was established near Chatham square in February 1656, and was expanded in 1681, and again in 1729 (Inskeep 2000:36). Historian Stokes disputes whether the Congregation Shearith Israel cemetery present within the APE is the same one granted in 1656, and suggests that it was not actually utilized until 1683 (Stokes 1923:514). He cites the granting of land to Louis Gomez and his three sons (all Jewish) in 1729, placing their tract between the cemetery and the present line of Chatham Square (Ibid.). He further quotes a Mr. Samuel Oppenheim as stating that the cemetery was used as far back as 1683 as evidenced by an extant

tombstone of Benjamin Bueno de Mesquita who died that year, but that the grounds were acquired by deed in 1681 (Ibid.). Despite the fact that Stokes disputes the cemetery's early date in one volume (1926:514), in another he states that it was established at "New Bowery and Oliver" in 1656 (1928:337).

Regardless of the date of first interment, at one point the cemetery appeared to nearly cover all of Chatham Square, while "the oldest burials were in the section nearest to Madison Street" (Inskeep 2000:36). When Madison (then Bancker) Street was laid out in 1775, the Jewish burial ground - as it was then called - was extended up to it. In 1784 the burial ground became the "place of sepulture of the Congregation Shearith Israel" (Stokes 1926:1183). Although this implies that burials were occurring, it does not confirm whether or not deeper vaults were present.

In 1789, Madison Street, then Bancker, was graded to a new low level made, which left the cemetery "twenty steps above the street level" (de Sola Pool 1952:72). With the removal of supports the hill that formed the cemetery began to cave in. According to one source, "It must be remembered that in those days graves were shallow, for it was not until 1855 that New York made it obligatory that graves must have a depth of six feet" (Ibid.). In order to keep the cemetery's integrity, the congregation applied for a loan and built up a retaining wall but there were many problems with burials becoming exposed. They finally moved the bodies "away from the low-lying Madison Street section to the higher Park Row section of the ground above the steep declivity" (Ibid.:81). Although it was reported that bodies were moved around within the cemetery, to allow for the leveling of a hill (Grinstein 1945:325, 326), there were no actual records of where the bodies were located before or after their movement.

While the cemetery appeared on maps to extend northeast to Chatham Square, sections of it may not have been used for burials. For example, in 1823 the congregation sold an "unused" portion of the cemetery, measuring 45' by 88' to the Tradesmen's Bank (Stokes 1926:1626). "On November 15, 1820, the President of the community put before the electors the following proposal to authorize the sale of the unused cemetery land on Oliver and Bancker (Madison) Streets." (de Sola Pool 1852:110). Then on February 12, 1822 another sale of unused land went through the Trustees, this plot was on Chatham Street between James and Oliver Streets (Ibid.:111).

According to Stokes, burials ceased at the cemetery in 1805, and new lands were purchased for a second cemetery near Greenwich Village at 11th Street (Stokes 1926:1429). In 1827, the corporation of the City of New York "prohibited interments below Grand Street, except on payment of a fine" so the synagogue purchased a third plot at West 21st Street for burials (Grinstein 1945:321).

Although Henry Street was supposed to be extended through the original cemetery in 1831, the congregation managed to stop its construction based on Jewish burial law (Grinstein 1945:326). However, they were not as successful as thwarting infringements in 1833 when Oliver Street was widened over it. At that time it was reported that burials in the path of Oliver Street were dug up and the site was then covered with buildings (Stokes 1926:1717; Dripps 1852, Figure 6.1-4b). A second encroachment was

experienced in 1855 when "New Bowery," now St. James Place, was created across the site of the cemetery, and bodies within its path were taken by the city (Grinstein 1945:326; Perris 1857; Dripps 1867, Figure 6.1-5c). At that time reportedly 253 graves were moved to the congregation's cemetery at 21st Street, and three bodies were removed to Queens. Of these, only 70 bodies were identified, and deposited in separate coffins (Inskeep 2000:36). Stokes reports that permission was granted to remove "some of the bodies" buried here (Stokes 1926:1860). Whether the omission of a reference to "all of the bodies" was intended or not, it does bring up the issue of whether burials were potentially left beneath St. James Place within the APE.

The secondary literature does not elucidate the number of burials originally interred, and the number later reinterred elsewhere. An intensive investigation into the records of the Shearith Israel Congregation was attempted, but this was hindered by the lack of an available archivist at the congregation, and the fact that the Clerk's Office records, dating from ca. 1700 to 1985, constitute about 132 cubic feet of data. This includes memorial prayers, anniversaries of deaths, and information on cemeteries and numerous other subjects. No one was able to confirm the potential depth of historic burials (Mr. Laniado, Shearith Israel Congregation, personal communication, January 2000).

Even if an intensive record search was undertaken, and the reinterment of all documented burials were accounted for, there is always the possibility that undocumented burials, or older burials that were in poor condition and unable to be removed, were left within the APE.

When St. James Place was cut across the cemetery, land where the cemetery formerly lay was lowered by about three feet (Photographs 6.3-10 through 6.3-13). The only soil boring taken in proximity to the cemetery reported fill down to 9.5' below grade (Boring MI-28, Raymond International Inc. 1974). Beneath the fill to 20' below grade was a level of brown sand, gravel and boulders. This boring was taken directly where historic structures once stood, and the fill probably represents demolition from earlier structures. The water table was encountered at 26.5' below grade (Ibid.). No borings were available where the cemetery once lay outside of the footprint of developed city blocks.

In 1820, after considering complaints against other burial grounds in New York, the City's Committee on Public Lands recommended "that no Corpse shall be left at any time, without a covering of earth at least two feet deep.... No Corpse, shall be deposited nearer the surface of the ground than four feet. Nor shall any person whose death was occasioned by any contagious or putrid fever be interred otherwise than in a single grave six feet deep" (Stokes 1926:1611). Therefore, burial laws in effect during the period when the cemetery was active (pre-1831), required that bodies be buried anywhere from two to six feet below grade. However, the elevation of the streetbed is currently about 3' below the cemetery's surface, suggesting that burials could still lie several feet below grade. Therefore, the site of the former burial ground at St. James Place may be potentially sensitive for grave shafts and burials that were not removed when the street was opened in the 1850s.

In addition to the site of the cemetery, this APE is potentially sensitive for historic period occupation. Four houses stood on the cemetery's rear lots on Bancker (Madison) Street at Lots 35, 37, 39, 41, out of the APE. In 1825 these buildings were described as "scarcely tenantable" and were razed in 1826 when "the city ordered the fronts of the houses to be taken down for the widening of Madison Street" (de Sola Pool 1952:114-5).

In the 1850s surrounding the cemetery were 16 city lots, almost all developed, within this APE. Structures stood at 187 through 157 Chatham Street (odd only), 1, 3, and 5 Oliver Street, with the cemetery accessed through 13½ Oliver Street, and 10, 12, 14, and 18 James Street. By 1857, all of the buildings in the route of New Bowery, now St. James Place, were razed, bodies were removed from the cemetery, and the road was laid out.

Tax and directory research indicates that by 1808 some of the lots in the APE were occupied, and that by the 1850s there was a mixed residential occupancy on lots around the cemetery (see Tax and Directory Table above). Most of the structures within the APE were occupied by more than one resident in 1851, and some of the structures were occupied by their owners. At 10 Oliver Street, the lot directly adjacent to the entrance to the Shearith Israel Cemetery, residents in 1851 were clearly of Jewish descent, and were skilled professionals. The remainder of the lots were occupied by an ethnically mixed population.

In summary, this APE is potentially sensitive for remains from the cemetery, and for 18th through 19th century domestic resources from the 13 lots that encircled the cemetery in 1852. In the 1860s, after St. James Place was cut through, adjacent lots left untouched by the street's construction had tenements, and some lots still had active privies. Therefore, all of this section of the APE is considered potentially sensitive for historic period resources. The anticipated depth of resources could be up to 8' below grade for burials. Deep well shafts could potentially extend to the depth of the water table at 26.5' below grade, and possibly deeper. It is anticipated that approximately the top three feet of any potential shaft features were truncated when the street was laid out with its surface elevation slightly lower than the block's original surface.

St. James Place from James Street to Roosevelt Street - Former Block 117

What is now St. James Place between James Street and Roosevelt Street was formerly city Block 117. The block was originally bounded by Park Row (then Chatham Street), James Street, Roosevelt Street, and Madison Street. Several of the formerly developed lots on this block fall within the APE.

Castello 1660:	This APE is north of the boundaries of this map.
Miller 1696:	The APE is not on this map
Lyne 1730:	The APE is not on this map.
Carwitham 1740:	The APE is not on this map.
Buchnerd 1735:	Based on a comparison of this map to later more detailed maps, the APE is shown on this map as vacant land east of "Bower Layne."
Grim 1744/1813:	The APE is unchanged from the Buchnerd 1735.

Maerschalck 1755: What is later designated as Block 117 has been laid out. A structure appears on the southeast portion of the block fronting Madison (then Bankers) Street, and may fall within the APE.

Montresor1766: The block is laid out and shaded indicating some degree of development, but details are not depicted.

Ratzer 1766/67: The APE is unchanged from the Montresor 1766.

Holland 1776: The APE is unchanged from the Montresor 1766.

McComb 1789: The APE is unchanged from the Montresor 1766.

Taylor Roberts 1797: The APE is unchanged from the Montresor 1766.

Bridges 1803: (Published in 1807). The APE is unchanged from the Montresor 1766.

Mangin-Goerck 1803: The APE is unchanged from the Montresor 1766.

Commissioners' 1811: The APE is unchanged from the Montresor 1766.

Hooker 1824: The APE is unchanged from the Montresor 1766.

Colton 1836: The APE is unchanged from the Montresor 1766.

Endicott 1842: Water pipes from the Croton Water system are shown running down James, Roosevelt, and Madison Streets.

Perris 1849/50: There is a structure fronting James Street on the east side of the block abutting the APE. The APE is shown as shaded.

Dripps 1852: What will become the St. James Place roadbed crosses approximately 15 city lots. Most of these are developed, and some have vacant yards that fall within the APE.

Perris 1852: The following lots and structures fell within the APE:

21 James Street is partially covered by the brick High School No. 10. A small vacant alley is situated on the south side of the lot.

23 James Street has a wood structure on the front of the lot at James Street, and a vacant yard behind it within the APE.

25 James Street is almost entirely covered by a brick structure, although a small vacant yard remains undeveloped at the west end of the lot within the APE.

27 James Street has a long narrow structure extending over the north half of the lot, but the south half of the lot within the APE is vacant.

29 James Street has a masonry structure fronting the lot, and the western end of the lot which is vacant, falls in the APE. A second small structure sits at the western end of the lot within the APE.

13 Madison Street (a.k.a. 38 Roosevelt Street) has a brick building that covers most of the lot. A small vacant yard lies to the east of the building fronting Madison Street within the APE.

13 Madison Street (second lot with this designation) has a rectangular brick structure covering most of the lot with a small vacant area left undeveloped within the APE.

17 and 19 Madison Street are each predominantly covered by brick structures, with a narrow alley left undeveloped at the north end of both lots.

21 Madison Street has a brick building on the south end of the lot that extends into the APE. The north half of the lot, within the APE, is predominantly vacant.
23 Madison Street appears to be entirely covered by a brick building with a wood addition at the rear of the lot. A second masonry structure lies at the northern end of the lot within the APE.
25 and 27 Madison Avenue each have a brick structure on them fronting Madison Street, as well as vacant backyards within the APE. In the middle of the conjoined backyards, is a small square brick structure that appears to straddle each lot.
27½ Madison Avenue is an extremely narrow lot with a brick structure on it fronting Madison Avenue. To the north of this the lot broadens and encompasses a vacant back yard within the APE.
29 Madison Avenue has a brick structure on it fronting Madison Avenue, just south of the APE, but a back yard behind it falls within the APE. Within the backyard is a very small square structure that might be a shed or privy.
30 Roosevelt Street is entirely covered by a brick Gas House within the APE.
32 Roosevelt Street has a small section of the western end of the lot that falls within the APE. In this area is a brick building and a vacant yard.
34 Roosevelt Street also has only a small section of it that falls within the APE. Here, a brick building lies adjacent to the masonry structure described on the back of the lots at *21 and 23 Madison Avenue.*
36 Roosevelt Street has a framed structure on its western end, but within the APE there is a vacant yard, and two small masonry structures.

Perris 1857-62: All of the buildings on the lots within the APE have been razed, and 'New Bowery" has been laid out, that eventually becomes St. James Place.

Pulling 1864: Although New Bowery had been laid out and the lots within the APE were vacant, this map provides details of other structures and lots on Block 117. For example, the block contains a brewery, a coal yard, numerous liquor stores, "insalubrious localities," residences with typhoid fever and small pox within the recent past, privies in "extremely offensive conditions," and obvious signs of overcrowding.

Dripps 1867: Rail lines are shown running down New Bowery.

Viele 1874: The block is depicted as meadowland about two blocks east of fresh water at the Collect Pond. An inlet or stream runs on the block just south of this from the East River to the Collect.

Robinson 1885: The APE is unchanged from the Dripps 1867.

Robinson 1893: The APE is unchanged from the Dripps 1867.

Hyde 1913: The APE is unchanged from the Dripps 1867.

Bromley 1916: The APE is unchanged from the Dripps 1867.
Bromley 1925: The APE is unchanged from the Dripps 1867.
Bromley 1955: By this time the tracks had been removed from the street, and New Bowery had been renamed St. James Place.
Bromley 1974: The APE is unchanged from the Bromley1955.
Sanborn 2001: The APE is unchanged from the Bromley 1955.

Street elevations within this section of the APE are as follows:

Data Source	Roosevelt Street at Madison Street
1864 Pulling	11.5'
1893 Robinson	11'
1925 Bromley	15'
1955 Bromley	15'

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 117								
13 Madison Street	No Record	No Record	Not for this Yr	Not for this Yr	Ann Thompson, boarding Samuel Levi, caps	Not for this Yr	Not for this Yr	Not for this Yr
17 Madison Street	No Record	No Record	Oliver Claplo	David Baker	Andrew Schwartz, bootmaker Christina Etha	Not for this Yr	Not for this Yr	Not for this Yr
19 Madison Street	No Record	No Record	Joseph Clubsman	David Baker	Edward Morrisey, liquors	Not for this Yr	Not for this Yr	Not for this Yr
21 Madison Street	No Record	No Record	Widow A. King	David Baker	unlisted	Not for this Yr	Not for this Yr	Not for this Yr
23 Madison Street	No Record	No Record	Leonard Fisher	INC	James Butler, grocer	Not for this Yr	Not for this Yr	Not for this Yr
25 Madison Street	No Record	No Record	W. H. Rolston	INC	Timothy Gleason, policeman Susan Gleeson, fancy store	Not for this Yr	Not for this Yr	Not for this Yr
27 Madison Street	No Record	No Record	Walter Sparks	INC	J.S. Aylward, milk	Walter Sparks	Not for this Yr	Not for this Yr
27 ½ Madison Street	No Record	No Record	Not for this Yr	INC	unlisted	Lander Green	Not for this Yr	Not for this Yr
29 Madison Street	No Record	No Record	Leonard Smith and Robert Martin	INC	Leander Greene, carpenter John Patterson, printer	Lander Green	Not for this Yr	Not for this Yr

30 Roosevelt Street	Harman Johnson		James Balmes	W.W. Fox Gas Co.	Edward McNamars, Liquors	W.W. Fox Gas Co.	Howard Mission and Home for Little Wanderers	Not for this Yr
32 Roosevelt Street	Not for this Yr.	Not for this Yr.	Walter Sparks	Robert Mathews	Edward hart, liquors William Rourke, tailor	Robert Dillon	Howard Mission and Home for Little Wanderers	Not for this Yr
34 Roosevelt Street	John Hanmer		Walter Sparks and Robert Wilson	Daniel Mathews	Lewis Kenmen, watchmaker Elias Lebischinsky, tailor William Byrne, Carpenter SA Richardson, clerk	Samuel Wilkins	John J. Walton	Not for this Yr
36 Roosevelt Street	INC		Robert Jordan	C. Dorillard	Andrew Hogas, liquors	C Le Spencer	C Le Spencer	Not for this Yr
38 Roosevelt Street	INC	Not for this Yr.	William Slilton	W. Sparks	IE Sayre Bartfet Atherton, barber JB Kearns, physician	Daniel Buhler	Daniel Buhler	Not for this Yr
21 James Street	Richard Cunningham	Not for this Yr.	John Cunningham	Not for this Yr	No listing	Not for this Yr	Not for this Yr	Not for this Yr
23 James Street	John Benigar W. Brower Widow Dodge (back) Henry Locker	Not for this Yr.	Jonas Humbertr	INC	John Morrison, porterhouse James Collis, grocer John Murany, carpenter	Not for this Yr	Not for this Yr	Not for this Yr
25 James Street	Joseph Moore	Not for this Yr.	Charles Baker		Timothy Dynon, boarding Charles Sylvester, buttommkr Henry Vichman, beer Herman Matthews, segarmaker	Charles Baker	**School** (exempt)	Not for this Yr
27 James Street	James Drake	L. Plume	Thomas Bicking (?)	INC	EH Plume Hotel	Mary Plume	**School** (exempt)	Not for this Yr

29 James Street	Edward Rumanher (?)	Richard Barnard	G. Widmeyer	INC	CW Bohne, liquors	George Widmeyer	School (exempt)	Not for this Yr

Note: INC depicts names that were illegible.

Precontact Sensitivity

Maps of the topography of Manhattan prior to development show that this block was on meadowland situated just one block north of a stream that ran from the Collect Pond, a fresh water source, to the East River. The close proximity of all of these resources would have made it an attractive site for precontact habitation.

Soil borings taken in this area indicate that there is fill with sand, gravel, and brick from the surface to 12.5' below grade (Boring MI-26, Raymond International Inc. 1974), which corresponds to the increase in elevation at the intersection of Madison and Roosevelt Streets by four feet between 1893 and 1925 (see table above). Below the reported fill is a three foot deep level of brown sand, and gravel, and below this are deeper levels of fine sand and gravel. The water table was encountered at 16.5' below grade (Ibid.). If the sandy level beneath the fill represents the original precontact topography, then this section of the APE could be potentially sensitive for precontact resources below the 12.5' of fill.

Historical Sensitivity

By 1766 sections of Block 117 may have been developed with at least one structure that appeared to fall within the APE, however the precise location of this structure is not known. The first map to portray details of development depicted about 17 lots in the APE, some completely covered with structures and others having vacant yards (Dripps 1852, Figure 6.1-4b). Vacant yards and alleys were observed at 21 through 20 James Street (odd only), 21 through 29 Madison Avenue (odd only) except for 23 Madison Avenue that was entirely covered by a structure, and 36 Roosevelt Street. In addition to these, a gas house stood at 30 Roosevelt Street (Perris 1852).

Some of the lots within the APE were occupied by as early as 1808, and many lots changed hands through the first half of the 19th century (see Tax and Directory Table above). By 1851 there was a mixed residential population on the block within the APE. Some of the lots were owned by their occupants, while others were owned by a single person suggesting they were purchased as investment properties. Most lots had multiple unrelated occupants, with a variety of occupations.

The vacant yards formerly on these lots are potentially sensitive for historic resources ranging from the 18th through mid-19th centuries when St. James Place was cut through (between 1852 and 1857; Dripps 1852, Perris 1857, Dripps 1867, Figure 6.1-5c).

If shaft features were present on these lots, they may be located in the streetbed that appears to have been raised by approximately four feet between 1893 and 1925 (see

elevation table above). It is likely that shallow deposits were disturbed by the regulating and opening of St. James Place, but that deeper shaft features could still exist. Since the water table was reported at 16.5' below grade here, there is the possibility that wells extended to this depth, and possibly deeper.

St. James Place at Madison Street - Former Block 116

What is now St. James Place just south of Madison Street, runs over what was once the northwest corner of Block 116. The block was originally bounded by James Street, Oak Street, Roosevelt Street, and Madison Street. Several of the formerly developed lots on this block fall within the APE.

Cartographic History

Castello 1660:	This APE is north of the boundaries of this map.
Miller 1696:	The APE is not on this map.
Lyne 1730:	The APE is not on this map.
Carwitham 1740:	The APE is not on this map.
Buchnerd 1735:	Based on a comparison of this map to later more detailed maps, the APE is shown on this map as vacant land east of "Bower Layne."
Grim 1744/1813:	The APE is unchanged from the Buchnerd 1735.
Maerschalck 1755:	What is later designated as Block 116 has been laid out. A structure appears on the northwest corner of the block that may fall within the APE. Additional structures on the block fall outside of the APE.
Montresor1766:	The block is laid out and shaded indicating some degree of development, but details are not depicted.
Ratzer 1766/67:	The APE is unchanged from the Montresor 1766.
Holland 1776:	The APE is unchanged from the Montresor 1766.
McComb 1789:	The APE is unchanged from the Montresor 1766.
Taylor Roberts 1797:	The APE is unchanged from the Montresor 1766.
Bridges 1803:	(Published in 1807). The APE is unchanged from the Montresor 1766.
Mangin-Goerck 1803:	The APE is unchanged from the Montresor 1766.
Commissioners' 1811:	The APE is unchanged from the Montresor 1766.
Hooker 1824:	The APE is unchanged from the Montresor 1766.
Colton 1836:	The APE is unchanged from the Montresor 1766.
Endicott 1842:	Water pipes from the Croton Water system are shown running down Roosevelt and Madison Streets.
Perris 1849/50:	The block is shaded, but individual structures are not depicted.
Dripps 1852:	What will become the St. James Place roadbed crosses approximately four city lots. While most of these are developed, there is one small vacant yard that may fall in the APE.
Perris 1852:	The following lots and structures fell within the APE: *16 Madison Street (a.k.a. 42 Roosevelt Street)* has a framed structure on it at the very northwestern corner of the block. A

small vacant yard remained within the APE to the east of the structure.
18 Madison Street is a vacant lot.
20 Madison Street is entirely covered by a framed structure within the APE.
46 Roosevelt Street is entirely covered by a brick structure within the APE.

Perris 1857-62: All of the buildings on the lots within the APE have been razed, and 'New Bowery" has been laid out, eventually becoming St. James Place.

Pulling 1864: Although New Bowery had been laid out and the lots within the APE were vacant, this map provides details of other structures and lots on Block 116. For example, the block contains several liquor stores, residences with typhoid fever and small pox within the recent past, privies - some in "extremely offensive conditions" - and signs of extensive overcrowding.

Dripps 1867: Rail lines are shown running down New Bowery.

Viele 1874: The APE is depicted as meadowland, about two blocks east of fresh water at the Collect Pond.

Robinson 1885: The APE is unchanged from the Dripps 1867.

Robinson 1893: The APE is unchanged from the Dripps 1867.

Hyde 1913: The APE is unchanged from the Dripps 1867.

Bromley 1916: The APE is unchanged from the Dripps 1867.

Bromley 1925: The APE is unchanged from the Dripps 1867.

Bromley 1955: By this time the tracks had been removed from the street, and New Bowery had been renamed St. James Place.

Bromley 1974: The APE is unchanged from the Bromley1955.

Sanborn 2001: The APE is unchanged from the Bromley 1955.

Street elevations within this section of the APE are as follows:

Data Source	Roosevelt Street at Madison Street
1864 Pulling	11.5'
1893 Robinson	11'
1925 Bromley	15'
1955 Bromley	15'

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory
BLOCK 116					
16 Madison Street	Not for this Yr.	Not for this Yr.	Charles Ferris	Charles Ferris.	John Carrol, liquors J.E. Jones, seaman Mary Welch, boarding

18 Madison Street	Not for this Yr.	Not for this Yr.	Benj. Adams	Charles Ferris	George Hundt, tailor Peter Pechun
20 Madison Street	Not for this Yr.	Not for this Yr.	Mr. Ortley	INC	R.F. Paisley, notary Joseph Munson
46 Roosevelt Street	Not for this Yr.	INC	W. Bunce	S. Delancey	Simon Lowrith, tailor Robert Camphell, weigher

Precontact Sensitivity

Like Block 117, Block 116 was shown as meadowland situated adjacent to a stream that ran from the Collect Pond, a fresh water source, to the East River (Viele 1874). The close proximity of all of these resources would have made it an attractive site for precontact habitation.

Soil borings taken in this area indicate that there is fill with sand, gravel, and brick from the surface to 19' below grade (Boring MI-25, Raymond International Inc. 1974), which corresponds with the increase in elevation at the intersection of Madison and Roosevelt Streets by four feet between 1893 and 1925 (see table above). Below the reported fill is a six foot deep level of brown sand, and gravel, and below this are deeper levels of fine sand and gravel. The water table was encountered at 14.6' below grade (Ibid.). If the sandy level beneath the fill represents the original precontact topography, then this section of the APE could be potentially sensitive for precontact resources below the 19' of fill. However, these would be inundated due to the shallow water table at 14.6' below grade. Therefore, while this section of the APE may have a moderate potential for precontact resources, it appears that they would be immersed.

Historical Sensitivity

Only a few lots on what was the northwest corner of Block 116 fell within the APE. The earliest cartographically depicted development in this area dates to 1755 when a structure was shown in proximity to the APE (Maerschalck 1755). By 1852 there were four lots within the APE, two of which were either vacant or had vacant yards (Dripps 1852, Figure 6.1-4b; Dripps 1867, Figure 6.1-5c). These potentially sensitive lots were located at 16 and 18 Madison Avenue. In the 1850s lots were not owned by their occupants, who were predominantly middle class laborers (see Tax and Directory Table above).

Soil borings taken in this area depict fill to 19' below grade, whereas the water table is located at about 14.6' below grade (Boring MI-25, Raymond International Inc. 1974). Therefore, if there were ever shaft features present on either of these lots, they may still exist within the fill, and possibly below it. Since the water table is only 14' below grade here, wells might have extended down to this depth or lower in order to access more potable water.

St. James Place from Roosevelt Street to Chestnut Street

Where St. James Place now runs between Madison Street and Pearl Street, the area was once bisected by two additional roads named Roosevelt and Chestnut Streets. Between these two cross streets, just south of Madison Street, the APE traverses what was also once part of Block 115. The block was originally bounded by Oak Street, Roosevelt Street, Chestnut Street, and Madison Street. Several formerly developed lots on this block fall within the APE.

Castello 1660:	This APE is north of the boundaries of this map.
Miller 1696:	The APE is not on this map..
Lyne 1730:	The APE is not on this map.
Carwitham 1740:	The APE is not on this map.
Buchnerd 1735:	Buchnerd depicts a structure on the east side of Pearl Street, somewhere in the vicinity of the APE, but it is unclear whether or not it actually falls within the project site.
Grim 1744/1813:	Several structures are depicted fronting Pearl Street, and their back yards may fall within this section of the APE. A line of palisades traverses this block within the APE.
Maerschalck 1755:	What is later designated as Block 115 has been laid out. There are five structures fronting Roosevelt Street, two of which appear to fall within the APE. The others fall just north and south of the what later becomes St. James Place, but their yards may be within the APE. There are also two structures fronting Chestnut Street, one of which may fall within the APE. The line of palisades is shown traversing the APE from east to west in the middle of the block.
Montresor1766:	The block is laid out and shaded indicating some degree of development, but details are not depicted. The palisades are no longer present.
Ratzer 1766/67:	The APE is unchanged from the Montresor 1766.
Holland 1776:	The APE is unchanged from the Montresor 1766.
McComb 1789:	The APE is unchanged from the Montresor 1766.
Taylor Roberts 1797:	The APE is unchanged from the Montresor 1766.
Bridges 1803:	(Published in 1807). The APE is unchanged from the Montresor 1766.
Mangin-Goerck 1803:	The APE is unchanged from the Montresor 1766.
Commissioners' 1811:	The APE is unchanged from the Montresor 1766.
Hooker 1824:	The APE is unchanged from the Montresor 1766.
Colton 1836:	The APE is unchanged from the Montresor 1766.
Endicott 1842:	Water pipes from the Croton Water system are shown running down Roosevelt, Madison, and Oak Streets. A dashed line on Chestnut Street suggests that there may be a water line on it as well, or that it was in the process of being built during the year the map was created.
Perris 1849/50:	A structure is shown at the corner of Madison and Roosevelt Streets, that may extend into the APE.

Dripps 1852: What will become the St. James Place roadbed crosses approximately 16 city lots. Most of these are developed, but there are vacant yards that may fall within the APE.

Perris 1852: The following lots and structures fell within the APE:

8, 10, 12 Madison Street (a.k.a. 41 and 43 Roosevelt Street) has a framed structure that covers much of the lot, but there is a vacant yard behind the structure within the APE.

45, 47, 49, 51, and 53 Roosevelt Street each have a brick structure (except *47 Roosevelt* that is shown as framed) fronting Roosevelt Street. Each lot has a vacant backyard that falls directly within the path of what is now St. James Place.

8 Chestnut Street has a frame building on the western end of the lot fronting Chestnut Street, and a vacant yard to the north of it that falls within the APE.

10 Chestnut Street has two structures on the lot; a framed L shaped building fronting Chestnut Street, and a second small square masonry structure at the northeastern corner of the lot. Between and adjacent to these two structures is a vacant yard within the APE.

12 and 14 Chestnut Street each have a framed structure on their western ends, with vacant yards over the eastern halves of the lots within the APE.

16, 18, and 20 Chestnut Street each have a brick structure on them fronting Chestnut Street, with vacant back yards that fall within the APE.

22 Chestnut Street has a framed structure on the western end of the lot, with a vacant yard at the eastern end of the lot within the APE.

24 Chestnut Street has a brick structure on it that is largely west of the APE, and a vacant back yard at the eastern end of the lot within the APE.

Perris 1857-62: All of the buildings on the lots within the APE have been razed, and 'New Bowery," that eventually becomes St. James Place, has been laid out.

Pulling 1864: By this time Chambers Street had been cut through the block perpendicular to St. James Place, essentially cutting the block into three small sections. Although New Bowery had been laid out and the lots within the APE were vacant, this map shows that while no privies were present on remaining lots, there were several liquor stores and boarding houses on the block.

Dripps 1867: Rail lines are shown running down New Bowery.

Viele 1874: The block is depicted as meadowland with a watercourse draining the Collect Pond running just north of the block.

Robinson 1885: The APE is unchanged from the Dripps 1867.

Robinson 1893: The APE is unchanged from the Dripps 1867.

Hyde 1913: The APE is unchanged from the Dripps 1867.

Bromley 1916: The APE is unchanged from the Dripps 1867.

Bromley 1925: The APE is unchanged from the Dripps 1867.

Bromley 1955: By this time the tracks had been removed from the street, and New Bowery had been renamed St. James Place.
Bromley 1974: The APE is unchanged from the Bromley1955.
Sanborn 2001: The APE is unchanged from the Bromley 1955.

Street elevations within this section of the APE are as follows:

Data Source St. James Place and Chestnut Streets
(Nothing available pre-1916)
1916 Bromley 26'
1955 Bromley 26'

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory
BLOCK 115					
8 Madison Street	Not for this Yr.	Not for this Yr.	Walter Sparks	RM Durands	Phillip Gillman, smith Mary Samuel, store William Murray, models
10 Madison Street	Not for this Yr.	Not for this Yr.	RM Durands	RM Durands	Thomas Grandafield, butcher O.H. Noble, rulemaker
12 Madison Street (a.k.a. 41 and 43 Roosevelt)	Not for this Yr.	Not for this Yr.	Not for this Yr.	Not for this Yr.	Herman Rechers, grocer
45 Roosevelt Street	Thomas Reef	INC	Charles Donton	INC	Arthur Allen
47 Roosevelt Street	Frederick Reef	INC	Seymour Hoyt	INC	Hugh Boyle, barber
49 Roosevelt Street	Not for this Yr.	Not for this Yr.	Andrew Seymour	INC	Lathan Sutton, boarding
51 Roosevelt Street	Christopher Gilbes (poor copy)	INC	William Lawber	INC	John Johnson, physician Thomas Casey, policeman Thomas Smith, carpenter
53 Roosevelt Street	James Baley W. Burn	INC	Widow Fitz Gerald	INC	Mary Foley
8 Chestnut Street	John Bush	Widow Telius	Widow Telius	Not for this Yr.	Robert Moore, carpenter Thomas Brotherwick, washing Edward Marr, printer
10 Chestnut Street	INC	John Baflisi (?)	INC	Not for this Yr.	Francis Short/MArtin Spencer/William Spencer Thomas Purtel, tailor
12 Chestnut Street	INC	Sam Low	Rob Scottert	Not for this Yr.	refused
14 Chestnut Street	INC	Edward Huslow	S. Thurston	Not for this Yr.	George Simms, painter William Humphries, seaman
16 Chestnut Street	INC	Not for this Yr.	G. Lorillard	Not for this Yr.	Edward Swift, importer

18 Chestnut Street	INC	Not for this Yr.	R. Gremmer G. Smith	Not for this Yr.	James McAlister, medicines
20 Chestnut Street	INC	Sarah Somerville	Charles Mills	Not for this Yr.	Ellen Brown, boarding
22 Chestnut Street	INC	INC	James Collins	Not for this Yr.	Ann Pearse T. Stoll, upholstering
24 Chestnut Street	Not for this Yr.	Not for this Yr.	Not for this Yr.	Not for this Yr.	Hanah Joyce, boarding

Note: *INC indicates an entry that was illegible.* No tax records were available post 1851 since the lots were razed by this time.

Precontact Sensitivity

Prior to development, this map was depicted as meadowland with a watercourse draining the Collect Pond running just north of the block (Viele 1874). Its proximity to fresh water and the nearby East River would have made it an attractive location for precontact habitation. A soil boring taken in this vicinity showed 14.6' of fill below grade, with the water table located at 17.4' below grade (Boring MI-24, Raymond International Inc. 1974). Below the fill are levels of sand, some with fine silt and gravel. If these deeper levels represent the precontact living surface, then there may be potential sensitivity beneath the fill (14.6' below grade).

Historical Sensitivity

By 1755 at least two structures may have stood within the APE on Block 115 (Maerschalck 1755). By 1852, the block had been subdivided into smaller lots, and many of these fell within the APE (Dripps 1852, Figure 6.1-4b). At that time vacant yards and alleys were present at the following addresses: 8 through 12 Madison Avenue (even only), 45 through 53 Roosevelt Street (odd only) and 8 through 24 Chestnut Street (even only) (Perris 1852). The buildings on the lots were all razed between 1852 and 1857 (Perris 1852, 1857-60; Dripps 1867, Figure 6.1-5c).

Limited information was available on the historic ownership of these lots (see Tax and Directory Table above). By the 1850s, individual lots were occupied by multiple unrelated residents who held a variety of positions including, but not limited to, tailors, seamen, butcher, physicians, bankers, painters, and upholsters. These occupants were probably renters, since none of the names in the 1851 directory corresponds to names on earlier tax assessment records.

The opening and regulating of St. James Place may have disturbed the upper levels of these potentially sensitive lots. There is the possibility that deeper shaft features, associated with the structures present here by 1852, remained at least partially undisturbed. Fill in this area extends to 14.6' below grade, while the water table lies at 17.4' below grade. Therefore, this APE is potentially sensitive for home lot features dating from as early as 1755, and possibly earlier, up through at least 1852. While the depth of these features can not be known with certainty, they may extend as deep as the water table at 17.4' below grade, or perhaps even deeper.

St. James Place from Chestnut Street to Pearl Street

Where St. James Place now runs between Madison Street and Pearl Street, the area was once bisected by two additional roads named Roosevelt and Chestnut Streets. Between these two cross streets, just south of Madison Street, the APE traverses what was also once part of Block 115 (this block had two halves – see immediate section above). The block was originally bounded by Oak Street, Pearl Street, Chestnut Street, and Madison Street. Several developed lots that were formerly on this block fall within the APE.

Cartographic History

Castello 1660:	This APE is north of the boundaries of this map.
Miller 1696:	The APE is not on this map.
Lyne 1730:	The APE is not on this map.
Carwitham 1740:	The APE is not on this map.
Buchnerd 1735:	Buchnerd depicts a structure on the east side of Pearl Street, somewhere in the vicinity of the APE, but it is unclear whether or not it actually falls within the project site.
Grim 1744/1813:	Several structures are depicted fronting Pearl Street, and some may fall within the APE. Palisades are shown crossing Manhattan and Block 115 within this section of the APE.
Maerschalck 1755:	What is later designated as Block 115 has been laid out. There are two structures fronting Chestnut Street and two on Pearl Street, all four of which may fall within the APE. The line of palisades is shown traversing the APE from east to west.
Montresor1766:	The block is laid out and shaded indicating some degree of development, but details are not depicted. The palisades are no longer present.
Ratzer 1766/67:	The APE is unchanged from the Montresor 1766.
Holland 1776:	The APE is unchanged from the Montresor 1766.
McComb 1789:	The APE is unchanged from the Montresor 1766.
Taylor Roberts 1797:	The APE is unchanged from the Montresor 1766.
Bridges 1803:	(Published in 1807). The APE is unchanged from the Montresor 1766.
Mangin-Goerck 1803:	The APE is unchanged from the Montresor 1766.
Commissioners' 1811:	The APE is unchanged from the Montresor 1766.
Hooker 1824:	The APE is unchanged from the Montresor 1766.
Colton 1836:	The APE is unchanged from the Montresor 1766.
Endicott 1842:	Water pipes from the Croton Water system are shown running down Pearl, Oak and Madison Streets. A dashed line on Chestnut Street suggests that there may be a water line on it as well, or that it was in the process of being built during the year the map was created.
Perris 1849/50:	No individual structures are shown within this section of the APE.
Dripps 1852:	What will become the St. James Place roadbed crosses approximately 17 city lots. Most of these are developed, but there are vacant yards that appear to fall within the APE.

Perris 1852: The following lots and structures fell within the APE:
1 and 1½ Chestnut Street each have a brick structure on the eastern end of the lot, with a vacant yard at the western end of the lot that falls within the APE.
3 and 5 Chestnut Street each have a framed structure on the eastern half of the lot, with a vacant yard on the western end of the lot within the APE.
7 Chestnut Street has a masonry structure that covers almost all of the lot within the APE leaving only a small undeveloped alley left vacant at the western end of the lot.
9, 13, and 15 Chestnut Street each has a brick building on its eastern half fronting Chestnut Street, with a vacant yard at their western ends within the APE.
17 and 19 Chestnut Street each have a brick structure that covers the entire lot within the APE.
392 Pearl Street has a wood structure on the western end of the lot at the intersection of Pearl and Oak Streets. The eastern end of the lot within the APE is vacant.
394 and 396 Pearl Street each have a brick building on the western end of the lot, with vacant yards left undeveloped within the APE.
398 and 400 Pearl Street appear to be consolidated and have a framed structure covering the western end of the lot. While *398 Pearl Street* has a largely vacant yard at its eastern end, *400 Pearl Street* has a framed extension on the end of the building that covers most of the lot. A small alley remains at the very eastern end of the lot behind the building.
404 Pearl Street has a framed building west of the APE, but its eastern brick addition extends into the APE. There is also a small yard area that appears to fall within the APE.
406 Pearl Street has a framed structure that covers the entire southeastern end of the lot within the APE.

Perris 1857-62: All of the buildings on the lots within the APE have been razed, and 'New Bowery" has been laid out, eventually becoming St. James Place.

Pulling 1864: By this time Chambers Street had been cut through the block perpendicular to St. James Place, essentially cutting the block into three small sections, that were almost all empty. New Bowery had been laid out and the lots within the APE were vacant.

Dripps 1867: Rail lines are shown running down New Bowery.

Viele 1874: The block is depicted as meadowland with a watercourse draining the Collect Pond running just north of the block.

Robinson 1885: The APE is unchanged from the Dripps 1867.

Robinson 1893: The APE is unchanged from the Dripps 1867.

Hyde 1913: The APE is unchanged from the Dripps 1867.

Bromley 1916: The APE is unchanged from the Dripps 1867.

Bromley 1925: The APE is unchanged from the Dripps 1867.

Bromley 1955: By this time the tracks had been removed from the street, and New Bowery had been renamed St. James Place.
Bromley 1974: The APE is unchanged from the Bromley1955.
Sanborn 2001: The APE is unchanged from the Bromley 1955.

Street elevations within this section of the APE are as follows:

Data Source	New Bowery and Pearl Street
1864 Pulling	23'
1885 Robinson	23.7'
1916 Bromley	23.9'
1955 Bromley	23.9'

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory
BLOCK 115					
1 Chestnut Street	Widow Butler	W. Meyers	John Finch	Not for this Yr.	Patrick Murphy
1 ½ Chestnut Street	Not for this Yr.	Not for this Yr.	Jonas B. Miles	Not for this Yr.	refused
3 Chestnut Street	Andrew Layton	Isaac Fitus	James Harlan	Not for this Yr.	James Penny, tailor Ann Harahan, washing
5 Chestnut Street	M. Budds	W. Punk	John Fox	Not for this Yr.	W.W. Collins J.C. Rooney, runner
7 Chestnut Street	Not for this Yr.	L. Hutchison	John Tubbs	Not for this Yr.	William Cotter, porter
9 Chestnut Street	Not for this Yr.	Not for this Yr.	J. Minuse	Not for this Yr.	Charles Halsey, mariner Micheal Phelan, overseer Anthony Harkness, painter Robert Burges, bootmaker Ann Philips, shirtmakers
13 Chestnut Street	M. Brisben	INC	D. Chapman T. Geoyorne	Not for this Yr.	James Roberts, storekeeper
15 Chestnut Street	C. Darsells John Carr John Millsdlier (back)	Robert Brown	C. Shean Rich D. Letter	Not for this Yr.	T.A. Folger, policeman W.S. Willison, policeman Wiliam Asquew, tailor
392 Pearl Street	James Ferris	F. Willing	Edmund Fitzgerald	Not for this Yr.	J.M Rothert, grocer
394 Pearl Street	James and John Bakley	William Meyer	G. Hannah Homer Eder	Not for this Yr.	Edward Barber, butcher

396 Pearl Street	John Carome	INC	J. Gulick	Not for this Yr.	J.Duffy, provisions
398 Pearl Street	INC	INC	Charles Christman	Not for this Yr.	James Wells, saddlery
400 Pearl Street	INC	INC	John Minuse	Not for this Yr.	Robert Willard, shoemakers William Parkin, engineer
404 Pearl Street	INC	INC	Augustus Sherman Benj. Rushton	Not for this Yr.	C.G. Christman, musical intruments and publisher of music
406 Pearl Street	INC	INC	W. Bummell	Not for this Yr.	C.G. Christman, confetr

Note: INC indicates a name that was illegible. No records were available post-1851 since all of the lots were razed.

Precontact Sensitivity

The precontact potential for this APE is unchanged from that described for Block 116 above. Prior to development, this APE was depicted as meadowland with a watercourse draining the Collect Pond running just north of it (Viele 1874). Its proximity to fresh water and the nearby East River would have made it an attractive location for precontact habitation. A soil boring taken in this vicinity showed 14.6' of fill below grade, with the water table located at 17.4' below grade (Boring MI-24, Raymond International Inc. 1974). Below the fill are levels of sand, some with fine silt and gravel. If these deeper levels represent the precontact living surface, then there may be potential sensitivity beneath the fill (14.6' below grade).

Historical Sensitivity

St. James Place, formerly "New Bowery" was laid out across what was formerly Block 115 between 1852 and 1857 (Perris 1852, 1857). Development on or near this block may date as early as 1744 (Grim), and by 1755 there were four structures that may have been in the APE (Maerschalck 1755). Subsequent maps portrayed the block as shaded, and by 1852 17 lots, mostly developed, fell within the APE (Dripps 1852, Figure 6.1-4b). These were located at 1 through 19 Chestnut Street (odd only), and 392 through 406 Pearl Street (even only) (Perris 1852). Each of the lots except two, located at 17 and 19 Chestnut Street, had vacant yards and alleys that could have been where shaft features were located.

The tax and directory data show that the lots within the APE may have been occupied as early as 1808, and possibly earlier (see Tax and Directory Table above). Ownership of most properties changed hands through the early 19th century, and by the 1850s, there was a mixed residential population. Occupants appeared to be middle class workers who

held a variety of position, and none shared the same last name suggesting they were unrelated.

As reported above, the fill here was reported to be about 14.6' below grade, while the water table was at 17.4' below grade. Therefore, if historic resources related to the 18th and 19th century use of this block exist beneath St. James Place, shaft features may be potentially located either within the fill or below it. Wells could potentially be at least 17.4' deep, and possibly deeper.

Pearl Street from its junction with St. James Place to Peck Slip including the northwest corner of Block 112, and the southeastern corner of Block 105.

What is now Pearl Street directly south of Oak Street, was once part of Block 112. Several of the formerly developed lots on Block 112 fall within the APE. South of Franklin Square Pearl Street was widened to include a small section of Block 105 in the APE.

Cartographic History

Castello 1660:	This APE is north of the boundaries of this map.
Miller 1696:	The APE is not on this map.
Lyne 1730:	Pearl Street has been laid out between what eventually becomes Oak Street and Peck Slip. Structures appeared to be flanking both sides of the street within the APE.
Carwitham 1740:	The APE is unchanged from the Lyne 1730.
Buchnerd 1735:	Buchnerd depicts Pearl Street as laid out, and Block 112 within the APE as vacant. Block 105, on the west side of Pearl Street is also shown as vacant.
Grim 1744/1813:	Pearl Street is present between Oak Street and Peck Slip, and the lots on what later becomes Block 112 are shown as vacant. However, one structure is shown on Block 105, possibly in the APE.
Maerschalck 1755:	What are later designated as Blocks 112 and 105 have been laid out. A row of structures is present fronting Pearl Street on Block 112, but only one or two may fall within the APE at the northwestern corner of the block. Structures are also shown fronting Pearl Street where Block 105 lies.
Montresor1766:	No structures or development are shown within this section of the APE, but the block is shaded which may suggest development.
Ratzer 1766/67:	The APE is unchanged from the Montresor 1766.
Holland 1776:	The APE is unchanged from the Montresor 1766.
McComb 1789:	The APE is unchanged from the Montresor 1766.
Taylor Roberts 1797:	The APE is unchanged from the Montresor 1766.
Bridges 1803:	(Published in 1807). The APE is unchanged from the Montresor 1766.
Mangin-Goerck 1803:	The APE is unchanged from the Montresor 1766.
Commissioners' 1811:	The APE is unchanged from the Montresor 1766.
Hooker 1824:	The APE is unchanged from the Montresor 1766.
Colton 1836:	The APE is unchanged from the Montresor 1766.
Endicott 1842:	Water pipes from the Croton Water system are shown running down Pearl and Oak Streets.
Perris 1849/50:	No individual structures are shown within this section of the APE.
Dripps 1852:	What will become the Pearl Street roadbed crosses approximately five city lots on Block 112, all of which are covered with

structures. Pearl Street between Oak Street and Peck Slip is unchanged from earlier maps. The lots at the southwestern section of Block 105 within the APE are entirely covered by structures.

Perris 1852: On Block 112, the following lots and structures fell within the APE:

390 Pearl Street has a frame structure covering all of the lot within the APE.

388 ½ Pearl Street is also entirely covered by a frame structure within the APE.

388 ½ Pearl Street (the second structure with this address) has a stone or brick building covering all of the lot within the APE.

386 and 384 Pearl Street each has a frame structure covering all of the lot within the APE.

On Block 105 the following lots fall within the APE:

333 through 321 Pearl Street are covered by a single masonry structure within the APE.

319 Pearl Street is covered by a frame structure within the APE.

317 and 315 Pearl Street are covered by brick structures within the APE.

313 Pearl Street is covered by a masonry structure within the APE.

Perris 1857-62: On Block 112, all of the buildings on the sections of the lots that fell within the APE have been razed to allow for the creation of 'New Bowery," which eventually becomes St. James Place/Pearl Street. North of Dover Street its width appeared to be about 90', while south of Dover Pearl Street is shown as narrow streetbed. Block 105 is unchanged, but the masonry structures at *333 to 321 Pearl Street* are labeled "Harper's Iron Buildg's."

Pulling 1864: The remaining section of Block 112 that is not within the APE is covered by multi-family residential structures, some with privies. Block 105 is unchanged, but the iron works is now labeled the "Harper's Building."

Dripps 1867: Rail lines are shown running down Pearl Street.

Viele 1874: Block 112 is depicted as meadowland with a watercourse draining the Collect Pond running to the north. Pearl Street is meadowland along the shorefront that crosses an inlet to Beekman's Swamp at Peck Slip. The route of Pearl Street follows a bluff along the shoreline. Block 105 within the APE is directly adjacent to a small inlet from the East River, with the western half of the block shown as a pond.

Robinson 1885: By this time an elevated train station was established at the intersection of Cherry and Pearl Streets, at Franklin Square, within the APE. The Brooklyn Bridge access ramp has been constructed through Franklin Square across Pearl Street within the APE. Frankfort Street had been realigned to make it parallel with Dover

Street. North of Dover Street, Pearl Street was about 90' wide, but south of Dover Street it narrowed to less than 50' in width. Block 105 appeared unchanged, but the Harpers Building is shown as a publishing house.

Robinson 1893: The APE is unchanged from the Robinson 1885.

Hyde 1913: The APE is unchanged from the Robinson 1885.

Bromley 1916: The APE is unchanged from the Robinson 1885. On Block 105, the publishing house is a five-story building, and none of the buildings in the APE have basements.

Bromley 1925: The APE is unchanged from the Bromley 1916.

Bromley 1934: The APE is unchanged from the Bromley 1916.

Bromley 1955: By this time the tracks had been removed from Pearl Street, and the Franklin Square station had been dismantled. Sometime between 1925 and 1955 the Al Smith Housing development had been constructed outside of the APE directly east of Pearl Street to the north of the Brooklyn Bridge. Sometime between 1934 and 1955 Pearl Street was widened south of Dover Street over the southwestern edge of Block 105.

Bromley 1967: The APE is unchanged from the Bromley 1955.

Bromley 1974: The APE is unchanged from the Bromley 1955.

Sanborn 2001: The APE is unchanged from the Bromley 1955.

Street elevations within this section of the APE are as follows:

Data Source	Oak and Pearl Street	Cherry and Pearl Street	Peck Slip and Pearl Street
1864 Pulling	23'	24.25'	11.75'
1885 Robinson	23.7'	24.3'	11.7'
1916 Bromley	23.9'	24.4'	11.9'
1955 Bromley	23.9'	24.4'	11.9' (1974)

Tax and Directory Tables:

LOCATION	1808	1820	1834	1844	1851 Directory
BLOCK 112					
390 Pearl Street	Not for this Yr.	Not for this Yr.	A. Smith	Not for this Yr.	P. Sullivan, grocer William Fusileir, grocer
388 ½ Pearl Street	Not for this Yr.	Not for this Yr.	Not for this Yr.	Not for this Yr.	T. Hammel, shoemaker William Beard, shoemaker
388 Pearl Street	Mr. Wilkins	Not for this Yr.	John Martin	W. Belcher	Alexander Lang, baker
386 Pearl Street	Samuel Hoyt	Not for this Yr.	Isaac Hopper W. Conrad	Not for this Yr.	Daniel Cole, liquors

384 Pearl Street	John Cooper	Not for this Yr.	W. Haigh David Murphy	Not for this Yr.	W.H. Murphy, books

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 105								
313 Pearl Street	Collins + Murry	Not for this Yr.	Weeks + Giffin	Giles (house and lot)	No listing	Wm. Miller & Co	Aaron Schener back	Aaron Schener back
315 Pearl Street	Charles Clufer	T. H. Williams	John H. Williams	Chris-topher Wolfe	John H. Willliams & Son, looking glasses *G. H. Williams	Chris-topher Wolfe	Chris-topher Wolfe	Chris-topher Wolfe
317 Pearl Street	Edward Hitch-cock	F Awaldron	John Sniffin	Joseph Bradley	Joseph Bradley, chairs	C. Smith & Co.	C. Smith + Co.	Smith + Co.
319 Pearl Street	Titus + Averry	Walter Titus	Sam Skaden	Doct. J. R. Brad-hurst	William W. Thayer, drugs Michael Mahoney, tailor John Vinston, chandler Michael Foster, police Thomas Cortin, carpenter Thomas Madden, tailor B. Higgins	John M. Brad-hurst	John M. Brad-hurst	John M. Brad-hurst
321 Pearl Street	Nic-holas + Ray-mond	Mr. Mix T. Montgomery (crossed out) Barnes Andarlin David Phelps Gershom Smith (crossed out)	John H Guion Charles Filmore Stephon Summis	S. Ver-planch	G. F. Bonce, printing Anderson Fletcher, boarding Robert Sherland, fishmonger	William H Ver-plank	W. W. Ver-plank	D.W. Knicks
323 Pearl Street	W. Challen	John Corley	John Corley	Joseph Renochu r	G. F. Cooledge & brothers, books *W. D. Cooledge	George F. Coolidge	Geo F. Coolidg e	Geo. W. Coolidg e
325 Pearl Street	Jacob Smith	Geo. Brown Isaac Brown	Widow Cheshire	Brown	Unoccupied	George L. Brown	Geo L. Brown	Est. of George Brown
327 Pearl Street	John L. Wilson John	Martin Morrison	William H. Collier	S. J. Harper	Harper & Brothers, publishers	Harper & Brothers	Harper Bros	Harper + Bros

	Wilson							
329 Pearl Street	Widow Baker	Doc Smith	Octavius Longworth	G Ridley	D. mullins, gloves Mary Bevan, boarding	Harper & Brothers	Harper Bros	Harper + Bros
331 Pearl Street	W. Cumming Michall Nauburn	W. King Lecther S. D. Comslock Fal. S. Codwise	Benjamin Clark Winter	R. C. Cowell (exempt)	J & J W.C. Leveridge lawys B.C Leverridge, lawyer N. B. Penfold, boarding	Harper & Brothers	Harper Bros	Harper + Bros
333 Pearl Street	James Roosevelt	Fal. Roosevelt	Office of Dry Dock Bank W. Stebbins	Jonathan Shorn	Hooper & Bros. Looking glass *H. H. Hooper *Thomas Hooper John Whyte, hardware	Harper & Bros	Harper Bros	Harper Bros

Precontact Sensitivity

No precontact sites or areas of sensitivity were identified by the NYCLPC in the vicinity of this section of the APE (NYCLPC 1982; Site File Search). Early topographic maps show that this area was directly on the East River shoreline at the time of European Contact, and may have been at the top of a bluff (Viele 1859; 1874). It is possible that precontact encampments were located along this section of the Contact Period shoreline. Therefore, this area has a moderate sensitivity for precontact cultural resources. However, a series of soil borings taken between the intersection of Pearl Street and St. James Place, and Peck Slip to the south, suggests that if precontact resources exist below the landfill, in some areas they would now lie below the current water table.

Soil Boring MI-23, taken on the east side of Pearl Street just south of its intersection with St. James Place, shows 19.5' of fill underlain by brown course sand and gravel (Boring MI-23, Raymond International Inc. 1974). The water table was encountered directly below the fill at 19.8' (Ibid.). Therefore if precontact resources were located below the fill here, they would likely be submerged.

A boring taken beneath the Brooklyn Bridge Ramp just north of Dover Street found fill from the surface down to nine feet below grade (Boring MI-22, Raymond International Inc. 1974). The water table here was reported at 20.2' below grade (Ibid.). Profiles from the original construction of the bridge indicate that piers were located on either side of Pearl Street, but that the streetbed itself was left unaffected (Brooklyn Bridge Profile nd.:0149-1). Graphics portraying the construction of the piles for the bridge also show Pearl Street undisturbed and open to traffic (Grafton 1980:28). Therefore, this section of the APE may be sensitive for precontact period resources below the nine feet of fill.

Another boring taken from the west side of Pearl Street, directly north of Peck Slip reported brick fill from the surface down to 21' below grade, with the water table located at 16' below grade (Boring MI-21, Raymond International Inc. 1974). Beneath the fill were deep levels of sand and gravel, fine sand and sand (Ibid.). Again, if precontact resources existed beneath the 21' of fill, they would be inundated.

Historical Sensitivity

Prior to 1640, this section of the APE was included within a ca.35 acre farm owned by David Provoost. It was conveyed in 1642 to Govert Loockermans and Cornelis Leendertsen, along with a dwelling house believed to be located between Peck Slip and Pearl, Water, and Dover Streets (Pickman 1990:4). By 1638 a ferry had been established somewhere near the Pearl and Dover Street intersection (Stokes 1927:117). However,

> *...it should be noted that Booth (1867:262-263) places the site of the first Long Island ferry at a point "below Peck Slip" and Wilton (1893 I:366) locates it at Peck Slip.* (Pickman 1990:4)

Within this APE, Pearl Street was officially laid out in 1707 (WPA 1937), but as a small path along the shoreline it predates this date. At the time of the Lyne Plan, in 1730, Pearl (then Queen Street) was already lined with numerous structures on both sides of the street, some that may have stood in the APE. More than half the street frontage was occupied by buildings (Lyne 1730, Figure 6.1-1). The number of buildings increased until the maker of the 1767 map simply shaded in the blocks on each side of the street to indicate that they were built up (Ratzer 1766/67, Figure 6.1-3). On Block 106 directly east of the APE, Stokes identified the Walton House, erected in 1752 and demolished in 1881 (Stokes 1918:953). By 1852 Block 112 had four lots that were developed that now lie within the APE (Dripps 1852, Figure 6.1-4b and c). These were formerly located 384, 386, 388 ½, and 390 Pearl Street. Each of these lots may have been developed as early as 1755 (Maerschalck) and were razed between 1852 and 1857 when St. James Place was created across them (Perris 1852, 1857; Dripps 1867; Figure 6.1-5c).

Pearl Street at Frankfort Street is currently about 90' wide. Pearl Street's original width south of St. James Place was substantially narrower than at present, but no references were found that provides the exact original width.

In 1814 the Common Council ordered Pearl Street enlarged to 50' and straightened from Chatham to Augustus Streets (now Park Row to Cardinal Hayes Place, north of the APE) (Stokes 1926:1570). Straightening was necessary since the original route of the street followed pre-development topography. The combination of these operations, widening and straightening, caused many older buildings to become public nuisances. For example, prior to an 1826 widening and straightening of Pearl Street at Coenties Slip (south of this section of Pearl Street and not in the APE), the 17th century "ancient Knickerbocker edifice that has for nearly a century and a half obtruded itself far too much

into the street" was torn down (Stokes 1926 V:1658). This reference also suggests that street widening operations had been carried out continuously since the 17th century. Other improvements included the installation of sewer and water lines. On Pearl Street between Chatham Street and Beekman Street, sewers were installed in 1848 and 1849 (Board of Alderman 1857:126). Water lines were available by 1842 (Endicott 1842).

Prior to "New Bowery" being created, in 1852 Pearl Street north of Dover Street (Franklin Square) within the APE was about 90' wide, with the street broadening at Franklin Square, and then narrowing as it approached Peck Slip (Dripps 1852, Figure 6.1-4b and c). Calculations from 1885, 1913, and 1934 atlases and maps show that street widths were about 90' north of Dover Street, narrowing to about 50' between Dover and Peck Slip (Robinson 1885; Hyde 1913; Bromley 1934). This suggests that Pearl Street south of Franklin Square was not widened during the latter half of the 19th century or the early 20th century. In 1957, Pearl Street between Dover Street and Peck Slip was 60' wide, with 15' wide sidewalks on either side of the street, for a total width of 90' (City of New York 1957). Currently, it is still about 90' wide from its intersection with St. James Place south to Peck Slip (Sanborn 2001). Therefore, sometime between 1934 and 1957, Pearl Street was widened from Dover Street to Peck Slip by between 20' and 40'. This width was apparently taken from the west side of Pearl Street where Block 105 lies (comparing 1934 to 1955 Sanborn).

Block 112, located just south of where Pearl Street crosses Oak Street, was partially developed by 1755, and by 1852 there were five lots within the APE (Dripps 1852, Figure 6.1-4b). Structures were located at 390, 388½, 388½ (two were lots with this number), 386, and 384 Pearl Street (Perris 1852). These were all razed by 1857 when St. James Place, originally called "New Bowery" was laid out across them (Dripps 1867, Figure 6.1-5d). At least three of these lots were assessed for taxes in 1808, and by 1852 the residents appeared to be middle class workers who were probably renters (see Tax and Directory Table above).

Block 105 appeared to be developed as early as 1730, and when the first map depicted this block in detail, at least 11 lots were shown within the APE (Lyne 1730, Figure 6.1-1; Dripps 1852, Figure 6.1-4c). Included in the structures standing within the APE was an iron works - later to become Harper's Publishing - and several individual brick structures, that could have been residential. Taxes were assessed on the lots as early as 1808, and at least one of the owners at that time was associated with the development of the waterfront just east of the APE (e.g., Roosevelt). Many of the structure were held by the same person for many years, and were occupied by their owners in the 1850s (see Tax and Directory Table above). Most of the structures appeared to be largely commercial, and none appeared to possess vacant yards within the APE by 1852 (Figure 6.1-4c). These lots were all razed between 1934 and 1955 (Bromley 1934, 1955).

In addition to these buildings on Lots 112 and 105, NYCLPC sensitivity maps identified a structure in Pearl Street at the Peck Slip intersection, dating from the period 1609 to 1664 (NYCLPC 1982). Peck's Market appears on the 1767 map immediately east of Pearl

Street at Peck Slip (Ratzer 1766/67, Figure 6.1-3). NYCLPC identifies its period of activity as approximately 1721 to 1815 (NYCLPC 1982), but Stokes suggests the structure that stood in the APE operated from 1763 to 1793 (Stokes 1922:735, 777-778, 1,300; 1928:485). Subsequent widenings of Pearl Street would have brought large sections of the market location into this portion of the APE.

At present there are a number of utility lines running beneath Pearl Street that would have adversely affected potential buried archaeological resources. Excavations for the installation of these utilities would most probably have extended from one to two feet beyond the diameter of the utility pipe or conduit, both horizontally and vertically. Utility plans and profiles indicate that beneath Pearl Street these lines run between approximately three feet to 15' below the current grade and are clustered on the west side of the road (WPA 1937).

On Pearl near Frankfort Street, the streetbed had already reached its modern width by the 1930s (at present Franklin Square), with utilities distributed over an area about 57' wide. As a result, the utilities are more spread out in this area, leaving an undisturbed zone 240' long and about 16' wide, running southward from just below the Frankfort Street intersection. Also, the current APE is now 90' wide, indicating that undisturbed areas also exist along the edges of the roadway that early utility lines would have avoided due to the presence of structures (e.g., along Block 105; WPA 1937; Sanborn 1997). As stated above, most of these structures lacked basements.

The intersection elevations along Pearl Street appear to have been lowered by two inches or less from 1864 to the present (see elevation table above). This section of the APE still slopes downward from Frankfort Street to Peck Slip as observed on historic maps (Viele 1874).

As discussed above, soil borings show about 20' of fill beneath Pearl Street near St. James Place, 9' of fill near Dover Street, and 21' of fill below grade near Peck's Slip (Borings MI-21, MI-22, and MI-23, Raymond International Inc. 1974). It is possible that historic resources are located in the roadbed within the fill at both Block 112 and Block 105. If early wells and deep shaft features were installed here, they were dug at least as deep as the water table that currently lies between 16' and 20' below grade along this route, and possibly deeper (Ibid.).

Pearl Street from Peck Slip to Beekman Street

Pearl Street, between Peck Slip and Beekman Street, was widened in the 20th century. When this occurred, a section of Block 98 east of Pearl Street was incorporated into the roadbed, as were the fronts of lots on Block 98 on the west side of Pearl Street.

Cartographic History

Castello 1660: The APE is north of the northern boundary of this map.

Miller 1696: The APE is not on this map.

Lyne 1730: By this time Block 98 both east and west of Pearl Street, is shown. Beekman Street has been laid out running east-west to the west of Pearl (then Queen) Street. Development is shown on both sides of Pearl Street. Dally's Shipyard is located somewhere on Block 98 east of Pearl Street, but its exact whereabouts on the block in relation to this section of the APE are unknown.

Buchnerd 1735: Buchnerd depicts Pearl Street as laid out, and one building is shown at the northwest corner of Block 98, east of Pearl Street near the intersection of Pearl Street and Peck Slip within the APE. A shipyard is depicted on the eastern side of the block, but it is not clear if it extends into the APE. West of Pearl Street, Block 98 is shown undeveloped.

Carwitham 1740: The APE is unchanged from the Lyne 1730.

Grim 1744/1813: Two structures are shown on Block 98 fronting the east side of Pearl Street, and several structures are on the west side within the APE. A shipyard is depicted on Block 98 east of Pearl Street.

Maerschalck 1755: Development is shown on both sides of Pearl Street, but the exact number of structures that fall within the APE is unclear. Some vacant areas remain between structures within the APE. At this time Block 98 on the east side of Pearl Street appears to be combined with Block 95 to the south.

Montresor1766: Block 98 on both sides of Pearl Street is shaded indicating some degree of development, but specific structures are not shown.

Ratzer 1766/67: The Ratzer map depicts virtually the same conditions as the Montresor map.

McComb 1789: Block 98 east of Pearl Street appears similar in configuration to the Ratzer and Montresor maps, and while no specific buildings are shown on either side of the street, both blocks bordering Pearl Street are shaded indicating some degree of development.

Taylor Roberts 1797: The APE appears virtually unchanged from the 1789 McComb map, but by this time Queen Street had been renamed Pearl Street.

Bridges 1803: The APE appears unchanged from 1797.

Commissioners' 1811: The APE is unchanged from 1797.

Hooker 1824: The APE is unchanged from 1797.

Colton 1836: The APE is unchanged from 1797.

Endicott 1842: Water lines are shown running on Pearl Street, Beekman Street, and Peck Slip (then Ferry Street.)

Dripps 1852: Beekman Street has been cut through Block 98 between Pearl Street and the East River. Block 98 east of Pearl Street has approximately 15 lots fronting Pearl Street that may fall within the APE. Block 98 west of Pearl Street has about 13 lots within the APE. All of these appear to be developed.

Perris 1852: The following lots and structures on Block 98 fall within the APE on the east side of Pearl Street:

312 Pearl Street (a.k.a. 2 Ferry Street - Peck Slip) has a masonry building covering all of the lot within the APE.
310, 308, 306, 304, 302, 300, 298, and 296 Pearl Street each have a stone or masonry structure that covers all of the lot within the APE.
294 Pearl Street has a stone building with a frame addition on its northeast side, and a vacant yard to the southeast within the APE.
292 Pearl Street has a stone building on it with a vacant yard to the east that falls within the APE. There is an outbuilding at the southeastern corner of the lot that may also fall within the APE.
290 Pearl Street has a masonry building with a small undeveloped alley on its southeast corner that falls within the APE.
288 Pearl Street (a.k.a. 104 Beekman Street) has a stone building on it that covers all of the lot within the APE.
106 and 108 Beekman Street each have a stone structure that covers all of the lot within the APE.
Block 98 on the west side of Pearl Street has 13 lots within the APE that show the following development:
309 to 287 Pearl Street (odd only) are entirely covered by masonry structures. No vacant yards or alleys lie within the APE.

Perris 1857: All of the structures on Block 98 that fall within the APE on both sides of Pearl Street appear unchanged from 1852.

Dripps 1867: Block 98 on either side of Pearl Street appears virtually unchanged since 1852. By this time a rail line is shown running down Pearl Street between Peck Slip and Beekman Street.

Viele 1874: Viele depicts the early historic period shoreline as running directly east of Block 98, along what is now Water Street, indicating that Block 98, both east and west of Pearl Street, is on fast land. The original topography of this APE is pasture/meadow land sloping downhill from the west toward the river. An inlet ran along the course of what is now Peck's Slip to an inland salt water pond northwest of Block 98 near what is now the foot of the Brooklyn Bridge.

Robinson 1885: Steam railroad lines appear to run north/south along Pearl Street between Peck Slip and Beekman Street. A horse car or cable line also runs down Peck Slip. On either side of Pearl Street within the APE, Block 98 is shown to be fully developed with brick structures.

Robinson 1893: The APE is unchanged from 1885.

Bromley 1897: The APE is unchanged from 1885.

Bromley 1902: The APE is unchanged from 1885, but the structure at 293 Pearl Street, Block 98 west, is labeled as Public School No. 34.

Hyde 1913: The APE is predominantly unchanged from 1885. However, the structures at *288 Pearl Street* and *106 Beekman Street* are now

smaller and each have a vacant yard within the APE. West of Pearl Street, there are still no vacant yards or alleys in the APE.

Bromley 1916: By this time no vacant yards are shown anywhere on Block 98 east of Pearl Street in the APE, and almost all of the structures on either side of the street are depicted as four and five-story buildings with stores. None of the buildings in the APE have basements. The Pearl Street roadbed appears unchanged from earlier maps.

Bromley 1926: All the buildings within the APE are still brick, but the buildings east of Pearl Street at the northwestern corner of Block 98 located at *304 to 312 Pearl Street* have been replaced with a two-story brick garage with a basement. None of the remaining buildings on the block within the APE are labeled as having basements. Also, none of the buildings on Block 98 west of Pearl Street have basements.

Bromley 1934: The APE is unchanged from 1926.

Bromley 1967: Sometime between 1934 and 1967 Pearl Street was widened incorporating more than about 1/3 of the western side of Block 98, and about 20' of the front of the lots on Block 98 west of Pearl Street. All of the buildings on these blocks within the APE were razed.

Bromley 1974: The APE is unchanged from the 1967 Bromley.

Sanborn 1984: The APE is unchanged from the 1967 Bromley.

Sanborn 1991: The APE is unchanged from the 1967 Bromley.

Sanborn 2001: The APE is unchanged from the 1967 Bromley

Street Elevations of the APE are as follows:

Data Source	Pearl Street at Peck Slip	Pearl Street at Beekman Street
1885 Robinson	11.9'	14.6'
1934 Bromley	11.9'	14.8'
1957 City of NY	11.95	14.35

Tax and Directory Tables:

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 98 East side of Pearl Street								
312 Pearl Street	Herring Crom-well	Titus Avery & Weeks	E. R. Dufigwal?	William Kevan	Schulken & Lane, liquors B.W. Raper, printer	Est. of Wm. Kevan	Est. of Wm. Kevan	Est. of Wm. Kevan
310 Pearl Street	William Kevan	William Kevan	William Kevan	Wm. Kevan	B.C. Chamberlin, saloon	Est. of Wm. Kevan	Est. of Wm. Kevan	Est. of Wm. Kevan
	Wm. W.							

308 Pearl Street	Fox?	Wm W. Fox	U? Coffin	Wm. Fox	G. Lyons, tailor M. Albertson M. Murty W. Berkley, boarding	Wm H. Fox	Wm. W? Fuse?	W. W. Fox
306 Pearl Street	Hawson ?	Owner of House and Lot	Peter Poillan?	Rev. Sam Jarvis	W.R. Williams, moss T. Berry, umbrellas	Rev. Sam H. Jarvis	Rev. Sam H. Jarvis	Rev. Sam H. Jarvis
304 Pearl Street	John Gauldwell	Widow? Goodrich	David Coolridge	John D. Wright	A.Studwell, shoe findings G. Barrenpohl J. Scheel Anderson, artist	John D. Wright	John D. Wright	John D. Wright
302 Pearl Street	Not for this year	Wm. Hawley (listed twice)	Tho. W. Flarsfield?	John D. Wright	Mulford & Cary, shoe findings J. Duffy, boarding	G. W. Towsend	G. W. Towsend	G. W. Towsend
300 Pearl Street	Isaac Wright	Hannah Hawley Joseph Carrol	Rich. Titus Henry W. Wickham James and Andrew Thompson Jonathan Hillman Seth W. White	Gilbert T. Everson	G. Barrenpohl, grocer A. Lane W. Dorman J. Dunsdater, tailor J. Hafferty T. Long M. Gallagher	Gilbert S? Everson	M. S. Everson	Wm. R. Fostr
298 Pearl Street	Towsend ?	L. Corlies J. W. Allen Edmund Penfold	Mrs. Chadeayne C. Miles Keyson	A.H. Duncan	G. Carmina, toys G. Talisblue, barometers Gillespie&Studwell, shoes	A. H. Duncan	A.H. Duncan	A.H. Duncan
296 Pearl Street	Estate of Willet ?eaman	G. Ferguson	Levi Collins	Gilbert T.Everson	T. Pitts, stencil engravers G.F. Everson&Co., shoe finds	Gilbert S. Ever-son		James Wood
294 Pearl Street	Allen Shepherd	John Cauldwell	Edward Isaac Smith	Widow Caldwell	R. Smith, brushes G. Clifton	Widow Cald-well	Est. of Caldwell	Wm. Schroder
292 Pearl Street	John Dodison John Barrow	G. Lathrop	Andrew Thorp	James Woods	J. Woods, umbrellas	J. Woods	James Wood	Thomas J. Pope
290 Pearl Street	Oliver H Taylor	? H. Taylor	Merrill Corlies of Stanton	Benj. Corlies	Harrison Breese & Co	Benj. Corlies	S. T. Tyson	S. T.Tyson

			Stanton House					
288 Pearl Street	Walter Brown	Walter Borone?	United States Insurance Co.	Barnett Andrews	M. Halmstedt, saloon	Barnette Andrews	Barnet And-rews	Barnett Andrews
104 Beekman Street	Not for this year	Not for this Year	Not for this year	Not for this Year	Martin Helmstadt, liquors Theodore Gray, printer Wm. Stein, optical instruments	Not for this Year	Not for this Year	Not For This Year
108 Beekman Street	Not for this Year	Not for this Year	L. Chesney	Est. of Clever H. Prylor	T.C. Moore,wire cloth Francis Adema, cooper	C.W. S. Roosevelt	C.W. S. Roosev elt	C.W. S. Roosevel t

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 98 West side of Pearl Street								
287 Pearl Street	Richard Bauer	PC. Parsells	James Caswell Smith	Robert Colgate (house)	Pollen & Colgate *GP Pollen *Robert Colgate	Robert Colgate	Robert Colgate	Robert Colgate
289 Pearl Street	Carles	LH Carter	W. Steele	T. Gardner	Same as Above	Robert Colgate	Robert Colgate	Robert Colgate
291 Pearl Street	Collins & Sampler	WR Thurston	S. Vail	W. Thurston	Joseph Manning, boarding	WR Thurston	William Thurston	W. Thursto n
293 Pearl Street	Wms. Hardenb rook	W. Hardinbrook	D & C Hubbs	J. Hardenbr ook	E.S. Day --Macdonnell, physician	W. Hardinbr ook	Corp. City of NY	School (exempt)
295 Pearl Street	Thomas Jones	W. Hardin-brook		J. Leggett	Henry Kindon, gloves William Alderton, envelopes A.C. Dietz & Co. *G.F. Dietz Abbot & Wilcomb, binder's muslin *J.D. Abbot James Wilcomb James cook, binder's	Hannah Jenkins	Francis Legget	Joseph Agato

					leather John W. Taylor, paper			
297 Pearl Street	Thomps on Van ?	John Fitus	Stacy Collins	J. Leggett	Henry Collins, looking glasses	L. Brown	Francis Legget	Joseph Agato
299 Pearl Street	John Titus Peter Titus	W. Haydock John Corlies Josh Corlies HW Haydock William White	William Hills	John Glover	Edward Godfrey & Son, leather and findings *A.W. Godfrey G.W. Isaacs John Collins Fredrk Gilmore	Est of John Glover	A. Lyons	A. Lyons
301 Pearl Street	? Baudwin	John R. Willis	Mrs. Johnson Perritt	J. Leggett	Leggett & Brothers, paper *TB Leggett *JW Leggett *G.F. Leggett	J. Leggett	WH Leggett	WH Leggett
303 Pearl Street	John Peshing Captn. Newell	W. Pashine W. Baker Josh Patch	AL Willetts (store)	A & S Willetts	Willets & Co. Hardware *Samuel Willets *R.R. Willets *D.T. Willets *E.P. Willets	A & S Willetts	Willetts & Co.	Willetts & Co.
305 Pearl Street	Frederic k Garner	Fred Pardiner	Mrs. Vail Edwin Miles Samuel Hutchinson L. Reeves Alfred Wickham Edward Thompson N. Beagen	Est of Fred Garner	Steele & Co., feather brushes *Wiliam Steele *J. Steele *W.I.Steele *W.M. pierson George Magwire, boarding	Est of John Garner	Abner Chichest er	Abner Chichest er
307 Pearl Street	Thomas Leggett	E. Cornell W. H. Leggett	Mrs Corse William Corse T. Le Pewitt	J. Leggett and Co.	E. Waterbury & Son, leather *F. Waterbury	Leggett Fox and Co	Leggett Fox and Co	Leggett Fox and Co.
309 Pearl Street	Samuel Leggett John R. Nillis	Fred Evarth W. Puion	A. F. Foster	T. Suffern	Eastern Pearl St. House F. Steeley, hotel	Thomas Suffern	Thomas Suffern	Thomas Suffern

Precontact Sensitivity

No precontact sites or areas of sensitivity were identified by the NYCLPC in the vicinity of this section of the APE (NYCLPC 1982; Site File Search). Early topographic maps show that this area was directly on the East River shoreline at the time of European Contact, and may have been at the top of a bluff (Viele 1859; 1874). It is possible that

precontact encampments are located along this section of the Contact Period shoreline. Therefore, this area has a moderate sensitivity for precontact cultural resources.

Soil Boring MI-20, taken in 1974 on the east side of Pearl Street just south of Peck Slip, indicates that there is 15.5' of fill below grade, and immediately below this is sand (Raymond International Inc.1974). Most of the buildings that flanked Pearl Street prior to its widening did not have basements, so effects from their construction probably did not extended below this 15.5' of fill. The lack of basements is probably due to the shallow water table that is located at 13.5' below grade (Ibid.). Soil boring MI-19 was taken from the west side of Pearl Street, just north of Beekman Street. Here, fill was reported to 15' below grade, while the water table was at 18' below grade (Boring MI-19, Raymond International Inc. 1974). Therefore, there is possibility that precontact deposits exist beneath the ca. 15' of fill here, but if they do they may be inundated near Peck Slip.

Historical Sensitivity

Within this APE, Pearl Street was officially laid out in 1707 (WPA 1937), but it existed as a small path along the shoreline before this date. At the time of the Lyne Plan, in 1730, Pearl (then Queen Street) was already lined with numerous structures on both sides of the street, some that may have stood in the APE (Lyne 1730, Figure 6.1-1). Dally's Shipyard was located somewhere on Block 98, east of Pearl Street by 1730, but its size and location in relation to the APE is unknown. Water lines were installed in Pearl Street within this APE by 1842, and sewer lines were installed by 1848 (Endicott 1842; Board of Alderman 1857:127).

By 1852, when individual structures were clearly depicted, Block 98 east of Pearl Street contained 15 lots in the APE, and Block 98 west of Pearl Street contained 13 lots (Dripps 1852, Figure 6.1-4c). On the east side these lots were located at 312 through 288 Pearl Street (even only) and 106 and 108 Beekman Street. Most of these lots passed through a series of owners during the first half of the 19th century (see Tax and Directory Table above). At least one lot, 308 Pearl Street, stayed in the Fox family from 1808 through 1874, but it was not occupied by the Foxes in 1851 (Ibid.). Residents of the structures on this were of mixed ethnicity and included artists, grocers, and coopers.

West of Pearl Street lots were located at 309 through 287 Pearl Street (odd only). All of these lots served mixed use, with the exception of a public school at 293 Pearl Street. Most were owned by the same person or family for many decades in the early 19th century, and some were occupied by their owners (see Tax and Directory Table above). For example, the Willetts owned the structure at 303 Pearl Street from at least 1808 until at least 1874, and in 1851 occupied the building and ran their hardware business from it. While there were vacant yards and alleys on some of the lots east of Pearl Street in 1852, all of the lots west of the street were entirely developed (Figure 6.1-4c). In addition, most of the buildings lacked basements, probably due to the shallow water table here.

On Pearl Street from Peck Slip to Beekman Street there are telephone ducts, two sets of electrical ducts, 8" and 10" gas lines, a 12" sewer, 16" and 12" water mains, and a 16" high pressure water main. South of Beekman Street and north of Peck Slip there is also a 4" by 2'8" circular sewer at the center of the roadbed. Additional buried utilities cross Pearl Street at the intersections (Beekman, Peck Slip), creating a concentration of utilities and utility disturbance in this part of the APE (WPA 1937).

The utility disturbance is tightly clustered in the roadbed. In no locations does it extend beneath the c.1937 sidewalks, or east and west where structures were located in 1937. Moreover, following the creation of these utility maps and profiles, Pearl Street was widened throughout this APE, bringing the sidewalks and additional utility-free areas into the APE. Utilities are tightly spaced within a 20' section of the APE (WPA 1937).

Two soil borings taken between Peck Slip and Beekman Street report about 15' of fill, with the water table located at 13.'5 at the north, and 18' at the south (Boring MI-19, MI-20, Raymond International Inc. 1974). It is more than likely that historic resources relating to the 18th through 20th century occupation of Block 98 on either side of Pearl Street are located either within the fill. Deeper shaft features, that may have been excavated to the depth of the water table or deeper to access clean water, may also be present. These deep shaft features would probably have escaped utility disturbance. Therefore, the Pearl Street roadbed between Peck Slip and Beekman Street is potentially sensitive for 18th through 20th century resources that once stood on either side of the street on Block 98 in the APE.

Pearl Street from Beekman Street to Fulton Street

Pearl Street between Beekman Street and Fulton Streets was widened in the 20th century. When this occurred, a section of Block 95 that formerly lay east of Pearl Street was incorporated into the roadbed.

Cartographic History

Castello 1660:	The APE is north of the northern boundary of this map.
Miller 1696:	The APE is not on this map.
Lyne 1730:	By this time Block 95, that now partially falls within the Pearl Street roadbed, is shown directly along the shorefront. Beekman Street had been laid out running east-west from the west side of Pearl (Queen) Street. Development is shown on the western section of the block fronting Pearl Street within the APE. Fulton (then Beekman Slip) was also laid out. Warehouses are visible on the eastern half of the block, just outside the APE.
Buchnerd 1735:	Buchnerd depicts Pearl Street as laid out, and Block 95 has three structures on it within the APE. Beckman's Slip forms the southern boundary of the block where Fulton Street will eventually be laid out.

Carwitham 1740: Development is shown on the southern side of the block within the APE. No buildings are shown on the Pearl (then Queen) Street side of Block 95.

Grim 1744/1813: Eight or nine structures are shown on Block 95 fronting Pearl Street and Beckman's Slip within the APE.

Maerschalck 1755: Development is shown on the western and southern sections of Block 95, and the block appears to be combined with Block 98 to the north. The exact number of structures that fall within the APE is unclear. Some vacant areas remain between structures within the APE. Beckman's Slip borders the southern edge of the block.

Montresor1766: Block 95 is shaded indicating some degree of development, but specific structures are not shown. Beckman's Slip extends only as far west as Water Street, indicating that it was filled between Water and Pearl Streets sometime between 1755 and 1766.

Ratzer 1766/67: The Ratzer map depicts virtually the same conditions as the Montresor map.

McComb 1789: Block 95 appears similar in configuration to the Ratzer and Montresor maps. Although no specific buildings are shown, the block is shaded indicating it was developed to some unknown degree.

Taylor Roberts 1797: The APE appears virtually unchanged from the 1789 McComb map, but by this time Queen Street had been renamed Pearl Street.

Bridges 1803: The APE appears unchanged from 1797.

Commissioners' 1811: The APE is unchanged from 1797.

Hooker 1824: The APE is unchanged from 1797, but by this time Beekman Street had been laid out separating Block 95 from Block 98 to the north.

Colton 1836: The APE is unchanged from 1824.

Endicott 1842: Water lines are shown running on Pearl Street, Beekman Street, and Fulton Street.

Perris 1849/50: Block 95 is shaded, indicating some degree of development, and Pearl Street appears unchanged.

Dripps 1852: Block 95 has approximately 24 lots fronting Pearl Street that may fall within the APE.

Perris 1852: The following lots and structures on Block 95 fall within the APE:

111 Beekman Street has a masonry structure on the lot with a small addition at the rear of the building. A small vacant yard on the southeast corner of the lot lies within the APE.

109 Beekman Street has a masonry building fronting Beekman Street, with a vacant backyard within the APE.

286 and 284 Pearl Street (a.k.a. 105 Beekman Street) has a masonry building covering all of the lot within the APE.

282 Pearl Street has a masonry building with an addition on it and a vacant yard to the east that falls within the APE.

280 and 278 Pearl Street each have a masonry building with a vacant back yard that falls within the APE.

276 and 274 Pearl Street has a masonry building on it that covers all of the lot within the APE.
272 ½ and 272 Pearl Street have an attached masonry building and a large vacant back yard within the APE.
270 Pearl Street is predominantly covered by a masonry structure, but a very small section of the lot at the southeast corner remained undeveloped.
268 Pearl Street (a.k.a. 37 Fulton Street) has a brick building covering all of the lot within the APE and is labeled "Fulton Bank."
35, 34 and 33 Fulton Street each have a masonry building covering the entire lot within the APE.
31 and 29 Fulton Street have masonry buildings covering almost all of each lot, but there is a small vacant shared backyard that remained undeveloped.
27 Fulton Street has a masonry building that covers the entire lot.
218 Water Street has a masonry structure covering the entire lot within the APE.
212 Water Street has a masonry structure that covers all but the westernmost edge of the lot, where a vacant back yard falls within the APE.
210 Water Street is predominantly covered by a masonry structure, but the southwestern corner of the lot appeared to have remained undeveloped. This small area falls within the APE.
208 and 206 Water Street have a masonry structure that traverses both lots, as well as a shared backyard that falls within the APE.

Perris 1857: All of the structures on Block 95 that fall within the APE appear essentially unchanged from 1852, except for the following lots:
111 Beekman Street is now entirely covered by a structure.
286 and 284 Pearl Street is now labeled the "Market Bank."
282 Pearl Street is now entirely covered by a structure.
270 and 268 Pearl Street (a.k.a. 37 Fulton Street) now has an attached masonry structure covering each of these lots that is labeled as the "Fulton Bank."

Dripps 1867: Block 95 appears essentially unchanged since 1857. By this time a rail line is shown running Beekman and Fulton Streets.

Lloyds 1867: Several of the structures on Block 95 that fall within the APE are labeled.
270 and 268 Pearl Street (a.k.a. 37 Fulton Street) is still labeled as the Fulton Bank.
212 Water Street is labeled "Collins and Company, Edge Tool and Cast Steel."
208 and 206 Water Street is labeled "Thos. M. Shepard Store & Co."

Viele 1874: Viele depicts the historic period shoreline as running directly south and east of Block 95, along what are now Water and Fulton Streets, indicating that Block 95 is on fast land. The original topography of this APE is pasture/meadow land sloping downhill from the west toward the river. An inlet ran along the course of what is now Peck's Slip to the north, and extended to an inland salt water pond northwest of Block 95 near what is now the foot of the Brooklyn Bridge.

Bromley 1879: An elevated rail line is shown running down Pearl Street.

Robinson 1885: Block 95 within the APE is shown to be almost fully developed with brick and iron structures. Small vacant yards only appear on the following lots within the APE:
111 Beekman Street
282 and 272 Pearl Street
33 Fulton Street
206, 210, and 218 Water Street

Robinson 1893: The APE is unchanged from 1885.

Hyde 1913: The APE is predominantly unchanged from 1885. However, small vacant yards appeared on the following lots within the APE:
109 Beekman Street
280 Pearl Street
206, 210, and 212 Water Street

Bromley 1916: The block remains essentially unchanged from the Bromley 1913 map. The structure at *286 Pearl Street* is labeled the "Commonwealth Building."

Bromley 1925: The block appears unchanged from 1913. None of the buildings within the APE have basements.

Bromley 1934: The APE is unchanged from 1913.

Bromley 1955: Pearl Street was widened on its eastern side over the former location of the western half of Block 95, and all of the buildings on the block within the APE were razed.

Bromley 1967: The APE is unchanged from the Bromley 1955.

Bromley 1974: The APE is unchanged from the Bromley 1955..

Sanborn 1984: The APE is unchanged from the Bromley 1955.

Sanborn 1991: The APE is unchanged from the Bromley 1955.

Sanborn 2001: The APE is unchanged from the Bromley 1955.

Street Elevations of the APE are as follows:

Data Source	Pearl Street at Beekman Street	Pearl Street at Fulton Street
1885 Robinson	14.6'	8'
1934 Bromley	14.8'	8'

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 95								
111 Beekman Street	No Record	No Record	L. Nichels	Jonathan Codding-ton (Store)	INC	Aden-drotch Brothers	Aben-droth Brothers	Aben-droth Brothers
109 Beekman Street	No Record	No Record	M. Jefson Oson (?)	Jonathan Coddingt on (Store)	INC	Aden-drotch Brothers	Aben-droth Brothers	Aben-droth Brothers
286 and 284 Pearl Street (a.k.a. 105 Beekman Street)	Alfred S. Pell K. Pell M. Lewis H. Heydon *286 B. Lecount John Fonnels Edward Fitch	L. Redmond *284 Peter Loon John Fonnels	Wyck + Phillips *284 Wickham + Hutchinso n	Buy Life Insurance + Trust (store) Both # 284 and 286	*286 CS Minor & Co, drugs Edwd. Holsworth, artifacts R. Lockner, paper boxes *284 Lyone & Inglis, varnish *m. Lyons G. . Inglis Colwell & Spurring, nails *E. B. Colwell (*no information) J.M Muir, shirts R.H. O'Hara, paper P. Charff, umbrella sticks	Market Bank	Market Bank	Market Bank
282 Pearl Street	George Newbold Doctor Birch	W. parker Leabury Fedwell	John T. Dolan Nick. B. Penfold	John Dolan	John T. Dolan & Sons, imprs. *Peter and Henry Dolan [M. Quinling Donahue J. Murphy J. McCarty M. Field William Simms J. Walker D. D. Wire	John S. Dolan	John S. Dolan	John S. Dolan
280 Pearl Street	Hicks Shurchwell J. Rogers Daniel Talcll Thomas Robinson William McInbric Charles	G. Lilby	Mead + Scofield Mrs. Hathaway James White	John Easter (house)	John D. Wendel, furs William Geisse & Sons, imprs *Herman C. Geisse (*no information) Francis Degan, hats	C. A. Carter	W.P. Aben-droth	William P. Aben-droth

	Walden Andrew Stockholm Anson Kimberly R. Bush M. Hyde							
278 Pearl Street	James Townsend	W. Vail	Smith + Lawrence	Ward N. Dean	John G. McMurray & Co, brushes *William Bradshaw	Doctor Thomas Ward	Thomas Ward	B. Butler
276 Pearl Street	Benj. Corlies	Geo Clancy	Willis + Brothers (store)	John R. Willis	Oliver Willets & Son, Erkery Amos Willets	John R. Willis	A. R. Gallatin	Albert R. Gallatin
274 Pearl Street	Samuel Hopkins	Mrs. Goold Chester Childs	James Wilson Lewis Uhl Joshua T. Gilbert	Richard Ray (house)	James Best, hardware Mrs. Wm. W. Stone, Boarding	Richard Ray	Richard Ray	Richard Ray
272 ½ Pearl Street	Not for this yr.	Not for this yr.	Not for this yr	Est. of M. Rogers	Beuham & Whitney, house furnishing *D. Benham *M. R. Whitney Ralph Bulkley	Est. of M. Rogers	M. Rogers	Est. of M. Rogers
272 Pearl Street	Samson	L. Lopes Luther Willard	Est. of M Rogers	Est of M. Rogers	Same as above	Est. of M. Rogers	Not for this yr.	Not for this yr.
268 Pearl Street (a.k.a. 37 Fulton Street)	Not for this yr.	Wellis + White	Not for this Yr.	Fulton Bank (house)	A.Bragg & Co, shoes *C.S. Parsons	Fulton Bank	John D. Wolfe Fulton Bank	Fulton Bank
35 Fulton Street	No Record	No Record	Joseph Osborne (stores)	Est. of Peter Hatrick	J. M Quirk, upholsterer	Thomas Suffren	Thomas Suffern	Thomas Suffern
34 Fulton Street	No Record	No Record	Not for this Yr.	Charles Osborne	Roche, Brothers & Co. Shippin merchants and passenger agents of the old black ball line of Liverpool packets and who sell drafts on the Royal bank of Ireland, and on Messrs. Prescott, Grote & Co. Bankers, London	Est of Charles Osborne	Est of Charles Osborne	Est of Charles Osborne
33 Fulton Street	No Record	No Record	"Owners of"... (including 33 ½)	Charles Osborne	S. S. Little, hardware	Est of Charles Osborne	Est of Charles Osborne	Est of Charles Osborne

31 Fulton Street	No Record	No Record	"Owners of"...	Benj. Nicott (store)	Osborn & Swan, hardware *Joseph Osborn *John Swan	J. B. Nichols	J. B. Nichols	J. B. Nichols
29 Fulton Street	No Record	No Record	"Owners of"...	Benj. Nicott (store)	Charles Wilbur, hardware Sterling Smith, Atlantic wire works, wire cloth, sieve, safe and bird cage manufactory Henry Gardner, bootmaker	J. B. Nichols	J. B. Nichols	J. B. Nichols

Precontact Sensitivity

This section of the APE was depicted with the historic period shoreline running directly south and east of Block 95, along what are now Water and Fulton Streets, indicating that Pearl Street and Block 95 were on fast land. The original topography of this APE was depicted as pasture/meadow land sloping downhill from the west toward the river. An inlet ran along the course of what is now Peck Slip to the north, and extended to an inland salt water pond northwest of Block 95 near what is now the foot of the Brooklyn Bridge.

A soil boring taken halfway between Beekman Street and Fulton Street reported fill levels down to about 18.5' below grade (Boring MI-18, Raymond International Inc. 1974). Below the fill were layers of brown sand, and sand with silt (Ibid.). If the depth of the water table was reported on the boring log, its designation was illegible. It should be noted that this boring was taken from what was formerly the center of Block 95, a developed city block. The fill levels undoubtedly represent construction and demolition episodes on the block.

On Pearl Street from Beekman Street to Fulton Street, there are telephone ducts, two sets of electrical ducts, 8" and 10" gas lines, a 12" sewer, 16" and 12" water mains, and a 16" high pressure water main. South of Beekman Street and north of Peck Slip there is also a 4" x 2'8" circular sewer at the center of the roadbed. Additional buried utilities cross Pearl Street at its intersections (Beekman Street, Fulton Street), creating a concentration of utilities and utility disturbance in this part of the APE (WPA 1937). However, the utility disturbance is tightly clustered in the ca.1937 roadbed that was substantially narrower than the current roadbed.

The depth of fill in this area, 18.5' below grade, suggests that if the layers of sand beneath the fill represent the precontact living surface, then precontact sensitivity may exist beneath at this depth.

Historical Sensitivity

Historic maps suggest that the section of Block 95 that is now part of the Pearl Street roadbed may have been developed as early as 1730 (Lyne 1730, Figure 6.1-1), and Mrs. Buchnerd's map indicates that at least three structures stood on the block by 1735 (Buchnerd 1735). In 1740 it is depicted as shaded (Carwitham 1470, Figure 6.1-2). By 1744 there may have been eight or nine buildings on Block 95 in the APE (Montresor 1744), and by 1852 there were 24 developed lots (Dripps 1852, Figure 6.1-4c). According to Stokes' Landmark Map (Vol. III, 1918) a redoubt or earthwork of the Revolutionary War period was also located on this block.

Between 1934 and 1955 Pearl Street was widened on its eastern side encompassing the western half of Block 95. In 1852, the lots within this section of the APE were depicted as developed, although some retained yards and alleys that were vacant (Dripps 1852, Figure 6.1-4c). These lots were located at 111 and 109 Beekman Street, 286 through 268 Pearl Street (even only) 35, 34, 33, 31, and 29 Fulton Street, and 218, 212, 210, 208, and 206 Water Street (Perris 1852). None of the buildings on the block were depicted as having basements on any historic maps or atlases. Water lines were available to these residents by 1842, while sewer lines were installed in Pearl Street in 1846 (Endicott 1842; Board of Alderman 1857:126).

Most of the lots within the APE were assessed for taxes in 1808, and changed ownership frequently (see Tax and Directory Table above). The only lot that was apparently owner-occupied was at 282 Pearl Street. The Dolans owned this lot from at least 1834 through 1874, and ran their importing business there in 1851 (Ibid.). Almost all of the structures were occupied by commercial ventures in 1851, and many served as both a residence and workplace. The businesses on the block ranged from merchants, importers, and tinsmiths.

A 1937 utility map indicates that on Pearl Street from Beekman Street to Fulton Street there are telephone ducts, two sets of electrical ducts, 8" and 10" gas lines, a 12" sewer, 16" and 12" water mains, and a 16" high pressure water main. South of Beekman Street and north of Peck Slip there is also a 4" by 2'8" circular sewer at the center of the roadbed. Additional buried utilities cross Pearl Street at the intersections (Beekman Street, Fulton Street), creating a concentration of utilities and utility disturbance in this part of the APE (WPA 1937).

In 1937, the subsurface utilities were tightly clustered in an area about 20' wide in what was then the roadbed (WPA 1937). Therefore, any historic period resources present on Block 95 would have been potentially undisturbed. A soil boring log from a boring taken in the center of what was formerly Block 95 indicates there is 18.5' of fill below grade. Therefore, there is the potential for 17th through 20th century resources to exist within the APE both in, and potentially below, the 18.5' of fill. Since the depth of the water table is unknown, the depth of potential shaft features cannot be estimated.

Fulton Street from Pearl Street to Water Street

Cartographic History

Castello 1660:	The APE is north of the northern boundary of this map.
Miller 1696:	The APE is not on this map.
Lyne 1730:	Beekman Slip runs from Pearl Street west where Fulton Street will be laid out.
Buchnerd 1735:	Beckman's Slip is still present where Fulton Street will eventually be.
Carwitham 1740:	The APE is unchanged from the Buchnerd 1735.
Grim 1744/1813:	The western end of Beckman's Slip appears squared off just east of Pearl (then Queen) Street.
Maerschalck 1755:	The APE is unchanged from 1744.
Montresor1766:	Beckman's Slip now terminates on the east side of Water Street, indicating that it was filled between Water and Pearl Streets sometime between 1755 and 1766.
Ratzer 1766/67:	The Ratzer map depicts virtually the same conditions as the Montresor map.
Holland 1776:	Beckman's Slip appears filled as far west as Front Street.
McComb 1789:	The APE is unchanged from the Holland 1776.
Taylor Roberts 1797:	The APE appears virtually unchanged from the 1789 McComb map, but by this time Queen Street had been renamed Pearl Street.
Bridges 1803:	The APE appears unchanged from 1776.
Commissioners' 1811:	The APE is unchanged from 1776.
Hooker 1824:	The APE is unchanged from 1776.
Colton 1836:	Beckman's Slip has been renamed Fulton Street.
Endicott 1842:	Water lines are shown running on Fulton Street.
Perris 1849/50:	The APE is unchanged from the Colton 1836.
Dripps 1852:	The APE is unchanged from the Colton 1836.
Perris 1852:	The APE is unchanged from the Colton 1836.
Perris 1857:	The APE is unchanged from the Colton 1836.
Dripps 1867:	By this time a rail line is shown running down Fulton Street.
Lloyds 1867:	The APE is unchanged from the Dripps 1867.
Viele 1874:	This map shows that the APE was originally on the edge of fast land located to the north and west, with the East River on the east.
Bromley 1879:	The APE is unchanged from the Dripps 1867.
Robinson 1885:	The APE is unchanged from the Dripps 1867.
Robinson 1893:	The APE is unchanged from the Dripps 1867.
Hyde 1913:	The APE is unchanged from the Dripps 1867.
Bromley 1916:	The tracks had been removed from the streetbed, and Fulton Street is indicated as 48' wide within the APE.
Bromley 1925:	The APE is unchanged from the Bromley 1916.
Bromley 1932:	The APE is unchanged from the Bromley 1916.

Bromley 1934:	The "Subway to Brooklyn," built between 1932 and 1934, is depicted under Fulton Street within the APE.
Bromley 1967:	Sometime between 1934 and 1967 Pearl Street was widened, however the Fulton Street roadbed within the APE remained unchanged. To the east of the APE it was also widened.
Bromley 1974:	The APE is unchanged from the 1967 Bromley.
Sanborn 1984:	The APE is unchanged from the 1967 Bromley.
Sanborn 1991:	The APE is unchanged from the 1967 Bromley.
Sanborn 2001:	The APE is unchanged from the 1967 Bromley

Street Elevations of the APE are as follows:

Data Source	Fulton at Pearl Street	Fulton at Water Street
1885 Robinson	8'	5.3'
1934 Bromley	8'	5.4'

Precontact Sensitivity

Most of this APE was land under water at the time of European Contact. The section of Fulton Street that was exposed for habitation is considered potentially sensitive for precontact cultural resources. In addition, there may have been sections of Fulton Street that were beneath the East River at the time of European Contact which were exposed and habitable during the precontact period. These areas are now buried beneath layers of historical fill, introduced in the 18th century to allow for the creation of Fulton Street where Beekman's Slip once lay.

Early maps suggest that the western section of Fulton Street near Pearl Street was fast land at the time of European Contact, while the remaining area to the east rests on fill. Therefore, the western section of the APE may be sensitive for precontact resources deposited along the East River shoreline. East of this, the APE may have been elevated land at some point during the precontact period, and then subsequently inundated. Since researchers argue that these drowned shorelines are potentially sensitive for early precontact resources that may have been deposited prior to being inundated by the East River, this section of the APE may be sensitive for precontact resources.

Despite potential precontact sensitivity, the documentary research suggests that if resources were once located here, they may have been affected. Because Fulton Street was the site of Beckman's Slip (Figures 6.1-1, 6.1-2, 6.1-3), it may have been disturbed by its 18th and 19th century use. Dredging was undertaken at slips in the 18th century, which was necessary to keep passage open. According to one report,

> *In 1857, the scope of dredging technique was discussed and it was observed that the "deposits in the slips are removed to the channels of the North and East Rivers..."* (Grossman 1984:14)

It is highly probable that Beekman's Slip was dredged periodically in order to keep it free from encumbrances prior to it being filled ca. 1755 to 1766 (Maerschalck 1855; Ratzer 1766/67, Figure 6.1-3). It may be that potentially sensitive precontact strata that were first inundated, and then dredged, have been compromised. Therefore, while the western section of this APE at Pearl Street is potentially sensitive for precontact period resources, the eastern section of the APE no longer retains subsurface integrity.

Historical Sensitivity

Most of this APE was created by landfilling, except for the intersection of Pearl and Fulton Street that is depicted on historic maps as upland (Viele 1874). Filling between Pearl Street and Water Street appeared to have been undertaken between 1755 and 1766 (Maerschalck 1755; Montresor 1766, Ratzer 1766/67, Figure 6.1-3), and east of Water Street was filled between 1767 and 1776 (Ratzer 1767, Figure 6.1-3; Holland 1776).

Pearl Street ran along the East River shore of Manhattan as it existed when the first European settlers and explorers arrived on the island. It was officially opened in 1707 (NYCLPC 1982; WPA 1937). The original Pearl Street is estimated to have been approximately 30' wide. That corresponds to the westernmost 30' of the Fulton Street and Pearl Street intersection. The remaining Fulton Street roadbed to the east lies on made land created by the deposition of fill in the East River.

By 1730 fill had been added south of Pearl Street, creating Beckman's Slip, in the path of future Fulton Street. At that time buildings had already been erected along the north side of the slip (Lyne 1730, Figure 6.1-1; Carwitham 1740, Figure 6.1-2; See Block 95 discussion above). By 1757, Water Street had been laid out as far as the south shore of the slip, and buildings stood on all sides of the slip west of Water Street (Holland 1757). The 1767 Ratzer map shows a clear picture of Beckman's Slip. The narrowest part of the slip, a small finger of water, extends westward into the APE. Except for the water side, the adjacent blocks are all shaded to indicate that the lots contain structures (Ratzer 1767, Figure 7.1-3). Between 1767 and 1776, the filling of this section of Fulton Street was completed. The "small finger of water" mentioned in the previous paragraph, was shaded in 1776 to indicate that it contained structures (Ratzer 1767Figure 6.1-3; Holland 1776). By 1797 it had been cleared and made part of Water Street (Taylor-Roberts 1797).

Although the Fulton Market was located on Fulton Street from 1816 on, its location between Fulton, Front, South, and Beekman Streets places it east of the APE (NYCLPC 1982:97).

There is the potential for sunken ships to exist in the fill beneath Fulton Street where Beekman's Slip once existed. According to the Minutes of the Common Council, in 1784 a petition was made to remove an old hulk from Beekman's Slip. However, there was no confirmation as to whether or not the order was followed. Sometimes the task of removing sunken ships was cost prohibitive, so they were left where they sank (Kirkorian and Tidlow 1984:21). However, references to the periodic dredging of slips indicates

that while the slip was active it was kept clear. Any potential sunken ships would probably have been deposited as part of the fill.

A comparison of historical maps indicates that from before 1857 to post-1922, Fulton Street was approximately 45' wide in this APE (Perris 1857; Robinson 1884; Sanborn 1922). When another part of Fulton Street (then called Partition Street) was laid out on the west side of Manhattan in 1785, its width was set at 40' (Stokes 1926 V:1202). For the sake of this discussion, 40' will be used as the former width of Fulton, although it may have been as narrow as 30', as was Water Street, when it was originally planned (Stokes 1922 IV:491).

Currently, as described above, the APE section of Fulton Street lies between Pearl and Water Streets. It runs approximately 100' from north to south. The intersection was created by the post-1937 widening of Pearl Street from its original ca.30'. In this widening the block at the northeastern corner of Fulton and Pearl Streets (now the eastern half of Block 95) was truncated, and some of these old building lots are presently part of Pearl Street (see discussion for *Pearl Street, Beekman Street to Fulton Street* APE).

To the south, the Fulton Street APE is currently approximately 60' wide. The northern 40' of this intersection corresponds to a filled-in section of Beckman's Slip, part of which is depicted with structures in 1776, that was incorporated into Water Street by 1797 (Holland 1776; Taylor-Roberts 1797).

At present there are a number of utility lines running beneath Fulton Street that would have adversely affected potential buried historical period archaeological resources. Excavations for the installation of these utilities would most probably have extended from one to two feet beyond the diameter of the utility pipe or conduit, both horizontally and vertically. Utility plans and profiles indicate that beneath Pearl Street these lines run to depths of approximately three, to as much as 15' below the current grade.

Utilities running along Fulton Street include: a 12" water pipe and a 12" High Pressure water main; a 4'0" by 4'0" sewer line; a 12" gas pipe; and telephone and electrical ducts. From Water Street, utilities turn eastward on Fulton, and leave the APE to go northward on Water Street. These include a 24" gas line, a 12" water main, four electrical ducts that crisscross the area, and a 12" gas main that links up with the line going west on Fulton Street. Utility lines entering Fulton Street from Pearl Street include a 4'0" circular sewer, 12" and 16" water lines, a 16" High Pressure water main, 8" and 10" gas lines, one telephone line and two electric ducts (WPA 1937).

Although there are a vast number of utility lines in this area, they tend to be tightly clustered in an approximately 20-foot-wide band in what were the original roadbeds of Water and Fulton Streets. In no locations do the utility lines appear to extend beneath the old c.1937 sidewalks. Moreover, as discussed earlier, following the creation of the WPA utility maps and profiles, Pearl Street was widened on its eastern side, bringing the old sidewalks and former building lots of Block 95 into the APE (Sanborn 1997).

Another potential disturbance to this APE was the construction of the IND subway tunnel beneath Fulton Street, completed in 1933 (Hall 1945:8). However, this tunnel, actually a pair of tunnels, round in cross section, was not constructed by the cut and cover method, but instead was built by deep tunnel boring which would not have affected the archaeological resources in this section of the APE. Furthermore, the intersection elevations along Fulton Street have changed by no more than an inch since 1885 (see elevation table above). The elevation at Pearl Street is now 5.4' where it was formerly 5.3'. At Water Street the elevation is still 8' (Sanborn 1997; Robinson 1885).

A soil boring taken at the intersection of Fulton Street and Water Street shows fill from the surface down to about 19' below grade (Boring MI-17, Raymond International Inc. 1970s). Below the fill was a ten-foot deep layer of brown sand, and below this was brown sand and silt to a depth of 55' below grade (Ibid.). Levels of sand and clayey silt extended down to 63' below grade, and bedrock was not encountered.

Although there are a large number of buried utilities beneath the Fulton Street roadbed, they tend to be clustered in a 20-foot-wide band under the old streetbeds, leaving the outer sections of the roadbed and the sidewalks untouched. This section of Fulton Street near the current Pearl Street intersection is potentially sensitive for historical fill that was deposited prior to 1728. Heading east on Fulton Street, filling episodes continued through the 1770s. Therefore, this section of the APE is sensitive cribbing along the edge of Beekman's Slip, for 18th century fill, including potential sunken ships, and for fill retaining structures.

Water Street from Fulton to John Street

What is now Water Street between Fulton and John Streets (previously Burling Slip) was widened to the east across Block 74 in the 1960s, incorporating about 20' of the western side of the block into the APE. The block is bounded by Fulton, Water, John, and Front Streets.

Cartographic History

Castello 1660:	The APE is north of the northern boundary of this map.
Miller 1696:	It appears that Water Street between Fulton and John Streets was partially created by the construction of a wharf.
Lyne 1730:	At this time, Water Street is depicted as directly along the East River waterfront, but what will become Block 74 is land under water. What becomes John Street bordering Block 74 is shown as Lyons Slip, and it extends into what will eventually become Water Street.
Buchnerd 1735:	The APE is unchanged from the Lyne 1730, but Lyons Slip is shown as Burling Slip.

Carwitham 1740:	The APE is unchanged from the Lyne 1730, but the slip is labeled as "Lions Slip." It is still shown extending through Water Street.
Grim 1744/1813:	A small section of the southern half of the block appears to be partially filled and developed within the APE. The slip is still shown at John Street, but it is unlabeled.
Maerschalck 1755:	Block 74 has been filled and created, and the western half shows structures within the APE. Therefore, fill within the block dates to sometime between 1731 and 1755. The slip is still shown extending inland across the route of what will become Water Street, but it is unlabeled.
Ratzer 1766/67:	Block 74 is shown as shaded, indicating some degree of development. The slip is still shown extending through Water Street and is labeled as "Rodmans Slip."
Holland 1776:	Block 74 appears unchanged, but the slip at John Street has been filled, and Water Street has been created across it. Therefore, fill at Water Street and John Street within the APE dates to sometime between 1766 and 1776.
McComb 1789:	The APE is unchanged from the Ratzer 1766/67.
Taylor Roberts 1797:	The APE is unchanged from the Ratzer 1766/67.
Bridges 1803:	The APE is unchanged from the Ratzer 1766/67.
Commissioners' 1811:	The APE is unchanged from the Ratzer 1766/67.
Hooker 1824:	The APE is unchanged from the Ratzer 1766/67.
Colton 1836:	The APE is unchanged from the Ratzer 1766/67.
Endicott 1842:	Water lines are shown *running* on Fulton, Water, John and Front Streets.
Perris 1849/50:	The APE is unchanged from the Ratzer 1766/67.
Dripps 1852:	Block 74 is shown as fully developed with no vacant yards within the APE. There are approximately ten lots that front Water Street within the APE, but only the westernmost 20' of each lot falls within the APE.
Perris 1852:	All of the buildings within the APE are masonry structures. Street addresses within the APE are, from north to south, *199 through 181 Water Street*, odd numbers only.
Perris 1857:	The APE is unchanged from the Perris 1852.
Dripps 1867:	The APE is unchanged from the Perris 1852.
Lloyds 1867:	The APE is unchanged from the Perris 1852.
Viele 1874:	This map shows that the APE, including Water Street, was originally land under water.
Bromley 1879:	The APE is unchanged from the Perris 1852.
Robinson 1885:	The APE is unchanged from the Perris 1852.
Robinson 1893:	The APE is unchanged from the Perris 1852.
Hyde 1913:	The APE is unchanged from the Perris 1852.
Bromley 1916:	All of the structures on Block 74 are four, five, and six story structures with stores. None have basements.
Bromley 1925:	The APE is unchanged from the Bromley 1916.

Bromley 1934: The APE is unchanged from the Bromley 1916.
Bromley 1967: By this time all of the structures on Block 74 within the APE had been removed, and Water Street was widened by 20'.
Bromley 1974: The APE is unchanged from the 1967 Bromley.
Sanborn 1984: The APE is unchanged from the 1967 Bromley.
Sanborn 1991: The APE is unchanged from the 1967 Bromley.
Sanborn 2001: The APE is unchanged from the 1967 Bromley

Street Elevations of the APE are as follows:

Data Source	Water at Fulton Street	Water Street at Burling Slip/John Street
1885 Robinson	5.3'	4.8'
1934 Bromley	5.4'	4.10'
2001 Sanborn	5.4'	4.10'

Tax and Directory Table:

LOCATION	1808	1820	1834	1842	1851 Directory	1858	1869	1876
BLOCK 74								
199 Water Street	R. Charmly	M. Hoffman	L. Carlez + Nephews	N. Jackson	Newtown & Dunn, Engravers *Mark Newtown, Huntington Dunn	E. Roosevelt	E. Roosevelt	Roosevelt
197 Water Street	J. Chatham	L. Whitson	A. Underhill	"O.Paris"	John Mayher & Co, Poughs *John McNally	E. Roosevelt	E. Roosevelt	Roose
195 Water Street	T. Payne	Owner of Vacant Lot	H. Haydock	"O.Paris"	not listed	Gaganon	J. Ferguson	J. Ferguson
193 Water Street	J. Murray	Owner of Vacant Lot	L. Dunn + Co.	"O.Paris"	J.D. Locke, tine	J. Under-wood	L. Brooks	L. Brooks
191 Water Street	H. Mandville	Owner of Vacant Lot	Owner of "Emp Lot"	Croft	not listed	E. Conklins	Trustees of Conklin	Trustees of Conklin
189 Water Street	P. Bruin	H. Ebbets	Owner of "Emp Lot"	White	Allen & Co agricultural implements *R.L. Allen	"Est. Of Howard"	B. Tweedy	B. Tweedy
187 Water Street	Shatzel	H. Storm	J. Center	Dunn + Co.	G.G. Sheppard, agent	"Est. Of Howard"	B. Hart	B. Hart
185 Water Street	W. Marshall	R. Burr	E. Raymond	A. Center	Center& Sons, merchants *A.H./Anson Center	Howard	B. Hart	B. Hart
183 Water Street	J. Pill	G. Broson	G. Broson	Quillard	W. Underhill, druggist	C. Spencer	C. Spencer	C. Spencer
181 Water Street	J. Wade	J. Shepard	Leaman Maewater + Co.	A. Treadwell	B. Poultney, commer D.W. Belden,hatter	A. Treadwell	A. Treadwell	A. Treadwell

Precontact Sensitivity

This section of Water Street was land under water at the time of European Contact (Viele 1874; Miller 1696; Department of Docks 1873). However, precontact potential may exist if this area was drained when water tables were lower during that period. These potentially sensitive strata, if they exist, would be located beneath landfill added in the late 17th through mid-19th centuries (Miller 1696; Lyne 1730, Figure 6.1-1; Maerschalck 1755).

Soil boring MI-16, taken from the east side of Pearl Street, shows 16' of fill below grade, underlaid by a 3.5' deep level of gray silt and peat (Boring MI-16, Raymond International Inc. 1974). The water table was encountered at only 7.5' below grade. Beneath the level of silt and peat were levels of gray-brown silt and fine sand, alternating with reddish brown fine sand with silt and clay. These alternating levels extended to 56' below grade (Ibid.).

The presence of peat in the boring may be indicative of an estuarial environment, and, consequently, potential precontact sensitivity. Therefore, this section of the APE outside of John Street, formerly Lyons Slip which was likely dredged (Lyne 1730, Figure 6.1-1; Carwitham 1740, Figure 6.1-2), is considered potentially sensitive for precontact resources below landfill (about 16' below grade), probably to a depth of about 19.5' below grade. However, if precontact resources do exist below the landfill, they are currently inundated since the water table lies about 7.5' below grade.

Historical Sensitivity

As previously discussed, this section of the APE was land under water at the time of European Contact (Viele 1874; Miller 1696; Department of Docks 1873). Landfill operations had begun to create building lots on the east side of Pearl Street in the 17th century. During the last decade of that century, landowners at different locations along the *eastern* side of Pearl Street were required to "build a wharf" 30' wide behind their properties for use as a public street, that later became Water Street (Stokes 1922: 366, 382, 395-396). This is evidenced by the 1696 Miller map that shows Water Street as a wharf between Fulton and John Streets (Miller 1696). Grants of water lots on the east side of Water Street between Fletcher and John Streets (directly south of this APE) required the grantees to extend Water Street from 30' to 45' at their own expense (Friedlander et al. 1981:4). This was also accomplished in this APE by 1730 when Water Street was depicted as entirely filled (Lyne 1730, Figure 6.1-1).

Where John Street lies, was formerly a slip that extended west to Pearl Street. Prior to 1692 this was Van Clyff's Slip, but it was renamed Lyons Slip by 1730 (Stokes 1918:981). Maps indicate that Lyons Slip (a.k.a. Lions, Burling, Rodmans) Slip was filled sometime between 1755 and 1766/67 (Carwitham 1740, Figure 6.1-2; Maerschalck 1755; Ratzer 1766/67, Figure 6.1-3), and Stokes refines this date to 1761 (Stokes 1918:981).

Currently, Water Street is approximately 70' wide from Fulton to John Street. In 1817 Water Street was widened from Burling Slip to Fulton Slip (South Street Seaport Index Cards: Water Street 3). It may be that structures present on Block 74 at that time were moved, or removed, from Water Street within the APE. The additional street widening undertaken in the late 1960s, facilitated by a general replacement of earlier structures, took its additional land from lots on the eastern or shore side of Water Street (Kearns et al 2000:19). Ten historic lots that formerly fronted the east side of Water Street on Block 74 were truncated, and 20' of the west end of each lot was incorporated into the roadbed (Bromley 1934, 1967).

Development on Block 74 postdated its being filled between approximately 1744 and 1755 (Grim 1744; Maerschalck 1755). By 1766 the block was shaded, indicating it had been developed (Ratzer 1766/67, Figure 6.1-3). In 1852, ten lots fell within the APE, and these were located at 199 through 181 Water Street (odd only). All of the lots were covered by masonry structures by this date, and none had vacant yards or alleys within the APE (Dripps 1852, Figure 6.1-4c; Perris 1852; Dripps 1867, Figure 6.1-5d). These lots remained virtually unchanged over the next 110 years, until they were razed in the 1960s to allow for the widening of Water Street. While water lines were installed in Water Street by 1842, sewers were not available here until 1852 (Endicott 1842; Board of Alderman 1857:129).

The tax assessments for the lots in the APE indicate that three, located at 191, 193, and 195 Water Street may have been vacant in 1820 (see Tax and Directory Table above), despite the fact that in 1808 they were all assessed. It could be that in 1808 taxes were paid on vacant land. Throughout 19th century, the lots changed hands frequently, and in 1851 they were predominantly occupied by commercial ventures. In many cases, the operators of businesses on the block were also residents.

A soil boring taken from the east side of Water Street reported brick, wood, gray sand and miscellaneous fill to 16' below grade, with the water table reported at 7.6' below grade (Boring MI-16, Raymond International Inc. 1974). Beneath the fill is a level of dense gray silt with peat extending to 19.5' below grade, and below this are levels of gray brown silt and fine sand, underlain by reddish brown fine sand, silt and clay (Ibid.). The boring was taken from the section of Water Street that traverses what was formerly Block 74. Therefore, the 16' of fill probably represents both the original filling of the block, together with historic deposits from the 18th through 20th century occupation.

The presence of natural peat beneath the fill suggests that 16' is a rough estimate of the maximum depth for anticipated fill, but if shaft features were present on any of these lots within the APE, they have the potential to be deeper. If wells were sunk on this block after it was filled, they may have needed to be sunk far below the depth of the water table to reach potable water, because of the proximity of the East River. This could have been accomplished by sealing the sides of the wells to prohibit ground water permeation.

All of Water Street is potentially sensitive for the pre-1730 wharf that allowed for its creation, and for fill and/or fill retaining devices dating from the early to mid-18th century. Lyon Slip at John Street was filled by 1761, so this area is also sensitive for fill and/or fill retaining devices, as well as cribbing along the edges of the slip. The former locations of the lots on Block 74 (the eastern 20' of Water Street) are also sensitive for fill and/or fill retaining devices, as well as evidence of 18th through 20th century occupation. Given the depth of fill reported here, the depth of potential historic resources in this section of the APE is estimated to be at least 16' below grade and possibly deeper.

Water Street from John Street to Maiden Lane

What is now Water Street between John Street and Maiden Lane was widened on its eastern side across Block 71 in the 1960s, incorporating about 50' of the western side of the block into the APE. The block is bounded by Maiden Lane, and Water, John, and Front Streets.

Cartographic History

Castello 1660: The APE is north of the northern boundary of this map.

Miller 1696: It appears that Water Street between John Street and a slip at Maiden Lane has been created as a wharf.

Lyne 1730: At this time, Water Street is depicted directly along the East River waterfront, and what will become Block 71 is land under water. It appears that where Maiden Lane will be, an unnamed slip extends inland to Pearl (then Queen) Street. There is also a slip at John Street, but this was discussed in the previous section.

Buchnerd 1735: The slip at Maiden Lane is labeled "Fly Market Slip," and it is still shown crossing Water Street within the APE. Block 71 is depicted as land under water.

Carwitham 1740: The APE is unchanged from the Lyne 1730, but the slip is labeled as "Ferry Stairs, Fly Market." It is still shown extending through Water Street.

Grim 1744/1813: The eastern edge of Block 71 appears filled and partially developed within the APE. The Fly Market slip is still present, but not labeled.

Maerschalck 1755: Block 71 has been filled and created, and the western half shows structures within the APE along Water Street. Therefore, fill within the block dates to sometime between 1744 and 1755. The slip at Maiden Lane is still shown extending inland, but it does not go as far west as what was then Water Street. However, it may have extended far enough west to fall within what is the present day Water Street roadbed, within the APE. Therefore, fill beneath the western 40' of Water Street at Maiden Lane probably dates between 1744 and 1755.

Montresor 1766: Block 71 appears shaded, and the slip appears to extend from the river west to the eastern side of what was then Water Street.

Ratzer 1766/67: Block 71 is shown as shaded, indicating some degree of development. On this map, the slip on Maiden Lane appears to extend only half way between Front and Water Streets. A small alley bisects Block 71, that eventually becomes Fletcher Street.

Holland 1776: The APE appears unchanged from Montresor 1766.

McComb 1789: The alley bisecting Block 71 is identified on this map as Fletcher Street. Both halves of Block 71 are shaded, suggesting some development, and all of Maiden Lane has been filled between Front and Water Streets. Therefore, the eastern 50' of Water Street at Maiden Lane was probably filled sometime between 1766 and 1789. The Fly Market had been built over the former location of the slip, its western end extending into the APE.

Taylor Roberts 1797: The APE is unchanged from the McComb 1789.

Bridges 1803: The APE is unchanged from the McComb 1789.

Hill 1804: The APE is unchanged from the McComb 1789.

Commissioners' 1811: The APE is unchanged from the McComb 1789.

Hooker 1824: The APE is unchanged from the McComb 1789.

Colton 1836: The APE is unchanged from the McComb 1789.

Endicott 1842: Water lines are shown running on Maiden Lane, Water, John, Fletcher, and Front Streets.

Perris 1849/50: The APE is unchanged from the McComb 1789.

Dripps 1852: Block 71 is shown bisected by Fletcher Street. The northern half of the block has about 10 lots that fall within the APE, and the southern half has five lots. All of the lots within the APE are fully developed with structures, but only the westernmost 50' of each lot falls within the APE. The Fly Market is not shown on Maiden Lane.

Perris 1852: The ten lots north of Fletcher Street within the APE are almost entirely covered by masonry structures, and are numbered *179 to 161 Water Street* (odd only) from north to south. There appears to be one small undeveloped alley at the northeastern end of the lot at 163 Water Street, surrounded by masonry structures on all sides.
The five lots on the block south of Fletcher Street are numbered *159 through 155 Water Street (odd only)*, from north to south, and *133 and 135 Maiden Lane*. Each of these is entirely covered by a masonry structure within the APE.

Perris 1857: The APE is unchanged from the Dripps 1852, but all of the structures are shown as masonry buildings. The formerly vacant yard at *163 Water Street* has been covered by a masonry extension from the building on the lot.

Dripps 1867: While the APE is unchanged from the Perris 1857, a horse or cable car line had been established on Maiden Lane.

Viele 1874: This map shows that the APE, including Water Street, was originally land under water. A fresh water stream runs down the route of Maiden Lane, west of the APE.

Bromley 1879: The APE is unchanged from the Dripps 1867.

Robinson 1885: The APE is unchanged from the Dripps 1867, except all of the structures are shown as brick.

Robinson 1893: The APE is unchanged from the Robinson 1885.

Hyde 1913: The APE is unchanged from the Robinson 1885. At John Street, Water Street is 42' wide.

Bromley 1916: All of the structures on Block 71 are depicted as three, four, and five story buildings with stores. None have basements. Water Street is still shown as 42' wide, and Maiden Lane is 60' wide.

Bromley 1925: The APE is unchanged from the Bromley 1916.

Bromley 1934: The APE is unchanged from the Bromley 1916.

Bromley 1974: By this time Water Street had been widened by about 48' on its eastern side, and the buildings on Block 71 on the lots within the APE were razed.

Sanborn 2001: Water Street is currently shown as 90' wide between John Street and Maiden Lane, that is 48' wider than its 1916 width.

Street Elevations of the APE are as follows:

Data Source	Water at John Street	Water at Fletcher Street	Water at Maiden Lane
1885 Robinson	4.8'	5.3'	4.5'
1934 Bromley	4.10'	5.3'	6'
2001 Sanborn	4.10'	5.3'	6'

Tax and Directory Table:

LOCATION	1808	1820	1834	1842	1851 Directory	1858	1869	1876
BLOCK 71								
179 Water Street	Jiedt	INC	H. Thomas	INC	G.W. Blunt, inst. Makers H.R. Kimberly, watches	E. Onderdonk	E. Onderdonk	Est of E. Oderdonk
177 Water Street	Jiedt	W. Van Landt	"Pollan of Colgate "	Colgate	J.M Oppenheim, impts	Zanitt	Penfold	Penfield
175 Water Street	Nathan	C. Wollen	Owner of Colgate	INC	Hickok&Starr, caps *H.F. Hickok/M.W. StarrA.M. White, hatters goods	White	W. White	White
173 Water Street	"Garret...and Sons"	J. Burling	P. Fullerton	INC	King & Samuels, furrier * B. King/S. Samuels	White	W. White	W. White
171 Water Street	Whitt-more	J. Williams	T. Hills	INC	A.T Finn, furriers Reboul&Whitt more, furs *J.C. Reboul/A.O. Whittmore	W. Burling	R. Taylor	R. Taylor
169 Water Street	Hardill	A. Colwell	H. Hughes	INC	Thompson&Co , caps *J. Thompson/R. White	E. White	E. White	E. White
167 Water Street	T. Hutter	W. Post	E. Woolen	INC	W.J. Crouch, packing cases	E. White	E. White	E. White
165 Water Street	Isaac	R. Yeo	R. Yeo	H. Ruggels	Winchelhausen Rechnagel & Schwab, com. mers Solis Bros., fur G. Rechnagel G. Schwab	H. Ruggels	R. Greene	R. Greene

163 Water Street	Bostwick	J. West	R. Smith	INC	P.H. Tuske, capmaker	Est of Post	Est of G. Post	Est of G. Post
161 Water Street	W. Quin	E. West	L. Known + Co.	INC	Mawson Brothers, fur Lewis/G.S./E.S Mawson	Est of Post	Est of W. Post	Est of W. Post
159 Water Street	J.Dolano	J. Dolano	S. Robinso n	INC	N.B. Taylor, trimmings Freeman Dodd, skins	P. Lorillard	Trustees of Lorillard	Trustees of Lorillard
157 Water Street	Hunt/Gills	J. Cunning ham	D. Holden	INC	King & Co., furriers *M.J. King/Charles Zeller	J. Wolfe	Trustees of J. Wolfe	J. Wolfe
155 Water Street	Ilug	C. Cormick	J. Harris	INC	Simpson & Birch, silk Samuel Phillips, furrier George Shaw, gilder John Walker, hatter	N. House	N. House	N. House
137 Maiden Lane	Adamson			INC			Est of D. Smith	E. of D. Smith
135 Maiden Lane	Joyson			INC				

Note: INC indicates a name that was illegible.

Precontact Sensitivity

The precontact potential for this block is similar to Block 74 to the north. This section of Water Street was land under water at the time of European Contact (Viele 1874; Miller 1696; Department of Docks 1873). However, precontact potential may exist if this area was drained when the water table was lower at times during the precontact period. Potential sensitivity is further suggested because of this APE's proximity to the fresh water stream at Maiden Lane (Viele 1874). These potentially sensitive strata, if they exist, would be located beneath landfill brought in during the late17th through mid-19th centuries (Miller 1696; Lyne 1730, Figure 6.1-1; Maerschalck 1755).

Eight soil boring logs, taken on either side of Water Street between John Street and Maiden Lane, were available for review. On the west side of Water Street, fill varies in depth from ten feet below grade near John Street, to 14' below grade at Maiden Lane. From north to south fill was at ten feet, 15.5', 14', 17', and 14' in depth (Borings C2-20, MI-15, C2-17, C2-16 and C2-13 Raymond International Inc. 1944). The depth of the water table fluctuated from north to south, from 6.5', 7.5', 16', 7', to 7' below grade (Ibid.). At least one of the borings from the west side of Water Street reported organic silt below the fill, from ten feet to a depth of 19' below grade (Boring C2-20). This organic silt layer could either represent river bottom or, potentially, a precontact living surface.

Borings taken on the east side of Water Street show fill ranging from ten feet to 14' in depth from north to south (Borings C2-19, C2-15, MI-14, Raymond International Inc. 1974), with one boring at Fletcher Street reporting two feet of wood underlying the fill (Boring C2-15). Furthermore, the boring taken nearest John Street, the former location of Lyons/Burling Slip, showed organic silt from the bottom of the fill at ten feet down to 22' below grade (Boring C2-19). Again, this organic silt could either represent river bottom or precontact levels, and, as such, is considered potentially sensitive for precontact resources. Therefore, the western side of Water Street is considered potentially sensitive for precontact resources below landfill that extends between ten and 17' below grade. However, if precontact resources do exist below the landfill, they are currently inundated since the water table lies about 7' below grade.

On the eastern side of Water Street, fill ranges from ten to 14' below grade, with the water table ranging from five to ten feet below grade. Therefore, if the precontact living surface lies buried beneath the fill, it would be located between ten to 14' below grade and would be inundated since the water table lies between five and ten feet below grade.

Historical Sensitivity

The Dongan charter of 1686 permitted filling to the low water mark, and after this, city ordinances regulated the granting and filling of water lots (Buttenwieser 1987:26). The Montgomery Charter of 1731 extended the landfill 400' past the low water mark, that required the creation of a bulkhead or dock and back filling. Boats and other items were used for fill. In their 1981 study of the 175 Water Street Block (bounded by Burling Slip, and Water, Front, and Fletcher Streets within the APE), Soil Systems, Inc.'s (1981), research demonstrated that this block was filled between 1730 and 1766-67. Eighteenth century grants of water lots on the east side of Water Street between Fletcher and John Streets required the grantees to extend Water Street from 30' to 45' at their own expense (Friedlander et al. 1981:4). Land west of 175 Water Street (in the APE) was filled between 1660 and 1730.

The archaeological study of this block found that the process of land filling was complex and on-going, and that numerous primary and secondary fill episodes support this. Primary fill was noted as "trash and harbor-related accumulation" (Soil Systems Inc. 1983:706). Its matrix was composed of black to gray silt and sands, replete with cultural material. The presence of a late 17th to early 18th century merchant ship, and wharf/grillage provided evidence of retaining devices employed to create the block (Ibid.:685, 702). Secondary filling in a subsequently-built cofferdam box, dated to ca.1790-1820, was believed to have been employed to eliminate stagnant water (Ibid.:693).

The cartographic study of this block shows that what became the Fly Market Slip was established at what is now Maiden Lane by 1696 (Miller 1696), with Stokes identifying it as the "Maiden Slip" prior to 1692 (Stokes 1918:989). It was later called the "Countess Key Slip," and by 1730 had become the "Fly Market Slip" (Lyne 1730, Figure 6.1-1). It was enlarged in 1737 (Stokes 1918:989; Carwitham 1740, Figure 6.1-2). Maps and atlases indicate that the part of the slip at Water Street was filled by 1755 (Maerschalck 1755), and that the eastern 50' of Water Street at Maiden Lane was probably filled

sometime between 1766 and 1789 (Holland 1766; McComb 1789). After the slip was filled, the Fly Market that was originally near Maiden Lane at Pearl Street, was extended east into the APE. The Market, that was reportedly in operation between 1706 and 1821 near Maiden Lane at Pearl Street, was described as a series of three buildings constructed of brick and wood by 1730 (NYCLPC 1982:97, 99). Meat and fish were primarily sold there (Ibid.).

Shortly after Block 71 was filled, it was at least partially developed (Ratzer 1766/67, Figure 6.1-3). In 1817 Water Street was widened from Burling Slip to Fulton Slip, and structures present on Block 71 at that time may have been moved or removed from Water Street within the APE (South Street Seaport Index Cards: Water Street 3). By 1852, the first map to show details of development, Fletcher Street had bisected the block east of Water Street, and lots on either side of it were almost entirely covered by structures (Dripps 1852, Figure 6.1-4c). In the APE, buildings stood at 179 through 161 Water Street (odd only) north of Fletcher Street, and 159 through 155 Water Street (odd only) south of Fletcher Street (Perris 1852). In 1852, all of the lots within the APE were covered with masonry structures, except for a small undeveloped alley at 163 Water Street (Ibid.). Sewers were installed on Water Street between Burling Slip and Fletcher Street in 1847 (Board of Alderman 1857:129).

Tax assessment records show that most of these lots were being taxed as early as 1808, and that ownership changed frequently (see Tax and Directory Table above). Several lots were owned by one person suggesting they served as investment properties in the 19th century, rather than private homes. By 1851 the buildings housed a variety of occupants, many in the garment and fur trade.

The buildings in the APE on Block 71 were unchanged through the remainder of the 19th century (Dripps 1867, Figure 6.1-5d; Robinson 1885; Bromley 1897). These three, four, and five story buildings with stores (none with basements) stood through the 1960s when they were razed to allow for the widening of Water Street by 50' on its eastern side. The eastern 50' of Water Street, therefore, is sensitive for 18th through 20th century occupation. Most of the buildings that stood on Block 71 were mixed use, as was most of the neighborhood. Residential and commercial occupations were intermingled in this area.

Soil borings from the west side of Water Street showed fill from ten feet below grade near John Street, to 14' below grade at Maiden Lane. From north to south fill was at ten feet, 15.5', 14', 17', and 14' (Borings C2-20, MI-15, C2-17, C2-16 and C2-13 Raymond International Inc. 1944). The water table fluctuated in depth, from north to south, lying at 6.5', 7.5', 16', 7', and 7' below grade (Ibid.). Organic silt was reported in at least two borings extending to about 22' below grade (Ibid.). This layer could represent the historic period river bottom or a potential precontact living surface (see *Precontact Sensitivity* above).

On Water Street between Fulton and John Streets, utilities include a 3'7¼ " by 2'4¾" sewer main, 24", 4" and 12" gas lines, two sets of electrical ducts, telephone cables, and a 12" water pipe. From block to block, different lines begin and extend into the roadbed from cross streets. The above mentioned sewer line joins a larger main at John Street, and from John to Fletcher Street, there is a different, 4'0" sewer line. This line leaves the

APE on Fletcher Street, and the next sewer does not appear until south of Maiden Lane. Additional lines cross Water Street at each intersection (WPA 1937). A later utility map shows a 4' by 4' sewer line from 1961 running the length of the Water Street APE (Office Record Plan of Sewers 1958). A 12" High Pressure water line runs from Broad Street to Fulton Street, as does a 20" water main. This latter main appears to be in the current eastern side of Water Street (High Pressure Fire System Map; Water Distribution Map).

Except for the 20" main, these utilities tend to be clustered in a 25-foot in what was the old street bed before Water Street was widened by approximately 30 to 50' in the 1960s. That activity brought the old sidewalks and former building lots on the eastern side of Water Street into the APE (Sanborn 1997). Because detailed maps of utility placement were only available from Fulton Street to south of Maiden Lane, the presence of areas of little or no utility disturbance within the old Water Street roadbed south of Maiden Lane could not be determined.

Borings taken on the east side of Water Street show fill ranging from ten feet to 14' in depth from north to south (Borings C2-19, C2-15, MI-14, Raymond International Inc. 1974), with one boring at Fletcher Street reporting two feet of wood underlying the fill (Boring C2-15). These boring logs clearly indicate that this section of the APE is potentially sensitive for historic period resources. At Maiden Lane, the APE is sensitive for fill, cribbing, and fill retaining devices. All of Water Street is sensitive for the ca.1730s wharf, fill (including potential sunken ships such as the one previously found at Block 71), and fill retaining devices, as well as foundations from the Fly Market. And finally, the eastern 50' of Water Street is also sensitive for 18th through 20th century structures and any associated features that once stood on Block 71 and may have utilized shaft features prior to the introduction of sewers in 1847. The depth of historic resources are anticipated to extend at least 17' below grade, the maximum depth of reported fill, and possibly deeper. Organic silt deposits below fill may represent the early historic river bottom and, therefore, are also considered sensitive for potential discard along the waterfront. Therefore, this APE is sensitive for historic period resources to at least 22' below grade, and possibly deeper.

Water Street from Maiden Lane to Wall Street

What is now Water Street between Maiden Lane and Wall Street was widened on its eastern side across Block 38 in the 1960s, incorporating about 50' of the western side of the block into the APE. The block is divided by Depeyster and Pine Streets.

Cartographic History

Castello 1660:	The APE is depicted as land under water.
Miller 1696:	It appears that Water Street between Maiden Lane and Wall Street had been created as a wharf.
Lyne 1730:	At this time, Water Street is depicted as present, and Block 38 has been created. Only Pine Street bisects the block, as Depeyster Street is not present. To the north of Pine Street the block is shaded, suggesting some development, but to the south several individual structures are shown fronting Water and Wall Streets

within the APE. A slip is shown at Wall Street crossing Water Street and extending as far west as Pearl Street.

Buchnerd 1735: The Buchnerd map fails to show any development east of Water Street, but it does show the slip at Wall Street crossing Water Street.

Carwitham 1740: On Block 38, development is depicted south of Pine Street within the APE on Water and Wall Streets. The "Meal Market Slip" is shown crossing Water Street at Wall Street.

Grim 1744/1813: Block 38 is shown as partially developed both north and south of Pine Street within the APE. The slip at Wall Street does not appear to extend across Water Street, indicating that the fill at Water Street and Wall Street approximately dates to sometime between 1740 and 1744.

Maerschalck 1755: Block 38 is depicted as developed within the APE, and Depeyster Street has been created further dividing the block.

Montresor 1766: The APE is unchanged from the Maerschalck 1755.

Ratzer 1766/67: The APE is unchanged from the Maerschalck 1755.

McComb 1789: Although Block 38 is shown as developed, less detail is provided and the block appears to be bisected by Pine Street only.

Taylor Roberts 1797: Block 38 appears to be developed, and both Pine and Depeyster Streets are shown dividing it.

Bridges 1803: The APE is unchanged from the Taylor Roberts 1797.

Hill 1804: The APE is unchanged from the Taylor Roberts 1797.

Commissioners' 1811: The APE is unchanged from the Taylor Roberts 1797.

Hooker 1824: The APE is unchanged from the Taylor Roberts 1797.

Colton 1836: The APE is unchanged from the Taylor Roberts 1797.

Endicott 1842: Water lines are shown running on Maiden Lane and Wall, Pine, Depeyster, Water and Front Streets.

Perris 1849/50: The APE is unchanged from the Taylor Roberts 1797, but Wall Street is labeled as the "Coffee House Slip" even though the slip itself no longer exists within the APE.

Dripps 1852: On Block 38 within the APE, seven lots are present between Maiden Lane and Depeyster Street, three lots are shown between Depeyster and Pine Streets, and nine are shown between Pine and Wall Streets. All of these are completely covered with structures within the APE.

Perris 1852: Between Maiden Lane and Depeyster Street, Block 38 contains seven lots, each covered by masonry structures within the APE. From north to south, these are numbered as 134 Maiden Lane, and 153 through 141 Water Street (odd only).

Between Depeyster Street and Pine Street, there are three lots covered by masonry structures located at 139, 137, and 135 Water Street.

Between Pine Street and Wall Street, there are nine lots within the APE that lie at 133 through 119 Water Street (odd only - note 119 Water Street is a.k.a. 90 Wall Street), and 92 through 94 Wall Street (even only). All of these lots have masonry structures covering them except 125 and 123 Water Street where framed structures cover the lots within the APE.

While there are vacant yards at the eastern ends of some of the lots, these appear to fall east of the APE.

Perris 1857: The APE is unchanged from the Perris 1852, but a horse or cable car line had been established on Maiden Lane. At *119 Water Street (a.k.a. 90 Wall Street)* is the "Marine B." that is later listed as the Marine Bank.

Dripps 1867: The APE is unchanged from the Perris 1857.

Viele 1874: This map shows that the APE, including Water Street, was originally land under water.

Bromley 1879: The APE is unchanged from the Perris 1857.

Robinson 1885: All of the lots appear unchanged from 1857 with one exception. At *123 Water Street* where a previous framed building stood, there is now a very narrow alley shown on the south side of the building that may extend through the APE.

Robinson 1893: The APE is unchanged from the Robinson 1885.

Hyde 1913: By this time a large structure had been built across the previously vacant alley at *123 Water Street.* No vacant yards or alleys remained within the APE.

Bromley 1916: On Block 38 between Maiden Lane and Depeyster Street, none of the buildings are listed as having basements.

Between Depeyster and Pine Streets, one large building covers three former lots within the APE, but it does not appear to have a basement.

Between Pine and Wall Streets, there are now four structures. The two narrow structures at the northern end of the block at 129 and 127 Water Street do not have basements, but the two large six and nine story buildings on the southern 2/3rds of the block do have basements. Water Street is shown as 40' wide at Pine Street, and at Wall Street.

Bromley 1925: The APE is unchanged from the Bromley 1916.

Bromley 1934: The APE is unchanged from the Bromley 1916.

Bromley 1955: The APE is unchanged from the Bromley 1916.

Bromley 1974: By this time Water Street had been widened by about 48' on its eastern side, and all of the buildings on the lots on Block 38 within the APE were razed. Depeyster Lane was eliminated, but Pine Street remains.

Sanborn 2001: Water Street is currently shown as 90' wide Maiden Lane and Wall Street, which is 48' wider than its 1916 width.

Street Elevations of the APE are as follows:

Data Source	Water Street at Maiden Lane	Water Street at Wall Street
1885 Robinson	4.5'	6.9'
1934 Bromley	6'	6.11' (1955)
2001 Sanborn	6'	N/A

Tax and Directory Table:

LOCATION	1808	1820	1834	1842	1851 Directory	1858	1869	1876
BLOCK 38								
153 Water Street	Gilbert Haight	G. Haight	J. Haight	L. Earle	J. Carle&Co, druggist *J. Carle John Loines Edward Strong	S. Carl + Nephew	S. Carl + Nephew	S. Carl + Nephew
151 Water Street	C. Long	T. Butler	Isaac Osgood + Co.	R. Hay	Saroni &Archer, caps *C.S. Saroni/W.A Porcer/ Porcher & Brothers, hatters * W.A./J.B. Porcher	S. Carl + Nephew	S. Carl + Nephew	S. Carl + Nephew
149 Water Street	Est of J.Waters	G. Wooldridge	Spofford Tillets on & Co.	Spofford Tilletson & Co.	Gault & Ballard, strnwgoods Importers and manufacturers of furs *George Gault *Loomis Ballard	Stafford/ Tillotson	Emanuel Hoffman	E. Hoffman
147 Water Street	D. Pymer	I. Hewit	Maltby & Starr	J. Nesmith (?) Ow Maltby + Co	Malthy & Starr *O. F. Malthy *Nashan Starr	Stafford/Fileston	T. Nesmith	A. Keogh
145 Water Street	M. Atkinson	Dr. Payor	Porter + Co	Stafford	Manning & Faulkner, caps *A.Manning/J.T.Faulkner S.J. Jacobs, furriers	S. Merrmitts	E. Hoffman	E. Hoffman
143 Water Street	J. Hayes	F. Depwyster	Spear/ Patten	Stafford	Gilbert, Camp&Co., hat merchants *A. Gilbert/S.K. Camp/S. Nichols	Stafford/Fileston	E. Hoffman	E. Hoffman
141 Water Street	John Waskell	Wm. Bryce	S. Osborn	Widow Lefferts S. Osborn	W.W. Holmes, dining rooms	W. Lefferts	E. Hoffman	E. Hoffman
139 Water Street	G. Kerris	missing	M. Harwood	Est. of Lorillard Hering	J.W. Stiles, cards W.P. Robinson, cards C.Frank&Co.,caps T.Levy&Co., caps J.W.Christ,printer Pincus King, cap trimmins	L. Morris	Durke & Base	E.R. Durker + Co.
137 Water Street	W. Adamson	vacant	B. Knapp	Est of Lorillard Barlow & Co.	same as above	W. Bailey	Durke & Base	E.R. Durker + Co.
135 Water Street	Thomas Nixon	T. Nexon	J. Lorillard	Est of Lorillard A.W. Sanger	same as above	T. Ward	Durker	Durker + Co.
133 Water Street	S.Negrin J. Desnouis	D. Sullivan	Sparks/ Morrell	K. Brusko	Robbins, Langdon&Co., oils James Elliot,printer	Est of Sulley	Leonard Appleby	L. Appleby
131 Water Street	D. Sullivan	D. Sulliva	A. Sanger	R. Nose	G.W. Lamson,druggist John Dorlon, hatter	F. Lavarus	J.W. Lasak	J. Lasak

		n						
129 Water Street	Widow Newson	D. Sullivan	Bartlett /Davis	H. Field	S.H. Low, drugs E.E.Porter, broker	H. Field	B.H. Field	H. Field
127 Water Street	A. Kerr	D. Sullivan	T. Morton	H. Field	B.H. Field, com. mer	H. Field	B.H. Field	H. Field
125 Water Street	H. Lewell	L. Wellan d	M. Henry	G. Brown	G.W. Browne, dining rooms	G. Brown	Brown	Brown
123 Water Street	I. Hariland	G. Brown	G. Brown	G. Brown	same as above	G. Harriband	Brown	Brown
121 Water Street	J. Reese	L. Powers	Goddard/Gleason	J. Bridron	A.A. Sampson, tobaccanist Lighton&Co., importers * Henry Lighton/ J.Jacobson	J. Brian	Briar	Briar
119 Water Street (a.k.a. 90 Wall Street)	A. Stewart	INC	INC	INC	L.F. Appleby, tobaccanist	James M.. Brown J. McBrair	J. McBriar	J. McBriar
92 Wall Street	David Butmand	D. Bethune	Allen Paxton	J. Jones Stanton	M.P. O'Hern & Co. com. Mers Turell Brothers, brokers *William Turell *C.J. Turell Eves & Starbuck.com.mers. *E. R . Ives *M. Starbuck Edward Locquet. Com.mer Ernest Charmet, com,mer W. L Graham, ins. Broker W. H. Thomas, importer	?: P. Bailey	?. P. Bailey	?. P. Bailey
94 Wall Street	NA	NA	NA	NA	C. E. Habicht & Co. com.mers *Thorwald Heyerdahl D. M. Jeannerett, com.mer Daniel Pilkington, com.mer W.Hart,com.mer F. W. Marten, broker R. C. Burlage Jr. com. Mer Chant and agent R. H. Greene & Sons brokers *C. Green *J. L. Greene F.W Hart, wines	C?H. Green	C?H. Green	C?H. Green

Note: INC indicates a name that was illegible. NA indicates the information was unavailable.

Precontact Sensitivity

The precontact potential for this block is similar to the potential for Block 71 to the north. This section of Water Street was inundated at the time of European Contact (Viele 1874; Miller 1696; Department of Docks 1873). However, precontact potential may exist if this area was drained when the fluctuating water table was lower during the precontact period. These potentially sensitive strata, if they exist, would be located beneath landfill brought in during the late 17th through mid-19th centuries (Miller 1696; Lyne 1730, Figure 6.1-1; Maerschalck 1755).

Five borings were taken on the west side of Water Street, three between Maiden Lane and Pine Street, and two between Pine Street and Wall Street. Fill, from north to south was reported at 12', 20', 14', 14', and 14' (Borings C2-11, MI-13, C2-8, C2-6 and C2-3 Raymond International Inc. 1944). The water table fluctuated in depth, from north to south, and was encountered at 9.2', 6.9', 12', 10', and 7.4' below grade (Ibid.).

Four soil borings taken on the east side of Water Street show fill, from north to south, extending to 14', 18', 23' and 14.6' below grade (Borings C2-12, C2-9, C2-4, and MI-12, Raymond International Inc. 1974). One boring encountered two feet of sand and wood underlying the fill (Boring MI-12), and another reported organic silt beneath the fill to a depth of 23' below grade (Boring C2-12). The water table was reported at 7', 6', 9', and 9.5' below grade elevation (Ibid.). In all of the borings, the strata of sand with silt and gravel extended down to bedrock.

The presence of organic silt in one of the borings may be indicative of a precontact living surface. Therefore, the western side of Water Street is considered potentially sensitive for precontact resources below landfill (between 12' and 20' below grade), within the organic silt levels that continue down to 23' below grade. However, if precontact resources do exist below the landfill, they are currently inundated since the water table lies between 6.9' and 12' below grade. On the eastern side of Water Street, fill ranges from 14' to 23' below grade, with the water table ranging from six to nine feet below grade. As previously indicated, the location of the slip at Maiden Lane may have been dredged, suggesting that if precontact resources were ever present here, they may have been disturbed. Therefore, if the precontact living surface lies buried beneath the fill, it would be located beneath 14' to 23' of fill, and would be inundated since the water table lies between six and nine feet below grade. The APE, excluding Maiden Lane at Water Street, is potentially sensitive for precontact resources ranging between approximately 14' and 28' below grade.

Historical Sensitivity

This section of the APE was first filled sometime before 1730, when a wharf was built essentially creating Water Street (Lyne 1730, Figure 6.1-1). The Meal Market, or Coffee House Slip ran through what is now Maiden Lane extending west to Pearl Street. The slip was probably named for the Merchant's Coffee House, a tavern, that was built at the northwest corner of Wall and Water Street adjacent to the APE prior to 1738. The Coffee House was abandoned as a tavern in 1772 (Stokes 1918:981). Maps suggest that the slip was filled at Water Street sometime between 1740 and 1744 (Carwitham 1740, Figure 6.1-2; Grim 1744).

Block 38 within the APE was filled and partially developed by 1730 (Lyne 1730, Figure 6.1-1). Subsequent 18th century maps show increased development on the block, until it was depicted as entirely covered by structures in 1852 (Dripps 1852, Figure 6.1-4c). Between Maiden Lane and Depeyster Street there were seven lots within the APE located at 134 Maiden Lane, and 153 through 141 Water Street (odd only). From Depeyster Street to Pine Street there were three structures in the APE at 139, 137, and 135 Water Street, and between Pine and Wall Streets there were nine buildings in the APE at 133 through 119 Water Street (odd only) (Dripps 1867; Figure 6.1-5d). A sewer line was

installed in Water Street between Maiden Lane and Wall Street in 1850 (Board of Alderman 1857:129).

The lots within the APE contained a mix of residential and commercial uses in 1851 (see Tax and Directory Table above). At that time, many of the commercial businesses on the block were related to importing and brokering. Other occupants were druggists, tobacconists, dining establishments, and garment-related businesses. Most of the lots moved through a number of owners in the first half of the 19th century, but after the 1850s many continued under the same ownership for greater periods of time.

Soil borings from the west side of Water Street show fill, from north to south at depths of 12', 20', 14', 14', and 14' below grade elevation (Borings C2-11, MI-13, C2-8, C2-6 and C2-3 Raymond International Inc. 1944). From north to south, the water table was encountered at 9.2', 6.9', 12', 10', and 7.4' below grade (Ibid.). On the east side of Water Street, fill was identified in borings, from north to south, at 14', 18', 23' and 14.6' below grade (Borings C2-12, C2-9, C2-4, and MI-12, Raymond International Inc. 1974). One boring reported two feet of sand and wood underlying the fill (Boring MI-12). The water table was encountered at 7', 6', 9', and 9.5' below grade (Ibid.). Beneath the fill, most borings reported levels of sand and gravel, with bedrock encountered anywhere from 34' to 53' below grade.

These boring logs clearly indicate that this section of the APE is potentially sensitive for historic period resources. At Maiden Lane, the APE is sensitive for fill, cribbing, and fill retaining devices. All of Water Street is sensitive for the pre 1730s wharf, fill, and fill retaining devices. And finally, the eastern 50' of Water Street is also sensitive for 18th through 20th century structures and any associated features that once stood on Block 38. The depth of historic resources is anticipated to extend at least 23' below grade, the maximum depth of reported fill, and could be found possibly deeper. Organic silt deposits below fill may represent the early historic river bottom and, therefore, are also considered sensitive for potential discard along the waterfront. Therefore, this APE is sensitive for historic period resources to at least 23' below grade, and possibly deeper.

Water Street from Wall Street to Old Slip

What is now Water Street between Wall Street and Old Slip was widened across Block 33 in the 1960s, incorporating about 50' of the western side of the block into the APE. The block is divided by Gouverneur Lane.

Cartographic History

Castello 1660:	The APE is depicted as land under water.
Miller 1696:	The APE is unchanged from the Castello 1660.
Lyne 1730:	Water Street is depicted as present directly along the shoreline, but Block 33 has not yet been created. Slips cross Water Street at Wall Street and Old Slip. Water Street is labeled "Hunters Key," suggesting that Water Street was filled sometime between 1696 and 1730.

Buchnerd 1735:	The Buchnerd map fails to show any development east of Water Street, but it does depict the slips at Wall Street and Old Slip each crossing Water Street, which is still labeled "Hunters Key."
Carwitham 1740:	The APE is unchanged from the Buchnerd 1735 map.
Grim 1744/1813:	The APE is unchanged from the Buchnerd 1735 map.
Maerschalck 1755:	The APE is unchanged from the Buchnerd 1735 map, despite development to the north and south.
Montresor 1766:	The APE is unchanged from the Buchnerd 1735 map.
Ratzer 1766/67:	The APE is unchanged from the Buchnerd 1735 map.
Holland 1776:	By this time Block 33 had been filled to what is now Front Street, and Gouverneur Lane had been created, bisecting the block. Water Street has been filled where the former slips lay at both Wall Street and Old Slip. Fill in Water Street at each of these slips appears to date to sometime between 1766 and 1776. Block 33 appears to be shaded, indicating some development.
McComb 1789:	The APE is unchanged from the Holland 1776.
Taylor Roberts 1797:	The APE is unchanged from the Holland 1776.
Bridges 1803:	The APE is unchanged from the Holland 1776.
Hill 1804:	The APE is unchanged from the Holland 1776.
Commissioners' 1811:	The APE is unchanged from the Holland 1776.
Hooker 1824:	The APE is unchanged from the Holland 1776.
Colton 1836:	The APE is unchanged from the Holland 1776.
Endicott 1842:	Water lines are shown running on Water and Wall Streets, and at Old Slip.
Perris 1849/50:	The APE is unchanged from the Holland 1776.
Dripps 1852:	On Block 33 between Wall Street and Gouverneur Lane, 10 lots are present within the APE, and each is entirely covered by a structure. Between Gouverneur Lane and Old Slip there are nine lots within the APE that are completely covered by structures.
Perris 1852:	*117 and 115 Water Street (a.k.a. 91 and 93 Wall Street)* has a masonry structure on it labeled "Journal of Commerce." A small vacant yard on the southeast end of the lot falls within the APE. The remainder of the lots from *113 to 77 Water Street* that fall within the APE are covered by masonry structures.
Perris 1857:	The APE appears unchanged from Perris 1852.
Dripps 1867:	The APE is unchanged from the Perris 1852.
Viele 1874:	This map indicates that Water Street, between Wall Street and Old Slip, was fast land near the shoreline prior to development, but that Block 33 was entirely land under water.
Robinson 1885:	While all of the buildings on Block 33 appear unchanged, a building labeled "Fire Truck No. 15" has been constructed in the center of Old Slip within the APE (this will be further discussed below as part of Block 32).
Robinson 1893:	The APE is unchanged from the Robinson 1885.
Hyde 1913:	Water Street at Wall Street is 40' wide, and at Old Slip it is 42' wide. A horse car cable line is shown running down Old Slip. Most of the buildings on Block 33 are shown as four to eight stories tall. *117 to 115, and 111 Water Street* each have a basement.

Bromley 1916: *117 to 115 Water Street (now labeled just 115 Water Street)* is labeled the "Federal Building," and is eight stories tall with a basement. The vacant yard observed in 1852 is still present within the APE.
111, 109, and 107 Water Street are also depicted as covered with structures with basements.
Almost all of the structures on the block are depicted as having stores.

Bromley 1925: The APE is unchanged from the Bromley 1916.

Bromley 1955: Block 33 has essentially remained unchanged except for the following lots:
105 to 97 Water Street have been razed and are vacant.

Bromley 1974: By this time Water Street had been widened by about 48' on its eastern side, and all of the buildings on Block 33 within the APE were razed. Gouverneur Lane still bisects the block.

Sanborn 2001: Water Street is currently shown as 90' wide, which is 50' wider than its 1913 width at Wall Street, and 48' wider than its 1913 width at Old Slip.

Street Elevations of the APE are as follows:

Data Source	Water Street at Wall Street	Water Street at Old Slip
1885 Robinson	6.9'	7'
1955 Bromley	6.11'	7.1'

Tax and Directory Table:

LOCATION	1808	1820	1834	1842	1851 Directories	1858	1869	1876
BLOCK 33								
91and 93 Wall Street (a.k.a. 115 and 117 Wall Street)	Not this year	W. Jones' Estate	Doane Sturges	J.J .Jones "ow." Betts	Office Journal of Comerce Hale&Hallock, publishers	Hull Hallock	Allendorf Base & Co.	Allendorf Base & Co.
113 Water Street	J. Patterson	J. Patterson	E. Willets	E. Willets	S & F Willets, crockery J.C. Jackson, china	S. Willets	S. Willet	S. Willets
111 Water Street	S. Hansburg	P. Dunning	J. Mayer	H. Maxwell	Curtis, Mitchell & Co., sperm oil Wheeler & Co., importers	W. Maxwell	W. Maxwell	W. Maxwell
109 Water Street	J. Maxwell	G. Ballitter	Churchill+Co	H. Maxwell	William Engs, com.mer Snow&Hurley, com.mer	H. Maxwell	H. Maxwell	J. Donohue
107 Water Street	F. Cooper	M. Dunnison	W. Cheeseman	C. Hummingon	Schieffeil&Co., druggist * Eugene Schieffl	G. Cuming	J. Donohue	J. Donohue
105 Water Street	N. Talcott	Foresyth	T. Seaman	A. Hamlin	John Cunningham, com.mer Cunningham&Osborne, com.mer * J.B.	A. Hamblin	J. Caswell	J. Caswell

					Cunningham/C.F. Osborne			
103 Water Street	W. Bryar	Bryaro	Baker + Co	C. Carter	F.S. Innes&Co., com.mer Wilson Hubbel, Com.mer John Claney, com.mer	A. Mellville	A. Melville	M. Clark
101 Water Street	W. Hacker	Itsteinbach	Cooke + Co.	J. Cheeseman	Henry Winkler, com.mer J. Ridgeway & Co., cockery S.D. Skillman, crockery	S. Moore	J. Moore	J. Moore
99 Water Street	J. Pill	Reid	T. Kissman	R. Williams	Robert & Wiliams, com.mer *C.R. Roberts/H.L. Williams	R. Williams	C. Roberts	C. Roberts
97 Water Street	R. Tucker	R. Tucker	T. Delano	T. Delano	same as 99 Water St.	R. Williams	C. Roberts	Roberts
93 Water Street	G. Lathrop	Robertson	Thorne + Co	Hendricks	Charles Storm, tobacco	R. Thorn	R. Thorn	R. Thorn
91 Water Street	missing	J. Guntz	Coldwell	Est of J. Costar	Alfred Atkins, importer J. Day & Co., com.mer * D.J. Day Blow & March Co., com.mers *Robert Blow/ P.S. MArch	M. Taylor	M. Taylor	M. Taylor
89 Water Street	W. Farmer	R. Fox	B. Simpson	T. Moore	Fairbanks & Co., platform balances T.D. Moore & Co. Glassware *A.M. Cozzens	B. Sozens	G. March	G. March
87 Water Street		J. Diyas	R. Witmore	R. Whitemore	Blackwell & Burr, hardware *Samuel Blackwell, C.H. Burr	T. Carpenter	T. Carpenter	T. Carpenter
85 Water Street	James Bleecker	J. Burling	Handricks + Brothers	R. Whitemore	Dean & Thorton, com.mer *W.B. Dean/Anthony Thorton R.C. Wetmore& Co., crockery	R. Wetmore	G. Carman	G. CArman
83 Water Street	J. Bleecker	E. Abrams + Co	J. Benson	J. Ellis	Evans &Carmen, grocers *J. Evans/W.H. Carmen J.W. Harris, crockery	H. Thorn	Est of Thorn	Est of Thorn
81 Water Street	W. Blaily	P. Brewer	M. Gardiner	J. Benson	Hotchkiss, Fenner &Co., grocers A.H. Solomon, merchant	M. Cheesebor ough	M. Cheeseborough	M. Cheeseborou gh
79 Water Street	C. Keeney	C. Henry	C. Jackson	R. Nichols	B.G. Nichols, com.mer Robert Nichols, com.mer Samuel Barber & Co., teas *Edward Rathbon	J. Caswell	J. Caswell	J. Caswell
77 Water Street	D. Lord	D. Lord	D. Lord	J. Alloore	J.A. Moore, merchant J.C. Willard, merchant	F. Ray	Est of F. Ray	Est of R. Ray

Note: INC indicates a name that was illegible.

Precontact Sensitivity

Water Street between Wall Street and Old Slip was land under water at the time of European Contact (Viele 1874). A soil boring taken on the west side of Water Street reported fill to 10.6' below grade, with the water table at 8'10" below grade (Boring M1-11, Raymond International Inc. 1974). A second boring taken south of this in 1937 reported that results were "not recorded" from the surface down to bedrock at 30' below grade (Boring 1.1.452, WPA 1937). On the east side of Water Street, a boring recorded 20' of fill, with the water table found at eight feet below grade. Sand, silt and gravel were reported below the fill to a depth of 35' below grade where bedrock was encountered (Boring C2-2, Raymond International Inc. 1974). Neither of the borings reported silt or peat below the fill, only levels of sand and gravel.

A soil boring taken at Gouverneur Lane showed sand fill to eight feet below grade, and sand to 29.4' below grade. (Boring 388, WPA 1937). Another taken here showed seven feet of fill, with levels of sand and mud extending to 32.2' below grade (Boring 404, WPA 1937). The lack of any indicators of a potential precontact living surface in any of the borings, combined with the fact that the shoreline was reportedly rocky and deep here, suggests that this section of the APE lacks precontact potential.

Historical Sensitivity

Water Street between Wall Street and Old Slip was submerged, with maps indicating that it was filled prior to 1730 (Lyne 1730, Figure 6.1-1). Originally known as Rotten Row, or Hunter's or Burnets Key, Stokes also reports that this section of Water Street was constructed prior to 1730 (Stokes 1918:990; Lyne 1730, Figure 6.1-1). Both Block 33 and a slip at Wall Street, that ran west to Pearl Street, were not portrayed as filled until sometime between 1766 and 1776 (Carwitham 1740, Figure 6.1-2; Ratzer 1766/67, Figure 6.1-3; Holland 1776). Maps also indicate that by 1852, Block 33 had ten developed lots within the APE, identified as 117 through 77 Water Street (odd only) (Dripps 1852, Figure 6.1-4d). These stood through the 1960s (Dripps 1867, Figure 6.1-5d; Robinson 1885; Bromley 1897, 1916, 1925, 1955).

By 1851 the buildings on Block 33 along the east side of Water Street were occupied by a variety of businesses and merchants (see Tax and Directory Table above). Some of the structures were occupied by their owners, others had their place of business there. For example, at 113 Water Street the building was owned by the Willett family from at least 1820 to 1874, and in 1851 they were operating their crockery business there. From 91 through 87 Water Street, residents occupied the structures where they worked (Ibid.).

Archaeological excavations at the Assay Site, located just north of Old Slip between Front and South Streets (one block east of the APE), cited soil borings that showed that the deepest cultural levels of clay, mud, and fill were underlain by layers of coarse sand and sandy clay, that were considered "probably sterile" (Greenhouse Consultants Inc. 1983:26). Cultural levels were estimated to extend between 27' and 30' below surface grade on the western end of the block, closest to Front Street, and between 33' to 37' under South Street, indicating that fill levels were deeper the closer one got to the East River (Ibid.). Mud and clay deposits that lay above the sandy river bottom were

interpreted as consistent with still or backwater sediments produced by slower currents such as those in and around piers, slips, and jetties (Ibid.).

Five soil boring logs were available to review for this APE. One, taken on the west side of Water Street, reported fill to 10.6' below grade, with the water table at 8'10" below grade (Boring M1-11, Raymond International Inc. 1974). Below the fill was a level of reddish brown sand and gravel, underlain by gray brown silt, sand and gravel, and finally gravel with boulders to 24' below grade where bedrock was encountered. A second boring taken south of this in 1937 reported that subsurface conditions were "not recorded" from the surface down to bedrock at 30' below grade (Boring 1.1.452, WPA 1937).

The third boring, taken from the east side of Water Street, recorded 20' of fill, with the water table found at eight feet below grade. Sand, silt and gravel were reported below the fill to a depth of 35' below grade where bedrock was encountered (Boring C2-2, Raymond International Inc. 1974).

A fourth boring taken at Gouverneur Lane showed sand fill to eight feet below grade, and sand to 29.4' below grade. (Boring 388, WPA 1937). The fifth, also taken near Gouverneur Lane, showed seven feet of fill below grade, with levels of sand and mud extending to 32.2' below grade (Boring 404, WPA 1937). The presence of sand and mud may represent the stagnant river bottom present when wharves were built along the shoreline.

The documentary research and boring logs clearly indicate that this section of the APE is potentially sensitive for historic period resources. At Wall Street, the APE is sensitive for fill, cribbing, and fill retaining devices. All of Water Street is sensitive for the pre 1730s wharf, fill, and fill retaining devices. And finally, the eastern 50' of Water Street is also sensitive for 18th through 20th century structures and any associated features that once stood on Block 33. Since sewers were not installed in Water Street here until the 1850s, shaft features predate their availability may exist in the APE (Board of Alderman 1857:29, 1859:57). The depth of historic resources are anticipated to extend at least 20' below grade, the maximum depth of reported fill, and possibly as deep as the mud level that extended to 32.2' below grade.

Water Street from Old Slip to Coenties Slip

What is now Water Street between Old Slip and Coenties Slip was widened on its eastern side across Block 32 in the 1960s, incorporating about 50' of the western side of the block into the APE. The block is divided by Cuylers Alley.

Cartographic History

Castello 1660:	The APE is depicted as land under water.
Miller 1696:	The APE is unchanged from the Castello 1660.
Lyne 1730:	At this time, Water Street is depicted directly along the shoreline, but Block 32 had not yet been created. Old Slip and Coenties Slip cross Water Street to Pearl Street. This suggests that Water Street,

between these two slips, was filled sometime between 1696 and 1731.

Buchnerd 1735: The Buchnerd map fails to show any development east of Water Street, but it does show both slips at Old Slip and Coenties Slip crossing Water Street.

Carwitham 1740: The APE is unchanged from the Buchnerd 1735.

Grim 1744/1813: A wharf was created bordering the eastern side of Water Street, and development is shown on it within the APE. While the wharf extended east and then south, to form an upside down U, much of it did not fall within the APE.

Maerschalck 1755: Both slips are still shown crossing Water Street. Block 32 has been created, and there is development shown fronting Water Street and Old Slip within the APE. Cuylers Alley had not yet been laid out.

Montresor 1766: Block 32 is shaded indicating development. Both Old Slip and Coenties Slip have been filled, indicating that the fill beneath Water Street in these locations dates to sometime between 1755 and 1766.

Ratzer 1766/67: Block 32 is still shaded, and Cuylers Alley is visible, bisecting the block. Despite the fact that Montresor 1766 indicated that both slips were filled, on this map both Old Slip and Coenties Slip appear to be crossing Water Street.

Holland 1776: This map indicates that Old Slip has been filled, and that Coenties Slip still crosses Water Street.

McComb 1789: Both slips appear to be filled, and Block 32 is shaded indicating it is developed to some degree.

Taylor Roberts 1797: In contrast to earlier maps, Cuylers Alley is not shown bisecting the block

Bridges 1803: The APE is unchanged from the Taylor Roberts 1797.

Hill 1804: The APE is unchanged from the Taylor Roberts 1797.

Commissioners' 1811: The APE is unchanged from the Taylor Roberts 1797.

Hooker 1824: Cuylers Alley is visible bisecting Block 32. The remainder of the APE is unchanged.

Colton 1836: The APE is unchanged from the Hooker 1824.

Endicott 1842: Water lines are shown running on Water Streets, Old Slip, and Coenties Slip.

Perris 1849/50: The APE is unchanged from the Colton 1836.

Dripps 1852: Block 32 between Old Slip and Cuylers Alley is shown subdivided, with nine lots falling within the APE. South of Cuylers Alley Block 32 has six lots. All of these appear to be developed with structures covering the entire APE.

Perris 1852: All of the lots within the APE are covered with masonry structures. Although many of the lots have vacant alleys at their eastern ends, these appear to fall east of the APE. The following addresses fall within the project site:

73 through 39 Water Street (odd only, minus 53 and 51)
15 Old Slip
10 Coenties Slip

Perris 1857: The APE is unchanged from the Perris 1852.

Dripps 1867: The APE is unchanged from the Perris 1852. Horse or cable car lines are shown running down Water Street from Old Slip to Coenties Slip.

Viele 1874: This map indicates that Water Street, between Wall Street and Old Slip, was dry land prior to development, but that Block 302 was entirely land under water. Viele's portrayal of Water Street as dry land is questionable.

Robinson 1881: The APE is unchanged from the Dripps 1867.

Robinson 1885: While all of the buildings on Block 32 appear unchanged, a building labeled "Fire Truck No. 15" has been constructed in the center of Old Slip, but does not appear to extend far enough west to fall within the APE.

Robinson 1893: In the middle of Old Slip, the "Hook and Ladder Company No. 15." appears to extend into the APE. The structures on Block 32 are all brick or stone structures, and appear unchanged from 1885.

Hyde 1913: Water Street at Old Slip it is labeled as 42' wide. Most of the buildings on Block 32 range from four to five stories tall, but the building at the northwest corner of the lot, labeled the "Arbuckle Building," is seven stories tall. No stores or basements are depicted.

Bromley 1916: By this time a subway line had been constructed beneath Old Slip via deep tunnel boring.

Bromley 1925: The APE is unchanged from the Bromley 1916.

Bromley 1955: The APE is unchanged from the Bromley 1916.

Bromley 1974: By this time Water Street had been widened by about 48' on its eastern side, and all of the buildings on Block 32 within the APE were razed. Cuylers Lane no longer exists.

Sanborn 2001: Water Street is currently shown as 90' wide, which is 50' wider than its 1913 width at Wall Street, and , and 48' wider than its 1913 width at Old Slip.

Street Elevations of the APE are as follows:

Data Source	Water Street at Old Slip	Water Street at Coenties Slip
1885 Robinson	7'	6.4'
1913	7.1'	6.4'
1955 Bromley	7.1'	N/A

Tax and Directory Table:

LOCATION	1808	1820	1834	1842	1851 Directory	1858	1869	1876
BLOCK 32								
73 Water Street (a.k.a. 15 Old Slip)	Not for this yr.	name crossed out	C. Gallowa y	S. Walton	not listed	W. Southard	W. Southard	B. Pinekey

71 Water Street	C. Brower	G. Copelano	J. Taylor	L. Humming son	not listed	G. Cuming	G. Kemp	M. Colligan
69 Water Street	P. Gold	S. Mumford	Murray + Co.	Est of Goeleton	not listed	P. Goelit	P. Goelet	P. Socket
67 Water Street	M. Hughs	I. Garlow	J. Phoenix	Babcock/ Phoenix	Murray & Lanmans, drugs George Godfrey, agent * D.T. Lanman/L.Murray	Phoenix	Est of Phoenix	Est of Phoenix
65 Water Street	A. Bleecker	H. Ferris	J. Phoenix	Babcock/ Phoenix	Babcovk & Co., merchants * J.D. Phoenix/F.M+J. Babcock Chastelain, Ponvert & Co., merchants *Elias Ponvert/J.M. Burke/Julian Chastelain	Phoenix	Est of Phoenix	Est of Phoenix
63 Water Street	J. Breath	W. Breath	P. Ball	F. Bull	Henry Starkweather, grocer Richard Lathers, com.mer J.B.&G.A. Hamilton, Com. mer	W. Tracy	Trustees of Williams	W. True
61 Water Street	P. Mackie	H. Hudlerto n	Roe/Mon roe	Van Nesting	Mead, Rogers & Co. ,grocers W.D. Cuthberison, importers * S.S. Rogers/J.S. Mead/S.O. Mead	S. Caswell	J. Caswell	J. Caswell
59 Water Street	R. Corbet	R. Corbet	J. Devoe + Co	A. Hamblin	Barton & Co., com.mer Owen Byrnes, ales High Monroe, com.mer * E.H. Barton/L.M. Barton	H. Hamilto n	O. Byrne	O. Bryne
57 Water Street	R. Morris	R. Morris	Ditto	Pentz	Atwater, Mulford & Co., com.mer *W.C. Atwater, J.B. Mulford, W.Townsend	Pentz + Co.	J. Caswell	Est of M. Connolly
55 Water Street	J. Nickens	R. Walker	A. Pentz	Pentz	Pentz & Co., merchants Pentz,Townsend & Co., dye stuffs C.N.S. Rowland, merchants L.S. Hoyt, broker	Pentz + Co	W. Westerve lt	Est of M. Connolly
49 Water Street		L. Tesimon	D. Catheal	H. Catheal	Bostwick & Sterling *H.M. Bostwick, E.S. sterling	H. Catheal	A. Catheal	A. Catheal
47 Water Street	D. Hayer	J. Carlows	J. Corlius	B. Stevenson	Alex, Seignette & Co, importers *S.Mead H.	B. Stevens	B. Stevens	B. Stevens

					Sheldon			
45 Water Street	L. Slou-ghton	D. Thang	A. Pentz	Est of J. Suydam	C.M. Connoly, com. mer	Est of Suydam	Est of Suydam	Est of J. Suydam
43 Water Street	T. Brighton	G. Taylor	J. Wright	H. Weed	Veghte&Bergh, crockery *Rymier Veghte,G.R. Berg Wood& Hostage, Crockery	H. Weed	H. Weed	H. Weed
41 Water Street	Black-well/Mc Farlan	Black-well/ McFarlan	Black-well/Mc Farlan	Est of Blackwell	Burger,Hurlbut & Co., com. A.H. Bean, importer G.W. Rychman, merchant	Phoenix	Est. of Phoenix	Est of Phoenix
39 Water Street (a.k.a. 10 Coenties Slip)	A. Vorhees	J. Morris	Black-well	Est of Blackwell	L.A. Mills, com. merchant Albert Montagie, Broker C.B. James, agent, NewYork and Canada Line B.R.M. Sill, agent	M. Gould	Est of Phoenix	Est of Phoenix

Precontact Sensitivity

This section of the APE was beneath the East River at the time of the earliest historical development (Viele 1874). Filling gradually extended the shoreline east and the shoreline here was buried (Lyne 1730, Figure 6.1-1). Soil borings taken between Old Slip and Coenties Slip report encountering the remnants of a cellar to 6.7' below grade, with fill extending to 19.5' below grade. Beneath this was sand mixed with clay to 40.8' below grade (Boring 1.1.349, WPA 1937). A second boring taken south of Old Slip encountered another cellar to 4.6' below grade, with fill and timber to 8' below grade. Below this was another layer of fill with sand and timber to 16.4' below grade. Fine sand and clay was encountered beneath the fill to 39.1' below grade (Boring 1.1.353, WPA 1937). A third boring taken on the west side of Water Street near Coenties Slip also encountered a basement to 7' below grade, with sand extending to 17.3', when a boulder and hardpan were encountered.

The lack of any indicators of a precontact living surface, either peat or silt indicative of a habitable environment, suggests that this section of the APE lacks precontact potential.

Historical Sensitivity

Although some early historic maps suggest that the Water Street between Old Slip and Coenties Slip was actually on fast land in the early historic period (i.e., the MacCoun 1909 reconstruction of the 1609 shoreline; Miller 1855; Viele 1874), others suggest it was land under water east of the eastern edge of Pearl Street (Castello Plan 1660; Miller 1695). Supporting the contention that Water Street between Old Slip and Coenties Slip was predominantly submerged in the early 17th century, a diagram of shoreline landfill episodes shows that the project site was filled between 1650 and 1776 (Kardas & Larrabee 1977:62). Stokes refines this date to sometime between 1679 and 1716 (Stokes 1922:366). By 1730, Water Street was clearly filled (Lyne 1730, Figure 6.1-1).

After Water Street was created between Old Slip and Coenties Slip, Cruger's Wharf was constructed outboard of it where Block 32 eventually lay. According to a previously completed archaeological study of the 55 Water Street block:

> *In 1739 Henry Cruger, Henry Cuyler, and their partners hired an Albany builder named Adam van Alen to construct a huge wharf of 30-foot timbers along the waterfront beginning 170 feet from Clock's corner at Old Slip* [near Pearl Street] *and extending southwestward parallel to Water Street. Every 20 feet a cedar post was set into the wharf for tying up ships...Cruger's Wharf was finished in 1740...and it enclosed an area that was subsequently filled between it and the shore at Water Street. In 1754 Cruger widened the Wharf about four feet.*
> (Huey 1984:15)

While maps dating to both 1735 and 1740 shows no sign of the construction of Cruger's Wharf (Buchnerd 1735; Carwitham 1740, Figure 6.1-2), by 1744 it was clearly present (Grim 1744). Also by that time, many structures had been built along the eastern side of Water Street within the project site, and along the southern border of Old Slip out to what would eventually become Front Street (Grim 1744).

In 1744, the Common Council declared that Old Slip was a public nuisance, and that all "nuisances should be removed at the city's expense" (Stokes 1922:578). In 1774 a petition was granted to remove the old market from the foot of Old Slip, and to allow for its filling (Stokes 1922:671). By 1775, filling was complete between Coenties Slip and Old Slip allowing the creation of a new city block out to Front Street (Holland 1757; Ratzer 1766-67, Figure 6.1-3).

Coenties Slip remained open to passage through at least 1776, but was filled by 1789 (Holland 1776; McComb 1789). Before it was filled, efforts were made for "removing certain hulks from Coenties and other docks" (MCC: July 13, 1785). Although the Council directed the wrecks to be removed, they later rescinded their request as it had become too expensive to continue (Ibid.: August 26, 1785). Therefore, there is the potential for sunken ships to lie within the fill at Coenties Slip.

In 1821 after Old Slip was filled to Front Street, the Franklin Market was erected on it (Hooker 1824). In 1835 the original market building burned to the ground, but it was rebuilt of brick in 1837 (DeVoe 1862:520). Although early maps place the building between Water and Front Streets (Hooker 1829; Colton 1836; Tanner 1836; Mitchell 1846), later maps place it between Front and South Streets outside of the APE (Dripps 1852, Figure 6.1-4d; Perris 1857-60, 1859; Dripps 1867, Figure 6.1-5d). By 1867 the building on Old Slip between Front and South Streets was still labeled as "Franklin Mkt." but there was a second label indicating it was part of the "First Ward Police" (Dripps 1867, Figure 6.1-5d). Sometime between 1881 and 1884 the Hook and Ladder Company No. 15 had erected a framed structure on Old Slip between Water and Front Streets, within the APE (Robinson 1881, 1884). Between 1884 and 1893 it was replaced by a slightly larger brick structure (Robinson 1893).

Almost immediately after the completion of filling, Block 32 was developed. However, since 18th century maps depict only the block as shaded, it is difficult to determine how

many and where structures existed (Holland 1757; Ratzer 1766-67, Figure 6.1-3). By 1758 a theater was constructed on the block below Water Street between Cuylers Alley and Old Slip (Stokes 1918:986). This would have stood almost directly within the project site near what is now the corner of Old Slip and Water Street. It was built by a man named Douglass, and presented its first production, an early opera titled *Jane Shore,* in 1758.

By 1852 there were six lots on the east side of Water Street within the APE (Dripps 1852, Figure 6.1-4d).. These were located at 73 through 39 Water Street (odd only; excluding 53 and 51 Water Street), 15 Old Slip, and 10 Coenties Slip (Perris 1852). All of the sections of these lots within the APE were entirely covered by masonry structures in both 1852 and 1867 (Dripps 1852, 1867, Figure 6.1-4d and 6.1-5d). While water lines were installed in Water Street by1842 (Endicott 1842), sewers were not installed until 1859 (Board of Alderman 1859:57). Therefore, the structures on the lots in the APE may have utilized cisterns, wells, and privies which are potentially archaeologically sensitive.

The buildings which stood on the east side of Water Street prior to it being widened underwent a series of ownership in the 19th century (see Tax and Directory Table above). Most of the structures were commercially utilized by 1851, when dozens of businesses occupied the block including merchants, importers, and stores. In some cases, people lived in the same building as their place of occupation, such as Phoenix and Babcock who resided at 65 Water Street, the location of their importing business (Ibid.). The residents of this block reflect the general nature of the neighborhood, which was largely commercial due to its proximity to the waterfront.

Archaeological salvage excavations were completed within Block 32 when a new building was constructed in the 1960s (Huey 1984:17). In addition to the extensive collection of artifacts found in the remaining landfill within the block (most of the block had been affected by foundation excavations and little remained by the time archaeologists were permitted to proceed), the original ca.1740 log crib footing under the northeast end of Cruger's Wharf was visible (Ibid.:18). Cribbing extended 175' southeast from Water Street along the original line of Old Slip. Artifacts within the landfill were able to address issues regarding colonial trade patterns and waterfront development (Ibid.:23). Paul Huey of the New York State Office of Parks, Recreation, and Historic Preservation, who undertook salvage excavations at the site, indicated that it appeared that significant strata may have continued westward under Water Street (personal communication December, 2000).

Potential effects to this section of the APE were confined to subsurface utilities, and the IRT Seventh Avenue line that runs beneath Old Slip. The subway's construction was fairly deep and may have left intact archaeological resources above it. According to Robert A. Olmsted, former Transit Authority Engineer and Chair of History and Heritage of the Metropolitan Section of the American Society of Civil Engineers, the Clark Street tunnel was built between 1914 and 1919 under guidelines set forth by the War Department (personal communication, December, 2000).

Since the War Department required the top of the Clark Street tunnel to lie at least 45' below mean low water at the pierhead line, construction of the subway beneath Old Slip entailed shield tunnel boring rather than the cut-and-cover method (Olmsted 1995:8).

The shield method causes disturbance to a discrete area limited to the face of a movable cylinder slightly larger than the finished tunnel. The land approach sections of the tunnel were also built by the shield method, with access on the Manhattan side allowed through a steel-lined construction shaft at Front Street (Olmsted 1995:8). The access point is now a ventilation shaft and emergency exit, and is visible directly in front of the former NYCLPC building, formerly a police precinct and now a police museum, in the center of Old Slip (Photograph D). Shield tunneling continued west of Water Street to Pearl Street, where cut-and-cover construction was then implemented.

In order to avoid potential effects to the precinct building on Old Slip, the east and west bound tunnels were built on either side of the structure's foundation. The tunnels, each 17.6' in diameter, lie deeply buried beneath Old Slip (Olmsted 1995: Profile Old Slip-Clark Street Tunnel). At the intersection of Front Street and Old Slip, the track level inside the tubes is 40' to 42' below grade, indicating that the top of the tunnel is about 25' below grade. The track level at Water Street is about 35' below grade, with the top of the tunnel at about 18' below grade. Even if effects from tunnel boring extended another three feet outside of the tunnel's outer shield, it would have left an area of 15' above it relatively undisturbed.

Soil borings on Water Street report encountering a cellar to 6.7' below grade, with fill extending to 19.5' below grade. Beneath this was sand mixed with clay to 40.8' below grade (Boring 1.1.349, WPA 1937). A second boring taken south of Old Slip encountered another cellar to 4.6' below grade, with fill and timber to 8' below grade. Beneath this was another layer of fill with sand and timber to 16.4' below grade, with fine sand and clay encountered to 39.1' below grade (Boring 1.1.353, WPA 1937). A third boring taken on the west side of Water Street near Coenties Slip also encountered a basement to 7' below grade, with sand extending to 17.3', where a boulder and hardpan were encountered (Boring 1.1.364, WPA 1937). Another soil boring completed in 1982 on the east side of Water Street, 19 feet south of Old Slip, showed fill to 7' below grade, underlain by brown sand with traces of silt to 26.5' below grade. Water was encountered at 11.5' below grade (Boring 2, City of New York Department of General Services 1982:1396).

The documentary research and boring logs clearly indicate that this section of the APE is potentially sensitive for historic period resources. At Old Slip, the APE is sensitive for fill, cribbing, and fill retaining devices from the surface down to the top of the IRT Subway tunnels, and outside of their footprints. All of Water Street is sensitive for the pre-1730s wharf, fill, and fill retaining devices. And finally, the eastern 50' of Water Street is also sensitive for Cruger's Wharf, and 18th through 20th century structures and any associated features that once stood on Block 33. The depth of historic resources are anticipated to extend at least 20' below grade, the maximum depth of reported fill, and possibly as deep as the bottom of silt levels that extended to a maximum depth of 40.8' below grade.

Water Street from Coenties Slip to Broad Street

What is now Water Street between Coenties Slip and Broad Street was widened on its eastern side across Block 7 in the 1960s, incorporating about 50' of the western side of the block into the APE.

Cartographic History

Castello 1660:	The APE is depicted as land under water.
Miller 1696:	Water Street has been created, and a curving quay wall of wood that enclosed the east basin of the Great Dock (not labeled at this time) is visible within the APE. Where Coenties Slip will eventually be is under water.
Lyne 1730:	Water Street is visible, and the quay is shown encompassing the East Dock where Block 7 will eventually be created. Coenties Slip has been created crossing Water Street.
Buchnerd 1735:	The APE is unchanged from the Lyne 1730.
Carwitham 1740:	The east dock falls within the APE just south of Coenties Slip, and "Long Bridge" is shown extending off the foot of Broad Street within the APE. Coenties Slip is still shown crossing Water Street.
Grim 1744/1813:	The APE is unchanged from the Carwitham 1740.
Maerschalck 1755:	The APE is unchanged from the Carwitham 1740.
Montresor 1766:	The Exchange building is shown within the APE at the intersection of Water and Broad Streets. The Great Basin is still present, but Coenties Slip is no longer shown crossing Water Street.
Ratzer 1766/67:	Despite the fact that Montresor 1766 indicated that Coenties Slip was filled, on this map it appears to be crossing Water Street. The Exchange building, Long Bridge, and the East Dock are all still present.
Holland 1776:	This map indicates that Coenties Slip still crosses Water Street. The Great Basin appears to have been filled, and Block 7 was created. The Exchange building is still at the intersection of Broad and Water Streets within the APE, and Broad Street extends west forming what is now the southern boundary of Block 7.
McComb 1789:	Most of the APE is unchanged from 1776, but Coenties Slip is shown as filled at Water Street within the APE.
Taylor Roberts 1797:	The APE is unchanged from the McComb 1789, but the Exchange Building is labeled as the "Exchange Market."
Bridges 1803:	The APE is unchanged from the Taylor Roberts 1797.
Hill 1804:	The APE is unchanged from the Taylor Roberts 1797.
Commissioners' 1811:	The APE is unchanged from the Taylor Roberts 1797.
Hooker 1824:	The Exchange Market is not depicted, but the remainder of the APE appears unchanged.
Colton 1836:	The APE is unchanged from the Hooker 1824.
Endicott 1842:	Water lines are shown running on Water Streets, Coenties Slip and Broad Street.
Perris 1849/50:	The APE is unchanged from the Hooker 1824.
Dripps 1852:	Block 7 has been subdivided, with nine entirely developed lots falling within the APE.
Perris 1852:	All of the lots within the APE are covered with masonry structures, with the exception of *39 Water Street* that is covered by a frame structure. The following addresses fall within the project site: *39 through 23 Water Street (odd only)* (Note: there was a second No. 39 Water Street on Block 32 to the north, and this 39 Water

Street is a.k.a. 7 Coenties Slip. Also, there is no 29 Water Street designated).
9 Coenties Slip

Perris 1857: The APE is unchanged from the Perris 1852.

Dripps 1867: The APE is unchanged from the Perris 1852. Horse or cable car lines are shown running down Water Street from Coenties Slip to Broad. Another line is shown running on Broad Street along the south side of the block.

Viele 1874: This map indicates that Block 7 and Water Street between Coenties Slip and Broad Street were land under water prior to historical development.

Robinson 1885: All of the lots on Block 7 within the APE are covered with brick or stone structures. Although there are vacant alleys and yards at the very eastern ends of the lots, these appear to fall east of the APE.

Robinson 1893: The APE is unchanged from the Robinson 1885.

Hyde 1913: The transit lines running down Water and Broad Streets are labeled as the Metropolitan Street Railway Company. Water Street is shown as 40' wide at Broad Street. Buildings on Block 7 within the APE range in size from four and a half stories to eight stories, and most are shown to have stores.
37 ½ Water Street (formerly 39 Water Street) and 7 through 9 Coenties Slip are consolidated and now contain a large brick eight story building with a basement.

Bromley 1916: The APE is unchanged from the Hyde 1913.

Bromley 1925: The APE is unchanged from the Hyde 1913.

Bromley 1955: The APE is unchanged from the Hyde 1913.

Bromley 1974: By this time Water Street had been widened by about 48' on its eastern side, and all of the buildings on the lots on Block 7 within the APE were razed.

Sanborn 2001: Water Street is currently shown as 90' wide, which is 50' wider than its 1913 width at Broad Street.

Street Elevations of the APE are as follows:

Data Source	Water Street at Coenties Slip	Water Street at Broad Street
1885 Robinson	6.4'	5.3'
1913 Hyde	6.4'	5.3'
2001 Sanborn	N/A	5.2'

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 7								
9 Coenties Slip	Garret Storm	Garret Storm	E.H. Herrick	Est. of JNL? Morris Ow. Sherwood & Co.	Not in Directory	GH Jones	J. Jones	J. Jones

39 Water Street (a.k.a. 7 Coenties Slip)	A. Vorhees	J. Morris	Blackwell/ McFarlan	Est of Blackwell	L.A. Mills, com.mer Albert Montagnie, broker	P. Phoenix	Est of Phoenix	Est of Phoenix
37 Water Street	Est of I. Kipp	J. Morris	C. Dubois	Est of Blackwell	Dubois&Vandervoort,com.mer *Cornelius Dubois/J.B. Vandevoort	M. Gould	M. Gould	M. Gould
35 Water Street	J. Sterling	H. Low	Sacket + Co	H. Rathbone	U.S. Bonded Warehouse	S. Whitney	Est of Whitney	Est of Whitney
33 Water Street	M. Van Antwerp	M. Van Antwerp	Douglas + Co	S. Whitney	U.S. Bonded Warehouse	S. Whitney	Est of Whitney	Est of Whitney
31 Water Street	Van Antwerp	J. Lint	Wheeler + Sons	M. Willow	Work&Drake, ccom. mers *W.N.Work/J. H. Drake	S. Whitney	Est of Whitney	Est of Whitney
27 Water Street	S. Nathan	S. Nathan	Mead/Stafford + Co	N. Wall	Hugh,Harrison &Co., provns *A.S.Jewell/S. D. Harrison Charles Taylor, broker	B. Mathews	B. Nathan	B. Nathan
25 Water Street	J. Delafield	J. Delafield	E. Abrahams	W. Southerland	Tompkins&Co .com.mers *E.H. Tompkins/Gilbert Tompkins John Platt, broker	B. Mathews	B. Nathan	B. Nathan
23 Water Street	N. Strathams	E. Abrams	E. Abrahams	s. Abrams	Henry Nason, com.mers W.M. Wilson, provisions	N. Hendrick	N. Hendricks	N. Hendrick

Precontact Sensitivity

Water Street between Coenties Slip and Broad Street was land under water in the 17th century (Viele 1874). Soil borings taken from this section of the APE showed miscellaneous fill from the surface down to 16.3' below grade. Fill and sunken timber was encountered to 19.4' below grade, and fine mica sand was reported to 24.4' below grade (Boring 1.1.120, WPA 1937). At Broad Street a boring encountered fill to 7' below grade, with course sand, gravel, and river mud to 15' below grade. Below this was a level of gravel, sand, and clay to 23.7' below grade (Boring 1.1.232, WPA 1937).

The lack of any indicators of a precontact living surface, either peat or silt indicative of a habitable environment, suggests that this section of the APE lacks precontact potential.

Historical Sensitivity

Although the APE was land under water at the time of European Contact, early efforts to bolster trade in New Amsterdam incited City leaders to concentrate on developing the waterfront. This ultimately led to the construction of the Great Dock in 1675. The curving quay wall of the Great Dock ran approximately where Block 7 was eventually laid out, within the APE (Miller 1696). Gradually, filling allowed for the creation of Water Street by 1730 (Lyne 1730, Figure 6.1-1), although the Great Basin remained open for docking for some time. While part of Block 7 adjacent to the basin was filled along Water Street by 1766, allowing for the construction of the Exchange building (later the Exchange Market) it was not entirely filled until 1776 (Carwitham 1740, Figure 6.1-2; Montresor 1766; Ratzer 1766/67, Figure 6.1-3).

In 1691 a fish market was established at the foot of Coenties Slip near Pearl Street. Although no formal market structure stood on the site for many years, in the 1720s a wood building was erected for this purpose (DeVoe 1862:113). The first Exchange Market was built west of the project site near Broad Street and the end of "Heern Gracht," now Broad Street (NYCLPC 1982:97). The second Exchange Market, that stood from 1752 to 1797, was on Broad Street between Front and Water Streets, within the APE (Ibid.; Ratzer 1766/67, Figure 6.1-3).

After Block 7 was filled, development ensued. By 1852 there were seven lots on the block within the APE, located at 39 through 23 Water Street (odd only; excluding 29 Water Street), and 7 and 9 Coenties Slip (Dripps 1852, Figure 6.1-4d; Perris 1852). Each of these lots was covered by a masonry building in 1852, and the lots remained unchanged through at least 1913 when an eight story brick building with a basement was constructed at 37 ½ Water Street (formerly 39 Water Street) and 7 through 9 Coenties Slip (Dripps 1852, Figure 6.1-4d; Dripps 1867, Figure 6.1-5d; Robinson 1885; Hyde 1913). All of the buildings on the lots were razed in the 1960s to allow for the widening of Water Street. Sewer lines were installed on Water Street by 1861, and water lines were present by 1842 (Board of Alderman 1861:78; Endicott 1842).

All of the lots in the APE were assessed for taxes in the early 19th century (see Tax and Directory Table above). While some of the structures had a series of owners through the 19th century, others were held for longer periods by individuals. Most buildings were commercially occupied by 1851, and some structures were also residentially occupied by people who maintained their businesses there. Most of the buildings were occupied by commercial merchants and brokers. The U.S. Bonded Warehouse occupied the structure at 33-35 Water Street at that time, although it appeared that a private individual was assessed for taxes on the lot.

Soil borings taken from this section of the APE showed miscellaneous fill from the surface down to 16.3' below grade. Fill and sunken timber was encountered to 19.4' below grade, and fine mica sand was reported to 24.4' below grade (Boring 1.1.120, WPA 1937). At Broad Street a boring encountered fill to 7' below grade, with course sand, gravel, and river mud to 15' below grade. Below this was a level of gravel, sand, and clay to 23.7' below grade (Boring 1.1.232, WPA 1937). Therefore, if river mud, and sand/gravel/clay levels represent the bottom of the river when the Great Dock stood here

(ca.1675-1776), this section of the APE may be potentially sensitive for historic period resources from the surface down to 23.7' below grade.

The cartographic research and review of soil borings strongly suggest that this section of the APE is potentially sensitive for a number of historic period resources. These could include 17th century fill, and fill retaining devices beneath all of Water Street; evidence of the quay for the Great Dock and Basin beneath the east side of Water Street; cribbing, fill, and fill retaining devices at Old Slip; and finally 18th through 20th century occupation of the seven lots on former Block 7 on the east side of Water Street. Resources potentially extend from the surface down to the deepest reported fill, at 19.4' below grade, and possibly to what may have been the 17th century river bottom extending down to 23.7' below grade.

Water Street from Broad Street to Moore Street

What is now Water Street between Broad Street and Moore Street was widened across Block 8 in the 1960s, incorporating about 50' of the western side of the block into the APE.

Cartographic History

Castello 1660:	The APE is depicted as land under water.
Miller 1696:	Water Street has been created, and a curving quay wall of wood that enclosed the west basin of the Great Dock (not labeled at this time) is visible within the APE. A short wharf extends off of what will become Moore Street into the basin.
Lyne 1730:	Water Street is visible, and Moore Street has been created bordering what will eventually become Block 8. However, the block itself has not yet been filled, and the quay is still depicted encompassing the West Dock.
Buchnerd 1735:	Same Lyne 1730.
Carwitham 1740:	The west dock falls within the APE, and "Long Bridge" is shown extending off the foot of Broad Street within the APE. Block 8 is not yet filled.
Grim 1744/1813:	The APE is unchanged from the Carwitham 1740.
Maerschalck 1755:	The APE is unchanged from the Carwitham 1740.
Montresor 1766:	The APE is unchanged from the Carwitham 1740.
Ratzer 1766/67:	The APE is unchanged from the Carwitham 1740, although at this time Moore Street is labeled "White Hall."
Holland 1776:	The Great Basin appears to have been filled, and Block 8 was created. The block is shaded, perhaps indicating some development.
McComb 1789:	The APE is unchanged from the Holland 1776.
Taylor Roberts 1797:	The APE is unchanged from the Holland 1776, but what was White Hall is now Moore Street.
Bridges 1803:	The APE is unchanged from the Taylor Roberts 1797.
Hill 1804:	The APE is unchanged from the Taylor Roberts 1797.
Commissioners' 1811:	The APE is unchanged from the Taylor Roberts 1797.
Hooker 1824:	The APE is unchanged from the Taylor Roberts 1797.

Colton 1836:	The APE is unchanged from the Taylor Roberts 1797.
Endicott 1842:	Water lines are shown running on Moore, Water, and Broad Streets.
Perris 1849/50:	The APE is unchanged from the Taylor Roberts 1797.
Dripps 1852:	Block 8 has been subdivided, with nine entirely developed city lots falling within the APE.
Perris 1852:	All of the lots within the APE are covered with masonry structures. The following addresses fall within the project site: *21 through 7 Water Street (odd only).* *110, 112 Broad Street.* *9 and 11Moore Street.*
Perris 1857:	The APE is unchanged from the Perris 1852.
Dripps 1867:	The APE is unchanged from the Perris 1852. Horse or cable car lines are shown running down Water Street between Broad and Moore Streets. Another line is shown running on Broad Street along the north side of the block.
Viele 1874:	This map indicates that Block 8 and Water Street, between Broad and Moore Streets, were land under water prior to historical development.
Robinson 1885:	All of the lots on Block 8 within the APE are covered with brick or stone structures.
Sanborn 1894:	The APE is unchanged from the Robinson 1885. At this time Water Street is depicted as 39' wide between Broad and Moore Streets.
Hyde 1913:	The transit lines running down Water and Broad Streets are labeled as the Metropolitan Street Railway Company. Buildings on Block 8 within the APE range in size from four to five stories, and most are shown to have stores. *21 through 15 Water Street and 110 and 112 Broad Street* are consolidated and now contain a large brick seven story building with no basement that is labeled the "Centennial Building."
Bromley 1916:	The APE is unchanged from the Hyde 1913.
Bromley 1925:	Between 1916 and 1925 the buildings at *11 through 7 Water Street* had been razed and replaced by a 16 story structure with a storefront. No basement is recorded. *13 Water Street* is labeled as "Lofts."
Bromley 1955:	The APE is unchanged from the Bromley 1925.
Bromley 1974:	By this time Water Street had been widened by about 48' on its eastern side, and all of the buildings on the lots on Block 8 within the APE were razed.
Sanborn 2001:	Water Street is currently shown as 90' wide, which is about 50.4' wider than its 1894 width.

Street Elevations of the APE are as follows:

Data Source	Water Street at Broad Street	Water Street at Moore Street
1885 Robinson	5.3'	No elevations
1913 Hyde	5.3'	were available
2001 Sanborn	5.2'	at Moore Street

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 8								
112 Broad Street	Jonathan Perry	James Lynch	Thurston S. Hall	Peter Goelch	F.R. Crote, broker	Peter Goelch	Peter Goelch	Peter Goelch
21 Water Street (a.k.a.110 Broad Street)	S. Abraham s	S. Abraham s	Not for this Yr.	Not for this Yr.	Diedrick Wilshusen, grcer	Peter Goelch	Peter Goelch	Peter Goelch
19 Water Street	J. Smith	J. Smith	J. Gibbons	Est of Geolet	Not for this Yr.	Not for this Yr	Not for this Yr	Not for this Yr
17 Water Street	M. Remsin	M. Remsin	M. Remsin	Est. of M. Remsin ow. Mead	J.C.Woodward, merchant Peter Pigeon, merchant	Est. of M. Remsin	J. Remsin	J. Remsin
15 Water Street	A. Patterson	A. Patterson	G. Whitaker	S. Whitne y ow. White (store)	Condit&Noble,c om.mers *J.L. Condit/Curtis Noble	S. Whitney	S. Whitney	Est of Whitney
13 Water Street	Suydam	A. Laursen	W. Williams	Dr. Woodsu -ff ow. P.S. Johnson	Caroline Knight, dressmaker	Est of Boursen	Est of A Boursen	Est of Whitney
11 Water Street	A. Morris	W. Mandle	D. Schmidt	Widow Jaques ow. Mellvill (house)	Joseph Stapleton& Patrick Dwyer, police James Joyce, grocer Henry Burns, tailor	Widow Jacques	Jacques	Est of Whitney
9 Water Street	W. Todd/T. North	J. Smith	T. Parmuton	E. Benson ow. L. Hill (store)	Thomas& Davenport, com .mers Camp&Welles,c om.mers Hale&Himron,c om.mers	B. White	B. White	B. Nathan
7 Water Street	J. Butler	G. Bays	R. Van Dunsir	Not for this Yr	Same as above	B. White	B. White	B. Nathan
9 Moore Street (a.k.a. 5 Water St.)	P. Sage	Not for this Yr.	P. Nastings		Charles Holgate, liquors; Henry Gurker, bookbinder: Alexander Adams, Mariner	Not for this Yr	Not for this Yr.	M. Herrick
11 Moore Street (a.k.a. 5 Water St)	P. Sage	I. Hollyer.	E. Mathews	W.Maitl and ow. M. Ken- nedy	Frederick Gremmel, bootmaker	W.Mait- land	Moses Taylor	Perry R. Pine

Precontact Sensitivity

Early historic maps indicate that this APE was land under water at the time of European Contact (Castello 1660; Viele 1874; Department of Docks 1873). A soil boring taken just south of Broad Street on the west side of Water Street showed sand and gravel down to 10' below grade, with sand extending another five feet. Beneath this was a layer of sand, clay, and gravel to 23.7' below grade (Boring 1.1.118, WPA 1937). The lack of any indicators in the soil boring suggesting a precontact living surface, coupled with the fact that this area was considered to lack potential sensitivity since it was described as a "rocky shoreline" (see Chapter 2), suggests that this section of the APE is not potentially sensitive for precontact resources.

Historical Sensitivity

Although the APE was land under water at the time of European Contact, early efforts to bolster trade in New Amsterdam incited City leaders to concentrate on developing the waterfront. This ultimately leads to the construction of the Great Dock in 1675. The curving western quay wall of the Great Dock ran approximately where Block 8 was eventually laid out, within the APE. Long Bridge (a wharf) extended out from Water Street at Broad Street, which was formerly known as *de Heere Gracht (the Gentleman's canal)* (Miller 1696). The Great Basin remained open for docking through at least 1766, but it was filled by 1776, including the site of Long Bridge (Lyne 1730, Figure 6.1-1; Carwitham 1740, Figure 6.1-2; Montresor 1766; Ratzer 1766/67, Figure 6.1-3).

Shortly after Block 8 was filled, it experienced development. By 1852 there were nine developed lots within the APE at 21 through 7 Water Street (odd only), 110 and 112 Broad Street, and 9 and 11 Moore Street (Dripps 1852, Figure 6.1-4d; Perris 1852).

All of the lots in the APE were assessed for taxes in 1808, and they apparently changed ownership frequently through the 19th century (see Tax and Directory Table above). By the 1850s, a variety of commercial endeavors were located in the buildings on the block, with many housing commercial merchants.

The structures in the APE remained unchanged from ca.1852 through at least 1867 (Dripps 1867, Figure 6.1-5d), but between 1894 and 1913 the buildings at 13 through 15 Water Street and 110 and 112 Broad Street were removed and replaced by a seven story brick building with no basement labeled the "Centennial Building." Water lines were installed in Water Street by 1842 as part of the Croton Water System, and sewer lines were laid in Broad Street at Water Street by 1845 (Endicott 1842; Board of Alderman 1857:115)

A soil boring taken just south of Broad Street on the west side of Water Street showed sand and gravel down to 10' below grade, with sand extending another five feet. Below this was a layer of sand, clay, and gravel to 23.7' below grade (Boring 1.1.118, WPA 1937). Although no fill was reported, it may be that the levels of sand, and sand with gravel represent introduced layers of clean fill that were not obvious as such. The borings taken in 1937 as part of the WPA program did not complete the same level of analysis of soil compaction, indicative of fill, that more modern geotechnicians

undertake. Therefore, if the sand levels represent fill, then historic period resources could conceivably extend from the surface down to the bedrock at 23.7' below grade.

The cartographic research and review of soil borings strongly suggest that this section of the APE is potentially sensitive for a number of historic period resources. These could include the 17th century fill, and fill retaining devices beneath all of Water Street; evidence of the quay for the Great Dock and Basin beneath the east side of Water Street; the Long Bridge wharf, fill, and fill retaining devices at Broad Street; and finally 18th through 20th century occupation of the nine lots on former Block 8 on the east side of Water Street. The anticipated depth of resources is assumed to extend to what may have been the 17th century river bottom that borings suggest could be located at 23.7' below grade.

Water Street from Moore to Whitehall Street

What is now Water Street between Moore Street and Whitehall was widened across Block 8 in the 1960s, incorporating from 70' to 111' of the western side of the block into the APE.

Cartographic History

Castello 1660:	The APE is depicted as land under water.
Miller 1696:	The APE is unchanged from the Castello 1660, although Moore Street is shown as filled.
Lyne 1730:	Whitehall has been created, but Water Street between Moore Street and Whitehall has not yet been filled.
Buchnerd 1735:	Water Street has been filled between Moore and Whitehall Street. Block 8 has also been filled. While there is one structure shown on the block, it falls east of the APE, that is depicted as vacant.
Carwitham 1740:	The APE is unchanged from the Buchnerd 1735.
Grim 1744/1813:	The APE is unchanged from the Buchnerd 1735.
Maerschalck 1755:	Structures are shown fronting Water, Moore, and Whitehall Streets on Block 8. Some of these appear to fall within the APE.
Montresor 1766:	Block 8 is shown as shaded, indicating it has been developed.
Ratzer 1766/67:	The APE is unchanged from the Carwitham 1740, although at this time Moore Street is labeled "White Hall," and what is now Whitehall Street is unlabeled.
Holland 1776:	The APE is unchanged from the Ratzer 1766/67.
McComb 1789:	The APE is unchanged from the Ratzer 1766/67.
Taylor Roberts 1797:	The APE is unchanged from the Ratzer 1766/67, although by this time Whitehall Street is labeled as such.
Bridges 1803:	The APE is unchanged from the Taylor Roberts 1797.
Hill 1804:	The APE is unchanged from the Taylor Roberts 1797.
Commissioners' 1811:	The APE is unchanged from the Taylor Roberts 1797.
Hooker 1824:	The APE is unchanged from the Taylor Roberts 1797.
Colton 1836:	The APE is unchanged from the Taylor Roberts 1797.
Endicott 1842:	Water lines are shown running on Moore, Water, and Whitehall Streets.
Perris 1849/50:	The APE is unchanged from the Taylor Roberts 1797.

Dripps 1852: Block 8 has been subdivided, with seven lots falling within the APE. Although most are developed, there are two vacant alleys on the north side of the block within the APE.

Perris 1852: Most of the lots within the APE are covered with masonry structures. The following addresses fall within the project site:
14 and 16 Moore Street are each covered by a masonry structure within the APE.
12 Moore Street is completely covered by a masonry structure.
5 Water Street (a.k.a. 10 Moore Street), that formerly had an alley on the south side of the lot, is now shown as completely covered by a structure.
3 Water Street is predominantly covered with a masonry structure, but there is a small vacant yard at the eastern end of the lot within the APE. The yard may be shared with the lot at *4 Front Street* behind it.
1 Water Street is completely covered by a building.
43 Whitehall Street is also completely covered by a building.
45 Whitehall Street has a masonry structure covering most of the lot, but a narrow undeveloped alley remains at the northern end of the lot within the APE.
47 Whitehall has a brick structure on its southern half, with a predominantly vacant backyard that appears to be shared with *2 Front Street.* Within the yard is a frame outbuilding on the northwest corner of the lot. The yard and outbuilding fall within the APE.
49 Whitehall has a brick structure covering the entire lot within the APE.
2 Front Street has a brick structure on the east half of the lot. A vacant backyard at the western end of the lot, that appeared to be shared with *47 Whitehall Street,* may fall within the APE.
4 Front Street has a masonry structure covering the eastern end of the lot. A vacant yard on its west side falls within the APE. The yard may be shared with the building at *3 Water Street.*

Perris 1857: The APE is unchanged from the Perris 1852.

Dripps 1867: The APE is unchanged from the Perris 1852. Horse or cable car lines are shown running down Water Street, Moore Street and Whitehall Street.

Viele 1874: Water Street is shown as fronting the East River shoreline prior to historical development. However, Block 8 is shown as land under water.

Robinson 1885: All of the lots on Block 8 within the APE are covered with brick or stone structures.

Sanborn 1894: Water Street is shown as 39.6' wide at Whitehall Street.
Most of the lots appeared unchanged except for the following:
5 Water Street and *49 Whitehall Street* are both labeled "Hotel."
2 Front Street (a.k.a. 47 Whitehall Street) is now entirely covered by a structure.
4 Front Street is labeled "North Railway Company Supply Dept." and the vacant yard on the lot within the APE is still present.

Hyde 1913: The transit lines running down Water and Broad Streets are labeled as the Metropolitan Street Railway Company. Buildings on Block 8 within the APE range in size from one to five stories, and most are shown to have stores. Small vacant yards and alleys are still visible at:
3 Water Street (adjacent to 4 Water Street).
49 Whitehall Street.

Bromley 1916: None of the buildings within the APE appear to have basements. A subway had been constructed beneath Whitehall Street, and a station appears to lie within the APE at the intersection of Water and Whitehall Street.
Vacant alleys are shown only at:
1 Water Street (adjacent to 2 Front Street).
3 Water Street (adjacent to 4 Front Street).
14 Moore Street at the southeast corner of the lot within the APE, that appears to be shared by *16 Moore Street.*

Bromley 1925: The lots appear unchanged from 1916.
5 Water Street is labeled "Swedish Immigration Home."

Bromley 1955: Most of the lots are unchanged from 1916 but *4 Front Street* is now vacant.

Bromley 1974: By this time Water Street had been widened by between 71' and 111' on its eastern side, and all of the buildings on the lots on Block 8 within the APE were razed.

Sanborn 2001: Water Street is currently shown about 110' wide at Moore Street, which is 71' wider than its 1894 width (39.6'). At Whitehall, Water Street is now 150' wide, making it about 111' wider than its 1894 width (39.6').

Street Elevations of the APE are as follows:

Data Source	Water Street at Moore Street	Water Street at Whitehall
1885 Robinson	No elevations	5.7'
1913 Hyde	were available	5.8'
2001 Sanborn	at Moore Street	5.8'

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 8								
16 Moore Street	Widow Louis	A. Baur-son	Ann Baxter (house)	S. Seguire ow Johnson	Charles Rowell	S. Seguire	J. Hall	J. Hall
14 Moore Street	Madame Lang	Hugh Holm-es	James O. Ward	W. Talmaro ow. Johnson	Robert Silvey, Police Captian	Chris A Doe	Rufus Story	Rufus Story
12 Moore Street	E. Lumcrindy-ke	Gitty Bates	Edward Ward	W. Talmaro ow. I.L Earle	William Gibson, Collecter and	Seuyler and Skaats	Schuy ler Sraali	Rufus Story

					J.G Thrall, Policeman		s	
10 Moore St	Not for this yr.	Luman Warn-er and Mich-eal Price (stable)	John Black	S. Seguire ow. D. Winnet	John Griffen, Letter Carrier Mary Chesebrough W.;D Ansalus, Customs	David Magic	Rufus Story	Rufus Story
5 Water St	P. Sage	Not for this yr.	Not for this yr.	Not for this yr.	Not in Directory	Not for this yr.	NA	Not for this yr.
3 Water St	D. Gibson	L. Reed	P. Hastings	H. Kerr	Jones, Rimrod&Titus, com.mer *W.Jones/W.Rimrod/M.A. Titus	L. Reed	M. Reed	*Est of Reed
1 Water St	J. Johnson	S. Turner	S. Whitney	S. Whitney	Schuyer Skaats,com.mer Andrew Nottebohm, tallow H.O. Andrews, broker	S. Whitney	S. Whitn ey	* Est of Whitne y
49 Whitehall	Not for this yr.	Not for this yr.	Crane	S.L Palmer	John Mason,porter house Jacob Pitts, bayhouse	Jopseph L. Walmer	Not for this yr.	David A. Decker
47 Whitehall	Jacob Grocheron (house)	Jacob Groch-eron	Not for this Yr.	Not for this Yr.	Peter Frits&Co., barbers *Jacob Fritz	D.K Floyd	Not for this yr.	D.V.K Floyd
45 Whitehall Street	Linch	Do....D o.... ?	C.C. Tunis	L. Flay ow. Buckley	John Rucastle, tavern	James Hay	Not for this yr.	J.H Guion
43 Whitehall Street	Not for this Yr.	Not for this Yr.	Not for this Yr.	A. Allcond ow. E. Griffich	Henry Wintjen, grocer William Manshagn,oysters	A. Allcond	Not for this yr.	Abband
2 Front Street	Isaac Houseman	A. Turner	Joseph P. Tooker	Est. of Brackeson ow. M. Robinson House	John Mason, liquors	D.V.K Floyd	D.V.K Floyd	J.P. Faster
4 Front Street	Joseph Wood	N. Wells	P.R. Hastings (house)	H.A. Kerr ow. Alartui	Bartlett, Perry&Co., grocers *G.BArtlett/Robert Perry/John Buckingham	H.A. Kerr	H.A. Kerr	D.V.K Floyd

Precontact Sensitivity

Early historic maps indicate that this APE was land under water at the time of European Contact (Castello 1660; Viele 1874; Department of Docks 1873). Only one soil boring log was available for review for Water Street between Moore and Whitehall Streets. Boring 1.1.127 taken at Whitehall Street directly adjacent to an existing subway line, showed sand from the surface down to 26' below grade, where bedrock was encountered (Boring 1.1.127, WPA 1937). The lack of any indicators in the soil boring suggesting a precontact living surface, coupled with the fact that this area was considered to lack potential sensitivity since it was described as a "rocky shoreline" (see Chapter 2), suggests that this section of the APE is not potentially sensitive for precontact resources.

Historical Sensitivity

Although Water Street between Moore Street and Whitehall was land under water in 1660 (Costello 1660), by 1696 Moore Street, within the APE, was depicted as filled (Miller 1696). Stokes reports that in 1691 the Common Council ordered the buyers of land between Moore Street and Whitehall Slip to create Water Street in the following manner:

> *They shall build a good and substantial stone wall, 3½ feet broad at the bottom 'to batter one foot inwards on the Outside.' They shall protect it from 'the rubbing of boates' by driving 'spoiles or stoadoes' ever 5 ft., and these shall be 7 in. in diameter, bound together at the top by a place. When finished this wall shall be kept in good repair by the owners of the lots fronting the street or wharf, who nevertheless, are not to claim any property or interest in the street or wharf, that, instead is 'to remain to the use of the Citty.' The owners of this land, to fill up their respective lots, are obliged to use 'the dock Mudd Twenty ffoot into the Dock before their owne houses.'* (Stokes 1918:372)

Water Street appeared on maps to be filled sometime between 1730 and 1735, as was Block 8 (Lyne 1730, Figure 6.1-1; Buchnerd 1735). After Block 8 was filled, it was developed over the years (Carwitham 1740, Figure 6.1-2) until seven developed lots were shown on it in 1852 (Dripps 1852, Figure 6.1-4d). Structures were located in the APE at 12, 14, and 16 Moore Street, 5, 3, and 1 Water Street, 43, 45, 47, and 49 Whitehall Street, and 2 and 4 Front Street (Perris 1852). At that time, vacant alleys and yards were shown at 3 Water Street, 43 and 47 Whitehall Street, and 2 and 4 Front Street. However, between 18767 and 1885 all of the lots were shown as completely covered with structures (Dripps 1867, Figure 6.1-5d; Robinson 1885). In contrast, later maps show vacant alleys on some of the lots (Hyde 1913; Bromley 1916). By 1913 the Metropolitan Street Railway Company supply depot covered the lot at 4 Front Street (Hyde 1913). Water was available to these lots by 1842, and sewer lines were installed at Whitehall Street in 1849 (Endicott 1842; Board of Alderman 1857:129).

The tax assessment records indicate that all of the lots in the APE were taxed by as early as 1808, and that ownership of properties changed frequently in the 19th century (see Tax and Directory Table above). Most of the buildings were commercially occupied in 1851, and only three properties listed residents who occupied the same building where they

worked. On Moore Street, buildings were occupied by a police Captain, policeman, and customs agent, whereas on Whitehall and Front Street there were taverns and grocers.

The only soil boring available for review for this section of the APE was taken directly next to an existing subway tunnel at Whitehall Street (Boring 1.1.127, WPA 1937). While the boring reports no fill below grade at this location, it is possible, and even probable, that fill and/or fill retaining devices lie buried beneath Water Street in this section of the APE. Cartographic sources indicate that fill was deposited along the shoreline to allow for the creation of Moore Street by 1696, and for the creation of Water Street and Block 8 between 1730 and 1735. Therefore, this section of the APE is potentially sensitive for fill and fill retaining devices beneath all of Water Street and 18th through 20th century structures that stood on seven lots on Block 8. The anticipated depth of these historic resources are unknown, given that no logs were available for review outside of the one taken from an obviously disturbed area.

Block 9 and State Street

Block 9 is bounded by Whitehall, Pearl, and State Streets. Only the northeastern corner of the block, and the adjacent State Street roadbed, fall within the APE.

Cartographic History

Castello 1660:	What becomes Block 9 within the APE is fully developed with structures fronting both Whitehall and State Streets. At the Whitehall and State Street intersection, there is a wharf along the waterfront. There is a small section of this corner that is not developed where the road cut into the corner of the block. A large structure is shown within the APE fronting Whitehall, and behind it are gardens encompassed by a wall. State Street is present and there is a gallows depicted on it.
Miller 1696:	The APE is unchanged from the Castello 1660, but less detail is shown.
Lyne 1730:	Block 9 and State Street are both depicted, and the large structure on the block is labeled "White Hall."
Buchnerd 1735:	The APE is unchanged from the Lyne 1730.
Carwitham 1740:	The APE is unchanged from the Lyne 1730.
Grim 1744/1813:	The APE is unchanged from the Lyne 1730.
Maerschalck 1755:	The APE is unchanged from the Lyne 1730.
Montresor 1766:	Block 9 is shown as shaded, indicating it has been developed.
Ratzer 1766/67:	The APE is unchanged from the Montresor 1766.
Holland 1776:	The APE is unchanged from the Montresor 1766.
McComb 1789:	The APE is unchanged from the Montresor 1766.
Taylor Roberts 1797:	The APE is unchanged from the Montresor 1766, although by this time Whitehall Street is labeled as such.
Bridges 1803:	The APE is unchanged from the Taylor Roberts 1797.
Hill 1804:	The APE is unchanged from the Taylor Roberts 1797.
Commissioners' 1811:	The APE is unchanged from the Taylor Roberts 1797.
Hooker 1824:	The APE is unchanged from the Taylor Roberts 1797.
Colton 1836:	The APE is unchanged from the Taylor Roberts 1797.

Endicott 1842: Water lines are shown on Whitehall, Pearl, and State Streets.

Perris 1849/50: The APE is unchanged from the Taylor Roberts 1797.

Dripps 1852: Block 9 has been subdivided, with three city lots falling within the APE. Structures are shown covering all of the lots within the APE.

Perris 1852: The three structures that fall within the APE on Block 9 are brick. These are located at *1, 2, and 3 State Street.*

Perris 1857: The APE is unchanged from the Perris 1852.

Dripps 1867: The APE is unchanged from the Perris 1852. Horse or cable car lines are shown running down Whitehall Street and State Street.

Viele 1874: Whitehall Street and State Street, directly adjacent to the northeast corner of Block 9 within the APE are shown as fast land. However, the locations of State Street to the south and Whitehall Street to the east of what is now Water Street, are shown as land under water.

Robinson 1885: The three lots on Block 9 within the APE are covered with brick structures.

Sanborn 1894: The APE is unchanged from the Robinson 1885.

Bromley 1916: On Block 9, the three individual structures at *1, 2, and 3 State Street* have been razed and replaced by the South Ferry Building, a large twelve-story masonry building with a basement that covered the entire northeast corner of the block. Also by this time, a subway had been constructed under Whitehall Street within the APE.

Bromley 1925: The APE is unchanged from the Bromley 1916.

Bromley 1955: The APE is unchanged from the Bromley 1916.

Bromley 1974: Between 1955 and 1974, the South Ferry Building was removed and replaced by One State Plaza, a 32 story building with a basement that covers the northern half of Block 9. The subway line is still present on Whitehall Street, and a station is clearly shown between State and Pearl Streets.

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

Street Elevations of the APE are as follows:

Data Source	Water Street at Whitehall
1885 Robinson	5.7'
1913 Hyde	5.8'
2001 Sanborn	5.8'

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 9								
1 State Street	John B Coles (house)	William Neilson (house)	James Bowen	W. Floles ow. S. Mudge (house)	William Dayton	J. W. Coles	Not for this Yr.	J. W. Coles

2 State Street	John B. Coles	John B. Coles, Wf. Coles, and B.W. Coles	J.B. Coles (estate) name crossed out	W. Floles ow. G. Nixon	John Nigeon	J. W. Coles	Not for this Yr.	J. W. Coles
3 State Street	B.W. Rogers	Henry Buring	Henry Overing	L. Curtis	Lewis Curtis	Lewis Curtis	Not for this Yr.	Lewis Curtis

Precontact Sensitivity

Although some sources indicate that Block 9 was exposed at the time of historic settlement (e.g., Viele 1874), the literature strongly supports the contention that part of Block 9 was filled in the 17th century (Geismar 1986:46). In 1658 Stuyvesant, who's house reportedly stood in the APE, was cited as fencing and improving the land near his house, that included "raising it up a great cost and labor out of the water swamp" (Stokes 122:186). However, Geismar suggests that filling probably occurred along the western shore.

The lack of soil borings from this location makes it difficult to assess current subsurface conditions. However, if precontact sensitivity did exist here, which is highly unlikely given its precontact topography was described as a "rocky shoreline" (Chapter 2), 20th century construction episodes would have eliminated any precontact potential. The South Ferry Building, a 12 story masonry structure with a basement, would have probably required deep footings to bedrock to secure in at this otherwise sandy location. It was subsequently replaced by One State Plaza, a 32 story building. Therefore, any potential precontact resources that may have once existed at Block 9 would have been affected during the construction of both of these structures, and, therefore, this section of the APE has no precontact potential.

Historical Sensitivity

According to Stokes, the northeast corner of Block 9 was granted to Nicasius DeSille in 1637, with the lot directly south granted to Nicholas Verlett before 1661 (Stokes 1916: Plate 87a). If any of the land within the APE was originally land under water, by 1637 it was filled and/or granted. Governor Stuyvesant built his great house within the APE by 1768, and just to the south of the house was Stuyvesant's extensive garden. Later, Robert Fulton's house reportedly stood in the same vicinity until 1914 (Geismar 1986:Figure 5).

The three lots within the APE were assessed for taxes as early as 1808 (see Tax and Directory Table above). Ownership of these lots stayed fairly constant in the 19th century, and they were clearly residentially occupied by their owners in 1851 (Ibid.).

Despite the continued use of this block from the 17th century onward (Lyne 1730, Figure 6.1-1, Carwitham 1740, Figure 6.1-2; Ratzer 1766/67, Figure 6.1-3), the small section of the block within the APE, that encompasses what was historically 1 through 3 State Street (Dripps 1852, Figure 6.1-4d), has experienced extensive 20th century effects. First, this corner of the block was developed with the construction of the South Ferry Building, a 12 story structure with a basement (Bromley 1916). In 1969 this was razed and replaced by 1 State Plaza (a.k.a. the Schroeder Building), a 32 story structure with a

basement (Willensky and White 1988:9; Bromley 1974). The basement, foundation, and footings for this massive structure, would have probably extended down as far as bedrock, and would have eliminated potential historical archaeological sensitivity on Block 9 within the APE.

Stokes suggests that part of State Street was land under water at the time that southern Manhattan was first developed (Stokes 1918:Plate 87A). However, the State Street roadbed within the APE has remained open as a street since at least 1660 (Castello 1660), and may have been passable at an earlier date. It appeared to be free of encumbrances throughout the historic period.

State Street and adjacent Peter Minuit Park (see Chapter 6.3) experienced subsurface disturbance with the construction of a series of subway and vehicular tunnels, as well as foundations for structures related to an elevated railway (Kearns et al 1992b:Figure 26). Closest to the State Street APE is the Battery loop of the IRT subway. But this runs towards the west end of State Street. Utility lines beneath the street are numerous, but it is possible that outside of the footprint of these, historic period resources related to the 17th and 18th century fill process could still be present here.

6.1.7.2 Site File Search Results, NYCLPC, NYSOPRHP and NYSM

SITE FILE SEARCH RESULTS

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

~~Village~~ City 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 ~~21~~ 19

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
7248 X		~~2- A061.01.0014 D03~~	survey in the 1970's
		3- A061.01.0623 X D023	2nd found historic Remains.
		4- A061.01.06763 X	no other info was found.)
		~~5- A061.01.0001~~	
	209 Water St. South Street NR 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	
		A061.01.01286 X	
		A061.01.0541 X	
		A061.01.00542 X	
		A061.01.09531 X	

*According to Cynthia Blakemore @ SHPO

ATIONAL REGISTER LANDMARK and LISTED ___ Eligible ___ Listed ___ Building Inventory

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

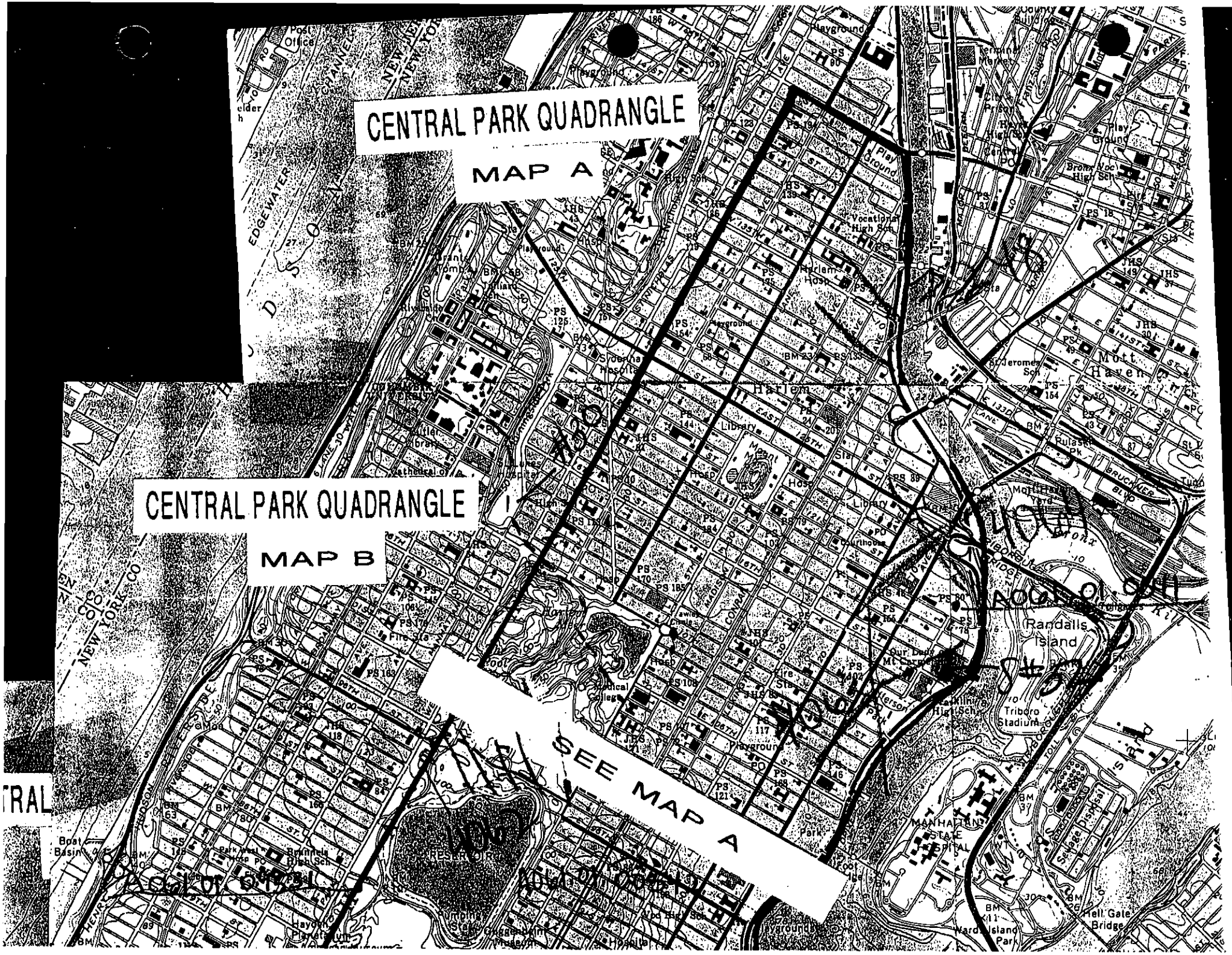
EVIOUS SURVEYS

<17 previous surveys w/in Radius>

8 Westside Highway Program – 1983
William D. Hersey – 1963 Castle Clinton at the Battery
Broad Street Financial Center Greenhouse January 1985
X
64th Pearl Street Fifth Landfill Arnold Pickman & Nan Rothschild May 1981
Stone Street Historic District 1977, 8/15 NYC Landmarks Pres. Comm. Tracker
9 Barclays Bank Site – 100 Water St. Berger – 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block. Kardon & Larrabee Aug 1971

209 Water St. – Schuyler – ? Date
East River Road. New York Harbor Collection Kardon & Larrabee October 1977
10 Sheridan Square – 1983 – Rutgers University
Lower Eastside Service Center – Louis Berger Jan '98
750 Sixth Ave. HPI – February 1998
Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1981 / December 1989
32 East River Plaza HPI Sept. 1998
Stone Street Historic District NYC Landmark Pres. Comm. February 1998

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


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A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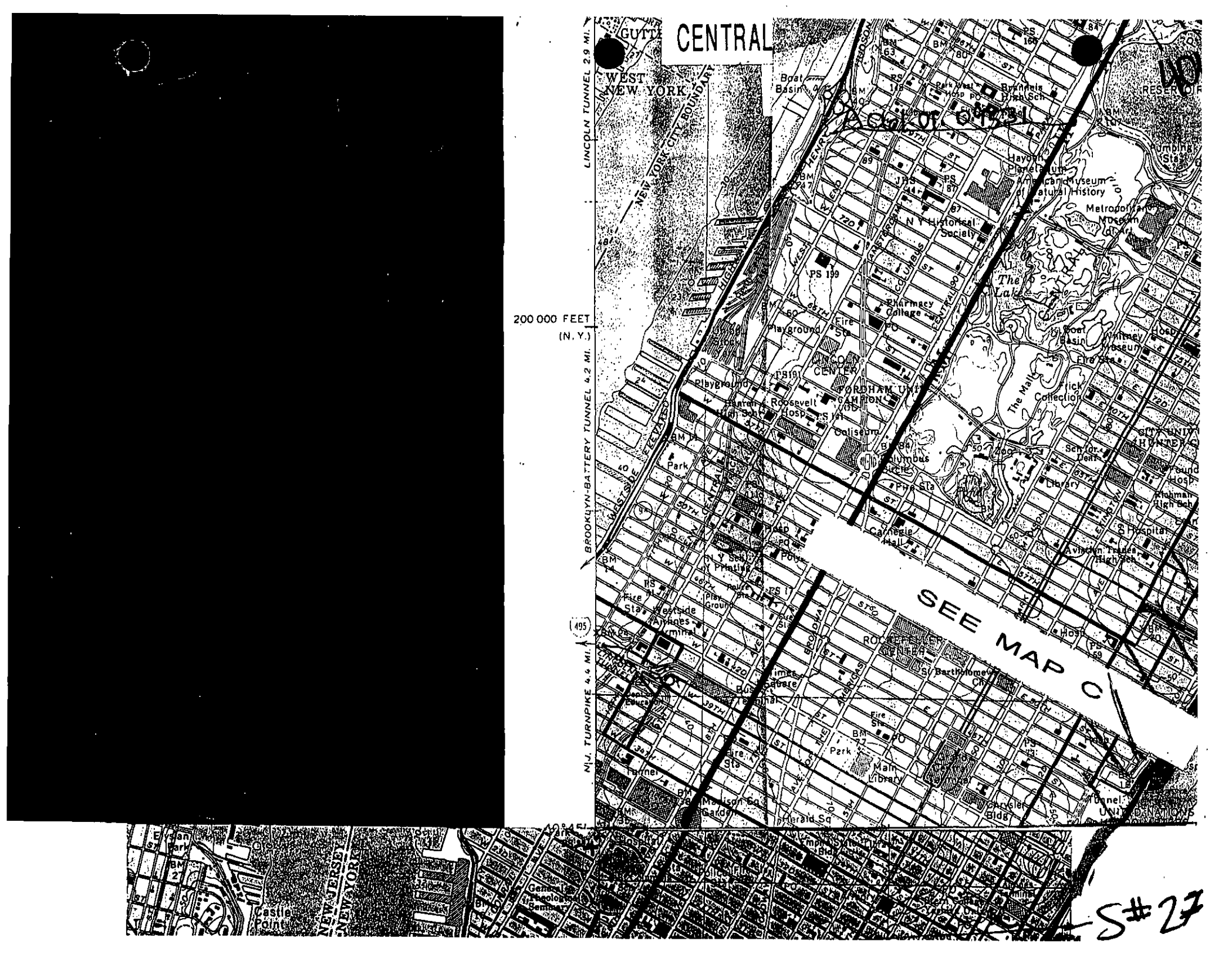
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WEST NEW YORK
NEW YORK CITY BOUNDARY
LINCOLN TUNNEL 2.9 MI.
BROOKLYN-BATTERY TUNNEL 4.2 MI.
N.J. TURNPIKE 4.4 MI.
200 000 FEET (N.Y.)
Boat Basin
Hayden Planetarium
American Museum of Natural History
Metropolitan Museum of Art
N Y Historical Society
PS 199
Pharmacy College
Playground
Fire Sta
LINCOLN CENTER
FORDHAM UNIV CAMPION
Roosevelt Hosp
Coliseum
Columbus Circle
Fire Sta
Carnegie Hall
The Lake
Whitney Museum
Frick Collection
The Mall
Library
Sch for Deaf
CITY UNIV HUNTER
Richman High Sch
Hospital
Aviation Trades High Sch
Park
Westside Airlines Terminal
Play Ground
Police Sta
Times Square
Bus Terminal
ROCKEFELLER CENTER
St Bartholomew Ch
Main Library
Chrysler Bldg
Tunnel
Madison Sq Garden
Herald Sq
Tunnel
UNITED NATIONS
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Castle Point
NEW JERSEY
NEW YORK
General Theological Seminary
S#27

Site #35
Site #28
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Site #32
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NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

For Office Use Only--Site Identifier A061-01-1304

Project Identifier City Hall Park Date _____

Your Name _____ Phone ( ) _____

Address _____

_____

Zip _____

Organization (if any) Grossman & Associates

1. Site Identifier(s) City Hall Park Site
2. County New York One of following: City _____
   Township _____
   Incorporated Village _____
   Unincorporated Village or Hamlet _____

3. Present Owner _____
   Address _____

   _____

   Zip _____

4. Site Description (check all appropriate categories):
   Structure/site
   Superstructure: complete__ partial__ collapsed__ not evident__
   Foundation: above__ below__ (ground level) not evident__
   __Structural subdivisions apparent __Only surface traces visible
   __Buried traces detected
   List construction materials (be as specific as possible):

   Grounds
   __Under cultivation __Sustaining erosion __Woodland __Upland
   __Never cultivated __Previously cultivated __Floodplain __Pasturela
   Soil Drainage: excellent__ good__ fair__ poor__
   Slope: flat__ gentle__ moderate__ steep__
   Distance to nearest water from structure (approx.) _____
   Elevation: _____

5. Site Investigation (append additional sheets, if necessary):
   Surface--date(s) _____
   __Site Map (Submit with form*)
   __Collection
   Subsurface--date(s) _____
   Testing: shovel__ coring__ other _____ unit size_____
   no. of units _____ (Submit plan of units with form*)

   Excavation: unit size _____ no. of units _____
   (Submit plan of units with form*)
   * Submission should be 8½"x11", if feasible

   Investigator J. Grossman
   Manuscript or published report(s) (reference fully):

Present repository of materials _____

6. Site inventory:
   a. date constructed or occupation period _____
   b. previous owners, if known
   c. modifications, if known

   (append additional sheets, if necessary)

7. Site documentation (append additional sheets, if necessary):
   a. Historic map references
      1) Name _____ Date _____ Source _____
         Present location of original, if known _____
      2) Name _____ Date _____ Source _____
         Present location of original, if known _____
   b. Representation in existing photography
      1) Photo date _____ Where located _____
      2) Photo date _____ Where located _____
   c. Primary and secondary source documentation (reference fully)

   d. Persons with memory of site:
      1) Name _____ Address _____
      2) Name _____ Address _____

8. List of material remains other than those used in construction (be as specific as possible in identifying object and material):

   Early 18th cent materials

   If prehistoric materials are evident, check here and fill out prehistoric site form. ___

9. Map References: Map or maps showing exact location and extent of site must accompany this form and must be identified by source and date. Keep this submission to 8½"x11" if feasible.

   USGS 7½ Minute Series Quad. Name _____

   For Office Use Only--UTM Coordinates _____

10. Photography (optional for environmental impact survey): Please submit a 5"x7" black and white print(s) showing the current state of the site. Provide a label for the print(s) on a separate sheet.

Report and More Elaborate Form To Be Submitted

RTD 4-17-09

ARCHEOLOGICAL SITE INVENTORY FORM

DIVISION FOR HISTORIC PRESERVATION
NEW YORK STATE PARKS AND RECREATION
ALBANY, NEW YORK
518 474-0479

FOR OFFICE USE ONLY

UNIQUE SITE NO. A061-01-0604
QUAD. Jersey City
SERIES
NEG. NO.

REPORTED BY: Dr. R.L. Schuyler, W. Adkins, R. Venn, J. Levin

YOUR ADDRESS: _____ TELEPHONE: _____

ORGANIZATION (if any): City University of New York

DATE: 1978 (Oct - Nov)

* *

1. SITE NAME: 209 Water Street

2. COUNTY: New York TOWN/CITY: New York VILLAGE: _____

3. LOCATION: 209 Water Street, Manhattan.

4. PRESENT OWNER: South Street Seaport Museum

5. OWNER'S ADDRESS: _____

6. DESCRIPTION, CONDITION, EVIDENCE OF SITE:

- ☐ STANDING RUINS
- ☐ CELLAR HOLE WITH WALLS
- ☐ SURFACE TRACES VISIBLE
- ☐ WALLS WITHOUT CELLAR HOLE
- ☐ UNDER CULTIVATION
- ☐ EROSION
- ☐ UNDERWATER
- ☐ NO VISIBLE EVIDENCE
- ☑ OTHER cellar of standing structure

7. COLLECTION OF MATERIAL FROM SITE:

- ☐ SURFACE HUNTING BY WHOM _____ DATE _____
- ☐ TESTING BY WHOM _____ DATE _____
- ☑ EXCAVATION BY WHOM CCNY DATE Oct-Nov 1978
- ☐ NONE

PRESENT REPOSITORY OF MATERIALS: _____

8. PREHISTORIC CULTURAL AFFILIATION OR DATE: _____

9. HISTORICAL DOCUMENTATION OF SITE:

10. POSSIBILITY OF SITE DESTRUCTION OR DISTURBANCE: none

11. REMARKS: Items discovered include various stoneware, white-ware, pearlware, creamware, porcelain, delftware, slip-ware and bottles.

12. MAP LOCATION

7 ½ MINUTE SERIES QUAD. NAME: Jersey City

15 MINUTE SERIES QUAD. NAME: _____

U.S.G.S. COORDINATES: _____

D.O.T. COORDINATES: (if known) _____

ATTACH SKETCH, TRACING OR COPY OF MAP

See report.

SOURCE OF MAP:

13. PHOTOGRAPHS (optional)

(ATTACH)

NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

For ~~Office~~ Use Only--Site Identifier A061-01-0623 DO-23

Project Identifier HUD UDAG TELCO Block Date January 1982

Your Name Diana Rockman Phone ( )

Address

Zip

Organization (if any) Soil Systems, Inc.

1. Site Identifier(s) Telco Block (Block 74W)
2. County New York One of following: City New York (Manhattan)
   Township
   Incorporated Village
   Unincorporated Village or Hamlet

3. Present Owner
   Address

   Zip

4. Site Description (check all appropriate categories):
   Structure/site See report for the numerous features discovered
   Superstructure: complete__ partial__ collapsed__ not evident__
   Foundation: above__ below__ (ground level) not evident__
   __Structural subdivisions apparent __Only surface traces visible
   __Buried traces detected
   List construction materials (be as specific as possible):

   Grounds
   __Under cultivation __Sustaining erosion __Woodland __Upland
   __Never cultivated __Previously cultivated __Floodplain __Pastureland
   Soil Drainage: excellent__ good__ fair__ poor__
   Slope: flat__ gentle__ moderate__ steep__
   Distance to nearest water from structure (approx.)
   Elevation:

5. Site Investigation (append additional sheets, if necessary):
   Surface--date(s)
   __Site Map (Submit with form*)
   __Collection
   Subsurface--date(s) 1981 See Report
   Testing: shovel__ coring__ other unit size
   no. of units (Submit plan of units with form*)

   Excavation: unit size no. of units
   (Submit plan of units with form*)
   * Submission should be 8½"x11", if feasible

   Investigator Diana Rockman
   Manuscript or published report(s) (reference fully):
   January 1982 The Archaeological Investigation of the TELCO Block, New York, New York: Interim Report: The Results of the Field Investigations.

   Present repository of materials
   October 1980 Wendy Harris Historic Background Study of Block 74W

6. Site inventory:
   a. date constructed or occupation period _____
   b. previous owners, if known

   c. modifications, if known

   (append additional sheets, if necessary)

7. Site documentation (append additional sheets, if necessary):
   a. Historic map references
      1) Name _____ Date _____ Source _____
         Present location of original, if known _____

      2) Name _____ Date _____ Source _____
         Present location of original, if known _____

   b. Representation in existing photography
      1) Photo date _____ Where located _____
      2) Photo date _____ Where located _____

   c. Primary and secondary source documentation (reference fully)

   d. Persons with memory of site:
      1) Name _____ Address _____
      2) Name _____ Address _____

8. List of material remains other than those used in construction (be as specific as possible in identifying object and material):

   If prehistoric materials are evident, check here and fill out prehistoric site form. __

9. Map References: Map or maps showing exact location and extent of site must accompany this form and must be identified by source and date. Keep this submission to 8½"x11", if feasible. See Plot on U.S.G.S. Topo. Sheet

   USGS 7½ Minute Series Quad. Name Jersey City

   For Office Use Only--UTM Coordinates _____

10. Photography (optional for environmental impact survey):
    Please submit a 5"x7" black and white print(s) showing the current state of the site. Provide a label for the print(s) on a separate sheet.

NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

For Office Use Only--Site Identifier A06I-01-1271

Project Identifier 175 Water Street Project Date April 1982
Your Name Joan Geismar Phone ( )
Address

Zip

Organization (if any) Professional Service Industries, Inc., Soil Systems Division

1. Site Identifier(s) 175 Water Street Site
2. County New York One of following: City Manhattan
   Township
   Incorporated Village
   Unincorporated Village or Hamlet

3. Present Owner Howard Ronson
   Address HRO International

   Zip

4. Site Description (check all appropriate categories):
   Structure/site For all details of finds see report
   Superstructure: complete__ partial__ collapsed__ not evident__
   Foundation: above__ below__ (ground level) not evident__
   __Structural subdivisions apparent __Only surface traces visible
   __Buried traces detected
   List construction materials (be as specific as possible):

   Grounds
   __Under cultivation __Sustaining erosion __Woodland __Upland
   __Never cultivated __Previously cultivated __Floodplain __Pastureland
   Soil Drainage: excellent__ good__ fair__ poor__
   Slope: flat__ gentle__ moderate__ steep__
   Distance to nearest water from structure (approx.)
   Elevation:

5. Site Investigation (append additional sheets, if necessary):
   Surface--date(s)
   __Site Map (Submit with form*) For all details of the excavations, see report.
   __Collection
   Subsurface--date(s) Oct. 1981 thru Mar. 1982
   Testing: shovel__ coring__ other unit size
   no. of units (Submit plan of units with form*)

   Excavation: unit size no. of units
   (Submit plan of units with form*)
   * Submission should be 8½"x11", if feasible

Investigator Joan H. Geismar
Manuscript or published report(s) (reference fully):
July 1983 The Archaeological Investigation of the 175 Water Street Block, Manhattan, New York County.

Present repository of materials South Street Seaport Museum

6. Site inventory:
   a. date constructed or occupation period _____
   b. previous owners, if known

   c. modifications, if known

   (append additional sheets, if necessary)

7. Site documentation (append additional sheets, if necessary):
   a. Historic map references
      1) Name _____ Date _____ Source _____
         Present location of original, if known _____
      2) Name _____ Date _____ Source _____
         Present location of original, if known _____
   b. Representation in existing photography
      1) Photo date _____ Where located _____
      2) Photo date _____ Where located _____
   c. Primary and secondary source documentation (reference fully)

   d. Persons with memory of site:
      1) Name _____ Address _____
      2) Name _____ Address _____

8. List of material remains other than those used in construction (be as specific as possible in identifying object and material):

   If prehistoric materials are evident, check here and fill out prehistoric site form. __

9. Map References: Map or maps showing exact location and extent of site must accompany this form and must be identified by source and date. Keep this submission to 8½"x11", if feasible. See Plot on U.S.G.S. Topo Sheet

   USGS 7½ Minute Series Quad. Name Jersey City

   For Office Use Only--UTM Coordinates _____

10. Photography (optional for environmental impact survey):
    Please submit a 5"x7" black and white print(s) showing the current state of the site. Provide a label for the print(s) on a separate sheet.

NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

For Office Use Only--Site Identifier A061-01-1272-D014

Project Identifier 64 Pearl Street-34 Water Street Project Date May 1981
Your Name Nan Rothschild & Arnold Pickman Phone ( )
Address
Zip
Organization (if any) New York Landmarks Conservancy

1. Site Identifier(s) Historic Landfill Site at 64 Pearl Street-34 Water Street
2. County New York One of following: City New York
Township
Incorporated Village
Unincorporated Village or Hamlet

3. Present Owner
Address
Zip

4. Site Description (check all appropriate categories):
Structure/site historic landfill
Superstructure: complete__ partial__ collapsed__ not evident__
Foundation: above__ below__ (ground level) not evident__
__Structural subdivisions apparent __Only surface traces visible
__Buried traces detected
List construction materials (be as specific as possible):

Grounds
__Under cultivation __Sustaining erosion __Woodland __Upland
__Never cultivated __Previously cultivated __Floodplain __Pastureland
Soil Drainage: excellent__ good__ fair__ poor__
Slope: flat__ gentle__ moderate__ steep__
Distance to nearest water from structure (approx.)
Elevation:

5. Site Investigation (append additional sheets, if necessary):
Surface--date(s)
__Site Map (Submit with form*)
__Collection
Subsurface--date(s) March 1980
Testing: shovel__ coring__ other unit size
no. of units (Submit plan of units with form*)

Excavation: unit size no. of units 3
(Submit plan of units with form*)
* Submission should be 8½"x11", if feasible

Investigator Nan Rothschild and Arnold Pickman
Manuscript or published report(s) (reference fully):
(May 1981) 64 Pearl Street: An Archaeological Excavation in 17th Century Landfill, New York City, New York County.

Present repository of materials

Site inventory:

a. date constructed or occupation period earliest fill is from the late 17th Century

b. previous owners, if known

c. modifications, if known

(append additional sheets, if necessary)

7. Site documentation (append additional sheets, if necessary):

a. Historic map references

1) Name _____ Date _____ Source _____
Present location of original, if known _____

2) Name _____ Date _____ Source _____
Present location of original, if known _____

b. Representation in existing photography

1) Photo date _____ Where located _____
2) Photo date _____ Where located _____

c. Primary and secondary source documentation (reference fully)

d. Persons with memory of site:

1) Name _____ Address _____
2) Name _____ Address _____

8. List of material remains other than those used in construction (be as specific as possible in identifying object and material):

See report

If prehistoric materials are evident, check here and fill out prehistoric site form. ___

9. Map References: Map or maps showing exact location and extent of site must accompany this form and must be identified by source and date. Keep this submission to 8½"x11", if feasible. See Plot on U.S.G.S. Topo Sheet

USGS 7½ Minute Series Quad. Name Jersey City

For Office Use Only--UTM Coordinates _____

10. Photography (optional for environmental impact survey):
Please submit a 5"x7" black and white print(s) showing the current state of the site. Provide a label for the print(s) on a separate sheet.

NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

For Office Use Only--Site Identifier A06I-01-1282

Project Identifier Howard Ronson Project Date 3/22/84
Your Name Joel Grossman, Ph.D. Phone (212) 514-9580
Address

Zip

Organization (if any) Greenhouse Consultants, Inc.

1. Site Identifier(s) Ronson Project Site (Pearl Bridge & Whitehall Streets)
2. County New York One of following: City Manhattan
   Township
   Incorporated Village
   Unincorporated Village or Hamlet

3. Present Owner Ronson International
   Address

   Zip

4. Site Description (check all appropriate categories):
   Structure/site Original Dutch period surfaces exposed beneath 19th cent. foundations
   Superstructure: ✓ complete __partial __collapsed __not evident __
   Foundation: above __ below __ (ground level) not evident __
   __Structural subdivisions apparent __Only surface traces visible
   X Buried traces detected
   List construction materials (be as specific as possible):

   Grounds
   __Under cultivation __Sustaining erosion __Woodland __Upland
   __Never cultivated __Previously cultivated __Floodplain __Pastureland
   Soil Drainage: excellent __ good __ fair __ poor __
   Slope: flat __ gentle __ moderate __ steep __
   Distance to nearest water from structure (approx.)
   Elevation:

5. Site Investigation (append additional sheets, if necessary):
   Surface--date(s)
   __Site Map (Submit with form*)
   __Collection
   Subsurface--date(s) December 1983
   Testing: shovel X coring __ other backhoe unit size
   no. of units (Submit plan of units with form*)

   Excavation: unit size 5'x5' or 10' no. of units 5
   (Submit plan of units with form*)

   * Submission should be 8½"x11", if feasible

Investigator Joel Grossman
Manuscript or published report(s) (reference fully):
1983 (October 12) Phase I Report and Mitigation Report for the Broad Street Plaza Site, New York, New York (Area I, Lots 12-14)

Present repository of materials

6. Site inventory:
   a. date constructed or occupation period 17th cent. thru modern
   b. previous owners, if known
   c. modifications, if known

   (append additional sheets, if necessary)

7. Site documentation (append additional sheets, if necessary):
   a. Historic map references
      1) Name _____ Date _____ Source _____
         Present location of original, if known _____
      2) Name _____ Date _____ Source _____
         Present location of original, if known _____
   b. Representation in existing photography
      1) Photo date _____ Where located _____
      2) Photo date _____ Where located _____
   c. Primary and secondary source documentation (reference fully)

   d. Persons with memory of site:
      1) Name _____ Address _____
      2) Name _____ Address _____

8. List of material remains other than those used in construction (be as specific as possible in identifying object and material):

   If prehistoric materials are evident, check here and fill out prehistoric site form. __

9. Map References: Map or maps showing exact location and extent of site must accompany this form and must be identified by source and date. Keep this submission to 8½"x11", if feasible. See Plot -- U.S.G.S. Topo Sheet

   USGS 7½ Minute Series Quad. Name Jersey City

   For Office Use Only--UTM Coordinates _____

10. Photography (optional for environmental impact survey):
    Please submit a 5"x7" black and white print(s) showing the current state of the site. Provide a label for the print(s) on a separate sheet.

NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

For Office Use Only--Site Identifier A06I-01-1283

Project Identifier Barlays Bank Site
Your Name Terry H. Klein Date 1/4/83, updated 4/28/86
Address 100 Halsted Street Phone (201) 678-1960
East Orange, New Jersey
Zip 07019
Organization (if any) Louis Berger & Associates, Inc.

1. Site Identifier(s) Barclays Bank Site/75 Wall Street
2. County New York One of following: City New York City, Manhattan
Township
Incorporated Village
Unincorporated Village or Hamlet

3. Present Owner London & Leeds Corporation
Address 101 East 52nd St., 35th Floor
New York, New York
Zip 10022

4. Site Description (check all appropriate categories):
Structure/site 16 contiguous lots occupied from 1702 to 1983
Superstructure: complete__ partial__ collapsed__ not evident X
Foundation: above__ below X (ground level) not evident__
__Structural subdivisions apparent __Only surface traces visible
X Buried traces detected
List construction materials (be as specific as possible):
Brick, mortar, stone, wood.

Grounds Urban lots, now site of office tower
__Under cultivation __Sustaining erosion __Woodland __Upland
__Never cultivated __Previously cultivated __Floodplain __Pastureland
Soil Drainage: excellent__ good__ fair__ poor X
Slope: flat__ gentle X moderate__ steep__
Distance to nearest water from structure (approx.)
Elevation: 10 feet

5. Site Investigation (append additional sheets, if necessary):
Surface--date(s) None
__Site Map (Submit with form*)
__Collection
Subsurface--date(s) 1-3 to 2-6-84
Testing: shovel__ coring__ other 12 back hoe trenches unit size 5x5 feet
no. of units five (Submit plan of units with form*)

Excavation: unit size 5x5 feet no. of units 51
(Submit plan of units with form*)
* Submission should be 8½"x11", if feasible

Investigator Terry H. Klein, Louis Berger & Associates, Inc.
Manuscript or published report(s) (reference fully):
1986 Cultural Resource Investigations of the Barclays Bank Site, 75 Wall Street, Borough of Manhattan, New York City, New York. Submitted to London and Leeds Corporation and Barclays Bank PLC, by Louis Berger & Associates, Inc.

Present repository of materials Louis Berger & Associates, Inc.

6. Site inventory:
   a. date constructed or occupation period 1702-1983, majority of archaeological material: 1750s-1820
   b. previous owners, if known
   c. modifications, if known

   (append additional sheets, if necessary)

7. Site documentation (append additional sheets, if necessary): See final report
   a. Historic map references
      1) Name _____ Date _____ Source _____
         Present location of original, if known _____
      2) Name _____ Date _____ Source _____
         Present location of original, if known _____

   b. Representation in existing photography None available
      1) Photo date _____ Where located _____
      2) Photo date _____ Where located _____

   c. Primary and secondary source documentation (reference fully)
      See final report.

   d. Persons with memory of site: None
      1) Name _____ Address _____
      2) Name _____ Address _____

8. List of material remains other than those used in construction (be as specific as possible in identifying object and material):

   See final report and artifact catalogue computer print-out.

   If prehistoric materials are evident, check here and fill out prehistoric site form. X Prehistoric material in landfill context, does not represent a site.

9. Map References: Map or maps showing exact location and extent of site must accompany this form and must be identified by source and date. Keep this submission to 8½"x11", if feasible.

   USGS 7½ Minute Series Quad. Name Jersey City, N.J. - N.Y.

   For Office Use Only--UTM Coordinates _____

10. Photography (optional for environmental impact survey): Please submit a 5"x7" black and white print(s) showing the current state of the site. Provide a label for the print(s) on a separate sheet.

NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

For Office Use Only--Site Identifier A06I-01-1283

Project Identifier Barclays Bank Site
Your Name Terry H. Klein Date 1/4/83
Address 100 Halsted Street Phone (201) 678-1960
East Orange, New Jersey
Zip 07019
Organization (if any) Louis Berger & Associates, Inc.

1. Site Identifier(s) Barclays Bank Site/100 Water Street Site
2. County New York One of following: City New York City, Manhattan
Township ____
Incorporated Village ____
Unincorporated Village or Hamlet ____

3. Present Owner London & Leeds Corporation
Address 499 Park Avenue
N.Y., N.Y.
Zip 10022

4. Site Description (check all appropriate categories):
Structure/site 16 contiguous lots occupied from 1702 to 1983
Superstructure: complete__ partial__ collapsed__ not evident X
Foundation: above__ below X (ground level) not evident__
__Structural subdivisions apparent __Only surface traces visible
X Buried traces detected
List construction materials (be as specific as possible):
Brick, mortar, wood

Grounds Urban vacant lot X
__Under cultivation __Sustaining erosion __Woodland __Upland
__Never cultivated __Previously cultivated __Floodplain __Pastureland
Soil Drainage: excellent__ good__ fair__ poor X
Slope: flat__ gentle X moderate__ steep__
Distance to nearest water from structure (approx.) on site
Elevation: 10 feet

5. Site Investigation (append additional sheets, if necessary):
Surface--date(s) None
__Site Map (Submit with form*)
__Collection
Subsurface--date(s) In progress
Testing: shovel__ coring__ other ____ unit size____
no. of units ____ (Submit plan of units with form*)

Excavation: unit size ____ no. of units ____
(Submit plan of units with form*)
* Submission should be 8½"x11", if feasible

Investigator Louis Berger & Associate, Inc., The Cultural Resource Group
Manuscript or published report(s) (reference fully):

An Archaeological Assessment of the Barclays Bank Site, 100 Water Street, New York, New York. Ms. on file, New York City Landmarks Commission, New York.

Present repository of materials N/A

6. Site inventory:
   a. date constructed or occupation period 1702-1830
   b. previous owners, if known See Assessment Report
   c. modifications, if known See Assessment Report

   (append additional sheets, if necessary)

7. Site documentation (append additional sheets, if necessary):
   a. Historic map references See Assessment Report
      1) Name _____ Date _____ Source _____
         Present location of original, if known _____
      2) Name _____ Date _____ Source _____
         Present location of original, if known _____

   b. Representation in existing photography None Available
      1) Photo date _____ Where located _____
      2) Photo date _____ Where located _____

   c. Primary and secondary source documentation (reference fully)

      See Assessment Report

   d. Persons with memory of site: None known
      1) Name _____ Address _____
      2) Name _____ Address _____

8. List of material remains other than those used in construction (be as specific as possible in identifying object and material): N/A

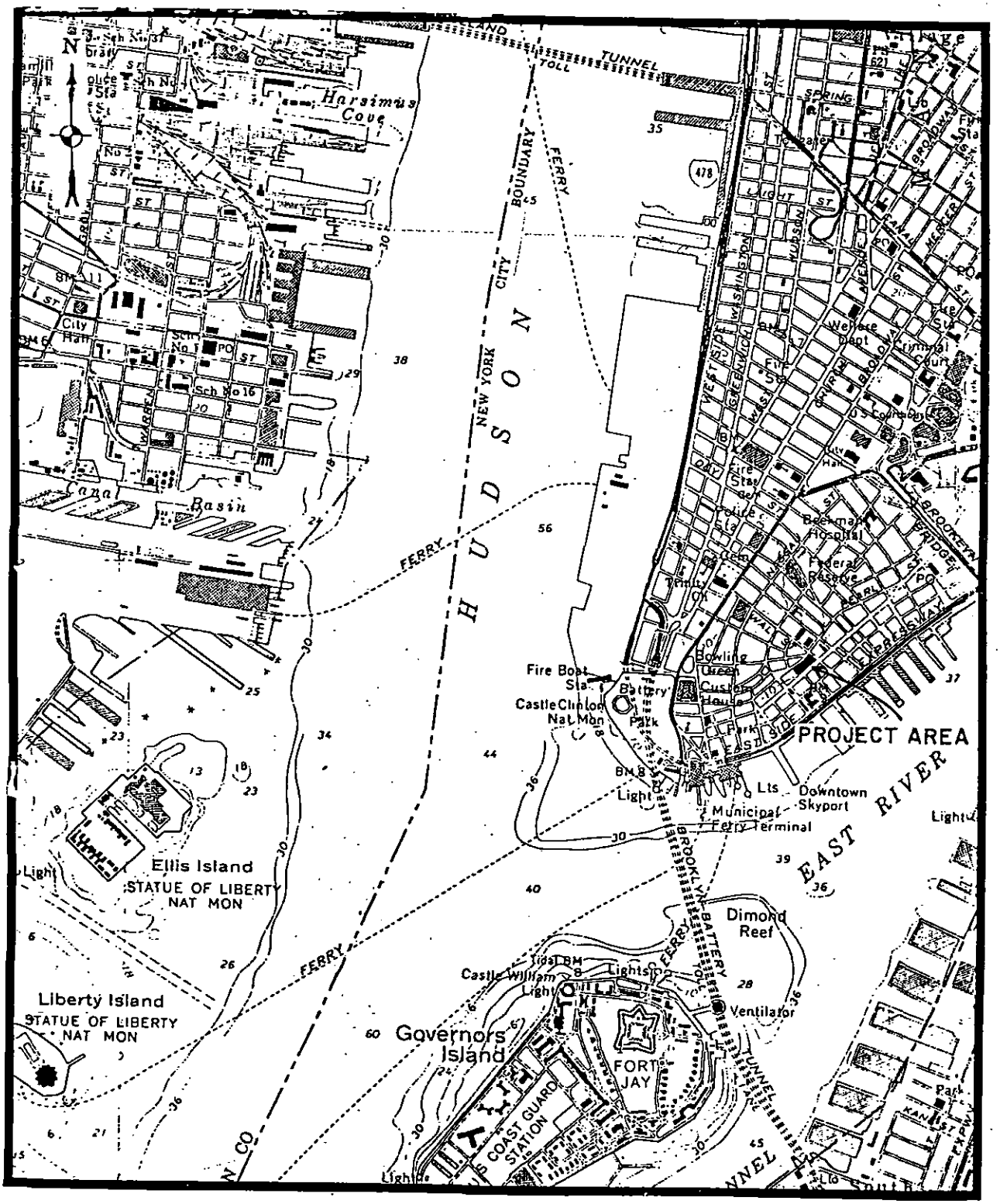
   If prehistoric materials are evident, check here and fill out prehistoric site form. N/A

9. Map References: Map or maps showing exact location and extent of site must accompany this form and must be identified by source and date. Keep this submission to 8½"x11", if feasible.

   USGS 7½ Minute Series Quad. Name Jersey City, N.J-N.Y

   For Office Use Only--UTM Coordinates _____

10. Photography (optional for environmental impact survey):
    Please submit a 5"x7" black and white print(s) showing the current state of the site. Provide a label for the print(s) on a separate sheet.



The Barclays Bank Site/100 Water Street Site.

7.5 min. Quadrangle, Jersey City, N.J. - N.Y. (scale: 1"=2000')

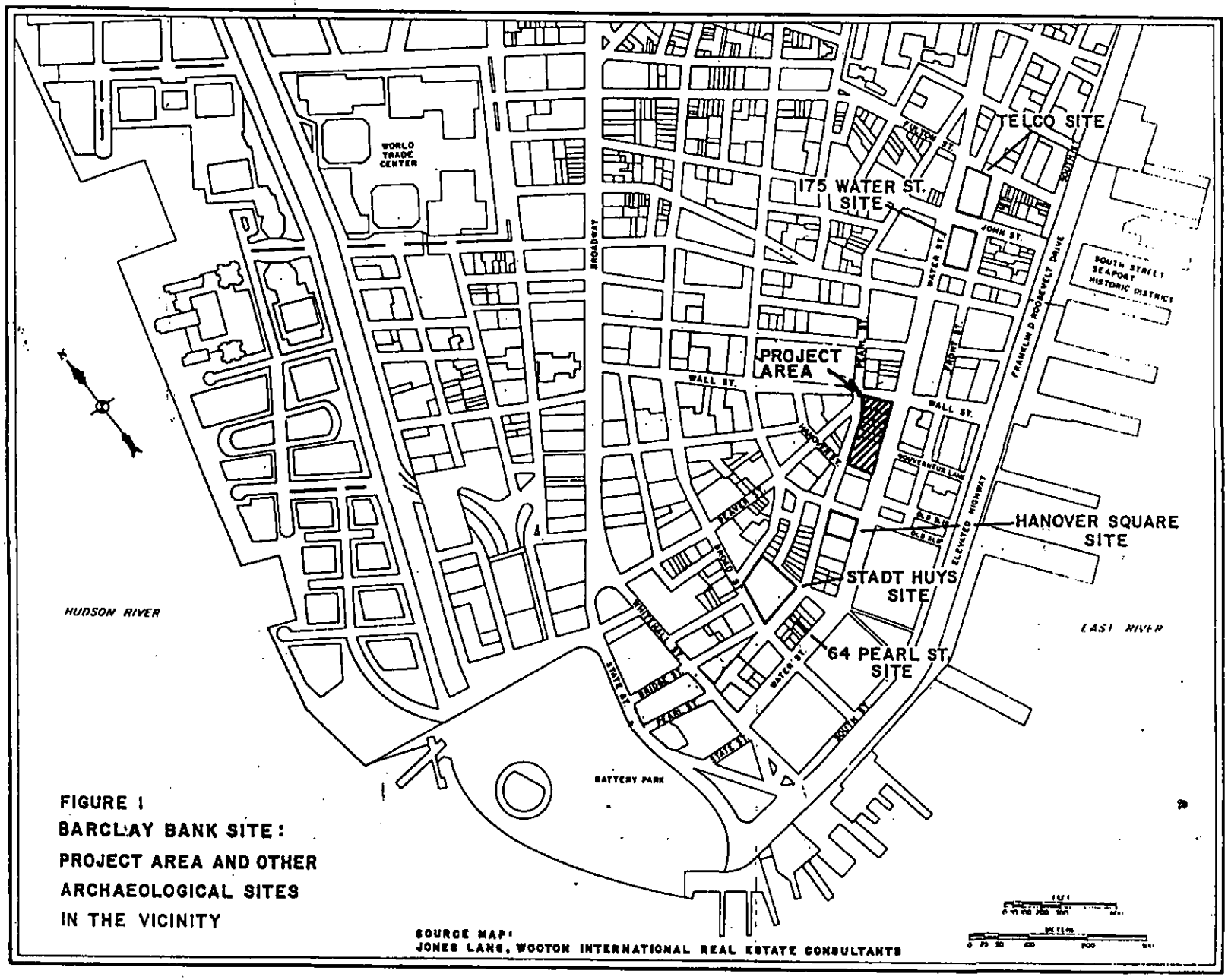


FIGURE 1
BARCLAY BANK SITE:
PROJECT AREA AND OTHER
ARCHAEOLOGICAL SITES
IN THE VICINITY

SOURCE MAP:
JONES LANG, WOOTON INTERNATIONAL REAL ESTATE CONSULTANTS

NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

For Office Use Only--Site Identifier A061-01-1284

Project Identifier The Assay Site Project Date 5/1/84

Your Name Ted Levin Phone (212) 514-9520

Address

Zip

Organization (if any) Greenhouse Associates

1. Site Identifier(s) Block 35 The Assay Site
2. County New York One of following: City Manhattan
   Township
   Incorporated Village
   Unincorporated Village or Hamlet

3. Present Owner
   Address

   Zip

4. Site Description (check all appropriate categories):
   Structure/site historic landfill site
   Superstructure: complete__ partial__ collapsed__ not evident__
   Foundation: above__ below__ (ground level) not evident__
   __Structural subdivisions apparent __Only surface traces visible
   __Buried traces detected
   List construction materials (be as specific as possible):
   4 Revolutionary-era cannon recovered from fill

   Grounds
   __Under cultivation __Sustaining erosion __Woodland __Upland
   __Never cultivated __Previously cultivated __Floodplain __Pastureland
   Soil Drainage: excellent__ good__ fair__ poor__
   Slope: flat__ gentle__ moderate__ steep__
   Distance to nearest water from structure (approx.)
   Elevation:

5. Site Investigation (append additional sheets, if necessary):
   Surface--date(s)
   __Site Map (Submit with form*)
   __Collection
   Subsurface--date(s) 4/84
   Testing: shovel__ coring x other Backhoe trenching unit size
   no. of units (Submit plan of units with form*)

   x Excavation: unit size no. of units
   (Submit plan of units with form*)

   * Submission should be 8½"x11", if feasible

   Investigator Ted Levin
   Manuscript or published report(s) (reference fully):
   telephone communication 5/1/84

   Present repository of materials

6. Site inventory:
   a. date constructed or occupation period _____
   b. previous owners, if known

   c. modifications, if known

   (append additional sheets, if necessary)

7. Site documentation (append additional sheets, if necessary):
   a. Historic map references
      1) Name _____ Date _____ Source _____
         Present location of original, if known _____

      2) Name _____ Date _____ Source _____
         Present location of original, if known _____

   b. Representation in existing photography
      1) Photo date _____ Where located _____
      2) Photo date _____ Where located _____

   c. Primary and secondary source documentation (reference fully)

   d. Persons with memory of site:
      1) Name _____ Address _____
      2) Name _____ Address _____

8. List of material remains other than those used in construction (be as specific as possible in identifying object and material):

   If prehistoric materials are evident, check here and fill out prehistoric site form. ___

9. Map References: Map or maps showing exact location and extent of site must accompany this form and must be identified by source and date. Keep this submission to 8½"x11", if feasible. See Plot on U.S.G.S. Topo. Sheet

   USGS 7½ Minute Series Quad. Name Jersey City

   For Office Use Only--UTM Coordinates _____

10. Photography (optional for environmental impact survey):
    Please submit a 5"x7" black and white print(s) showing the current state of the site. Provide a label for the print(s) on a separate sheet.

NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

For Office Use Only--Site Identifier A061-01-1285

Project Identifier Washington St. Urban Renewal Project Date 6/27/84
Your Name Joan Geismar Phone ( )
Address
Zip
Organization (if any)

1. Site Identifier(s) Site 1 Washington St. Urban Renewal Project
2. County New York One of following: City Manhattan
Site area bounded by Hubert St, Washington St, N Moore St, & West St
Township
Incorporated Village
Unincorporated Village or Hamlet

3. Present Owner Shearson American
Address
Zip

4. Site Description (check all appropriate categories):
Structure/site 1826 Foundry Site & historic landfill
Superstructure: complete__ partial__ collapsed__ not evident X
Foundation: above__ below X (ground level) not evident__
__Structural subdivisions apparent __Only surface traces visible
X Buried traces detected
List construction materials (be as specific as possible):

Grounds
__Under cultivation __Sustaining erosion __Woodland __Upland
__Never cultivated __Previously cultivated __Floodplain __Pastureland
Soil Drainage: excellent__ good__ fair__ poor__
Slope: flat__ gentle__ moderate__ steep__
Distance to nearest water from structure (approx.)
Elevation:

5. Site Investigation (append additional sheets, if necessary):
Surface--date(s)
__Site Map (Submit with form*)
__Collection
Subsurface--date(s) 1984
Testing: shovel__ coring__ other unit size
no. of units (Submit plan of units with form*)

Excavation: unit size no. of units
(Submit plan of units with form*)
* Submission should be 8½"x11", if feasible

Investigator Joan Geismar
Manuscript or published report(s) (reference fully):

Present repository of materials

6. Site inventory:
   a. date constructed or occupation period 1826
   b. previous owners, if known

   c. modifications, if known

   (append additional sheets, if necessary)

7. Site documentation (append additional sheets, if necessary):
   a. Historic map references
      1) Name _____ Date _____ Source _____
         Present location of original, if known _____

      2) Name _____ Date _____ Source _____
         Present location of original, if known _____

   b. Representation in existing photography
      1) Photo date _____ Where located _____
      2) Photo date _____ Where located _____

   c. Primary and secondary source documentation (reference fully)

   d. Persons with memory of site:
      1) Name _____ Address _____
      2) Name _____ Address _____

8. List of material remains other than those used in construction (be as specific as possible in identifying object and material):

   If prehistoric materials are evident, check here and fill out prehistoric site form. __

9. Map References: Map or maps showing exact location and extent of site must accompany this form and must be identified by source and date. Keep this submission to 8½"x11", if feasible. See Plat on U.S.G.S. Topo Sheet

   USGS 7½ Minute Series Quad. Name Jersey City

   For Office Use Only--UTM Coordinates _____

10. Photography (optional for environmental impact survey):
    Please submit a 5"x7" black and white print(s) showing the current state of the site. Provide a label for the print(s) on a separate sheet.

NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

For Office Use Only--Site Identifier A061-01-1286

Project Identifier Expansion of NYU Law Library Date 7/15/84
Your Name Sarah Bridges Phone ( )
Address
Zip
Organization (if any)

1. Site Identifier(s) Early 19th Century Suburban Area.
2. County New York One of following: City New York
   Township
   Incorporated Village
   Unincorporated Village or Hamlet

   Located in Sullivan St. between Washington Square South on the north and West 3rd St. on the south

3. Present Owner
   Address
   Zip

4. Site Description (check all appropriate categories):
   Structure/site
   Superstructure: complete__ partial__ collapsed__ not evident__
   Foundation: above__ below__ (ground level) not evident__
   __Structural subdivisions apparent __Only surface traces visible
   __Buried traces detected
   List construction materials (be as specific as possible):

   Grounds
   __Under cultivation __Sustaining erosion __Woodland __Upland
   __Never cultivated __Previously cultivated __Floodplain __Pastureland
   Soil Drainage: excellent__ good__ fair__ poor__
   Slope: flat__ gentle__ moderate__ steep__
   Distance to nearest water from structure (approx.)
   Elevation:

5. Site Investigation (append additional sheets, if necessary):
   Surface--date(s)
   __Site Map (Submit with form*)
   __Collection
   Subsurface--date(s)
   Testing: shovel__ coring__ other unit size
   no. of units (Submit plan of units with form*)

   Excavation: unit size no. of units
   (Submit plan of units with form*)
   * Submission should be 8½"x11", if feasible

Investigator Sarah Bridges
Manuscript or published report(s) (reference fully):
Report & more complete form to follow

Present repository of materials

6. Site inventory:
   a. date constructed or occupation period _____
   b. previous owners, if known

   c. modifications, if known

   (append additional sheets, if necessary)

7. Site documentation (append additional sheets, if necessary):
   a. Historic map references
      1) Name _____ Date _____ Source _____
         Present location of original, if known _____

      2) Name _____ Date _____ Source _____
         Present location of original, if known _____

   b. Representation in existing photography
      1) Photo date _____ Where located _____
      2) Photo date _____ Where located _____

   c. Primary and secondary source documentation (reference fully)

   d. Persons with memory of site:
      1) Name _____ Address _____
      2) Name _____ Address _____

8. List of material remains other than those used in construction (be as specific as possible in identifying object and material):

   If prehistoric materials are evident, check here and fill out prehistoric site form. __

9. Map References: Map or maps showing exact location and extent of site must accompany this form and must be identified by source and date. Keep this submission to 8½"x11", if feasible. See Plat - U.S.G.S. Topo Sheet

   USGS 7½ Minute Series Quad. Name Brooklyn

   For Office Use Only--UTM Coordinates _____

10. Photography (optional for environmental impact survey):
    Please submit a 5"x7" black and white print(s) showing the current state of the site. Provide a label for the print(s) on a separate sheet.

ARCHEOLOGICAL SITE INVENTORY FORM

DIVISION FOR HISTORIC PRESERVATION
NEW YORK STATE PARKS AND RECREATION
ALBANY, NEW YORK
518 474-0479

FOR OFFICE USE ONLY

UNIQUE SITE NO. 061-01-0491
QUAD. _____
SERIES _____
NEG. NO. _____

REPORTED BY: Karlene Kinnahan

YOUR ADDRESS: _____ TELEPHONE: _____

ORGANIZATION (if any): _____

DATE: 10/77

* *

1. SITE NAME: Municipal Ferry Pier

2. COUNTY: Nassau ~~TOWN~~/CITY: Manhattan VILLAGE: _____

3. LOCATION: 11 South St

4. PRESENT OWNER: _____

5. OWNER'S ADDRESS: _____

6. DESCRIPTION, CONDITION, EVIDENCE OF SITE:

☐ STANDING RUINS ☐ CELLAR HOLE WITH WALLS

☐ SURFACE TRACES VISIBLE ☐ WALLS WITHOUT CELLAR HOLE

☐ UNDER CULTIVATION ☐ EROSION ☐ UNDERWATER

☐ NO VISIBLE EVIDENCE ☐ OTHER _____

7. COLLECTION OF MATERIAL FROM SITE:

☐ SURFACE HUNTING BY WHOM _____ DATE _____

☐ TESTING BY WHOM _____ DATE _____

☐ EXCAVATION BY WHOM _____ DATE _____

☐ NONE

PRESENT REPOSITORY OF MATERIALS: _____

8. PREHISTORIC CULTURAL AFFILIATION OR DATE: Built in 1909 - Last of the old Ferry terminals. On National Register + N.Y.C. Landmark

9. HISTORICAL DOCUMENTATION OF SITE:
Goldstone + Dalrymple 1974: History Preserved: a Guide to N.Y.C. Landmarks + Hist. Dist.

10. POSSIBILITY OF SITE DESTRUCTION OR DISTURBANCE:

11. REMARKS: 2nd. Res. Reconnaissance: East River Reach New York Harbor Collection + Removal of Wreck Project

12. MAP LOCATION

7 ½ MINUTE SERIES QUAD. NAME: _____

15 MINUTE SERIES QUAD. NAME: _____

U.S.G.S. COORDINATES: _____

D.O.T. COORDINATES: (if known) _____

ATTACH SKETCH, TRACING OR COPY OF MAP

SOURCE OF MAP:

13. PHOTOGRAPHS (optional)

(ATTACH)

ARCHEOLOGICAL SITE INVENTORY FORM

DIVISION FOR HISTORIC PRESERVATION
NEW YORK STATE PARKS AND RECREATION
ALBANY, NEW YORK
518 474-0479

FOR OFFICE USE ONLY

UNIQUE SITE NO. 31-01-0490
QUAD. Trinity City
SERIES
NEG. NO.

REPORTED BY: Castle Gardens

YOUR ADDRESS: TELEPHONE:

ORGANIZATION (if any):

DATE: 10/77

* *

1. SITE NAME: The Battery - Castle Clinton (Castle Garden)
2. COUNTY: New York TOWN/CITY: Manhattan VILLAGE:
3. LOCATION: Battery
4. PRESENT OWNER: N.Y. City
5. OWNER'S ADDRESS:
6. DESCRIPTION, CONDITION, EVIDENCE OF SITE:

☐ STANDING RUINS ☐ CELLAR HOLE WITH WALLS

☐ SURFACE TRACES VISIBLE ☐ WALLS WITHOUT CELLAR HOLE

☐ UNDER CULTIVATION ☐ EROSION ☐ UNDERWATER

☐ NO VISIBLE EVIDENCE ☒ OTHER restored by National Park Service

7. COLLECTION OF MATERIAL FROM SITE:

☐ SURFACE HUNTING BY WHOM DATE

☐ TESTING BY WHOM DATE

☐ EXCAVATION BY WHOM DATE

☐ NONE

PRESENT REPOSITORY OF MATERIALS:

8. PREHISTORIC CULTURAL AFFILIATION OR DATE: constructed prior to War of 1812 - listed on National Register.

9. HISTORICAL DOCUMENTATION OF SITE:
Goldstone & Dalrymple 1974: History Preserved: A Guide to New York City Landmarks & Hist. Dist.

10. POSSIBILITY OF SITE DESTRUCTION OR DISTURBANCE:

11. REMARKS: Cult. Res. Reconnaissance East River Reach New York Harbor Collection & Removal of Drift Project

12. MAP LOCATION

7 ½ MINUTE SERIES QUAD. NAME: Jersey City

15 MINUTE SERIES QUAD. NAME: _____

U.S.G.S. COORDINATES: _____

D.O.T. COORDINATES: (if known) _____

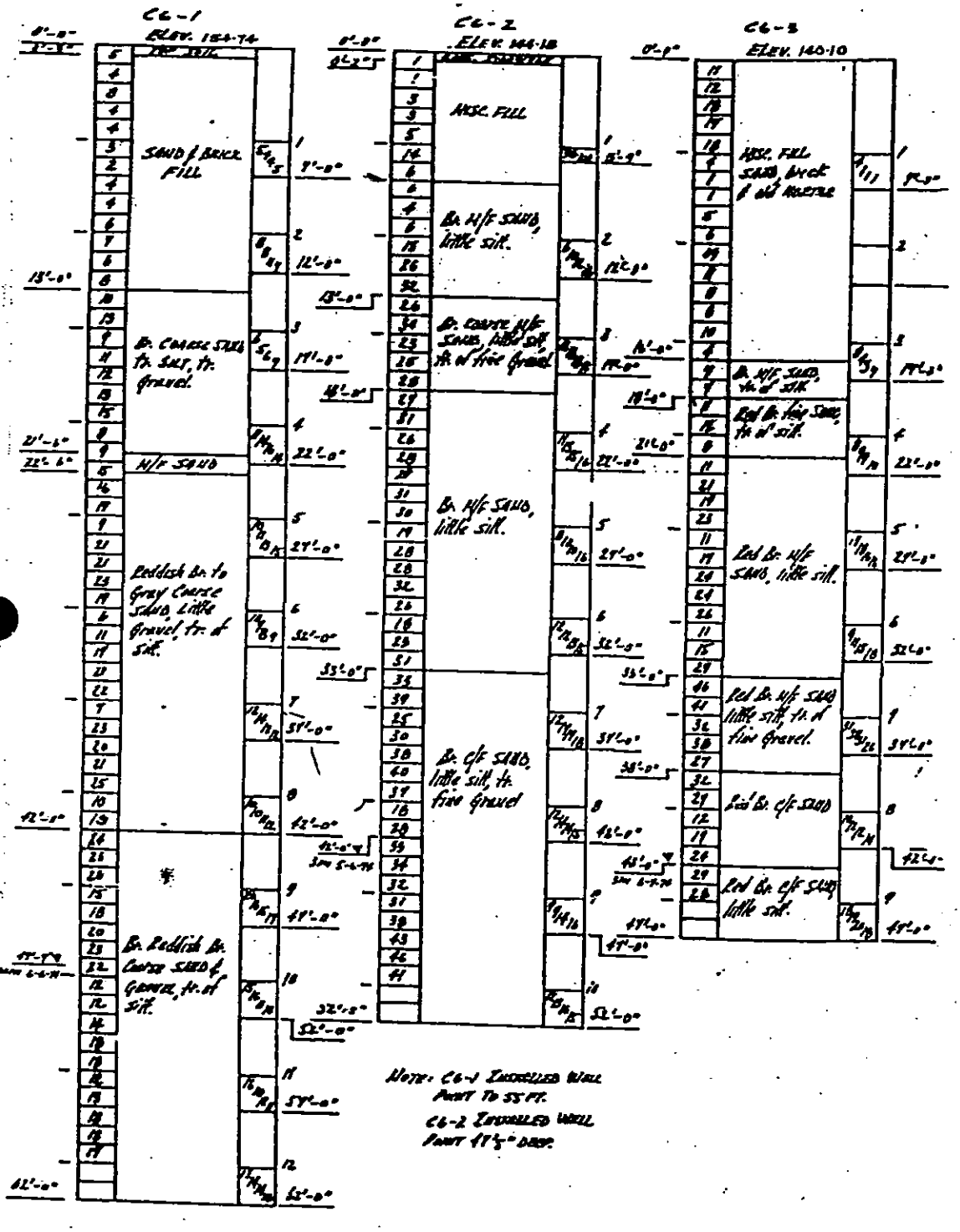
ATTACH SKETCH, TRACING OR COPY OF MAP

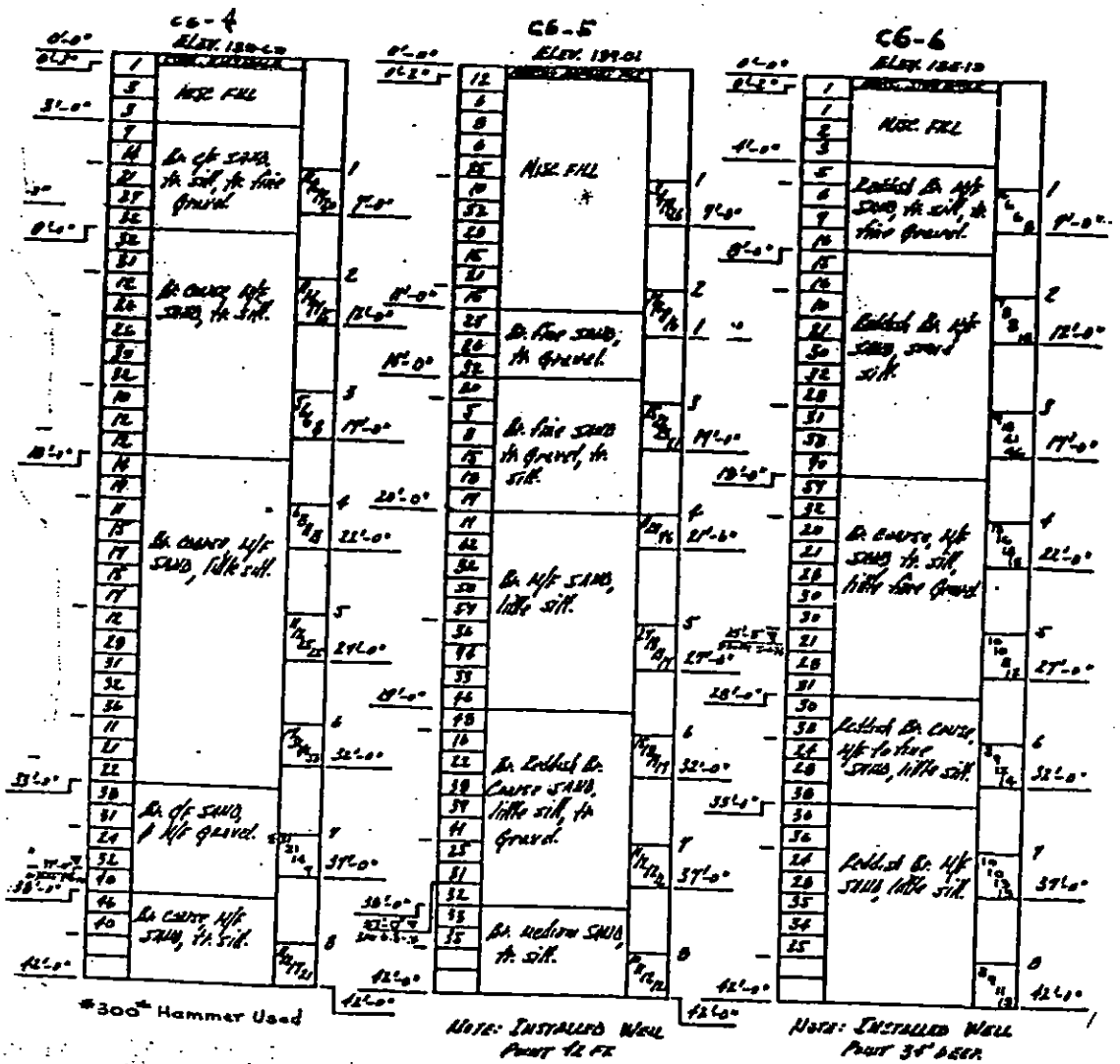
SOURCE OF MAP:

13. PHOTOGRAPHS (optional)

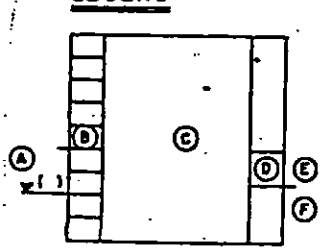
(ATTACH)

6.1.7.3 Soil Boring Logs


CB-1
ELEV. 154.74
SAND & BRICK FILL
Br. COARSE SAND Tr. SILT, Tr. Gravel
M/F SAND
Reddish Br. to Gray Coarse SAND, Little Gravel, Tr. of Silt.
Br. Reddish Br. Coarse SAND & Gravel, Tr. of Silt.
CB-2
ELEV. 144.18
MISC. FILL
Br. M/F SAND, little silt.
Br. COARSE M/F SAND, little Silt, Tr. of Fine Gravel
Br. M/F SAND, little silt.
Br. C/F SAND, little silt, Tr. fine Gravel
CB-3
ELEV. 140.10
MISC. FILL SAND, brick & old MATERIAL
Br. M/F SAND, Tr. of Silt.
Red Br. Fine SAND, Tr. of Silt.
Red Br. M/F SAND, little silt.
Red Br. M/F SAND little silt, Tr. of fine Gravel.
Red Br. C/F SAND
Red Br. C/F SAND little silt.
NOTE: CB-1 INCOMPLETED WELL POINT TO 55 FT.
CB-2 INCOMPLETED WELL POINT 48½' DEEP.



LEGEND



(A) WATER LEVEL ( ) HOURS AFTER COMPLETION.

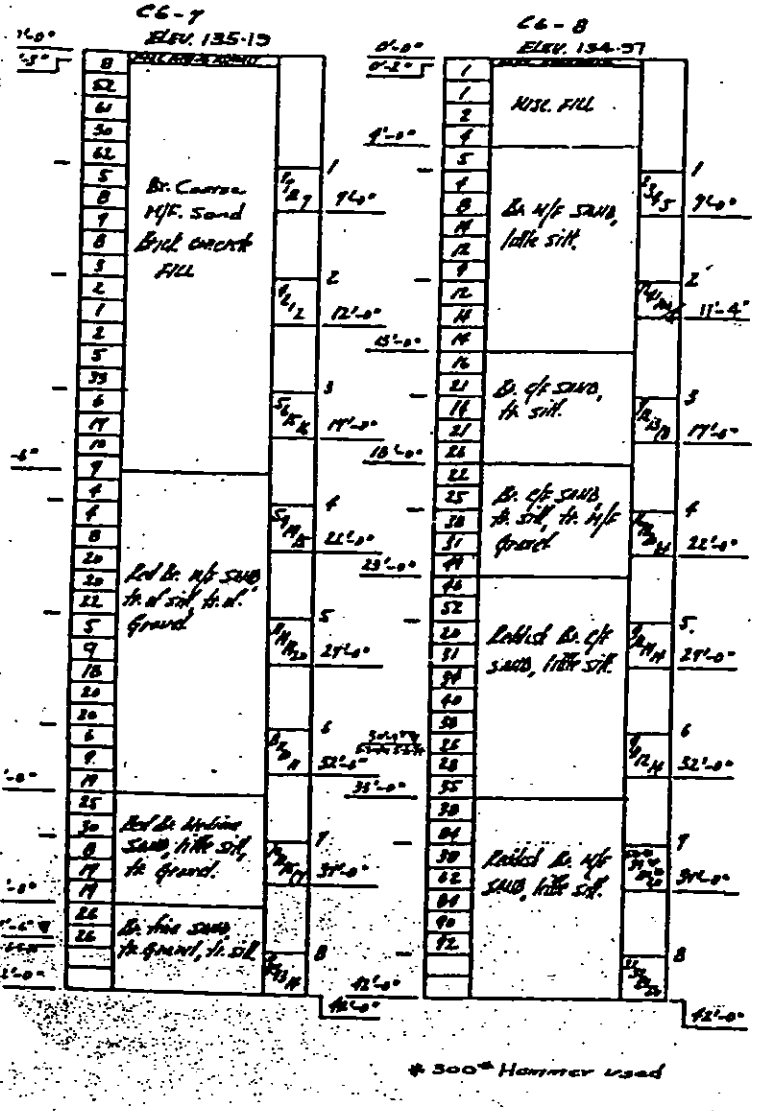
(B) NUMBER OF BLOWS OF A 300 LB. HAMMER FALLING 18" REQUIRED TO DRIVE A 2½" DIA. CASING (UNLESS OTHERWISE NOTED) EACH 12".

(C) STRATA DESCRIPTION.

(D) NUMBER OF BLOWS OF A 140 LB. HAMMER (UNLESS OTHERWISE NOTED) FALLING 30" REQUIRED TO DRIVE A 2" SPLIT SPOON EACH 6".

(E) SAMPLE NUMBER.

(F) DEPTH AT END OF SAMPLE DRIVE



RAYMOND INTERNATIONAL INC.

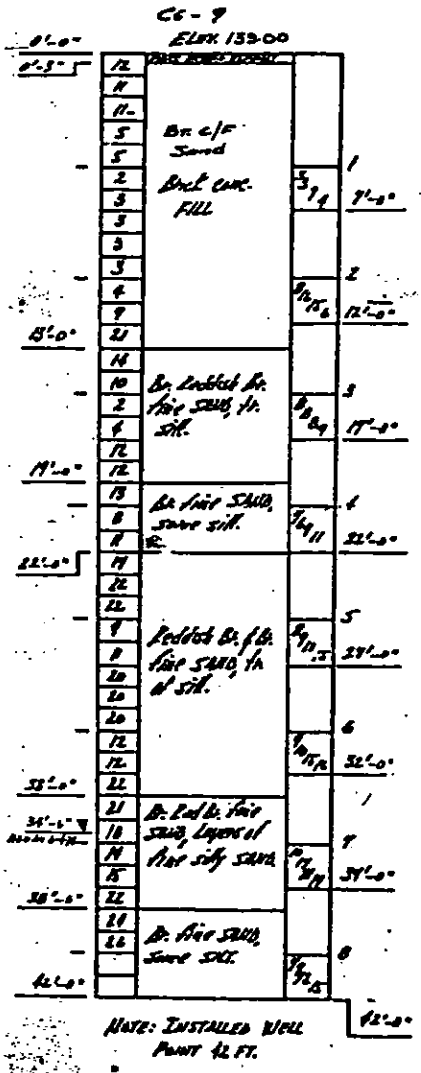
BORING SECTIONS

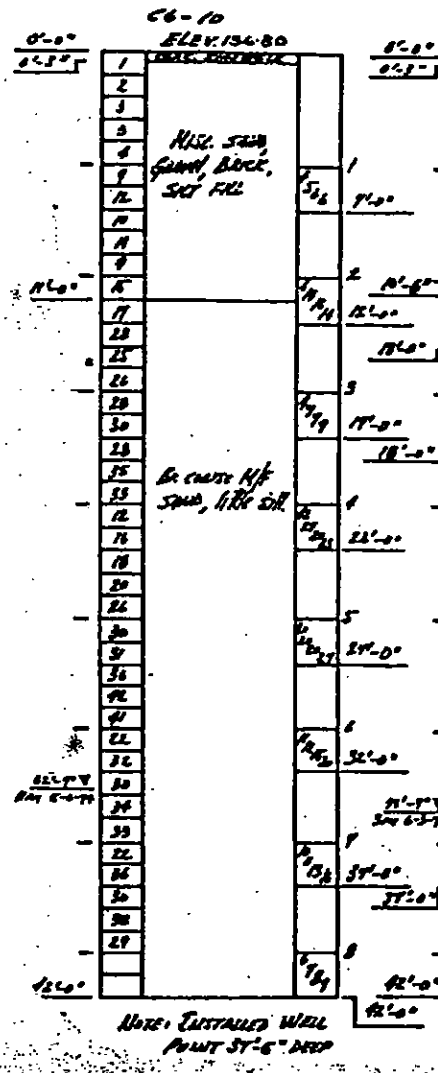
NEW YORK CITY TRANSIT SYSTEM

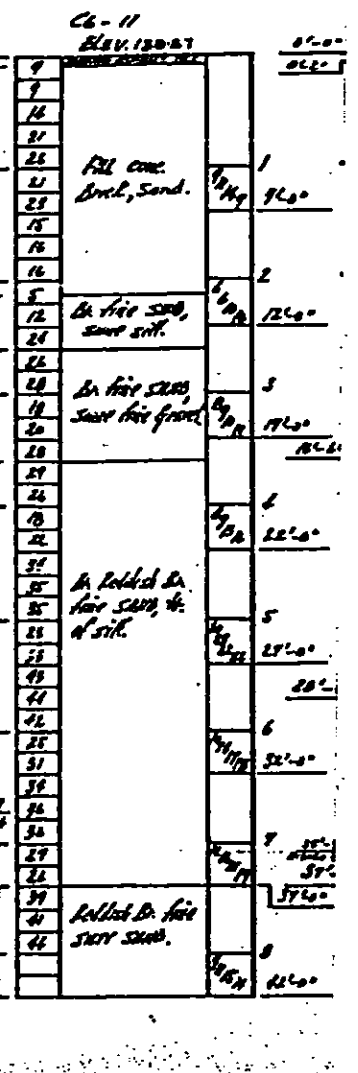
SECOND AVE SUBWAY
ROUTE 132-C SECT. 2

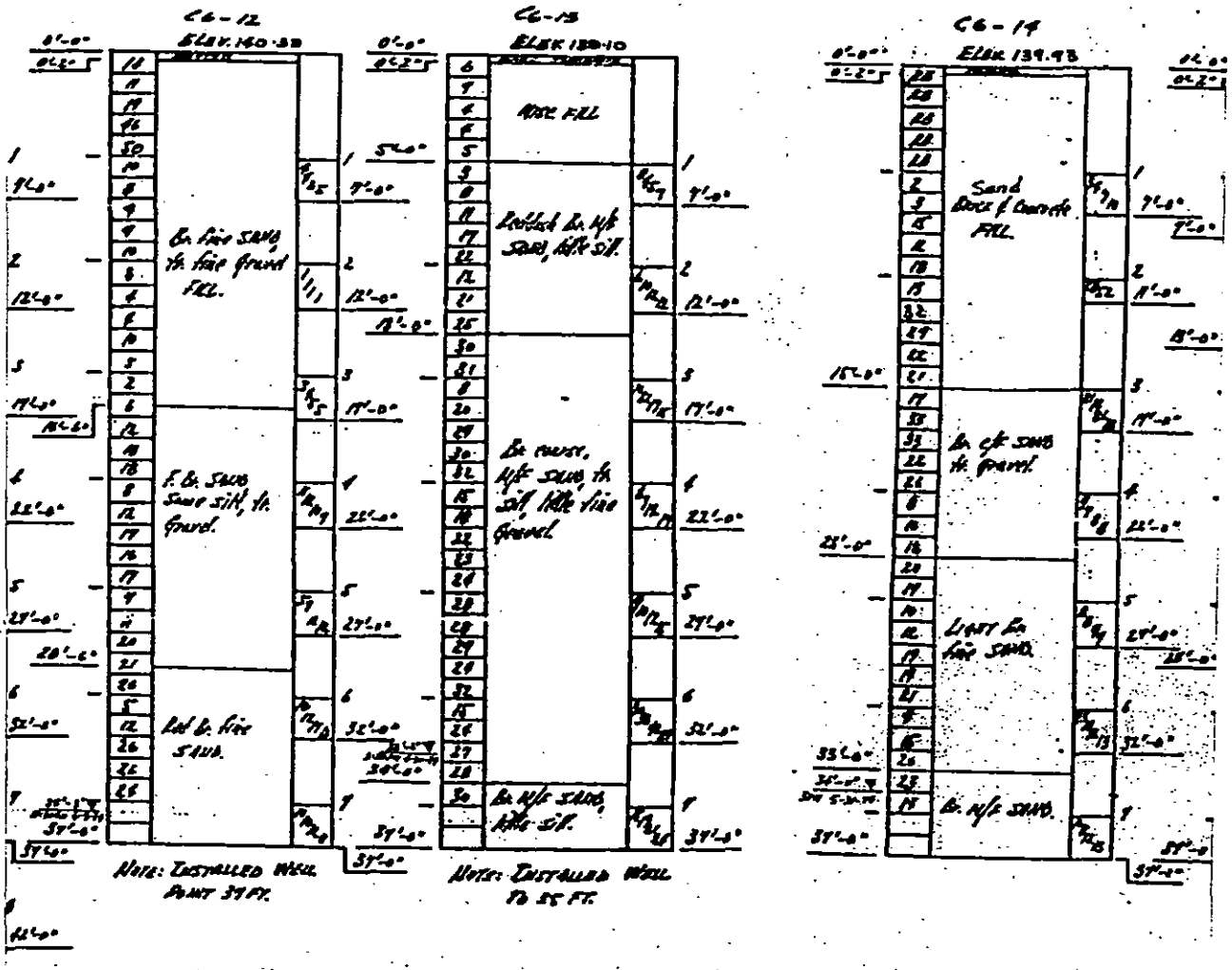
BOROUGH Manhattan

DRAWN BY: F.K.
CHECKED BY: J.E.
DATE: July 1974
SCALE: 1/8" = 1'-0" VEH


C6-9
ELEV. 133.00
Br. c/f Sand
Brick conc. FILL
Br. Reddish Br. fine SAND, tr. silt.
Br. fine SAND, some silt.
Reddish Br. & Br. fine SAND, tr. of silt.
Br. Red Br. fine SAND, layers of fine silty SAND
Br. fine SAND, some SILT.
NOTE: INSTALLED WELL POINT 42 FT.


C6-10
ELEV. 136.80
MISC. SAND, Gravel, BRICK, SILT FILL
Br. coarse M/F SAND, little silt.
NOTE: INSTALLED WELL POINT 37'-6" DEEP


C6-11
ELEV. 138.87
FILL conc. Brick, Sand.
Br. fine SAND, some silt.
Br. fine SAND, some fine gravel
Br. Reddish Br. fine SAND, tr. of silt.
Reddish Br. fine SILTY SAND.



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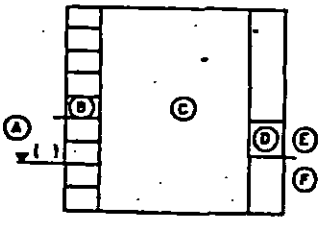


(A) WATER LEVEL ( ) HOURS AFTER COMPLETION.

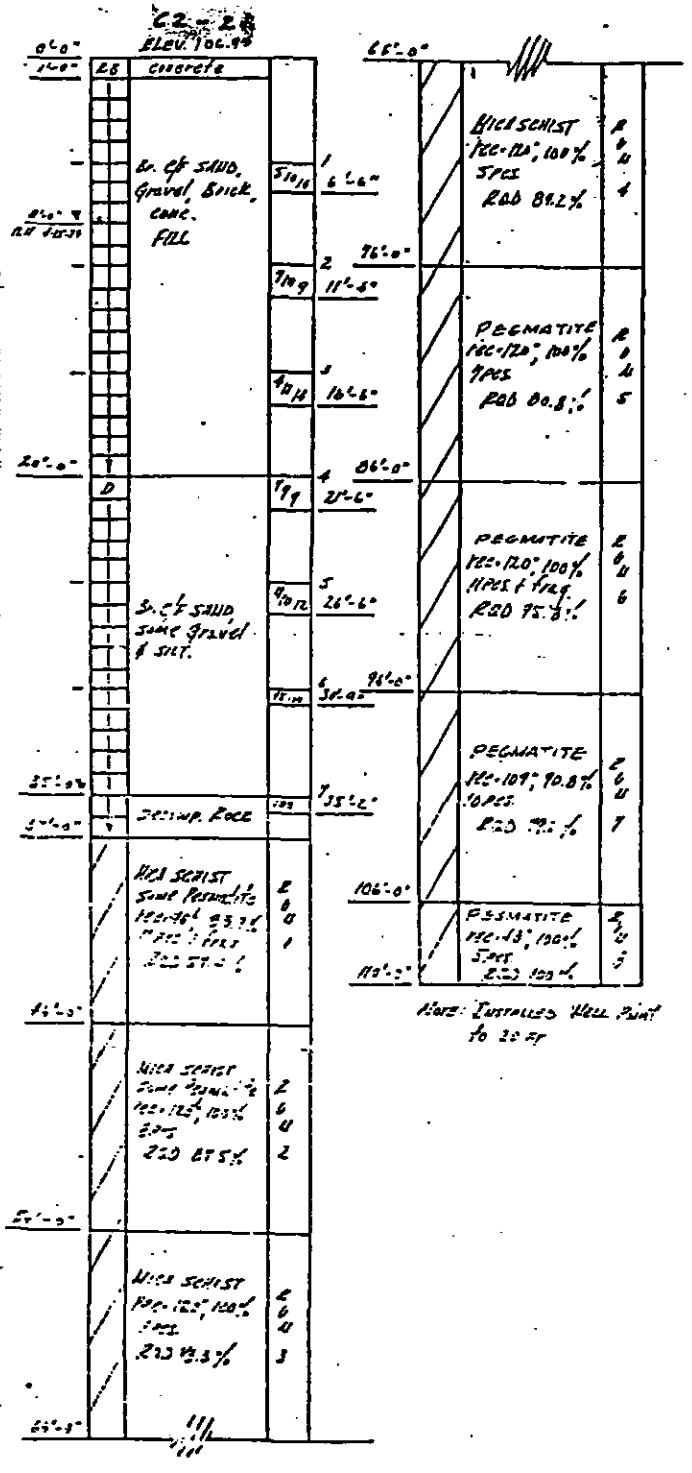
(B) NUMBER OF BLOWS OF A 300 LB. HAMMER FALLING 18" REQUIRED TO DRIVE A 2½" DIA. CASING (UNLESS OTHERWISE NOTED) EACH 12".

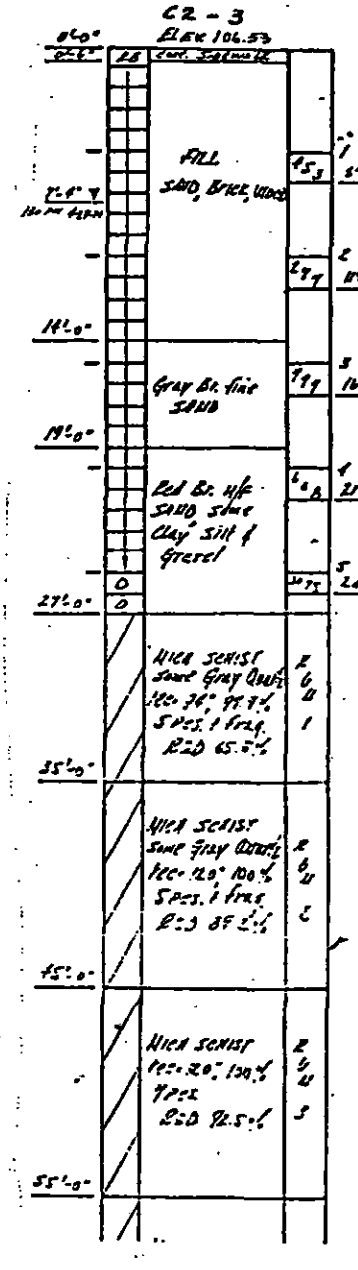
(C) STRATA DESCRIPTION.

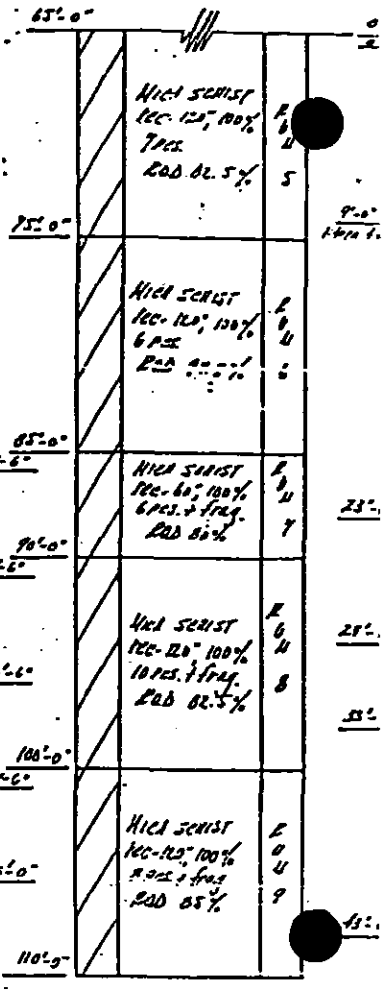
(D) NUMBER OF BLOWS OF A 140 LB. HAMMER (UNLESS OTHERWISE NOTED) FALLING 30" REQUIRED TO DRIVE A 2" SPLIT SPOON EACH 6".

(E) SAMPLE NUMBER.

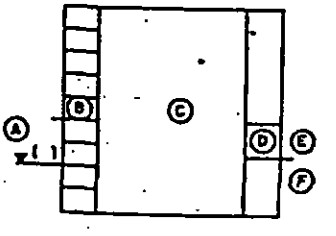
(F) DEPTH AT END OF SAMPLE DRIVE.







LEGEND



(A) WATER LEVEL ( ) HOURS AFTI

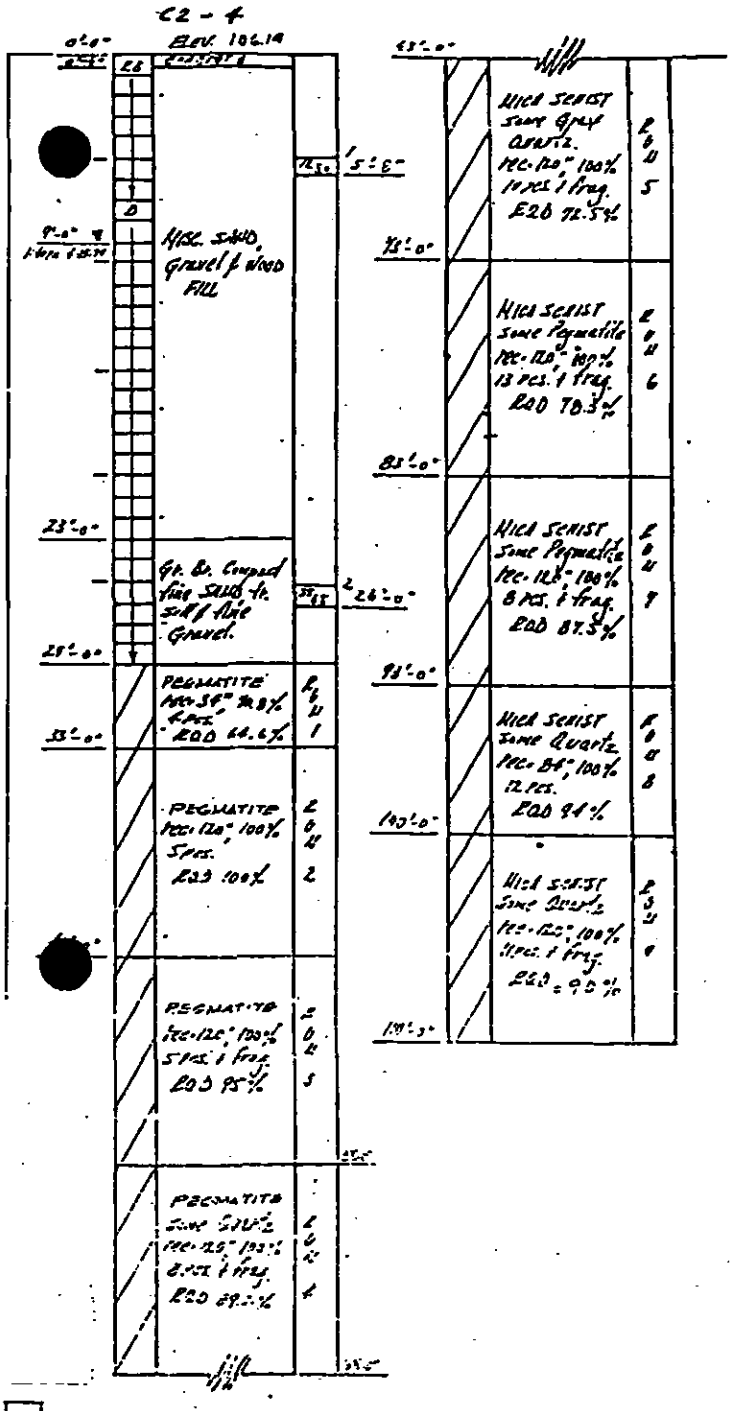
(B) NUMBER OF BLOWS OF A 30(FALLING 18" REQUIRED TO DR CASING (UNLESS OT[redacted]ISE N

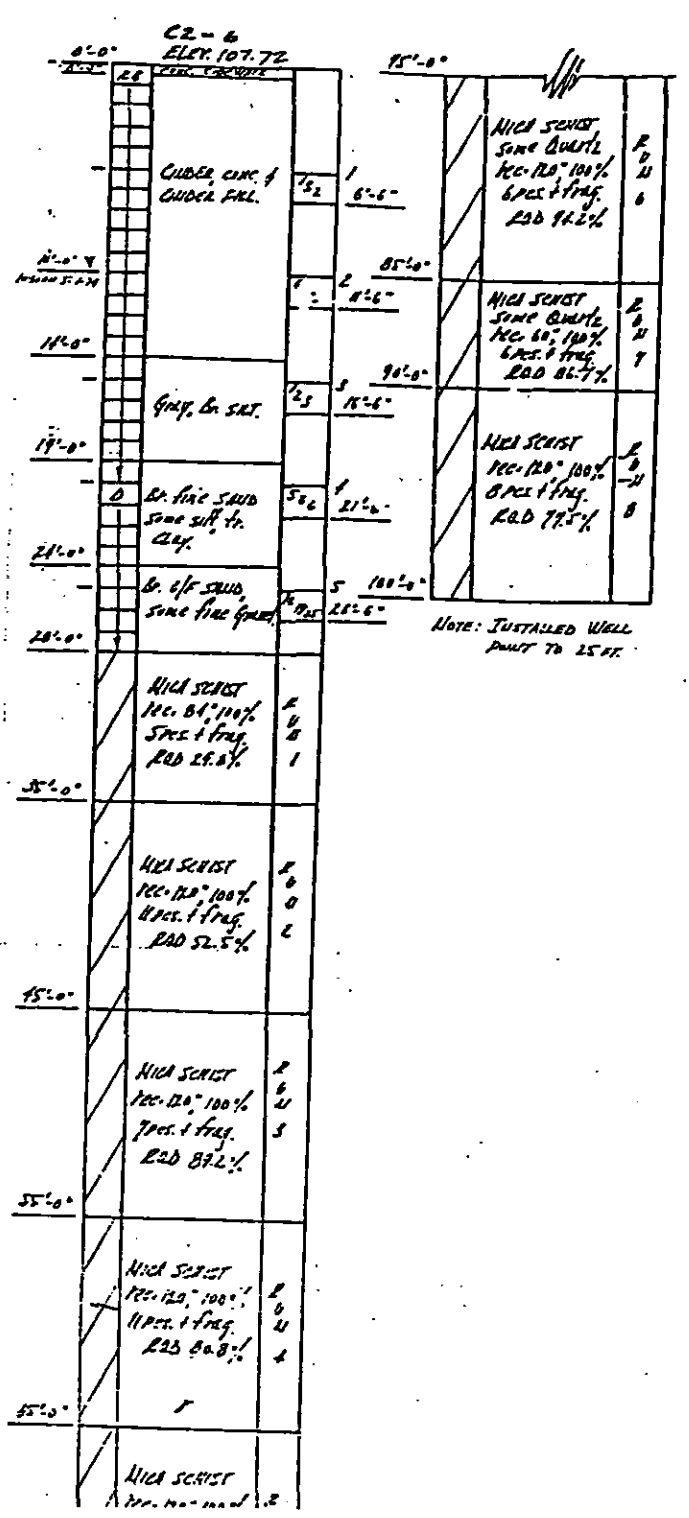
(C) STRATA DESCRIPTION[redacted].

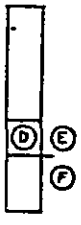
(D) NUMBER OF BLOWS OF A 140 L (UNLESS OTHERWISE NOTED) REQUIRED TO DRIVE A 2" SPLI

(E) SAMPLE NUMBER.

(F) DEPTH AT END OF SAMPLE D







URS AFTER COMPLETION.

)F A 300 LB. HAMMER
ED TO DRIVE A 2½" DIA.
HERWISE NOTED) EACH 12".

I.

F A 140 LB. HAMMER
NOTED) FALLING 30"
A 2" SPLIT SPOON EACH 6".

AMPLE DRIVE.



RAYMOND INTERNATIONA

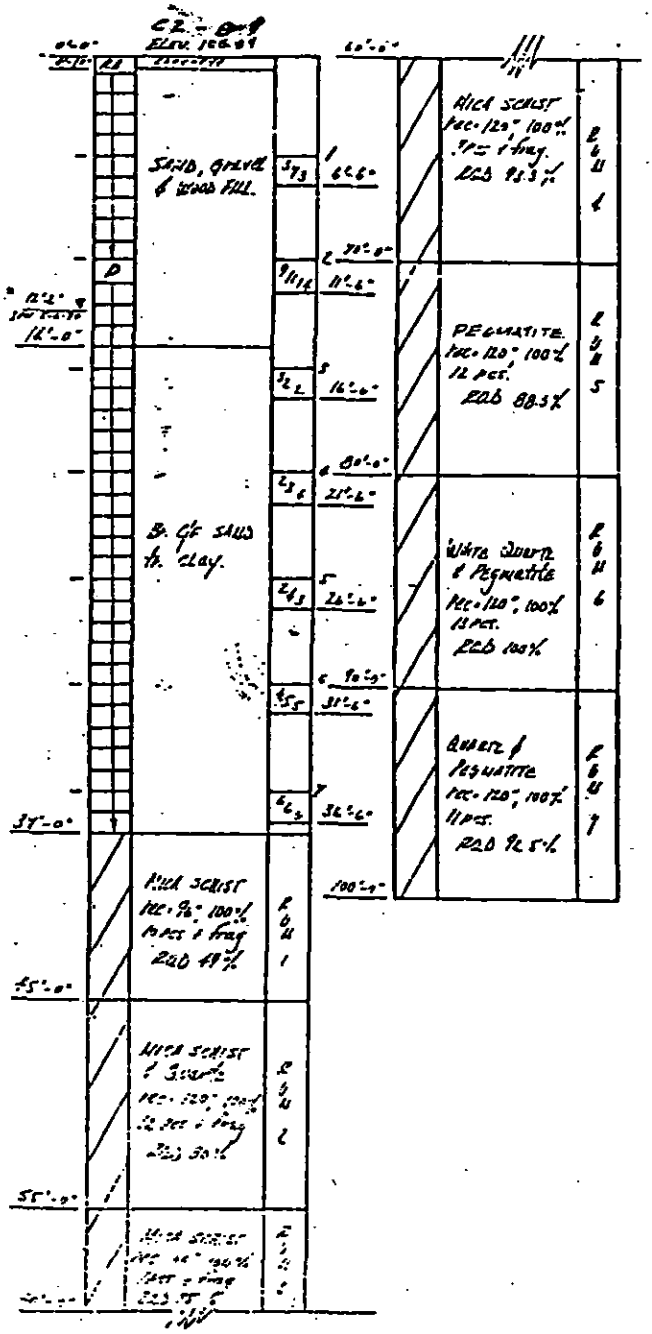
BORING SECTIONS

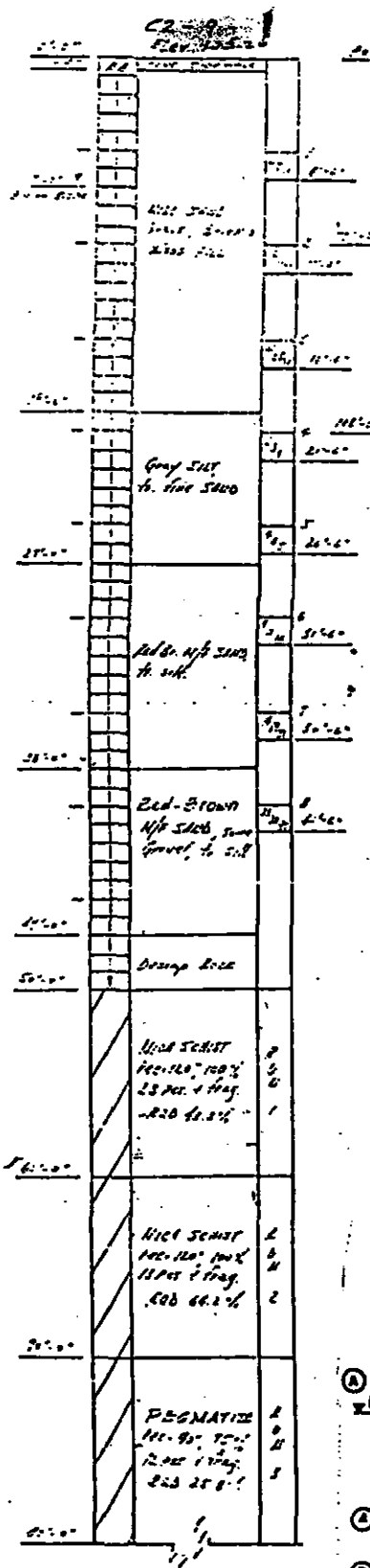
NEW YORK CITY TRANSIT SYSTEM

SECOND AVE SUBWAY
ROUTE 132-C SECT. 2

BOROUGH Manhattan

DRAWN BY: F.F. DATE: July
CHECKED BY: J.E. SCALE: 1/8" = 1





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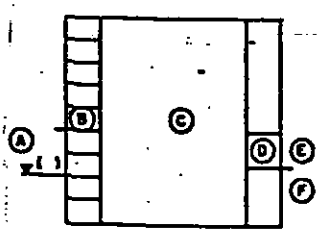
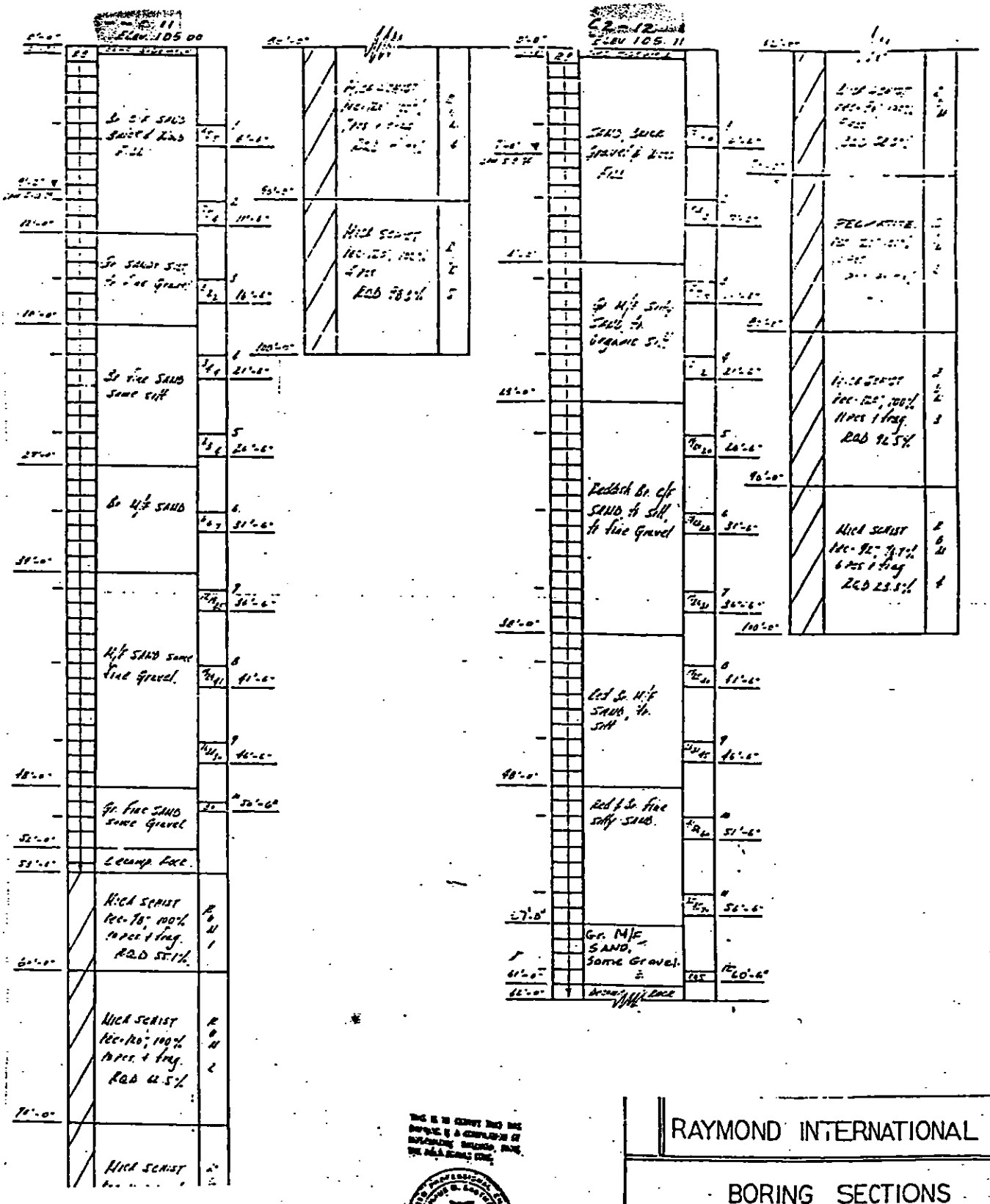


- (A) WATER LEVEL ( ) HOURS AFTI
- (B) NUMBER OF BLOWS OF A 30(FALLING 18" REQUIRED TO DR CASING (UNLESS OTHERWISEN(
- (C) STRATA DESCRIPTION
- (D) NUMBER OF BLOWS (140 ((UNLESS OTHERWISE NOTED) REQUIRED TO DRIVE A 2" SPL
- (E) SAMPLE NUMBER.
- (F) DEPTH AT END OF SAMPLE



I COMPLETION.

LB. HAMMER
E A 2½" DIA.
ED) EACH 12".

. HAMMER
LLING 30"
SPOON EACH 6".

IVE.

THIS IS TO CERTIFY THAT THIS DRAWING IS A COMPLETION OF INFORMATION SHOWN, PAGE THE AREA SHOWN CONT.

Edwin D. Hartman

FOR OFFICE RECORD
File No. ____ Dwg. No. ____

RAYMOND INTERNATIONAL INC.

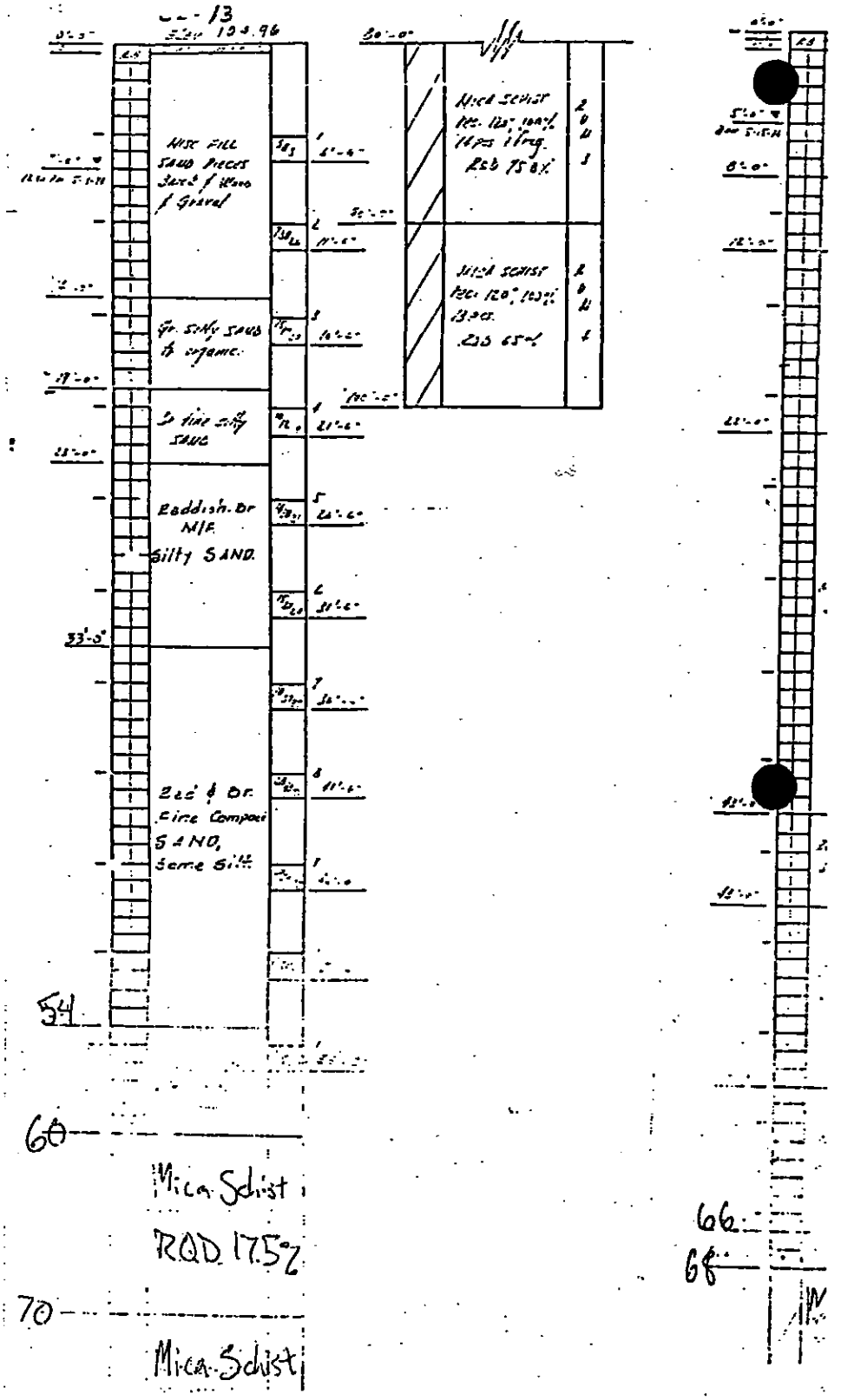
BORING SECTIONS

NEW YORK CITY TRANSIT SYSTEM

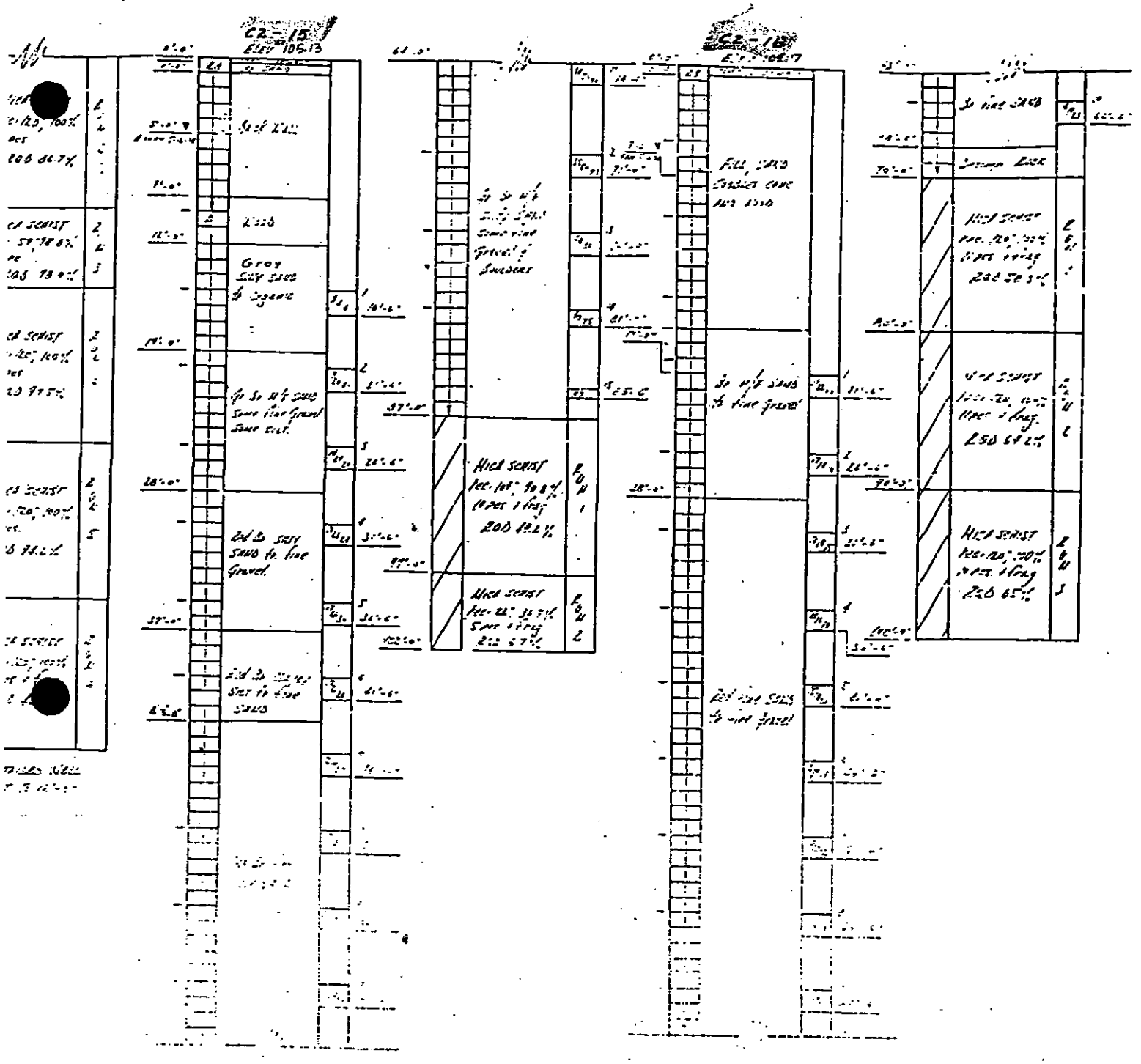
SECOND AVE SUBWAY
ROUTE 132-C SECT. 2

BOROUGH Manhattan

DRAWN BY: F.F.
CHECKED BY: J.E.
DATE: July 1974
SCALE 1/8" = 1'-0" Vert



Misc Fill Sand Pieces Sand & Wood & Gravel
Gr. Silty Sand to organic
Br fine silty Sand
Reddish Br M/F Silty SAND
Red & Br Fine Compact SAND, Some Silt
Mica Schist
Mica Schist
33'-0"
54
60
Mica Schist
RQD 17.5%
70
Mica Schist
66
68



...TER COMPLETION.

...0 LB. HAMMER
...RIVE A 2½" DIA.
...OTED ...CH 12".

...LB. HAMMER
...FALLING 30"
...IT SPOON EACH 6".

...DRIVE.

THIS IS TO CERTIFY THAT THIS DRAWING IS A COMPILATION OF INFORMATION OBTAINED FROM THE PUBLISHED LITERATURE.

Erwin D. Hartman

THE OFFICE RECORD

RAYMOND INTERNATIONAL INC.

BORING SECTIONS

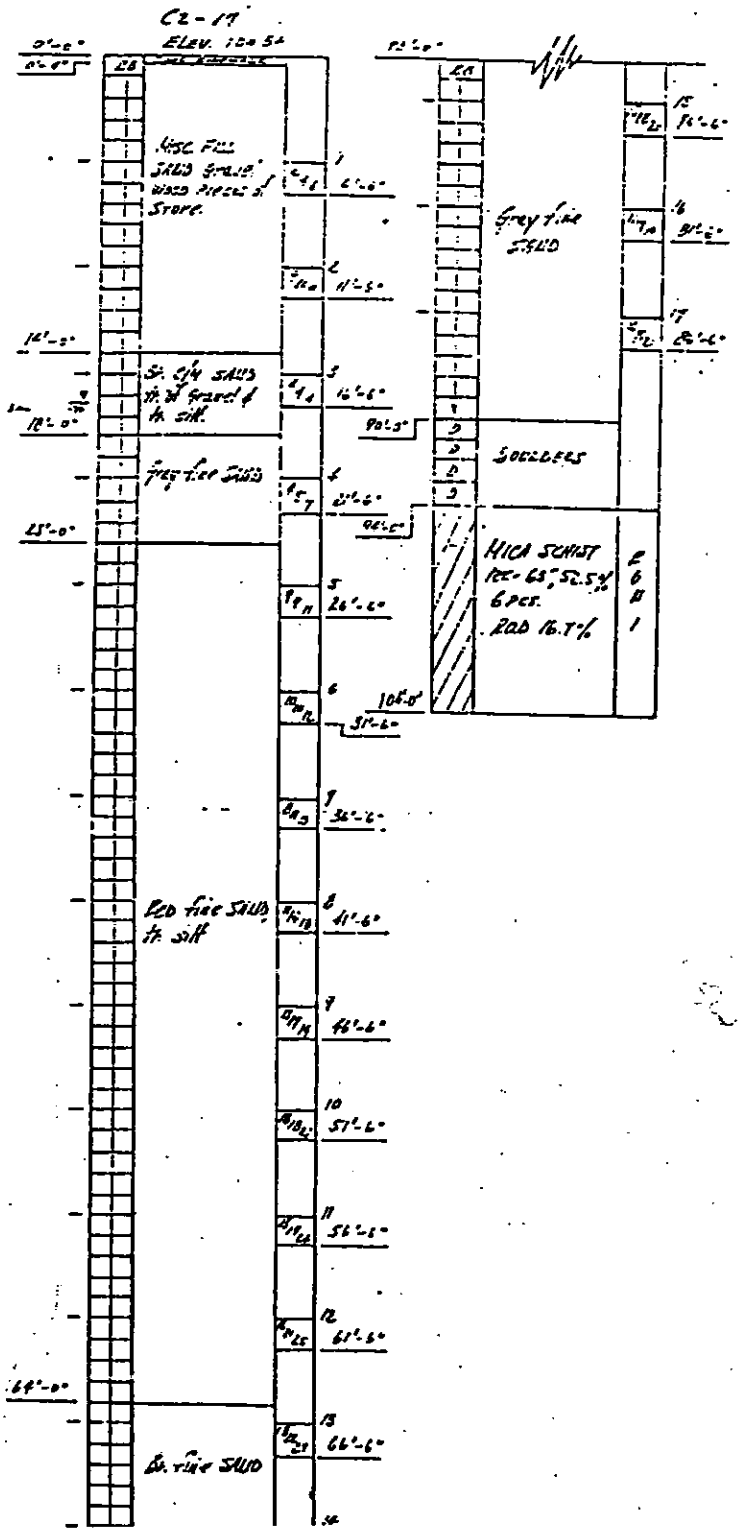
NEW YORK CITY TRANSIT SYSTEM

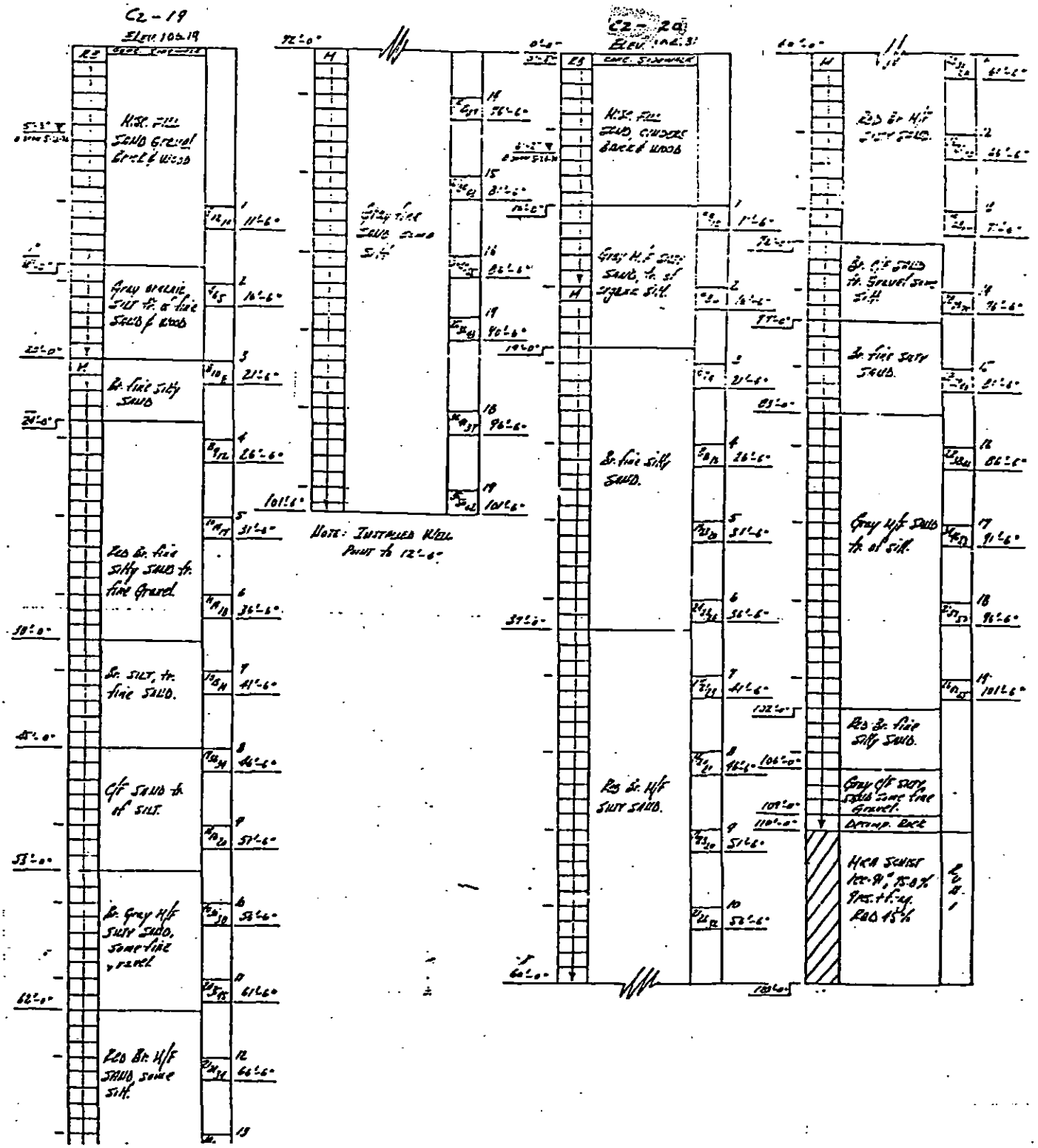
SECOND AVE SUBWAY
ROUTE 132-C SECT. 2

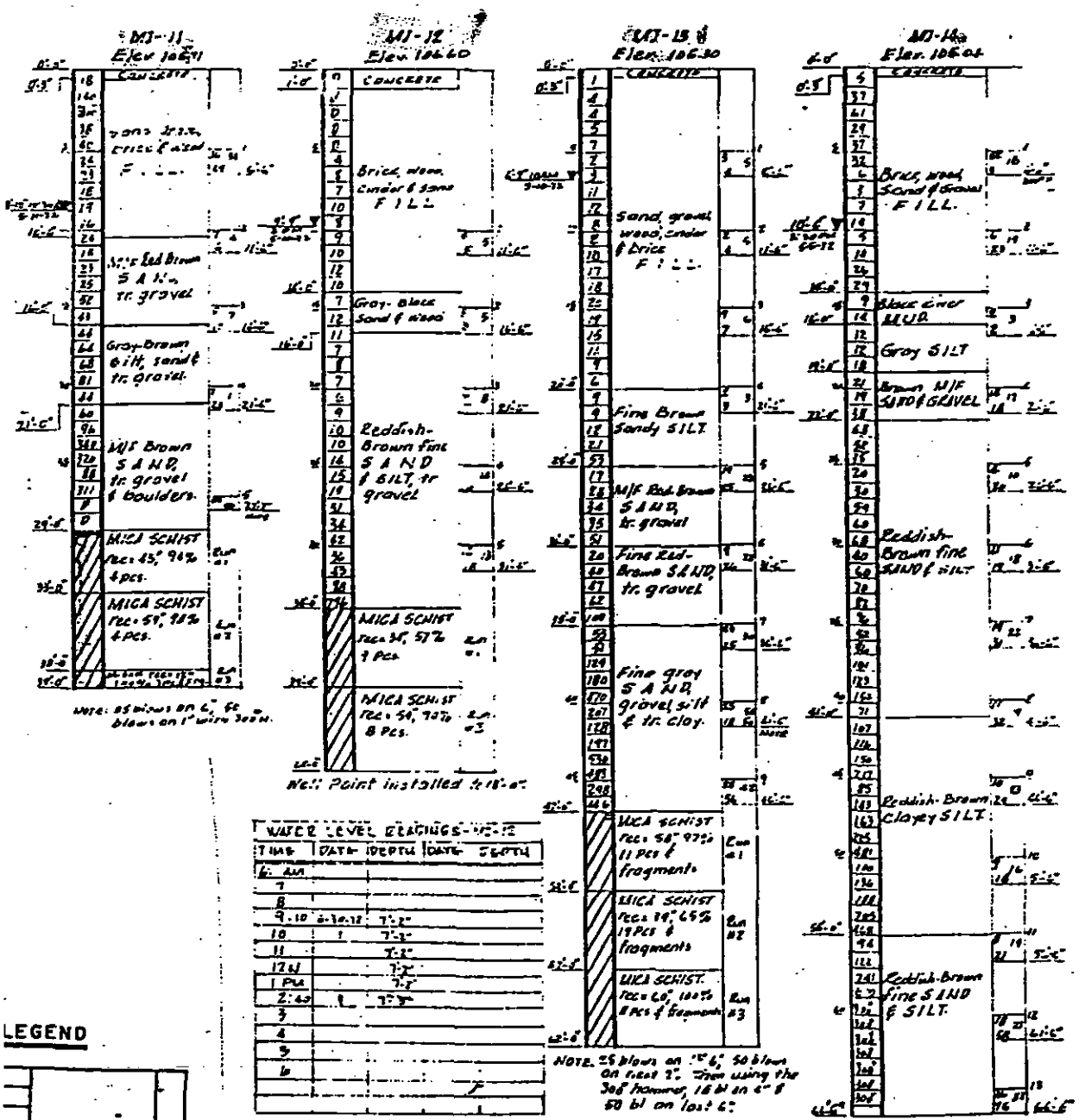
BOROUGH Manhattan

DRAWN BY: F.F.
CHECKED BY: J.E.

DATE: July 1974
SCALE: 1/8" = 1'-0" VEH


C2-17
Misc Fill
Sand Gravel
Wood Pieces of
Stone
Gray fine Sand
Red fine Sand
Br. fine Sand
Gray fine Sand
Boulders
Mica Schist
6 pcs.
Rad 16.7%

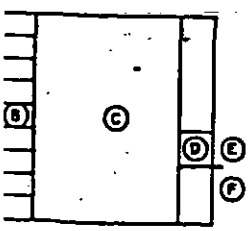

C2-19
Elev. 105.19
Conc. Sidewalk
H.S.C. Fill Sand Gravel Brick & Wood
Gray organic Silt tr. of fine Sand & Wood
Br. fine silty Sand
Red Br. fine silty Sand tr. fine Gravel
Br. Silt, tr. fine Sand.
C/F Sand tr. of Silt.
Br. Gray M/F Silty Sand, some fine gravel
Red Br. M/F Sand, some Silt.
Gray fine Sand some Silt
Note: Installed Well Point to 12'-6"
C2-20
Elev. 106.31
Conc. Sidewalk
H.S.C. Fill Sand, Cinders Brick & Wood
Gray M/F Silty Sand, tr. of organic Silt.
Br. fine silty Sand.
Red Br. M/F Silty Sand.
Red Br. M/F Silty Sand.
Br. C/F Sand tr. Gravel some Silt
Br. fine Silty Sand.
Gray M/F Sand tr. of Silt.
Red Br. fine Silty Sand.
Gray C/F Silty Sand some fine Gravel.
Decomp. Rock
HCA Schist
Rec. 91", 75.0%
Qrs. + f-ag.
RQD 45%



WATER LEVEL READINGS-MJ-12

TIME	DATE	DEPTH	DATE	DEPTH
6 AM				
7				
8				
9.10	6-30-72	7'-2"		
10		7'-2"		
11		7'-2"		
12 M		7'-2"		
1 PM		7'-2"		
2:40		7'-3"		
3				
4				
5				
6				

LEGEND



WATER LEVEL ( ) HOURS AFTER COMPLETION.

NUMBER OF BLOWS OF A 300 LB. HAMMER FALLING 18" REQUIRED TO DRIVE A 2½" DIA. CASING (UNLESS OTHERWISE NOTED) EACH 12".

STRATA DESCRIPTION.

NUMBER OF BLOWS OF A 140 LB. HAMMER (UNLESS OTHERWISE NOTED) FALLING 30" REQUIRED TO DRIVE A 2" SPLIT SPOON EACH 6".

SAMPLE NUMBER.

DEPTH AT END OF SAMPLE DRIVE.

THIS IS TO CERTIFY THAT THIS DRAWING IS A COMPILATION OF INFORMATION EXTRACTED FROM THE FIELD BORING CODE.

Edwin L. Gastman

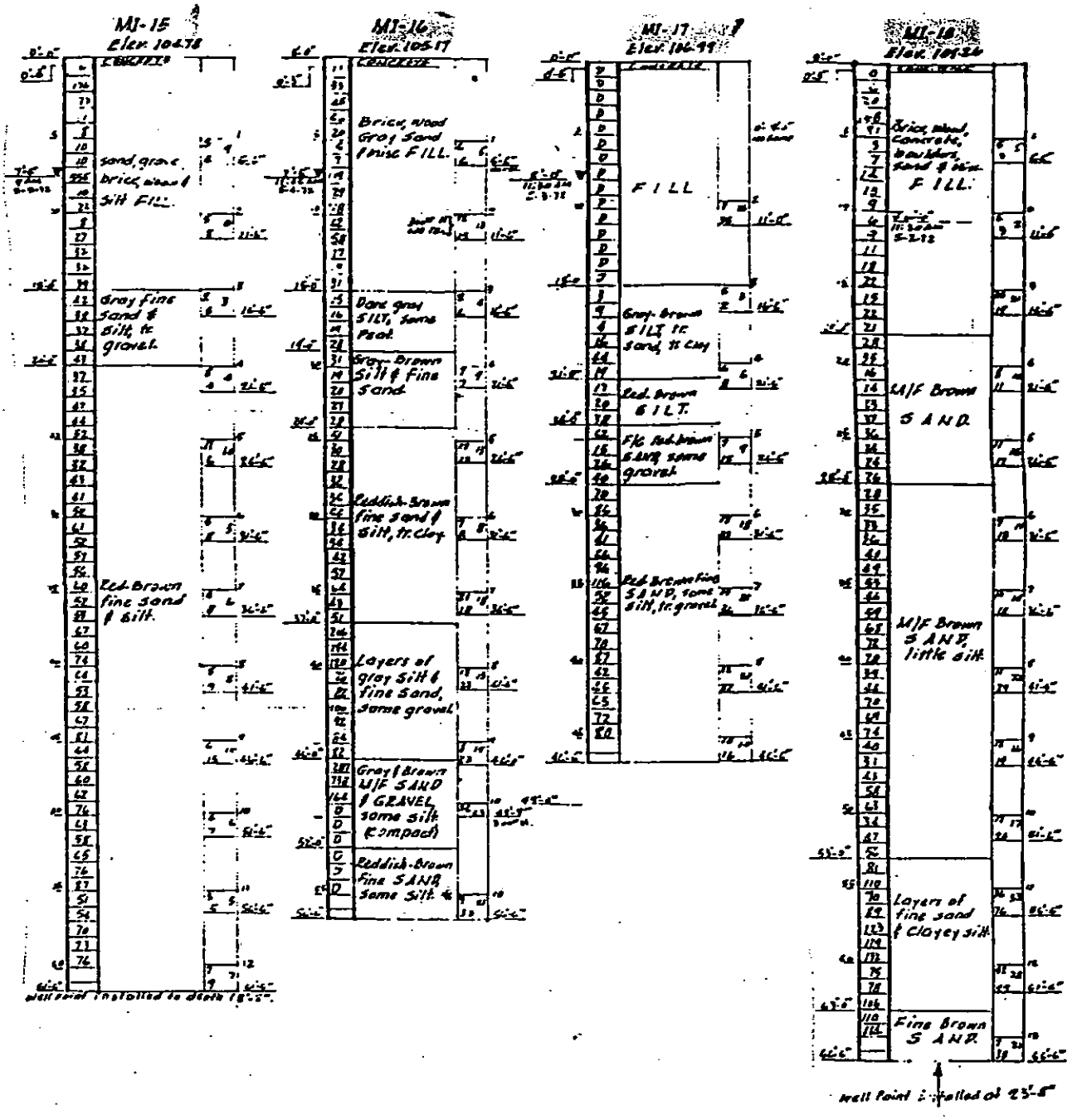
RAYMOND INTERNATIONAL INC.

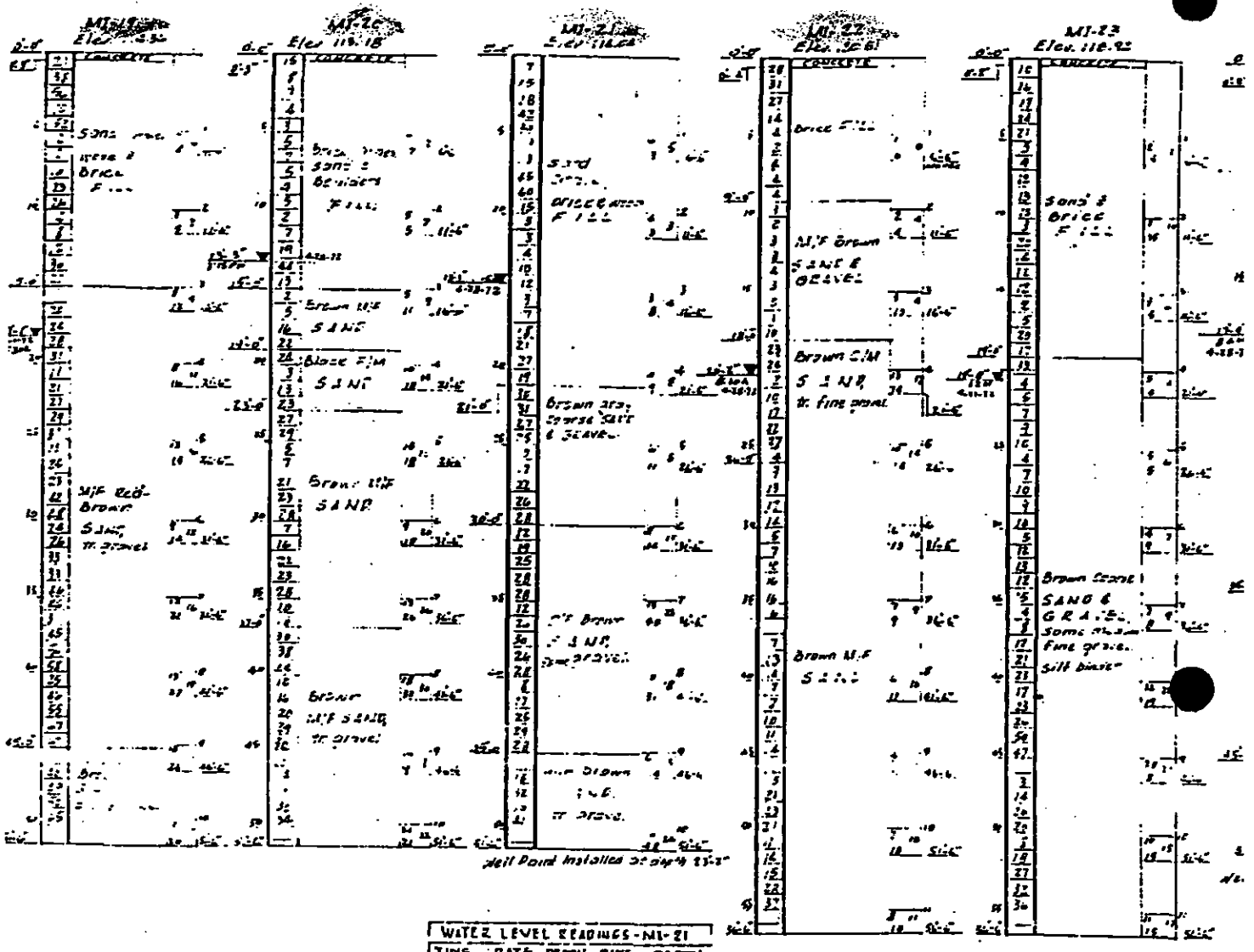
BORING SECTIONS

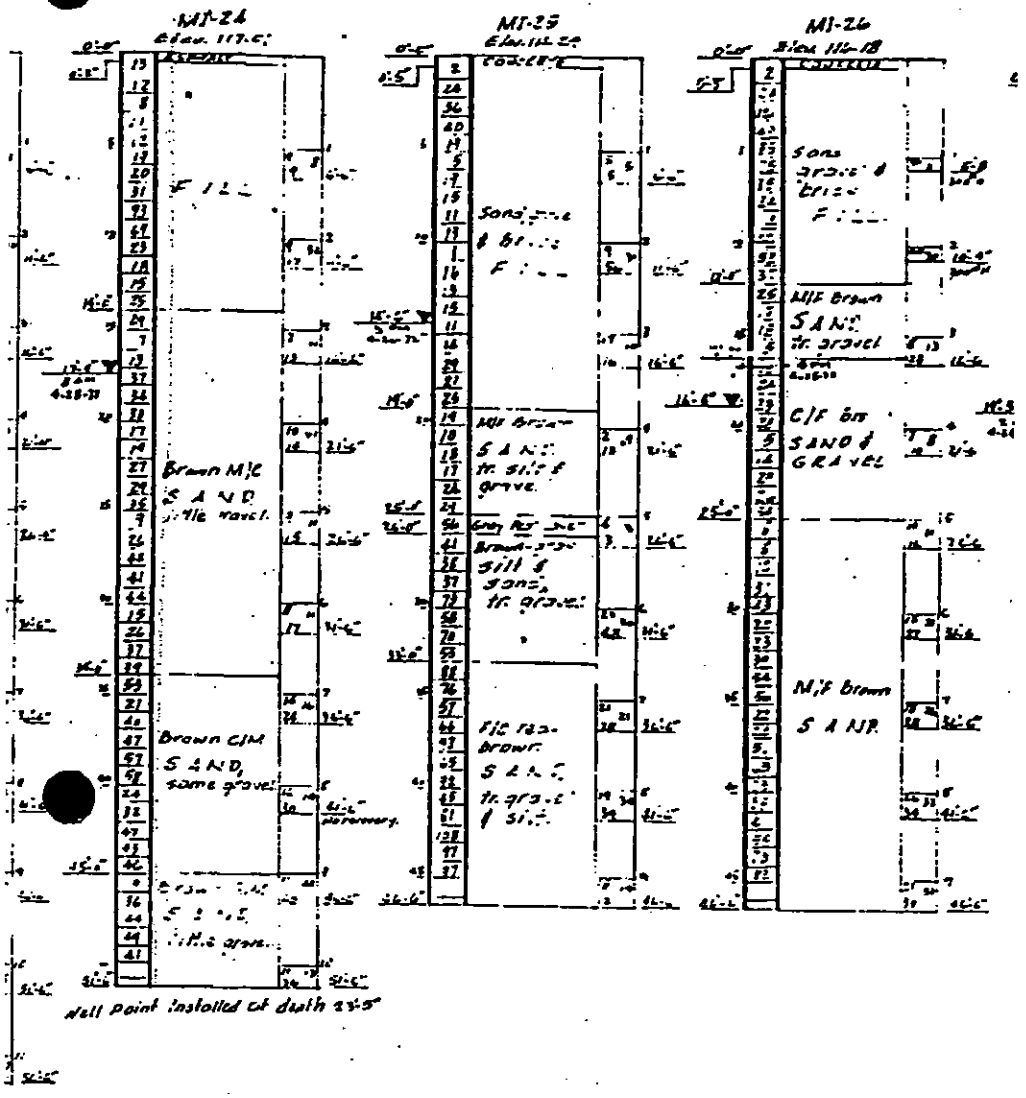
NEW YORK CITY TRANSIT SYSTEM

SECOND AVE SUBWAY
ROUTE 132-C SECT. 2

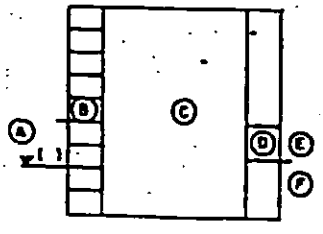
BOROUGH Manhattan


MI-15
Elev. 104.78
sand, gravel, brick, stone & silt FILL
Gray Fine Sand & Silt, fr. gravel
Red-Brown fine sand & silt
MI-16
Elev. 105.17
Brick, wood Gray Sand & misc FILL
Dark gray SILT, some Peat
Gray-Brown Silt & Fine Sand
Reddish-Brown fine sand & silt, fr. clay
Layers of gray Silt & fine Sand, some gravel
Gray & Brown M/F SAND & GRAVEL, some Silt (Compact)
Reddish-Brown fine SAND, some Silt
MI-17
Elev. 106.99
FILL
Gray-Brown SILT fr. sand, fr. Clay
Red. Brown SILT
Fine Red-Brown SAND, some gravel
Red-Brown Fine SAND, some silt, fr. gravel
MI-18
Elev. 104.24
Brick, wood, Concrete, boulders, sand & silt
FILL
M/F Brown SAND
M/F Brown SAND, little silt
Layers of fine sand & Clayey silt
Fine Brown SAND
Well Point installed at 25'-8"


MI-21
MI-22
MI-23
Elev. 118.92
Brown Silt
Sand & Gravel
Brown Silt
Sand & Gravel
Brown Silt
Sand & Gravel



LEGEND



(A) WATER LEVEL ( ) HOURS AFTER COMPLETION.

(B) NUMBER OF BLOWS OF A 300 LB. HAMMER FALLING 18" REQUIRED TO DRIVE A 2½" DIA. CASING (UNLESS OTHERWISE NOTED) EACH 12".

(C) STRATA DESCRIPTION.

(D) NUMBER OF BLOWS OF A 140 LB. HAMMER (UNLESS OTHERWISE NOTED) FALLING 30" REQUIRED TO DRIVE A 2" SPLIT SPOON EACH 6".

(E) SAMPLE NUMBER.

(F) DEPTH AT END OF SAMPLE DRIVE.

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RAYMOND INTERNATIONA

BORING SECTIONS

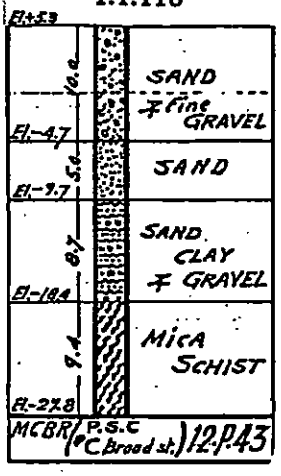
NEW YORK CITY TRANSIT SYSTE

SECOND AVE SUBWAY
ROUTE 132-C SECT. 2

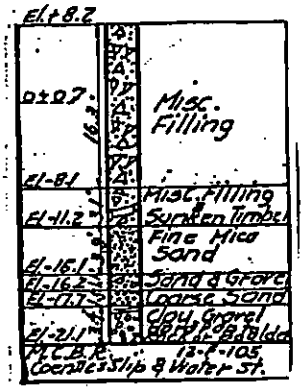
BOROUGH Manhattan

DRAWN BY: F.K.
CHECKED BY: J.E.
DATE: July
SCALE: 1/8" =

1.1.118



1.1.120



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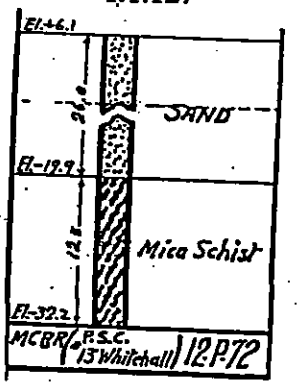

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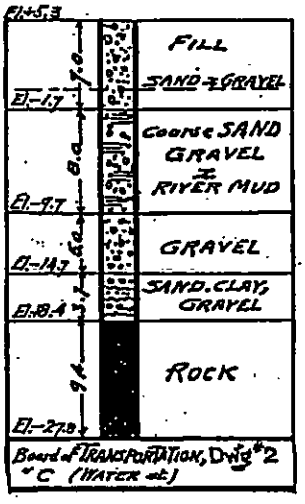

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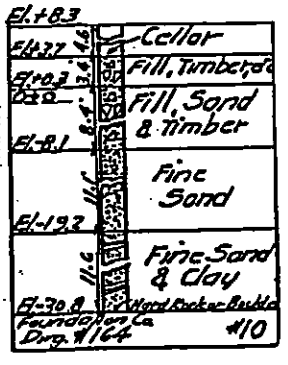
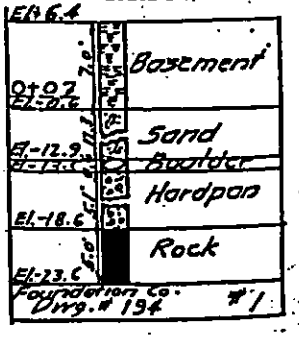


1.1.364



6.2 LOWER MANHATTAN SHAFT SITE AND SPUR TUNNEL OPTIONS

6.2.1 Study Area Description

Block 98, also known as the Peck Slip Parking Lot, is situated on the southeast side of Pearl Street between Beekman, Peck, Water, and Pearl Streets (Photographs 6.2-1 through 6.2-5). This site may be used as a shaft site. Since the horizontal and vertical limit of effects is unknown, the APE includes the entire block. A spur tunnel would also be constructed on Peck Slip, leading from Pearl Street to a spoils removal shaft at the South Street Right-of-Way (Photographs 6.2-6 through 6.2-8). An alternative would locate the spur tunnel on Gouverneur Lane, leading from Water Street to a spoils removal site at the South Street Right-of-Way (Photographs 6.2-9 and 6.2-10). Construction of the shaft sites and spur tunnels would be by the cut-and-cover method.

6.2.2 Existing Conditions

6.2.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

According to Grumet the very southern tip of Manhattan was called Kapsee in the 17th century (Grumet 1981:68). This was described as a ledge of rocks at the southernmost point of Manhattan Island, probably in the vicinity of what is now Battery Park (Ibid.:17). To the north, the landform termed Ashibic was probably a narrow ridge or ancient cliff north of Beekman Street in Lower Manhattan, that was bounded by marsh to the south (Ibid.:3). In addition, "Catiemuts" was the term probably used to describe a "fort or hill located near Pearl Street and Park Row," also several blocks west of the project site (Ibid.:8).

Archaeological Potential

Block 98

According to cartographic and documentary research, it appears that Block 98 was pasture/meadow land and possibly even partly swamp located directly along the shore of the East River prior to historical development, and that higher elevations were situated west of Pearl Street and Block 98 (Figure 6.2-1; Appendix 6.2.7.1). Soil borings taken near Block 98 indicate that there is 15.5' of fill below grade, and below that is sand (Raymond International Inc. 1974). Since only one structure that stood on block in the 20th century was reported to have a basement, the depth of effects from buildings on the block probably did not extended below this 15.5' of fill. Therefore, there is the possibility that precontact deposits exist beneath the 15.5' of fill, but these are probably inundated since the water table is located at about 13.5' below grade.

Peck Slip

Modern Peck Slip was originally the location of a creek that drained a small area of marshland about 250' to the north. The elevated sections of Peck Slip, northwest of Water Street, were most likely a combination of meadow and marshland, sloping down to the stream in the center of the roadbed, and in turn, sloping downward to the south (Figure 6.2-1). Current street intersection elevations reflect predevelopment topography, declining from northeast to southwest, and are not significantly different from the earliest recorded numbers available (Pulling 1864). Given the current elevations and the low-lying nature of the pre-development topography, this would suggest that if precontact resources were once present along the shoreline when the water table was drastically reduced, there is probably a deep level of fill under Peck Slip that would have protected them from later disturbance. A soil boring at Pearl Street showed fill to 15.5' below grade, but no borings were available for the rest of Peck Slip. Therefore, there is the possibility that precontact resources exist beneath the unknown depth of fill. However, given this APE's proximity to the shoreline, any resources would probably be located below the water table.

Gouverneur Lane

A review of documentary and cartographic resources indicates that the west side of Water Street, at the western end of Gouverneur Lane, marked the site of the precontact East River shoreline (Figure 6.2-1). Researchers have noted that during the prehistoric era there were periods of time when a distinct rise and fall of water levels occurred. In some locations these slight fluctuations allowed native peoples access to formerly inundated areas for resource procurement and temporary camps. However, this section of the APE was in an area known to have a deep water channel, and nearby soil borings indicate no potential precontact living surface. Therefore, there is probably no potential for the presence of intact precontact deposits at Gouverneur Lane (Appendix 6.2.7.1).

6.2.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

An extensive review of previously inventoried historical sites in the vicinity of Block 98, Peck Slip, and Gouverneur Lane is provided in section 6.1.2.2.

In addition to the historic period sites discussed in the previous chapter, limited excavations were conducted in the basement of 45 Peck Slip/151 South Street (1807 Ward Building) adjacent to the APE at the northwest corner of South Street and Peck Slip in 1979. Fill containing artifacts from the early 19th century, the period during which the building was constructed were recovered, but they are believed to be from artifact-rich introduced fill put down in a later period, rather than originating from activity at Peck Slip (Stewart 1980:27).

Archaeological Potential

Block 98

This APE has the potential to possess historical resources from the research categories of *Commercial* and *Residential.* Resources would include the footprint and any related features from the 1647 Allerton warehouse, Dally's Shipyard, and the commercial and residential structures that once stood on this block. The only soil boring available for this area indicates that near Pearl Street there is 15.5' of fill below grade, that lies over a layer of sand that is probably devoid of historical resources. It is possible that these 17th through 19th century resources may be located within these fill levels.

The buildings that once stood on what is now Block 98, and what was formerly Block 98 but now falls within the eastern roadbed of Pearl Street, were completely leveled by the mid-to-late 20th century. It may be that sections of foundations, vacant yards, and the potential privies, cisterns, and wells associated with early structures survived subsequent development. Most of the buildings on the block did not have basements. Again, the elevations at the corners of the block stayed the same from at least the 1880s onward, indicating that the area did not experience substantial filling or leveling after the buildings on the block were razed and Pearl Street was widened. The only soil boring available for review near Block 98 showed 15.5' of fill below grade, with the water table located at 13.5' below grade (Appendix 6.2.7.1). Therefore, if deep shaft features were present on the block, they have the potential to extend down to the depth of the water table, at 13.5', and possibly deeper.

Peck Slip

The documentary study found that the APE at Peck Slip is potentially sensitive for the resource categories of *Landfill* and *Commercial.*

Research found that Peck Slip near Water Street may have been the site of a ferry landing in 1642, and the landing for the Allerton warehouse from 1647. The shoreline at Peck Slip was gradually extended to the southeast, until by 1810 it was south of the South Street bulkhead.

Evidence of landfill and gradual land extension, such as buried and surviving stone and wooden piers, wharves and bulkheads, sunken vessels, and smaller detritus expelled from boats and other users of the slip could exist within the APE. These resources would date between ca 1640 to 1810, and would be located from the intersection of Peck Slip and Water Street, to as far south as the South Street bulkhead. Estimating resource depths is problematic without soil boring logs, but would be expected in deeply-buried in river sediments, as well as in historical fill layers. Thus, potentially sensitive material may be just beneath the current street surface.

The Peck Slip Market was built in 1763, and remained in use as until it was demolished in 1793. According to the historical maps, it was located on the north side of the Water Street intersection, extending approximately 100' northwest toward Pearl Street. Market

remains would be expected in deeply buried river sediments and in the fill of the slip itself. The precise depth of these sediments and the fill layer is unknown without data from soil boring logs. More shallowly-buried potential remains would be anticipated in the general vicinity of the market and its foundations, all of which would lie within historical fill layers. These remains were probably partially shielded from modern utility installation effects, because the market location was depressed below the level of the adjacent streets and additional fill added at the time of the market's demolition in 1793 (Appendix 6.2.7.1).

Gouverneur Lane

Gouverneur Lane, depicted on maps as 19' wide, has the potential to contain resources from the categories of *Docks and Wharves, Landfill*, and *Reservoir and City Water Systems* (that includes drainage systems).

Although submerged in the early 17th century, Gouverneur Lane may have been the location of early waterfront features including wharves, piers, or docks. The landfilling activity that occurred in the late-18th century may have protected these potential 17th and 18th century features. Therefore, the Gouverneur Lane has the potential for the presence of these resource types.

The waterfront features discussed here may be located beneath or within the fill layer. Based on the depth of the former river bottom and the review of the 1937 soil borings in the area, these features could be present down to a rock layer encountered at depths between 25' to 30' below grade.

Historical maps and records indicate that a considerable amount of landfill activity occurred in the area between Water Street and South Street. Both fill and fill retaining devices, such as bulkheads and dumping boards might be present beneath Gouverneur Lane. The archaeological examination of these potential features may provide information on the technology used to create the 18th century New York City waterfront. Therefore, this location is considered sensitive for these resources down to a depth of 25' to 30' below grade.

A significant drainage system had been privately installed in the Gouverneur Lane roadbed. Because this system was connected to street grates, the buried remains may still be present close to the surface. Although utility pipes were installed in the street bed during the 19th and 20th centuries, the effect on this early drainage system is unknown. Therefore, Gouverneur Lane is also considered sensitive for this cultural resource.

6.2.3 Summary of Archaeological Potential

Block 98

This APE is potentially sensitive for precontact and historical material, dating from at least the 1640s onward (Figure 6.2-9). Therefore, any subsurface disturbance to this block is likely to affect potential archaeological resources unless it is below the

anticipated depth of resources. As stated above, the maximum anticipated depth of potential shaft features is estimated to be about 55' below grade. Other potential resources would probably be found within the first 15' to 20' below grade, that represents 15' of fill plus an additional five feet where precontact resources may lie.

Peck Slip

Because this area is potentially sensitive for precontact and historical period material, dating from at least the 1640s onward (Figure 6.2-9), future subsurface disturbance to Peck Slip is likely to affect potential archaeological resources unless it occurs below the anticipated depth of resources. Because there is no soil boring data, the depth of potential prehistoric and historical resources is unclear, and requires further subsurface investigation. However, given the presence of known water and sewer mains, in addition to other utility lines that are undocumented, subsurface disturbance is likely to extend to at least four feet below the current surface in most areas of this APE. Also, this disturbance is likely to be more severe along South Street, where there is an elevated highway.

Gouverneur Lane

Gouverneur Lane is considered potentially sensitive for early historic material, dating from the late 17th through 18th centuries (Figure 6.2-10). Any subsurface disturbance to this block is likely to affect potential archaeological resources unless it is below the anticipated depth of resources. The potential historic resources would probably be found within the first 20' to 25' below grade, which represents approximately 20' of fill plus an additional five feet of the former river floor where historic resources may have been imbedded. The maximum anticipated depth of potential features is estimated to be about 25' to 30' below grade where soil borings indicate a significant rock layer is present.

6.2.4 Proposed Project Effects

According to construction plans (SYSTRA Drawing CT-02 March 1, 2002), Block 98 will not be affected. The same construction plans indicate that Peck Slip will not be affected either. However, proposed cut and cover construction for an underground conveyor system could potentially affect historic resources beneath Gouverneur Lane. Alternatively, an above-ground conveyance structure could be built on this street. Although the depths of proposed effects are unknown, anticipated resources may extend from the surface down to 30 feet below grade. Therefore, any subsurface work on Gouverneur Lane would affect potential historic archaeological resources.

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.

6.2.5 Recommendations

Block 98

There is the possibility that Block 98 was inhabited or utilized at some time during the precontact period, and documentary research clearly establishes a 17th through 20th century presence. However, since no effects are anticipated to this APE, no additional archaeological investigations are recommended. Should project plans change, potential effects on archaeological resources would be reassessed. If adverse effects to potential resources are identified, additional archaeological investigations, including the review of boring logs, additional documentary research, and subsurface testing, will be warranted.

Peck Slip

There is the possibility that the parts of Peck Slip north of Water Street were inhabited or utilized at some time during the precontact period, and the APE is sensitive for a variety of historic period archaeological resources. However, since no effects are anticipated to this APE, no additional archaeological investigations are recommended. Should project plans change, potential effects on archaeological resources would be reassessed. If adverse effects to potential resources are identified, additional archaeological investigations, including the review of boring logs, additional documentary research, and subsurface testing, will be warranted.

Gouverneur Lane

Because potential historical resources relating to an 18th century drainage system, waterfront features, and 18th century landfill may be present beneath Gouverneur Lane, further investigation of subsurface conditions may be necessary.

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] these will help to firmly establish the depth of fill within Gouverneur Lane proper and would serve to help determine the potential location and depth of historical period waterfront and landfill resources. Borings should extend beneath all fill layers and down to bedrock.

Following the review of soil borings, some sites 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

[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.

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

For areas with potential historic sensitivity, a subsurface testing plan will be warranted to test these potentially sensitive areas when the locations of effects are known. Where subsurface testing is indicated, its goal would be to establish the presence or absence of cultural resources, their horizontal and vertical extent, site integrity, and, their 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 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.

6.2.6 Figures and Photographs

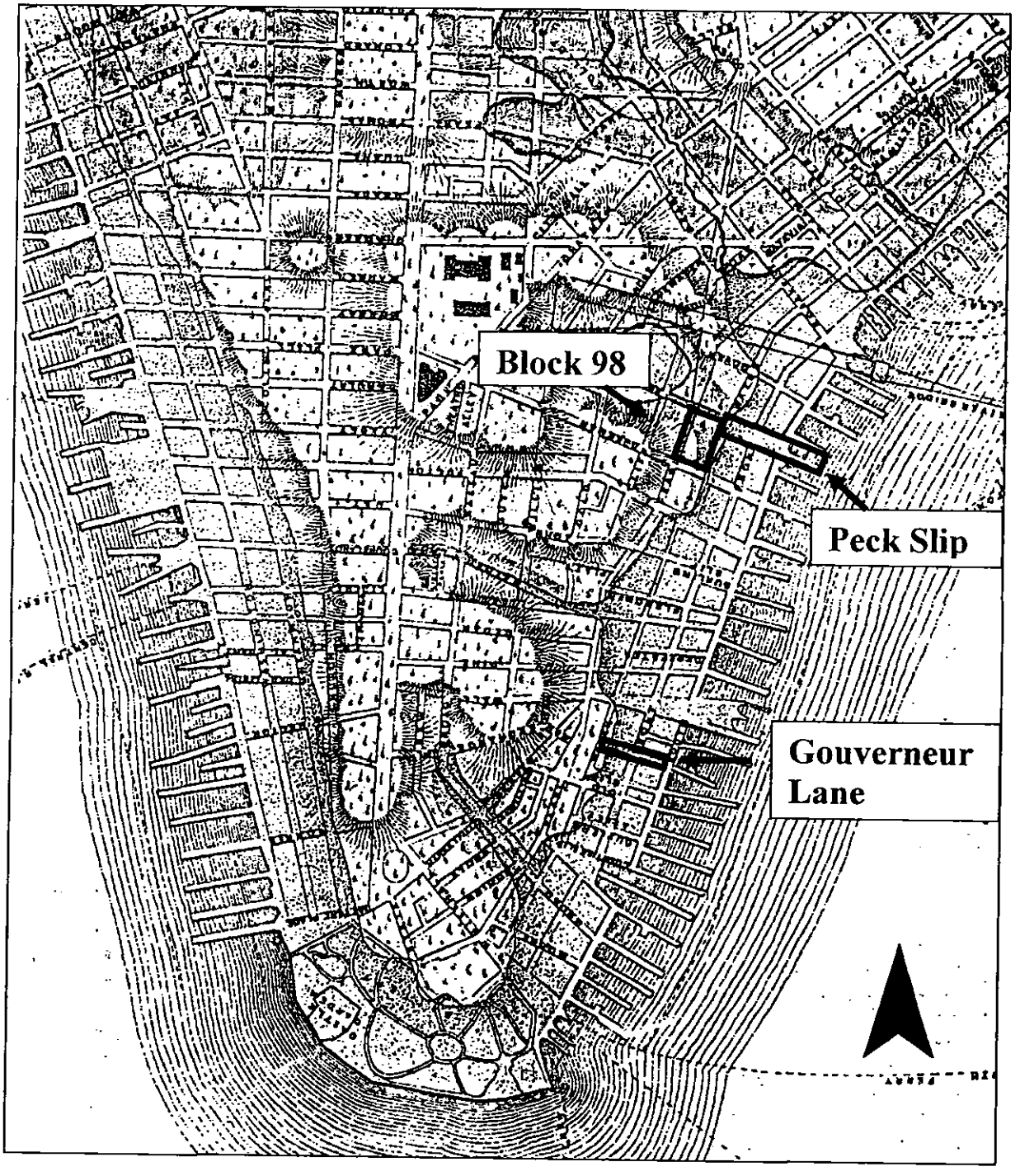


FIGURE 6.2-1

Topographical Atlas of the City of New York, Including the Annexed Territory. Viele 1874.

No Scale

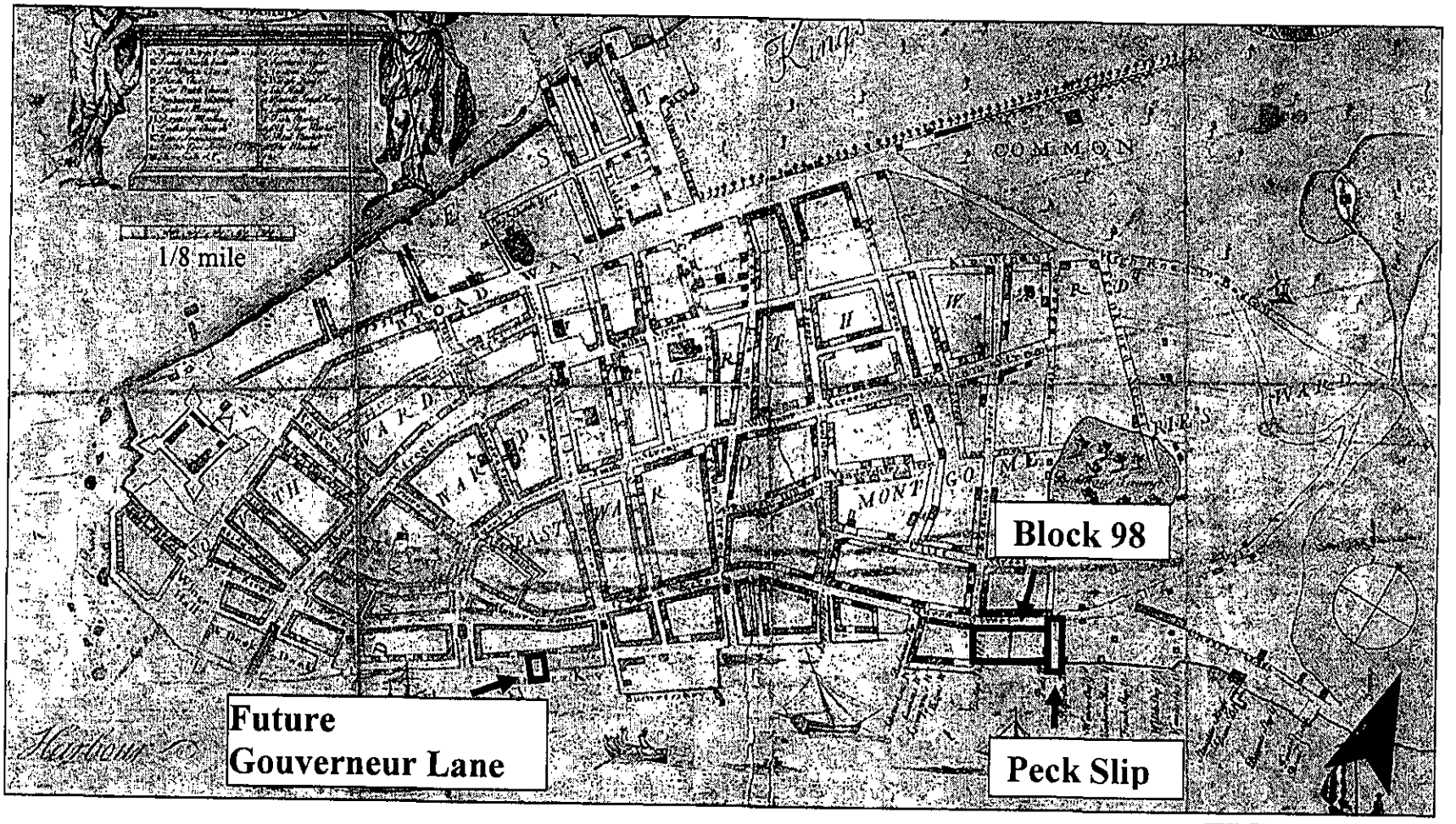


FIGURE 6.2-2

A Plan of the City of New York from an actual Survey. Lyne 1730.

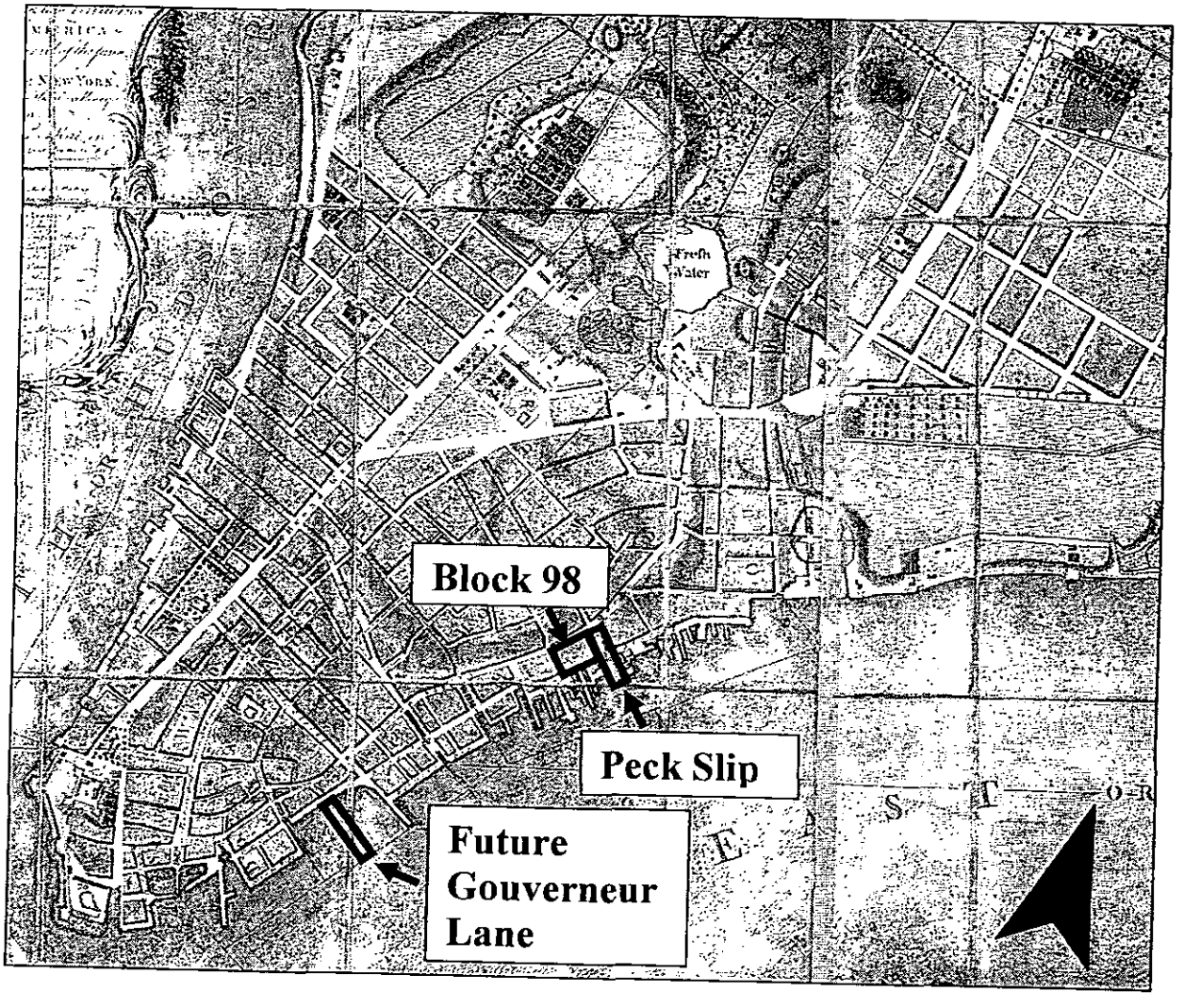


FIGURE 6.2-3

Plan of the City of New York. Ratzer 1766/67.

No Scale

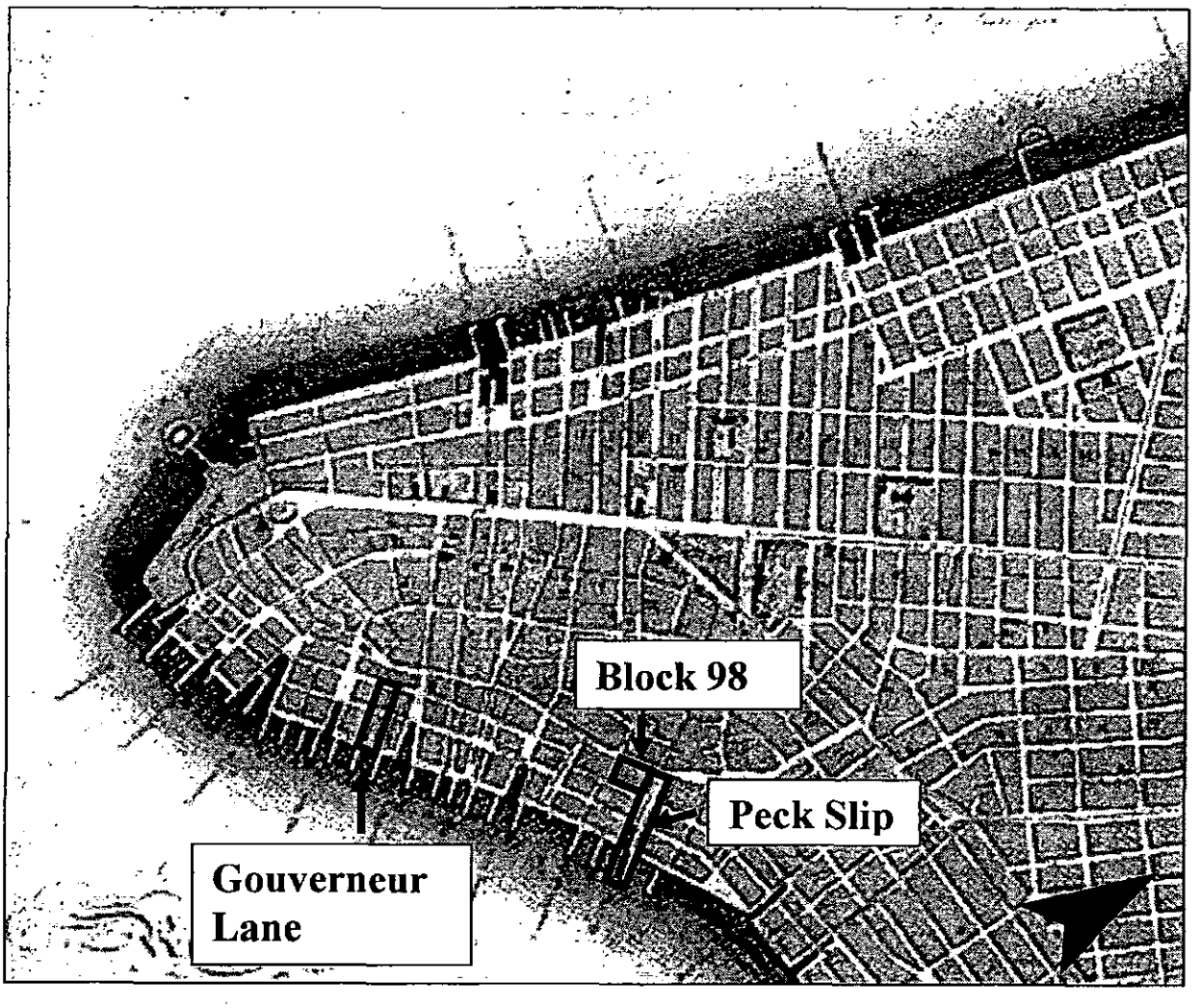


FIGURE 6.2-4

Map of the city of New York and Island of Manhattan as laid out by the Commissioners. Bridges 1807-1811.

Approximate Scale: 3 ½ inches = 1 mile

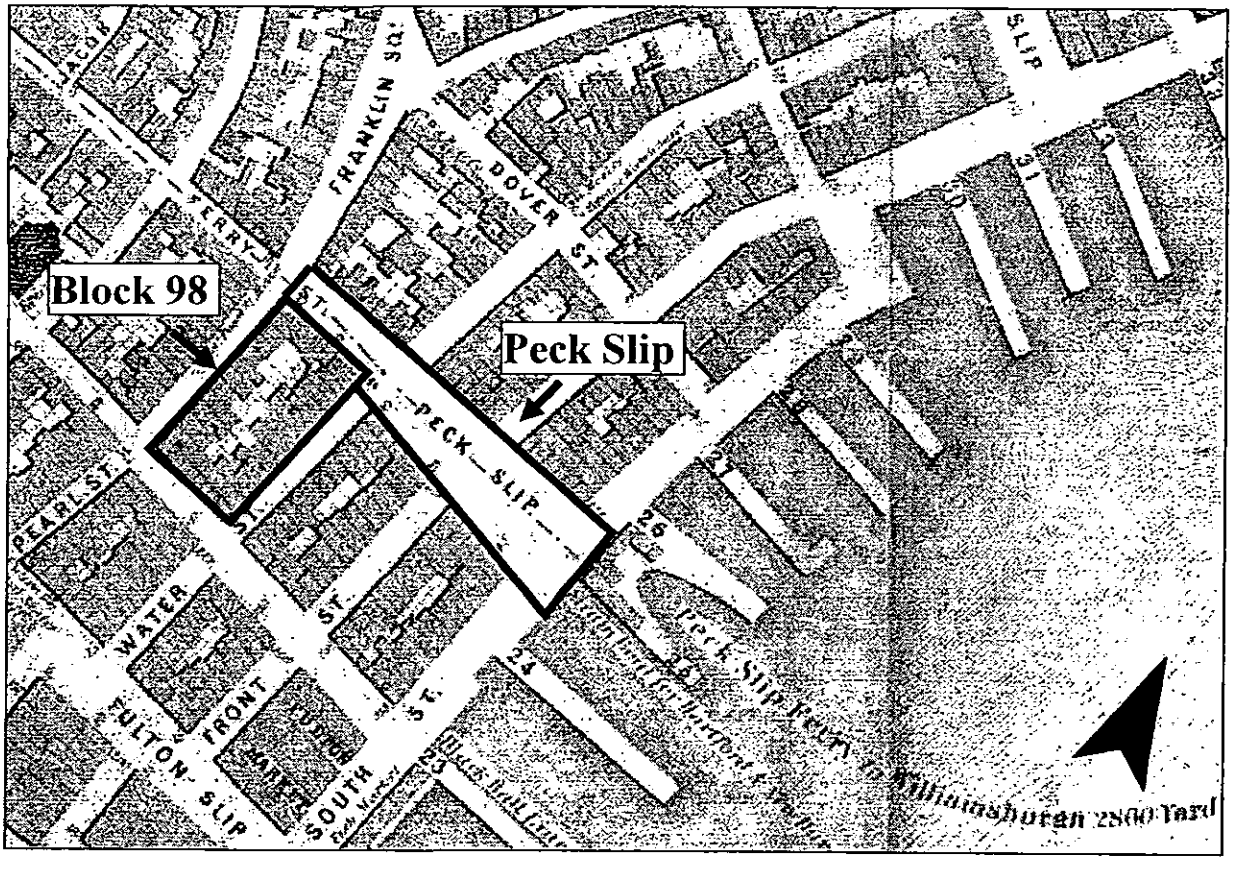


FIGURE 6.2-5a

Map of the City of New York Extending Northward to 50th Street.
Detail of Block 98 and Peck Slip. Dripps 1852.

No Scale

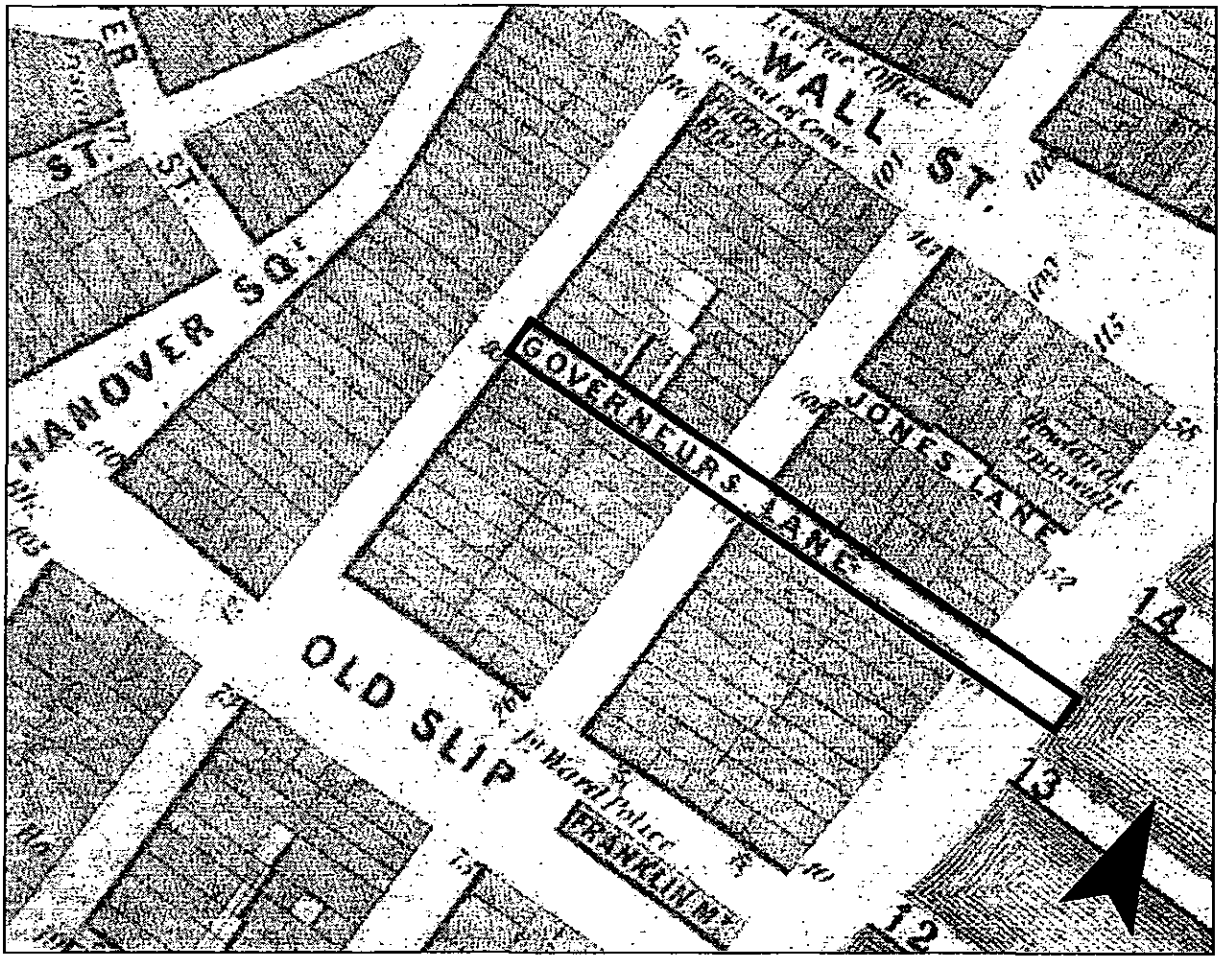


FIGURE 6.2-5b

Map of the City of New York Extending Northward to 50th Street.
Detail of Gouverneur Lane. Dripps 1852.

No Scale

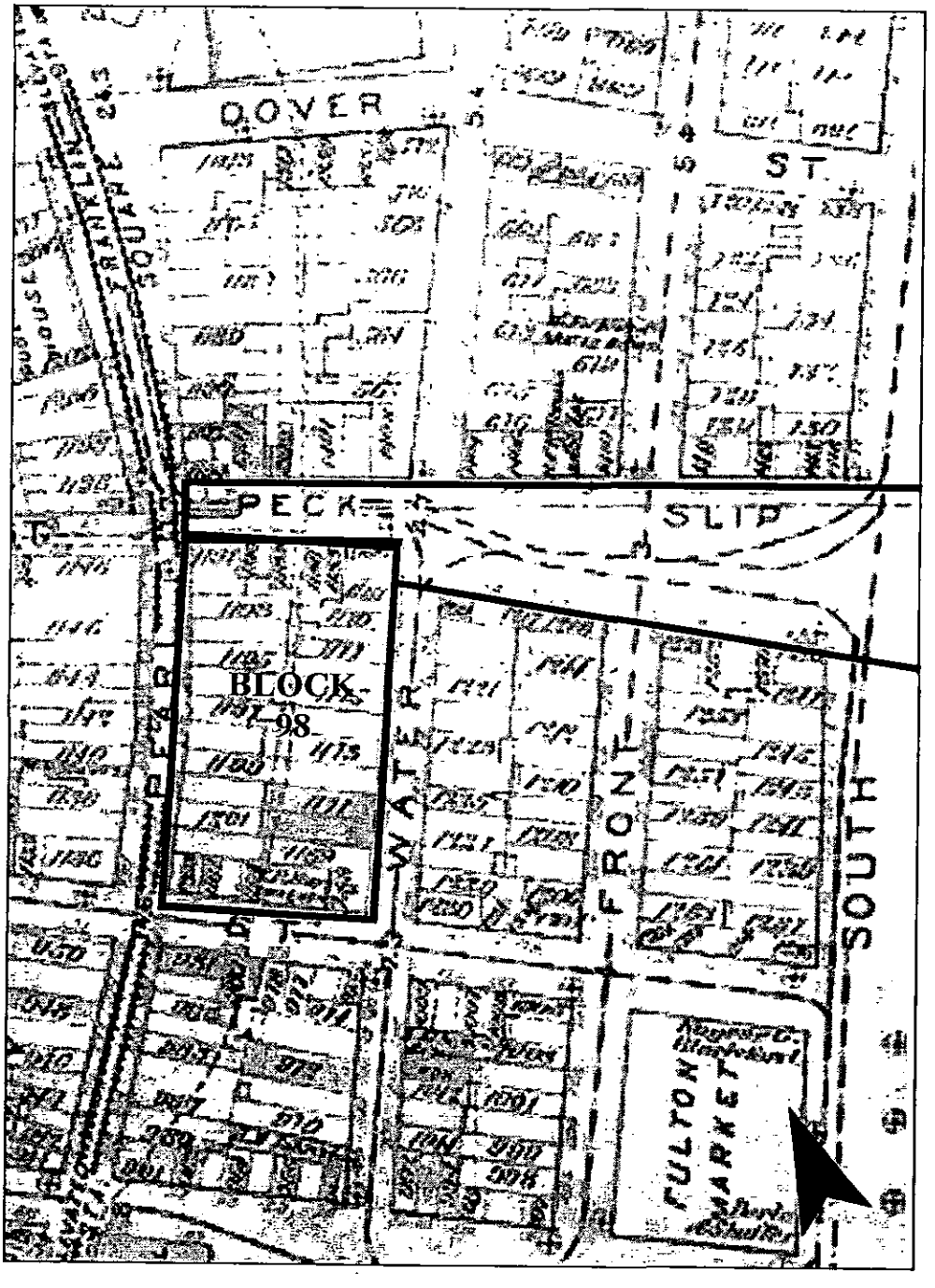


FIGURE 6.2-6

Atlas of the City of New York. Detail of Block 98 and Peck Slip. Robinson 1885.

Approximate Scale: ¼ inch = 100 feet

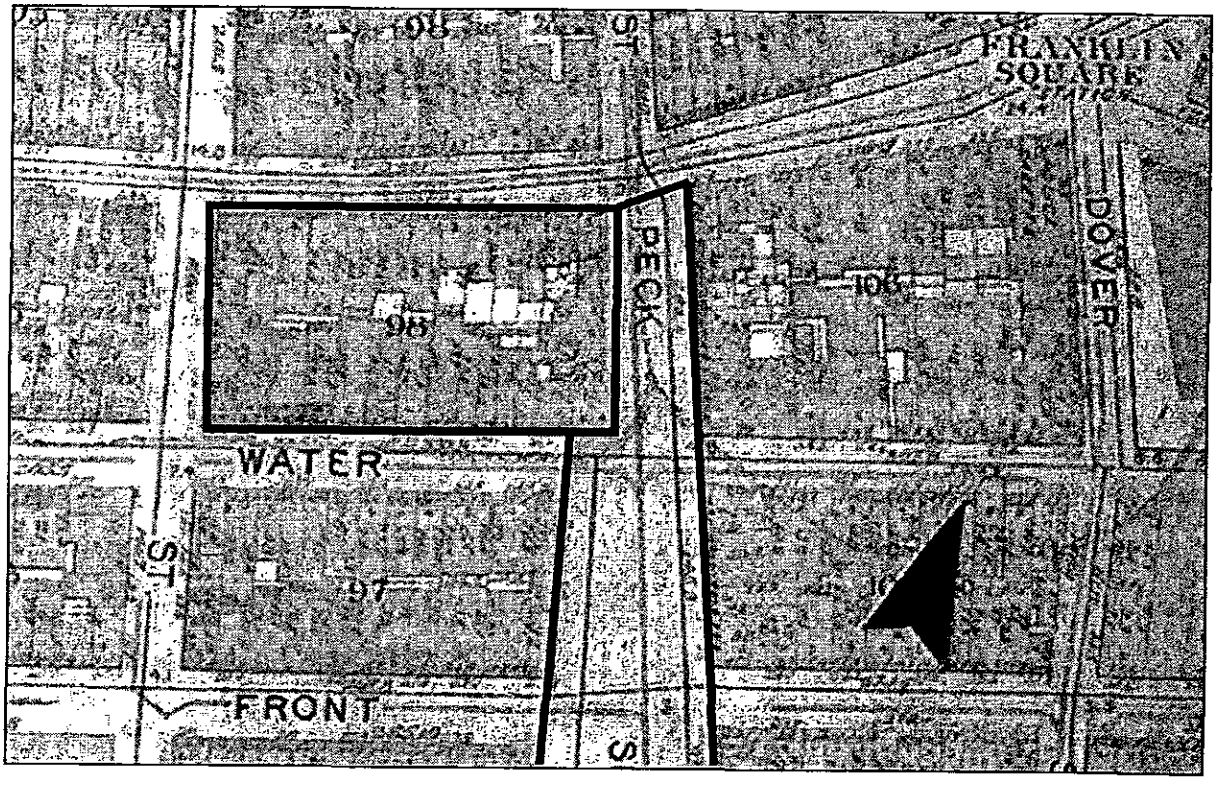


FIGURE 6.2-7

Atlas of the City of New York, Borough of Manhattan. From actual surveys and official plans. Detail of Block 98 and Peck Slip. Bromley 1897.

Approximate Scale: ¼ inch = 100 feet

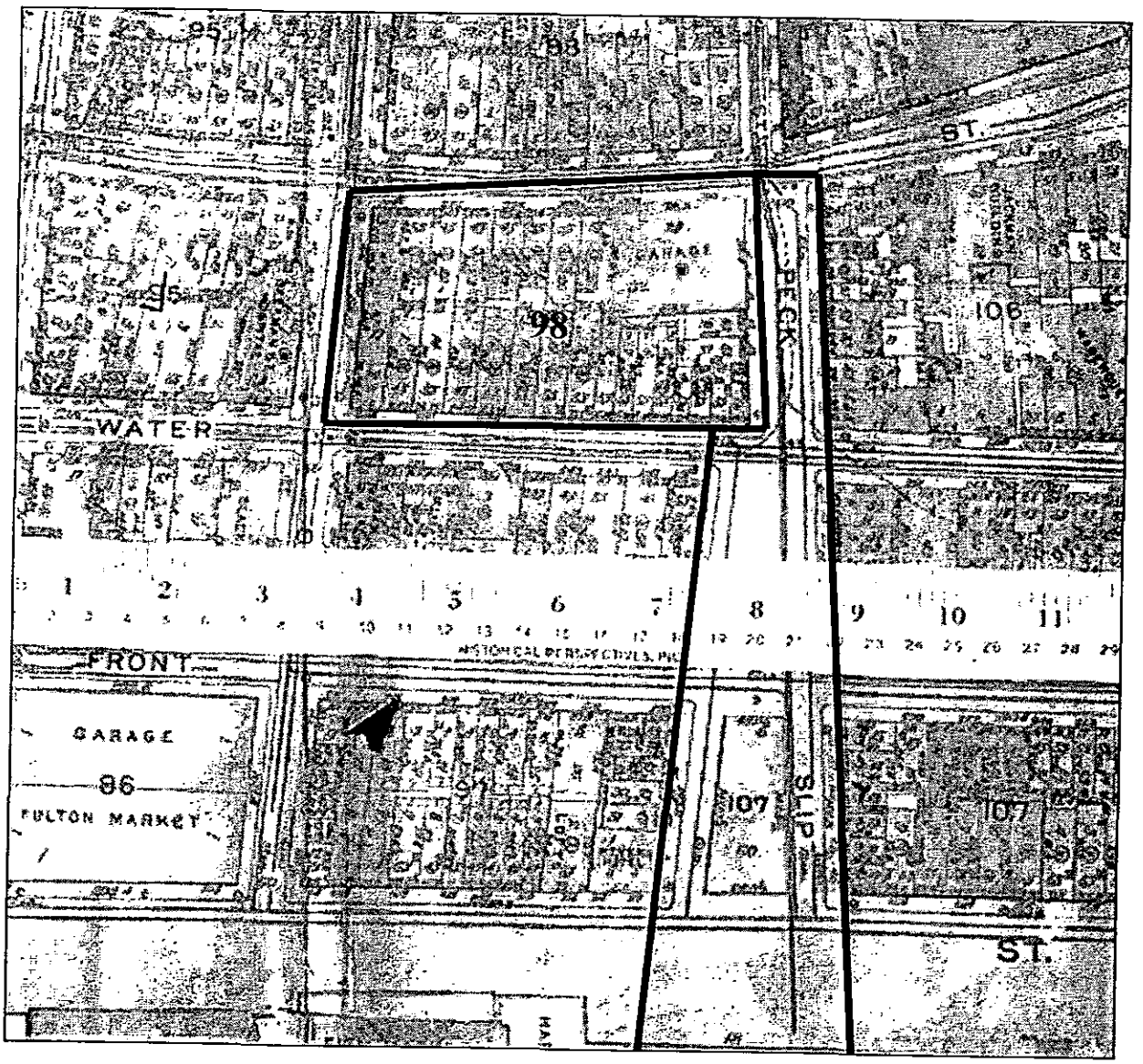


FIGURE 6.2-8

Land Book of the borough of Manhattan, City of New York.
Detail of Block 98 and Peck Slip. Bromley 1926.

Approximate Scale: 3/8 inch = 100 feet

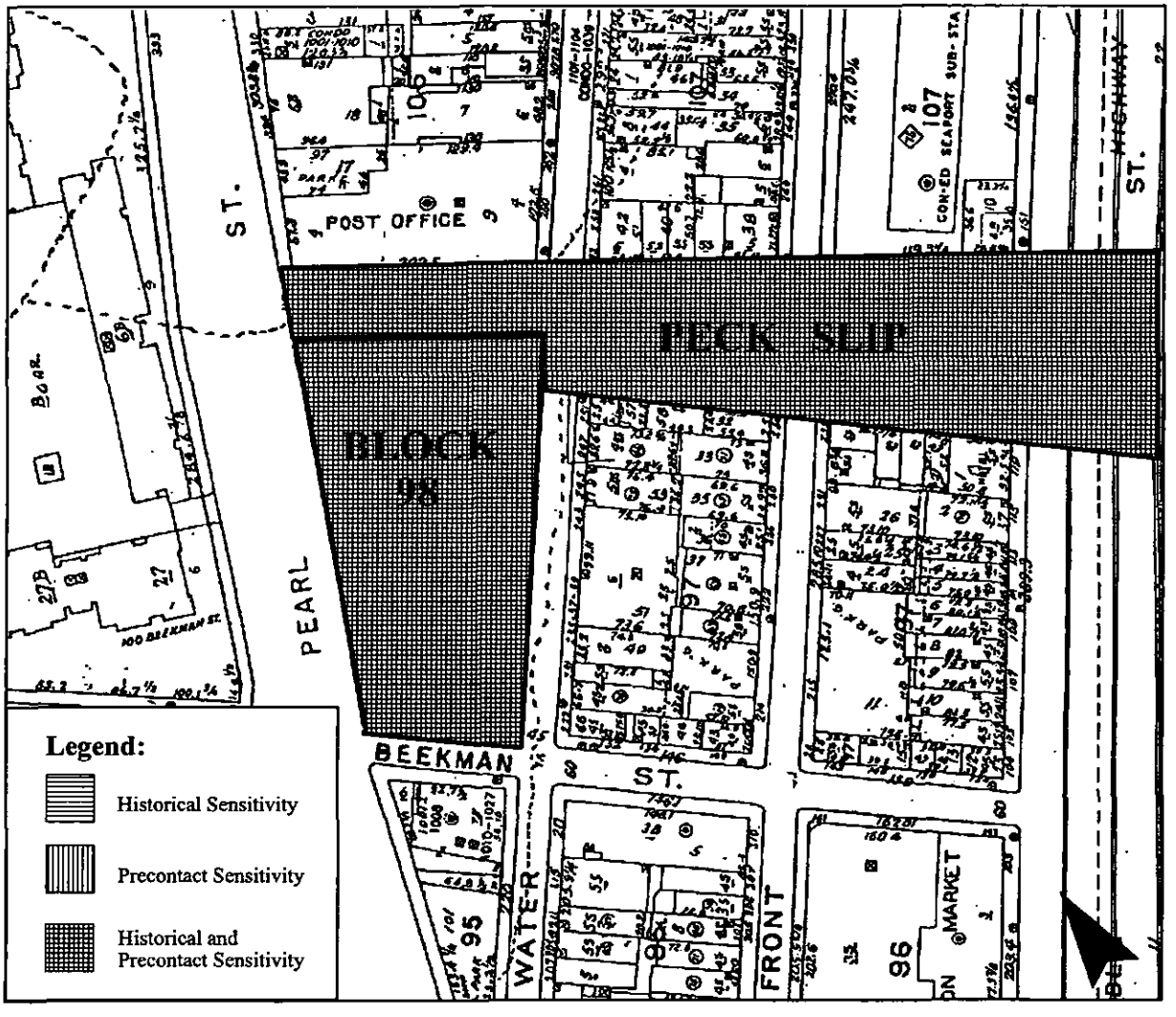


FIGURE 6.2-9

Area of Potential Archaeological Sensitivity.
Block 98 and Peck Slip. Sanborn 2001.

Scale: ½ inch = 75 feet

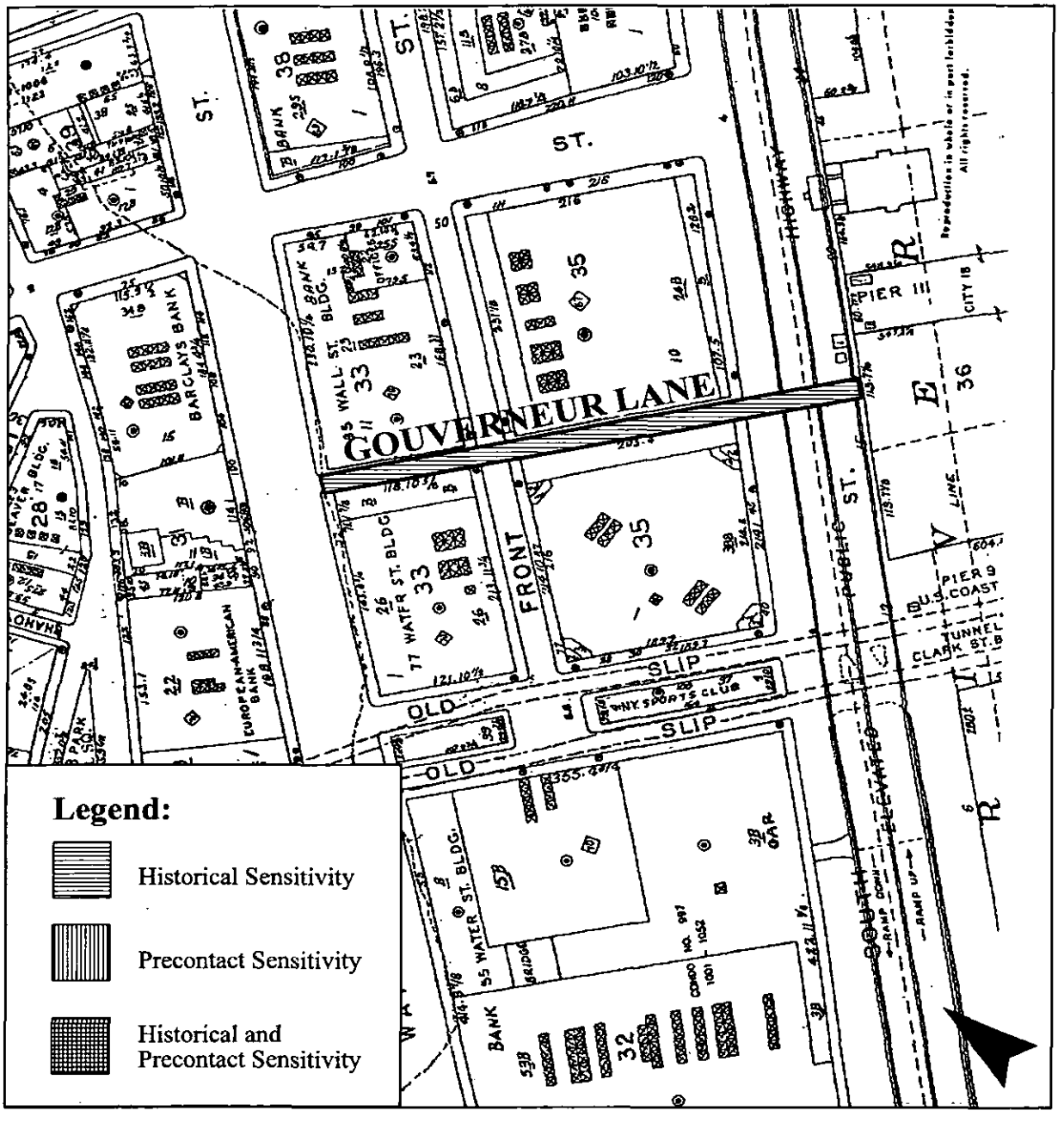


FIGURE 6.2-10

Area of Potential Archaeological Sensitivity.
Gouverneur Lane. Sanborn 2001.

Approximate Scale: ½ inch = 80 feet



Photograph 6.2-1: Facing north on the corner of Beekman Street and Pearl Street. Note: Block 98 is on the Right.

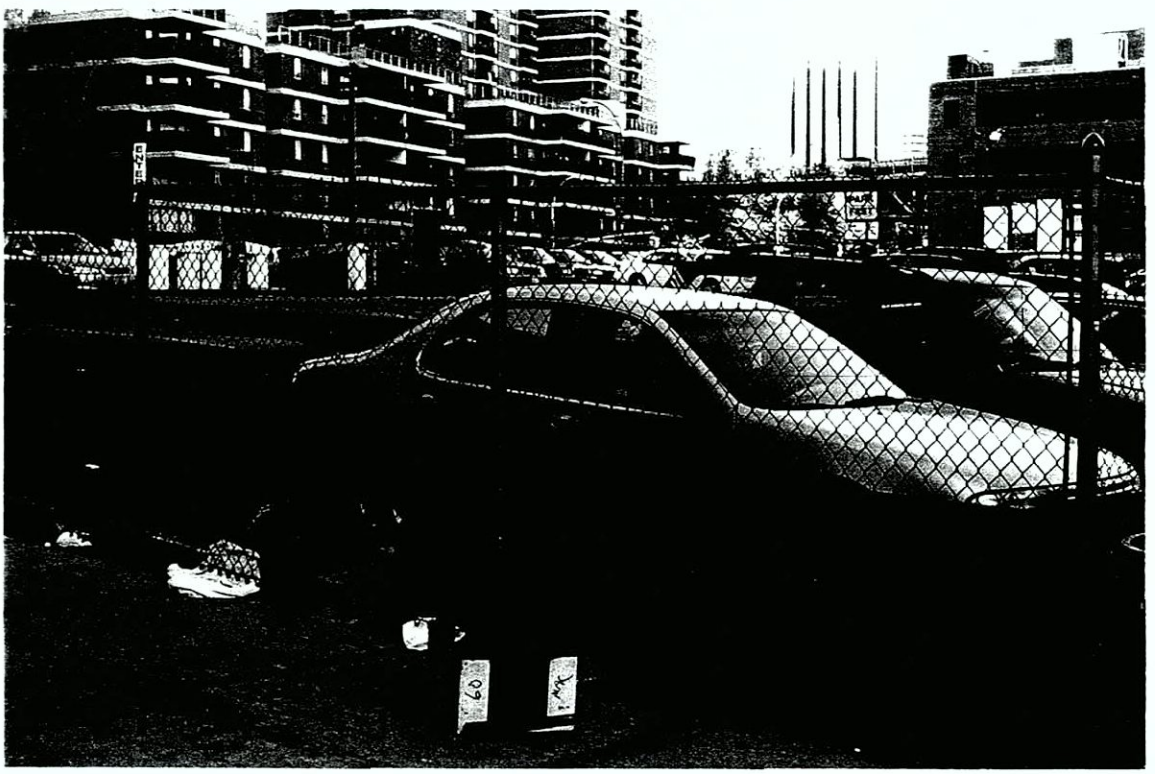
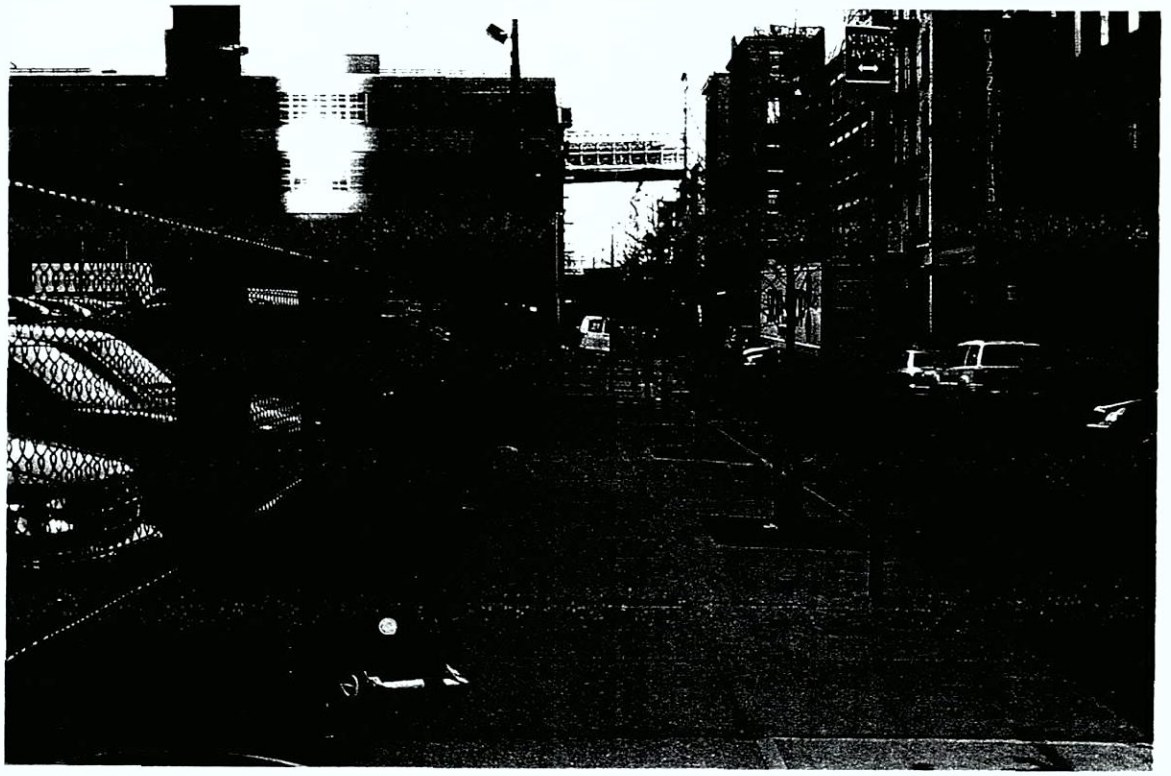


Photo 6.2-2: Facing northwest on corner of Water Street and Beekman Street towards Block 98



Photograph 6.2-3: Facing north on the corner of Water Street and Beekman Street. Note: Block 98 is on the left.



Photo 6.2-4:Facing northwest on the corner of Water Street and Beekman Street towards Block 98.



Photograph 6.2-5: Facing north on the corner of Water Street and Beekman Street towards Block 98.



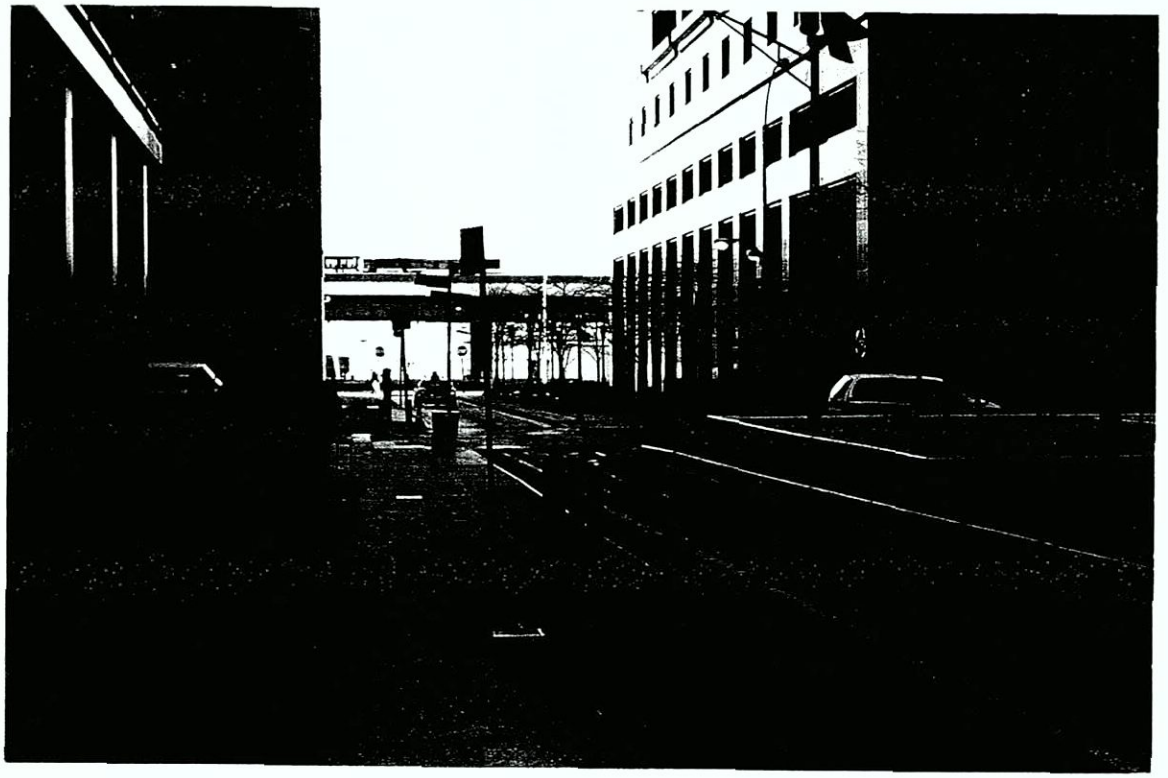
Photo 6.2-***6***: Facing east on Peck's Slip at the Pearl Street intersection.



Photograph 6.2-7: Facing east on Peck Slip.



Photograph 6.2-8: Facing east on Peck Slip. Note the change in the road.



Photograph 6.2-9: Facing east on Water Street towards Gouverneur Lane.



Photograph 6.2-10: Facing east on Front Street towards Gouverneur Lane.

6.2.7 Appendices

6.2.7.1 Documentary Assessment of APE

Block 98

Cartographic History

Duke's Plan 1664: The area of Block 98 appears in the northern section of this map. Although no blocks were laid out in this period, the map records "Aldertons Building" (Allerton's warehouse at 8 and 10 Peck Slip) along the shore, south of present Pearl Street. Oddly, it is separated from "Passage Place" the ferry landing and the hamlet of which it was supposedly a part.

Nicolls Map 1668: The location of Block 98 and the Peck Slip ferry landing is designated by a small building, along the shore, just west of the "Old Mill."

Lyne1730: By this time Block 98 is more distinct. Beekman Street has been laid out to the west of Pearl (then Queen) Street. What was to become Block 98 was bounded by Pearl Street on the west, the East River on the East, and Peck Slip on the north. The southern boundary, where Beekman Street is eventually cut through, is labeled as Dally's Ship Yard. Development is shown on the western section of the block fronting Pearl Street, and a small structure was built at the northeastern corner of the lot labeled Pecks W., probably indicating a wharf.

Carwitham 1740: Dally's Ship Yard is shown at the foot of Beekman Street on the East River, somewhere in the vicinity of the southern half of Block 98. Again, nondescript structures are shown fronting Pearl Street, and Peck's Wharf is located at the northeastern corner of the block.

Grim 1744/1813: Block 98 appears to be partially occupied by Dally's Ship Yard. At least six structures, and possibly more, are depicted on the northwestern and northeastern sides of the block. Peck Slip still demarcates the northern boundary.

Maerschalck 1755: By this time, Water Street had been laid out to form the eastern boundary of Block 98, but Beekman Street no longer appears to continue from the west, east to the river. Block 98 appears to be joined with Block 95 directly to the south, and the entire block has buildings along its perimeter. The types of structures present are not indicated, and Dally's shipyard is no longer labeled as such.

Montresor1766: Beekman Street has not yet been laid out to form the southern border of Block 98. While the block is shaded indicating some degree of development, specific structures are not shown.

Ratzer 1766/67: The Ratzer map depicts virtually the same conditions as the Montresor map.

McComb 1789: Block 98 appears similar in configuration to the Ratzer and Montresor maps, and no specific structures are shown although the block is shaded indicating it was developed in some capacity.

Taylor Roberts 1797: The APE appears virtually unchanged from the 1789 McComb map, but by this time Queen Street had been renamed Pearl Street.

Bridges 1807: Block 98 appears unchanged.

Commissioners 1811: The APE is unchanged, but again there is not enough information available on this map to determine the extent of development.

Commissioners' 1821: The block is unchanged.

Colton 1836: The block is unchanged.

Endicott 1842: Water lines are shown running on Pearl Street, Beekman Street, Water Street, and Peck Slip (then Ferry Street.)

Dripps 1852: Beekman Street has been cut through the block, running east to the river. Block 98 is subdivided into at least 40 city lots, each developed to varying degrees. The lack of development on many of the interior ends of the lots created a large undeveloped area in the center of the block. Although the functions of the structures are not indicated, they most likely served as mixed commercial and residential.

Perris 1857: Within the APE, the following lots and buildings are shown on Block 98:

16 Peck Slip (a.k.a. 258 Water Street) is almost entirely covered by a masonry structure. A narrow alley is left undeveloped at the western end of the structure.

12 Peck Slip has a frame building covering most of the lot, and a vacant yard at its southern end.

10 Peck Slip is entirely covered by a masonry building.

8 Peck Slip is almost entirely covered by a masonry building, but a narrow area at the southern end of the lot remained undeveloped

6 and 4 Peck Slip has a brick building covering the north half of the lot, with a vacant yard to its south

312 Pearl Street (a.k.a. 2 Peck Slip) has a masonry building covering all of the lot within the APE.

310 through 290 Pearl Street each have a stone or masonry structure that fronts Pearl Street. Each has a vacant yard at the eastern end of the lot.

288 Pearl Street (a.k.a. 104 Beekman Street) has a stone building on it that covers all of the lot within the APE.

106 through 118 Beekman Street has a masonry structure that covers all of the lot.

228 through 234 Water Street each have a masonry building that covers most of the lot, but small undeveloped yards remain at each lot's western end.

236 Water Street is entirely covered by a masonry structure. No vacant yard remains on the lot.

238 and 240 Water Street each have a masonry building covering most of the lot, but very narrow yards remain behind each structure.

242 and 244 Water Street are both entirely covered by masonry structures.

246 through 256 Water Street each have masonry structures on

them that cover most, but not all, of their respective lots. Small undeveloped yards and alleys remain behind each building.

Dripps 1867: The block appears virtually unchanged since 1852.

Viele 1874: Viele depicts the historic period shoreline as running directly east of Block 98, along what is now Water Street, indicating that Block 98 is on fast land. The original topography of Block 98, as depicted by Viele, is pasture/meadow land sloping downhill from the west toward the river. Hills rise to the west of present day Pearl Street outside of the APE. An inlet ran along the course of what is now Peck Slip to an inland salt water pond northwest of Block 98 near what is now the foot of the Brooklyn Bridge. The inlet, known as "Bestevaer's Kripplebush," or Beekman's Swamp, was a large "brier-tangled salt marsh fed by the East River" (Koeppel 2000:11). Soils in the area of the project site were described as porous, loamy, and impregnated with briny water (Ibid.).

Robinson 1885: Steam railroad lines appear to run north/south along Pearl Street adjacent to Block 98. The block is shown to be fully developed, with all structures shown as stone or brick. At the southeast corner of the block is a brick building housing T.R. Hayet's Crackers, probably a small factory. An old farm line is depicted through the block, indicating that at least the western side of Block 98 was once part of Beekman's Pasture. No basements are indicated for the structures on this block.

Bromley 1897: Block 98 is designated as such for the first time. The APE continues to show brick buildings covering most of the block, and many are labeled as four and five story structures. Vacant back yards are shown at the following addresses:
8 Peck Slip
310 through 292 Pearl Street (ten lots)
232 Water Street
248 through 252 Water Street (three lots)

Bromley 1902: The APE is seen to have a new fire hydrant in the middle of the western side of Pearl Street in the sidewalk. All the buildings within Block 98 are brick, the vacant backyards shown in 1897 are still present.

Bromley 1911: Block 98 is unchanged from the 1897 Bromley. An elevated train is depicted running up Pearl Street.

Bromley 1916: The block is unchanged from the 1897 Bromley except that on this map almost all of the structures are depicted as four, five, and six story stores.

Bromley 1926: All the buildings within the APE are still brick.
304 through 312 Pearl Street, at the northwestern corner of Block 98, have been razed and replaced with a two-story brick garage with a basement.
The other buildings on the block do not appear to have basements. Small vacant alleys are depicted on the following lots:

10 Peck Slip
302 to 292 Pearl Street (six lots)
232 Water Street
248 through 252 Water Street (three lots)

Bromley 1932: The APE is the same as it appeared in 1926.

Bromley 1934: The APE is unchanged from 1926.

Bromley 1967: Sometime between 1934 and 1967, Pearl Street was widened over more than about 1/3 of the western side of Block 98, leaving only the structures on the east half of the block fronting Water Street and Peck Slip standing. The parking garage at the northwestern corner of the block appears to have been reduced in size to accommodate this widening.

Bromley 1974: By this time, the entire block was vacant except for the parking garage at the corner of Pearl Street and Peck Slip.

Sanborn 1984: The APE is the same as it appeared in 1974.

Sanborn 1991: The APE is the same as it appeared in 1974.

Sanborn 2001: Block 98 is currently vacant.

Street Elevations surrounding Block 98 are as follows:

Data Source	Pearl St. at Peck Slip	Peck Slip at Water St.	Water St. at Beekman St.
1864 Pulling	11 ¾'	4 ¾'	
1885 Robinson	11.9'	4.8'	7.3'
1932 Bromley	11.9'	4.8'	7.4'
1984 Sanborn	11.9'	4.9'	7.4'
2001 Sanborn	11.9'	4.8'	7.4'

Tax and Directory Table:

LOCATION	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 98								
4 Pecks Slip	Jacob Bausher	Dr. Anderton	Dr. Anderton	William Kirevan	Seymour Carpeuter, physician	Wm. Kevan	Wm. Kevan	Wm. Kirevan??
6 Pecks Slip	Doctor Anderton	Thomas. P. Donnella n	H.P. Donnellan	William Kirevan	Danid Armstrong, plumber	Wm. Kevan	Wm. Kevan	Wm. Kirevan??
8 Pecks Slip	D. L.&J. Brown	D. L. &J Brown	D.L. & J Brown	Rev. Sam H. Jarvis	Nostrand & Combs,feed *Thomas Nostrand *Daniel Combs	Rev. Sam H. Jarvis	Sam Jarvis D.P. Brown	Sam Jarvis D.P. Brown
10 Pecks Slip	John M. Clowes	John G. Post	Jarvis Frost	Jarvis Frost	D.S. Brown, candles	D. P. Brown	D.P. Brown	Sam Jarvis D.P. Brown
	Richard	Silas	Silas	Est. of	Peter Mitchell,	John	John	(crossed

12 Pecks Slip	Mulherre n	Chickerin g?	Pickening?	Richard Mulherso n	boarding	Donell	Donnel l Alley in Bormo n	out) Jamette E. Arm-strong Alley
16 Pecks Slip	Not for this year	Not for this year	Not For this Year	Not for this year	No listing	Not for th year	Not for this year	Not for this year
312 Pearl St	Herring Cromwell	Titus Avery & Weeks	E. R. Dufigwal?	William Kevan	Schulken&Lane , liquors B.W. Raper, printer	Est. of Wm Kevan	Est. of Wm. Kevan	Est. of Wm. Kevan
310 Pearl Street	William Kevan	William Kevan	William Kevan	Wm. Kevan	B.C. Chamberlin, saloon	Est. of Wm. Kevan	Est. of Wm. Kevan	Est. of Wm. Kevan
308 Pearl Street	Wm. W. Fox?	Wm W. Fox	U? Coffin	Wm. Fox	G. Lyons, tailor M. Albertson M. Murty W. Berkley, boarding	Wm H. Fox	Wm. W? Fuse?	W. W. Fox
306 Pearl Street	Hawson?	Owner of House and Lot	Peter Poillan?	Rev. Sam Jarvis	W.R. Williams, moss T. Berry, umbrellas	Rev. Sam H. Jarvis	Rev. Sam H. Jarvis	Rev. Sam H. Jarvis
304 Pearl Street	John Gauldwell	Widow? Goodrich	David Coolridge	John D. Wright	A.Studwell, shoe findings G. Barrenpohl J. Scheel Anderson, artist	John D. Wright	John D. Wright	John D. Wright
302 Pearl Street	Not for this year	Wm. Hawley (listed twice)	Tho. W. Flarsfield?	John D. Wright	Mulford&Cary, shoe findings J. Duffy, boarding	G. W. Towsen d	G. W. Towsen d	G. W. Towsend
300 Pearl Street	Isaac Wright	Hannah Hawley Joseph Carrol	Rich. Titus Henry W. Wickham James and Andrew Thompson Jonathan Hillman Seth White	Gilbert T. Everson	G. Barrenpohl, grocer A. Lane W. Dorman J. Dunsdater, tailor J. Hafferty T. Long M. Gallagher	Gilbert S? Everso n	M. S. Everso n	Wm. R. Foster
298 Pearl Street	Towsend ?	L. Corlies J. W. Allen Edmund Penfold	Mrs. Chadeayne C. Miles Keyson	A.H. Duncan	G. Carmina, toys G. Talisblue, barometers Gillespie& Studwell, shoes	A. H. Duncan	A.H. Duncan	A.H. Duncan

296 Pearl Street	Estate of Willet ?eaman	G. Ferguson	Levi Collins	Gilbert T.Everson	T. Pitts, stencil engravers G.F. Everson&Co shoe finds	Gilbert S. Everson		James Wood
294 Pearl Street	Allen Shepherd	John Cauldwell	Edward Isaac Smith	Widow Caldwell	R. Smith, brushes G. Clifton	Widow Galdwell	Est. of Caldwell	Wm. Schroder
292 Pearl Street	John Dodison John Barrow	G. Lathrop	Andrew Thorp	James Woods	J. Woods, umbrellas	J. Woods	James Wood	Thomas J. Pope
290 Pearl Street	Oliver H Taylor	? H. Taylor	Merrill Corlies of Stanton House	Benj. Corlies	Harrison Breese & Co	Benj. Corlies	S. T. Tyson	S. T.Tyson
288 Pearl Street	Walter Brown	Walter Borone?	United States Insurance Co.	Barnett Andrews	M. Halmstedt, saloon	Barnette Andrews	Barnet Andrews	Barnett Andrews
104 Beekman Street	Not for this year	Not for this Year	Not for this year	Not for this Year	Martin Helmstadt, liquors Theodore Gray, printer Wm. Stein, optical instruments	Not for this Year	Not for this Year	Not For This Year
106 Beekman Street	Not for this Year	Not for this Year	G. Cait John	Est. of Clever H. Prylor	William Bars, guns J.H. Gills, Bookbinder Samuel Tristram, wireworker	C.W. S. Roosevelt	C.W. S. Roosevelt	C.W. S. Roosevelt
108 Beekman Street	Not for this Year	Not for this Year	L. Chesney	Est. of Clever H. Prylor	T.C. Moore,wire cloth Francis Adema, cooper	C.W. S. Roosevelt	C.W. S. Roosevelt	C.W. S. Roosevelt
110 Beekman Street	Not for this Year	Not for this Year	K.C. Treadwell	K.C. Treadwell	Johnston and Treadwell, bakers *James Johnston *FC Treadwell jr. Nicholas Tiebout, tinware	John W. Laurence	John W. Laurence	John W. Laurence
112 Beekman Street	Not for this Year	Not for this Year	K.C. Treadwell	K.C. Treadwell	Same as above	John W. Laurence	John W. Laurence	John W. Laurence

114 Beekman Street	Not for this Year	Not for this Year	K.C. Treadwell	K.C. Treadwell	Same as above	John W. Laurence	John W. Laurence	John W. Laurence
116 Beekman Street	Not for this Year	Not for this Year	K.C. Treadwell	K.C. Treadwell	Same as above	John W. Laurence	John W. Laurence	John W. Laurence
118 Beekman Street	Not for this Year	Not for this Year	Not for this year	Not for this year	Ebenezer Barrows, ranges	Not for this yr	Not for this yr	Not for this yr
228 Water Street	J. Thompson	J. Lupton/E. Ward/O. Vanderbilt	G./W. Townsend	J. W P. Townsend	E. Barrows, kitchen ranges	J.W. Townsend	J.&W. Townsend	J.&W. Townsend
230 Water Street	S. Lock	J. Thompson	A. Browen	Benj. Ayman	A.B. Sands, plumber	Benj. Stephens	Benj. Stephens	Benj. Stevens
232 Water Street	D. Cromwell	A. Cargill	A. Cargill	A. Cargill	D.P.&V. Cargill, tin J. Smith, boarding J. Rees, leather	Est. of H. Cargill	Alfred B. Sands	Alfred B. Sands
234 Water Street	D. Underhill	W. Shatzell	W. Shatzell	J. Brown	J.L. Brown, scales	J.E. Brown	Harrey Kennedy	Henry Kennedy
236 Water Street	J. Cucully	B. Masey	P. Ryan	? Seaman & Brothers	A. Brower&Co., plumber	A.Brown	A. Brown	Fuller & Warren
238 Water Street	Taloul	J. Piebout	M. Piebout	B. Aymas	M.P. Lows, stoves	Benj. Aymas	Benj. Aymas	Benj. Aymas
240 Water Street	Mott	W. Mott	J. Norwood	Wm. Mott	W.Littlejohn, stoves J. Peckorer, cabinet maker	J. W. Mott	J.W. Mott	J.W. Mott
242 Water Street	D. Underhill	R. Hunter	H. Nottol	Est. of Samuel Hicks	C.J. Shepard, stoves Stillman, Allen&Co., novelty works *T.B. Stillman/H. Allen/W.B. Brown	Charles S. Shephe rd	Charles J. Sheppa rd	Charles J. Sheppard
244 Water Street	Ritter	J. Simpson	J. Whitey	Sylvester Pier	T. Frazier, stoves C.W. Heynon, brazier	Samuel Nichols	Samuel Nichols	Samuel Nichols
246 Water Street	Brown	S. Pier	Halsey/ McCulloug h	Sylvester Pier	Seymour&Williams, stoves	Sylvester Pier	Sylvester Pryor	Sylvester Pryor
248 Water Street	Shazel	E. Kutz	J.L. Brown	Gould Thorp	D.B. Thorp, stoves	G.B. Thorp	G. B. Thorp (crossed	Est. of G. Thorp

							out) Phillip *Rollho* us)	
250 Water Street	A. Cargill	R./D. Ritter	J. Monfort	Peter Aims	P. Rollhans, ranges	Peter Aims	Peter Aims	Peter Aims
252Water Street		M. Conery	L. Nichols	Leonard Nichols	Butcher & Read, plumber	Peter Godet	Peter Goelet	Peter Goelet
254 Water Street	Frost	W. Hidder	G. Thorp	Daniel Cock	C. Goodwin, stoves J. La Motte, stoves	David Armstr ong	David Armstr ong	David Armstron g (crossed out)
256 Water Street	Rosenbau m	S. *Nichols*	S./W. *Nichols*/ J. Whittey	Samuel Nichols	J. Murphy, stoves	Samuel Nichols	Samuel Nichols	Mary E. Jarvis

Precontact Sensitivity

According to cartographic research, it appears that Block 98 was pasture/meadow land and possibly even partly swamp located directly along the shore of the East River prior to historical development, and that higher elevations were situated west of Pearl Street and Block 98 (Viele 1874; Figure 6.2-1). The historical filling process that affected most of the eastern shore of this part of Lower Manhattan may have bypassed some of Block 98 because this block was not land under water during the historical period (Lyne 1730:Figure 6.2-2; Ratzer 1766/67:Figure 6.2-3). However, its location along the shoreline may have necessitated some degree of in-filling prior to development. Historical elevations (see table above) indicate that Block 98 did not change topographically after 1885 (Robinson 1885; Figure 6.2-6). The cartographic review indicates that by the end of the 19th century almost the entire block was developed with four, five, and six story buildings, none with basements (Bromley 1897; Figure 6.2-7). While only a 20th century garage that stood at the northwestern corner of the block was shown to have a basement (Bromley 1926; Figure 6.2-8), the other structures presumably caused some degree of disturbance through the construction of foundations. Whether this disturbance affected introduced fill or the potential precontact living surface, is unknown.

While it is assumed that *long-term* precontact habitation sites would have been located west of Block 98 on elevated terrain, it may be that the land along the river was utilized in some capacity for resource procurement and/or discard (e.g., as a midden). It is highly probable that historical development eradicated any shallowly buried precontact resources if effects extended below the depth of historical fill. However, there is still the possibility that small interior sections of the block that remained devoid of development, and/or areas under landfill that were not previously disturbed, may have retained potential precontact sensitivity.

Soil Boring MI-20, taken in 1974, indicates that near Pearl Street and Peck Slip there is 15.5' of fill below grade, and below that is sand (Raymond International Inc. 1974). No indication of silt, peat, or other signs of a potential precontact living surface was

recorded, and the water table was reported at 13.5' below grade (Ibid.). Since all of the structures on this block except one were noted to lack basements, effects from historic construction probably only extend into introduced fill (Figure 6.2-9). Therefore, there is the possibility that precontact resources may exist beneath the 15.5' of fill, but these would be located approximately two or more feet below the current water table.

Historical Sensitivity

Beekman Street was named for William Beekman, who in the 1720s bought the farm of Thomas Hall, that once encompassed Block 98. Moscow (1978) speaks of the farmland bought by Beekman, but the buried evidence of farmland is probably no longer archaeologically visible due to extensive historical development.

Block 98 underwent many physical changes from the 18th century through the 20th century, but the street elevations surrounding the block did not change after 1864 (the first date they were shown on maps). By 1647 Isaac Allerton had erected a warehouse on the eastern side of the block adjacent to Peck Slip, where there was a small cove. Small craft could come up to the warehouse, and along the eastern side of the cove the ferry to Brooklyn docked. Historian Innes puts the warehouse location at 8 and 10 Peck Slip (Innes 1969:335). If any fill was required for development of the block, it would have been completed by this time (Stokes 1918:962). Maps indicate that by the 1730s Dally's shipyard was established on or near the southern end of the block, and that structures were built on its northwestern end and its northeastern corner (Lyne 1730; Figure 6.2-2). Later maps show additional buildings on the block, and it was almost entirely covered by the 1850s (Dripps 1952; Figure 6.2-5a). In the 1880s brick buildings were shown covering most of the block (Robinson 1885; Figure 6.2-6), and these stayed intact through the mid-20th century (Figures 6.2-7, 6.2-8). Most of these were demarcated as stores, but some may have served the dual function of commercial buildings with residences above.

The tax assessment records indicate that most of the lots were under ownership by 1808, and some were owned over many decades by the same person or family (see Tax and Directory Table above). For example, the Motts owned the structure at 240 Water Street from at least 1808 through 1874, although it was occupied by what appeared to be non-familial residents in 1851 (Ibid.). Other lots changed ownership over the first half of the 19th century, such as 292 Pearl Street which changed hands many times between 1808 and 1874. Most of the structures on the block were occupied by commercial businesses in 1851, that included cabinetmakers, tin smiths, plumbers, bookbinders, optical workers, and stores selling toys, kitchen ranges, and stoves.

Sometime between 1932 and 1967 Pearl Street was widened over more than about 1/3 of the southwestern side of Block 98, leaving Lots 24, 120, and 126 vacant. A parking garage at the northwestern corner of the block on Lot 32 was reduced in size to accommodate this widening.

Historical resources related to the 1647 Allerton warehouse, Dally's Shipyard, and the commercial and residential structures that once stood on this block, excluding potential shaft features, are probably located below existing grade. The only soil boring available for this block indicates that near Pearl Street there is 15.5' of fill below grade, that lies

over sand, that may also contain historical resources. There is the potential for these 17th through 19th century resources to be located within and below these fill levels.

The buildings that once stood on what is now Block 98, and what was formerly Block 98 but now falls within the eastern roadbed of Pearl Street, were completely leveled by the mid-to-late 20th century. It may be that sections of foundations, vacant yards, and the potential privies, cisterns, and wells associated with early structures survived subsequent development. Again, the elevations at the corners of the block stayed the same from at least the 1880s onward, indicating that the area did not experience substantial filling or leveling after the buildings on the block were razed and Pearl Street was widened.

There is also a strong possibility that this block once contained deep wells associated with the commercial and/or residential structures on it. While reports indicate that many people in Lower Manhattan collected rainwater in cisterns and excavated shallow wells (Koeppel 2000:13), other reports indicate that some wells were much deeper. For example, "The Fort" well completed ca.1790 near the southern tip of Manhattan was dug to a depth of 36' in order to reach "very good water" (Koeppel 2000:21). The subsurface conditions in the immediate vicinity of Block 98 undoubtedly influenced the depth of any potential wells or other shaft features.

Grade and bedrock elevations established on Pearl Street indicate that at Peck Slip the surface elevation is 11.8' ASL while the bedrock elevation is -54.9', indicating that the bedrock is about 67' below grade here. Similarly, the surface elevation at Beekman Street and Pearl Street is 14' ASL while the bedrock elevation is -87.8', indicating that the bedrock is about 102' below grade (SYSTRA et al 2001:Grade Elevations vs. Bedrock Elevations Table). Boring MI-20 indicates that the water table lies about 13.5' below grade, suggesting that wells might not have been very deep if dug on this block (Raymond International Inc. 1974). However, the depth needed to reach "good water" is unknown especially since the block's proximity to the original shoreline and the briny Beekman's Swamp may have made it difficult to obtain fresh water. Therefore, the depth of potential shaft features is potentially as deep as the current water table at 13.5' below grade, and possibly deeper.

The upper levels of any potential shaft features may have been affected by post-construction development, but this would not have been too deep since most of the buildings on the block lacked basements. Therefore, there is a strong possibility that their lower levels may have remained intact. In summary, the entire block is potentially sensitive for 18th through 20th century residential and commercial resources (Figure 6.2-9).

Peck Slip

Cartographic History

Duke's Plan 1664: The extreme northern section of Peck Slip, near Pearl Street, appears to be depicted at the northern section of this map, at the ferry landing, designated "Passage Place," south of the small hamlet there.

Nicolls Map 1668: The location of the ferry landing is designated by a small building, along the shore, just west of the "Old Mill." Most of Peck Slip is depicted as land under water.

Lyne-Bradford 1731: (Depicting conditions in 1730). Filling operations had extended the shoreline south of Pearl (then Queen) Street, almost as far as Water Street, creating Peck Slip. A house, possibly Benjamin Peck's, appears on Block 98 near the southwest corner of the slip, and Peck's W[harf], along the west side of the slip is indicated.

Carwitham 1740: Pecks Wharf is shown on the west side of the slip, and Rosetests [Roosevelt's?] Wharf on the east side. Peck Slip on this map is incompletely rendered.

Grim 1744/1813: The lack of detail on this map makes it difficult to determine the condition of Peck Slip

Mrs. Buchnerd 1735: The APE is unchanged from Grim 174/1813.

Maerschalck 1755: This plan suggests that fill operations had extended the shoreline beyond Water Street and shows Front (then Dock) Street broken into eastern and western sections by Peck Slip. What seems to be a pedestrian path runs along the east side of the slip from Pearl Street to the south side of Front Street. However, the Maerschalck plan is not supported by subsequent maps that show fill and development only on the east side of the slip.

Montresor 1766: The earlier existing sections of Peck Slip have been filled in as far as Water Street, and the new public market of 1763 is shown along the north side of Water Street ("O"). A wharf with a structure along the east side of the slip (part of future Block 107) extends as far as present Front Street, while the west side of the slip has not yet been extended beyond Water Street. The width of Peck Slip is depicted incorrectly between Pearl and Water Streets rather than as the irregularly shaped passage shown in earlier and subsequent maps.

Ratzer 1766/67: The Ratzer map depicts virtually the same conditions as the Montresor map, although with greater precision. The Peck Slip Market is shown on the eastern side of the filled in section of the slip, just north of Water Street, but closer to Block 106 than 98. Peck Slip was wider west of the market, most likely to permit the passage of traffic. This area, now the southeastern corner of Block 98, was probably part of the Peck Slip roadbed until the market's removal.

Holland 1776/77: Fill operations continue, extending the shoreline as far as Front Street, and creating an irregularly-shaped block-long slip south of Water Street.

British Headquarters 1782: The APE appears the same as on the Holland 1776/77.

Hills 1785: The APE appears the same as on the Holland 1776/77.

Taylor Roberts 1797: Front Street has been extended as far as the eastern side of Peck Slip, that has been filled in as far as the south side of Front Street. Additional fill has been added, creating blocks south of Front Street with open filled areas along the east and west sides of the

still aqueous parts of the slip. The market has been removed, and Block 98 extended to its present boundaries.

Commissioners 1811: This map shows Front Street crossing the slip, yet indicates the presence of water on both sides of the roadbed, extending about 75 feet north of Front Street.

Commissioners 1811 Bridges' adaptation: Bridges' 1811 adaptation of the Commissioners map shows Peck Slip filled in to the southeast side of Front Street. Although South Street has not been built across the slip, a wharf extends southward from the west side of the slip.

Hooker 1824: There is no visible change.

Colton 1836: Peck Slip has been filled in to the south side of South Street.

Endicott 1842: Water lines are shown running on Peck Slip (then Ferry Street) from Pearl Street through South Street.

Perris 1849/50: South of South Street, outside the APE, new Peck Slip ferry wharves have been constructed forming a half-oval cove for docking.

Dripps 1852: The Peck Slip ferry wharfage with structures is depicted on the eastern half of the East River frontage, with the "Steam Boat for Hartford" on pier 25, to the west.

Dripps 1867: The block appears virtually unchanged since 1852, except for the addition of five horsecar lines, one running north/south from Pearl to an east/west line along South Street, and two running north/south from Pearl Street and then turning westward on Water Street. An additional line runs east/west along Front Street.

Lloyd's 1867: Lloyd's map only differs in the horsecar routes depicted, showing only one line turning westward from Peck Slip/Ferry Street onto Water Street, and two lines continuing down to join the South Street routes near the foot of Peck Slip.

Robinson 1885: Robinson shows the horsecar lines more clearly, placing them mostly in the western two-thirds of the slip, and at the intersections.

Robinson 1893: The 1893 atlas records 6" water pipes beneath all streets and intersections of the Peck Slip APE. Between Pearl and Front Streets the water main is recorded on the east side of Peck Slip and this is joined by another water main running south from Water Street along the west side of the slip. Both join the main along South Street. A sewer main runs down the center of Ferry Street/Peck Slip, with additional lines feeding into it from the east and west sides of Water and South Street intersections, and from the west side of the Front Street intersection.

Bromley 1916: A new section of Block 107, designated Lot 60, has been delineated in the center of Peck Slip between Front and South Streets, dividing the roadbed into two 48-foot wide sections. The new lot contains no structures. A number of utility lines have been added beneath Peck Slip since 1893. Additional 12-inch water lines run east/west through the slip along Water Street, Front Street and South Street as well as another down the eastern side of the Peck Slip roadbed between Front and South Streets. The sewer

line seems to be unchanged, although it is sited more easterly than in 1893 to avoid the newly-created section of Block 107.

Bromley 1925: No change from 1916.

Bromley 1934: The Peck's Slip ferry and the Hartford steamboat piers, south of South Street, have been removed.

Bromley 1974: An elevated highway appears over the South Street roadbed.

Street Elevations on Peck Slip are as follows:

Data Source	Peck Slip at Pearl St.	at Water	at Front	at South
1864 Pulling	11 ¾'	4 ¾'	3'	
1885 Robinson	11.7'	4.7'	7.3'	N.A.
1893 Robinson	11.7'	4.7'	7.3'	N.A.
1916 Bromley	11.9'	4.9'	3'	N.A.
1974 Sanborn	11.9'	4.9'	3'	N.A.

Precontact Sensitivity

Modern Peck Slip was originally the location of a creek that drained a small area of marshland, known as Bestevaer's Kripplebush, later Beekman's Swamp, about 250' to the north. The creek emptied into the East River, in the intersection of Peck Slip and Water Street, where there was a small cove. South of Water Street, the Peck Slip section of the APE was regularly inundated by the tides or constantly submerged (Viele 1874; Figure 6.2-1). The path of the stream and the original shoreline are still plotted on current insurance maps of the area. The non-submerged sections of Peck Slip, north of Water Street, were most likely a combination of meadow and marshland, sloping down to the stream in the center of the roadbed, and in turn, sloping downward to the south.

Current street intersection elevations reflect predevelopment topography, declining from 11.9' at Pearl Street, to 4.5' at Water Street, to three feet at Front Street (Appendix 6.2.7.1). These elevations are not significantly different from the earliest recorded numbers available from 1864 (Pulling 1864). Because Pearl Street lay at the foot of a precipitous hill (Burgis 1719), the construction of Ferry Street/Peck Slip would have included the addition of large amounts of fill in order to provide a transitional grade for vehicles coming from the north. Given the current elevations and the low-lying nature of the pre-development topography, this would suggest more than three feet of fill in the entire Peck Slip section of the APE. Known subsurface disturbance such as buried utility lines and the foundations of the late 18th century market would tend to be in the upper four feet of the current roadbed, affecting only historical fill layers. Therefore, there is the possibility that precontact midden deposits exist beneath the unknown amount of fill (Figure 6.2-9).

Historical Sensitivity

The location of Peck Slip was an important landing designated as "Passage Place" or "The Ferry," appearing on maps as early as 1665. From the east side of a small cove at approximately the intersection with present Water Street, a ferry, established by 1642, ran to the Brooklyn settlement on Long Island. Both the 1664 Duke's Plan and the Nicolls

map of 1668 show a small hamlet adjacent to the project site (Duke's 1665; Nicolls 1668). One of these buildings was the farmhouse of Eghbert van Borsum, the ferrymaster, appointed in 1652. Another was probably Isaac Allerton's warehouse on the east side of Block 98 near the northwest corner of present Peck Slip (Stokes 1918:962; Innes 1969:319,340,343). The road leading to the hamlet was officially known as Ferry Street.

Benjamin Peck, after whom the slip was named, first appears in the vicinity in 1717, when he petitioned the Common Council for permission to remove an old blockhouse from his property. This was apparently elsewhere on Peck's lands, since there is no record of a blockhouse on the Peck Slip APE. In 1737, Peck received grants for the water lots adjacent to his property, extending south of Queen Street (now Pearl Street) between the high and low water marks of the East River. Shortly before this, Peck had requested permission to build a "Peer or Wharfe next adjoining the East Side of his premises, although the wharf already appears on a map depicting conditions in 1730 (Lyne 1730; Figure 6.2-2; Stokes 1922:551). Bulkheading of the shoreline had been completed from Pearl nearly to present Water Street, and Peck's Wharf ran along the west side of the newly-created slip, with a new building constructed on Peck's adjacent land.

The slip itself was officially ordered laid out and graded from Pearl Street to the high water mark, somewhere between Water and Front Streets, in 1755, and the Common Council minutes record payment "for Carting dirt and Gravell" to fill in the street in May of 1759 (Stokes 1922:671, 707). Most of the maps subsequent to 1755 tend to show fill and development along the east side of the slip preceding activity along the west side of the slip. In 1769, the city initiated construction of a stone pier along what became the western side of the slip, ordering that "the west side of the Pecks Slip be filled up and Docked out." Bills for the work appear throughout 1770 (Stokes 1922:786, 814, 816). Shortly thereafter, this filling was evident on maps (Ratzer 1766/67; Figure 6.2-3). The first map to show both sides extending to Front Street dates to 1776/77 (Holland 1776/77). Piers extending beyond Front Street were approved in 1797, and two piers running 250' into the river were ordered as late as 1809 (Stokes 1926:1,346, 1,505).

The filling of the northern parts of Peck Slip had proceeded sufficiently that by 1763, at the request of the nearby residents, headed by wealthy merchant William Walton, the city gave permission for the establishment of the new public market at Peck Slip, for the sale of country produce and firewood. The construction of the brick structure, extending approximately 100' north from the Water Street intersection, was the first brick market in the city, was paid for by the residents of the fashionable neighborhood. Although maps tend to show it in the middle of the Peck Slip/Ferry Street, documents record it on "the westerly side" of the street. The market remained in use until demolished in 1793. The materials were ordered sold, and included "good timber and bricks, and a considerable quantity of excellent Hell gate building stone." Additional fill was added to the market location to bring it up to the level of the adjacent streets (Stokes 1922:735, 777-778, 1,300; 1928:485).

As the Manhattan shoreline was further extended southward, the watery sections of Peck Slip were gradually filled in. Numerous references record the filling in and bulkheading of the end of Peck Slip, although it continued in existence and use (e.g., Stokes 1922:830). These seemingly conflicting reports can be reconciled by the fact that as the

slip itself was filled in, landfill on the adjacent blocks along Peck Slip continued to extend the shoreline, creating new sections of the slip. Extension of the shoreline as far as Front Street occurred between 1785 and 1797. Finally, with the completion of South Street to the edges of the APE before 1811, the city had let out a contract for private filling to the firm of Higgins and Park in 1810, who constructed the bulkhead at South Street that, when finished, eliminated the slip completely (Commissioners 1811; Figure 6.2-4).

Beginning with the natural cove at the intersection of Peck Slip and Water Street, that may have served as the ferry landing from 1642, the landing for the Allerton warehouse from 1647, and the hamlet that was established there during the 1640s, the shoreline was gradually extended to the south, until by 1810 it was beyond the project site, south of the South Street bulkhead.

Potential buried cultural remains, both deliberately and accidentally deposited in the cove, slip and river, would be related to the usage of the surrounding properties, and the docks adjacent to, and in the slip. These would reflect trade patterns and other shoreline activities (i.e., the Peck Slip Market 1763-1793, see below) from the 1640s until the final filling of project site sections of Peck Slip in 1810. The potential remains would be found from the vicinity of the intersection of Peck Slip and Water Street, to as far south as the South Street bulkhead. Estimating resource depths is problematic without soil boring logs, but would be expected to lie in deeply-buried river sediments, as well as in historical fill layers. Thus, potentially sensitive material may be just beneath the current street surface.

Continuous filling activity has taken place in the Peck Slip APE from the mid-17th century through 1810, as the grade along Ferry Street from north of Pearl Street was smoothed for vehicular traffic down to the slip and the shore. The shoreline itself was raised with fill, and a number of piers and wharves were constructed. As the shoreline of Manhattan was extended, these earlier constructions were gradually engulfed. In addition, the slip itself, created by this shore extension, was gradually filled in. These buried cultural materials would include the whole inventory of resources used for landfill and gradual land extension, such as buried and surviving stone and wooden piers, wharves and bulkheads, sunken vessels, and smaller detritus expelled from boats and other users of the slip.

This category of potential archaeological remains would be anticipated throughout the entire Peck Slip APE, interspersed with deeply-buried river sediments, and extending to the modern surface (Figure 6.2-9). Because no soil boring logs are available for Peck Slip, it is unclear to what depth the fill extends, or how far below the present surface the original river bottom lies.

The Peck Slip Market was built in 1763, filling a need in the more northerly sections of the city for a market for produce and firewood, that was also readily accessible by boat. The structure was the first brick market in the city, and also utilized "Hell gate" stone in its construction. The market remained in use as both market until demolished in 1793.

Markets, slips and docks were closely linked, since "Meat and produce that was unloaded at the docks always passed directly to markets nearby." The archaeological visibility of the market house would be high. "Artifacts at the market place would result from day to day breakage, refuse [e.g., meat bones] and loss" and "would tend towards a broad spectrum of manufactured and dietary products" (NYCLPC 1982:38, 47).

According to the historical maps, the Peck Slip market was located on the north side of the Water Street intersection, extending approximately 100' northward toward Pearl Street. Documentary sources indicate it was closer to the western side of the street. As discussed earlier, market remains would be expected in deeply buried river sediments and in the fill of the slip itself. The precise depth of these sediments and the fill layer is unknown without data from soil boring logs. More shallowly-buried potential remains would be anticipated in the general vicinity of the market and its foundations, all of that would lie within historical fill layers. These remains were probably partially shielded from modern utility installation effects, because the market location was depressed below the level of the adjacent streets by the additional fill added at the time of the market's demolition in 1793.

Gouverneur Lane

Cartographic History

Castello 1660:	The APE is depicted as land under water.
Miller 1696:	The APE is unchanged from Castello 1660.
Lyne 1730:	At this time, Water Street was depicted as created directly along the shoreline, but Block 33 and Gouverneur Lane had not yet been created. Water Street is labeled "Hunters Key."
Buchnerd 1735:	The Buchnerd map fails to show any development east of Water Street, but it does show Water Street as "Hunters Key."
Carwitham 1740:	The APE is unchanged from the Buchnerd 1735 map.
Grim 1744/1813:	The APE is unchanged from Buchnerd 1735.
Maerschalck 1755:	The APE is unchanged from Buchnerd 1735, despite development to the north and south.
Montresor 1766:	The APE is unchanged from Buchnerd 1735.
Ratzer 1766/67:	The APE is unchanged from Buchnerd 1735.
Holland 1776:	By this time Block 33 had been filled between Water and Front Street, and Gouverneur Lane had been created, bisecting the block.
McComb 1789:	The APE is unchanged from Holland 1776.
Taylor Roberts 1797:	The APE is unchanged from Holland 1776.
Bridges 1803:	The APE is unchanged from Holland 1776.
Hill 1804:	The APE is unchanged from Holland 1776.
Commissioners' 1811:	The APE is unchanged from Holland 1776.
Hooker 1824:	The APE is unchanged from Holland 1776.
Colton 1836:	The APE is unchanged from Holland 1776.
Endicott 1842:	Water lines are shown running on Water and Wall Streets, and at Old Slip.
Perris 1849/50:	The APE is unchanged from Holland 1776.
Dripps 1852:	Lots on either side of Gouverneur Lane have been developed.

Perris 1852:	The APE is unchanged from Dripps 1852.
Perris 1857:	The APE is unchanged from Dripps 1852.
Dripps 1867:	The APE is unchanged from Dripps 1852.
Viele 1874:	This map indicates that Gouverneur Lane was entirely land under water.
Robinson 1885:	The APE is unchanged.
Robinson 1893:	The APE is unchanged from Robinson 1885.
Hyde 1913:	The APE is unchanged from Robinson 1885.
Bromley 1916:	The APE is unchanged from Robinson 1885. Almost all of the structures bordering Gouverneur Lane are depicted as having stores.
Bromley 1925:	The APE is unchanged from Bromley 1916.
Bromley 1955:	The APE is unchanged from Bromley 1916
Bromley 1974:	By this time Water Street had been widened by about 48' on its eastern side, and all of the buildings on the lots on Block 33 within the APE were razed. The northwestern 48' of Gouverneur Lane was incorporated into Water Street.
Sanborn 2001:	Gouverneur Lane is shown as a 19' wide alley.

Precontact Sensitivity

A review of documentary and cartographic resources indicates that the west side of Water Street, at the western end of Gouverneur Lane, marked the site of the precontact East River shoreline in this location (Viele 1874; Figure 6.2-1). Scholars have noted that during the prehistoric era there were periods of time when a distinct rise and fall of water levels occurred. In some locations these slight fluctuations allowed native peoples access to formerly inundated areas for resource procurement and temporary camps. While this may have occurred in areas of shallow water along the shores of Manhattan, the depth of the East River in this location would have precluded the exposure of the land now buried under the 18th century fill deposited to create Gouverneur Lane. This is supported by soil borings taken to the south of Gouverneur Lane for the 1937 Bureau of Topographic Rock Data Map (Louis Berger & Associates 1990). Borings placed within Front and South Streets indicate that the mud, sand and clay river bottom layer was encountered under approximately 20' of fill. The borings further indicated that this stratum was found 15' below the water table, thus indicating that fluctuations in water level during the precontact era would not have exposed the riverbed in this location (Ibid.). Therefore, there is probably no potential for the presence of intact precontact deposits beneath the fill under Gouverneur Lane.

Historical Sensitivity

Originally known as Rotten Row, or Hunter's or Burnets Key, Stokes reports that Water Street adjacent to Gouverneur Lane was constructed prior to 1730 (Stokes 1918:990; Lyne 1730; Figure 6.2-2).

Although submerged in the early 17th century, Gouverneur Lane may have been the location of early waterfront features including wharves, piers, or bulkheads. The landfilling activity that occurred in the late-18th century may have protected these

potential 17th and 18th century features (Lyne 1730; Figure 6.2-2; Ratzer 1766/67; Figure 6.2-3). Some early docks were little more than crude wooden ramps that were quickly replaced by the more substantial wharves. In fact, throughout the colonial period the construction of wharves and fill-retaining structures was constant. The three main types of wharves constructed were made of stone, timber, and, in a few cases, the remains of ships (Heintzelman 1986: 125-132). Although a few stone wharves were built during the colonial period, the most common material used in wharf construction was timber. Timber wharves were built in either the "crib" or "cobb" construction method discussed in Chapter 3 and further detailed in Chapter 6.1. Because of the ambiguous nature of early historical maps and documents it is difficult to determine the presence or exact location of former wharves and pier supports. It is also unlikely that subsequent utility installation into the landfill would have disturbed or destroyed these possible features. Therefore, the strata under Gouverneur Lane have the potential for the presence of these resource types.

The waterfront features discussed here may be located beneath or within the fill layer. Based on the depth of the former river bottom and the review of the 1937 soil borings in the area, these features could be present down to a rock layer encountered at depths between 25' to 30' below grade.

Throughout the historic period the coastline of Manhattan along the East River has been altered extensively by land-filling episodes. At the end of the precontact period the coastline was located at the western side of present-day Water Street and by the middle of the 19th century the shoreline had been extended eastward to it's present boundary, the east side of South Street.

Historical maps and records indicate that a considerable amount of landfill activity occurred in the area between Water Street and South Street (Figures 6.2-2 through 6.2-4, 6.2-5b). Both fill and the features associated with landfilling, such as bulkheads and dumping boards might be present beneath Gouverneur Lane. The archaeological examination of these potential features may provide information on the technology used to create the 18th century New York City waterfront. Therefore, this location is considered sensitive for these resources down to a depth of 25' to 30' below grade.

The potential recovery of historic shipwrecks was also considered for this location. While the Common Council Minutes of 1784-1831 did not contain any specific references to shipwrecks near Gouverneur Lane, a review of the archaeological literature indicates that several undocumented ships have been recovered and investigated beneath and adjacent to Water Street. Because of the presence of a deep deposit of landfill, the introduction of public utilities under Gouverneur Lane, from the late 18th through the 20th centuries, would not have disturbed these deeply buried features. Therefore, there is potential for the recovery of this type of historical resource beneath the Gouverneur Lane street bed.

Correspondence between Nicholas Gouverneur and New York City Mayor Richard Varick indicates that by the end of the 18th century, a significant drainage system had been privately installed under Gouverneur Lane (MCC II:41). Because this system was connected to street grates, the buried remains may still be present close to the surface.

Although utility pipes were installed in the street bed during the 19th and 20th centuries, the effect on this early drainage system is unknown. Therefore, Gouverneur Lane is considered sensitive for this cultural resource (Figure 6.2-10).

6.2.7.2 Site File Search Results, NYCLPC, NYSOPRHP and NYSM

SITE FILE SEARCH RESULTS

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

~~Village~~ City 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 ~~21~~ 19

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
7248 X		~~2- A061.01.0014 D03~~	survey in the 1970's
		3- A061.01.0623 X D023	2nd found historic Remains.
		4- A061.01.06763 X	no other info was found.)
		~~5- A061.01.0001~~	
	209 Water St. South Street NZ 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 @ SHPO		A061.01.01286 X	
		A061.01.0541 X	
		A061.01.00542 X	
		A061.01.09531 X	

ATIONAL REGISTER ELIGIBLE and LISTED ___ Eligible ___ Listed ___ Building Inventory

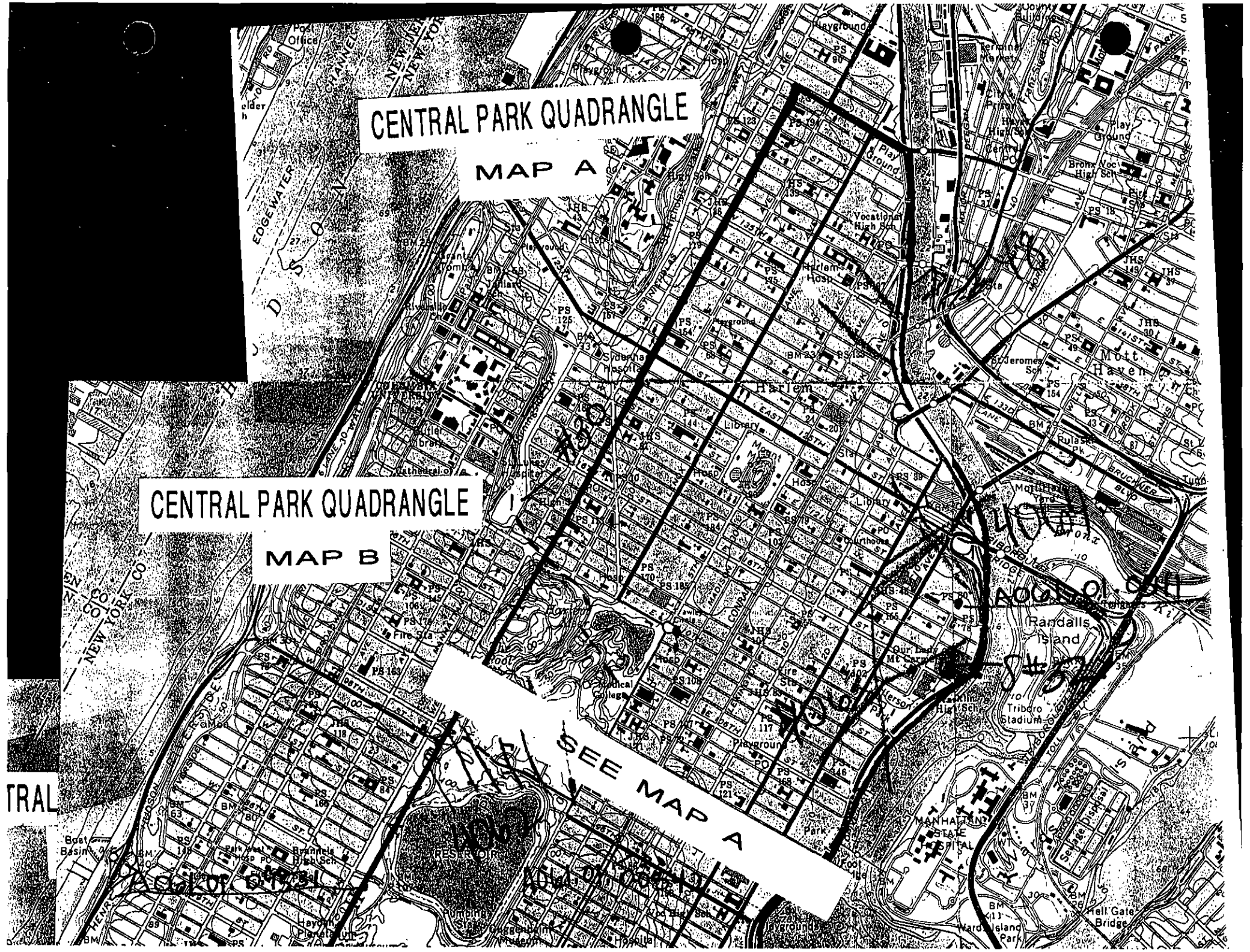
uilding Inventory #	NR Status	Form Copied	Property Description	Reads Checked
06101.000604	NRL	✓	South Street Seaport Historic District 209 Water Street	

EVIOUS SURVEYS <17 previous surveys w/in Radius>

8 Westside Highway Program - 1983
William D. Hersey - 1963 Castle Clinton at the Battery
Broad Street Financial Center Greenhouse January 1985
X
64th Pearl Street (17th Landfill) Arnold Pickman & Nan Rothschild May 1981
Stone Street Historic District 1977, 8/10 NYC Landmarks Pres. Comm. Tracker
9 Barclays Bank Site - 100 Water St. Berger - 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block Kardan & Larrabee July 1991

209 Water St. - Schuyler - ? Date
East River Road - New York Harbor Collection Kardan & Larrabee October 1977
10 Sheridan Square - 1983 - Rutgers University
Lower Eastside Service Center - Louis Berger Jan '98
750 Sixth Ave. HPI - February 1998
Baruch College Campus - Historic Conservation & Interpretation Inc. - Jan. 1989 / December 1989
32 East River Plaza HPI Sept. 1998
Stone Street Historic District NYC Landmark Pres. Comm February 1998

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


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A
Harlem
Randalls Island
Triboro Stadium
Hell Gate Bridge
Reservoir
Jacob Riis Park
Manhattan State Hospital
Ward Island Park
Sewage Disposal
Boat Basin
Grant's Tomb
Riverside Church
Cathedral of St. John
Harlem Hospital
Mount Sinai Hospital
Medical College
Fire Sta
Library
Courthouse
Post Office
Playground
Vocational High Sch
Bronx Voc High Sch
Morris High Sch
Manhattan Trade Sch
Textile High Sch
Bryant High Sch
Brandeis High Sch
Jamaica High Sch
Aqueduct
Hudson River
East River
Harlem River
Ship Canal
Spuyten Duyvil Creek
Central Park
Mott Haven
Port Morris
Hunts Point
Morrisania
Melrose
Bronx Park
Pelham Bay Park
Van Cortlandt Park
Riverdale
Kingsbridge
Fordham
Tremont
Highbridge
Concourse
Manhattanville
Washington Heights
Inwood
Marble Hill
Edgewater
New York Central R.R.
New York Connecting R.R.
Lenox Ave
Madison Ave
Park Ave
Fifth Ave
Broadway
Amsterdam Ave
Columbus Ave
Central Park West
Riverside Drive
Henry Hudson Parkway
Harlem River Drive
Major Deegan Expressway
Bruckner Blvd
Willis Ave Bridge
Third Ave Bridge
Madison Ave Bridge
Park Ave Bridge
Alexander Hamilton Bridge
Macombs Dam Bridge
Washington Bridge
Queensboro Bridge
Triborough Bridge
Hell Gate Bridge
125th St
135th St
145th St
155th St
Jerome Ave
Grand Concourse
Boston Post Road
Pelham Parkway
Gun Hill Road
Fordham Road
Kingsbridge Road
Sedgwick Ave
Mosholu Parkway
Bedford Park Blvd
Van Cortlandt Park South
Riverdale Ave
Broadway
Dyckman St
Isham St
Inwood Hill Park
Fort Tryon Park
Cloisters
Fort George Hill
Audubon Ave
Washington Heights
Columbia Presbyterian Medical Center
Columbia University
Barnard College
Teachers College
City College
Hamilton Grange
Colonial Park
Morningside Park
Riverside Park
Riverside Church
Grant's Tomb
Cathedral of St. John
Harlem Hospital
Mount Sinai Hospital
Medical College
Fire Sta
Library
Courthouse
Post Office
Playground
Vocational High Sch
Bronx Voc High Sch
Morris High Sch
Manhattan Trade Sch
Textile High Sch
Bryant High Sch
Brandeis High Sch
Jamaica High Sch
Aqueduct
Hudson River
East River
Harlem River
Ship Canal
Spuyten Duyvil Creek
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Hunts Point
Morrisania
Melrose
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Pelham Bay Park
Van Cortlandt Park
Riverdale
Kingsbridge
Fordham
Tremont
Highbridge
Concourse
Manhattanville
Washington Heights
Inwood
Marble Hill
Edgewater
New York Central R.R.
New York Connecting R.R.
Lenox Ave
Madison Ave
Park Ave
Fifth Ave
Broadway
Amsterdam Ave
Columbus Ave
Central Park West
Riverside Drive
Henry Hudson Parkway
Harlem River Drive
Major Deegan Expressway
Bruckner Blvd
Willis Ave Bridge
Third Ave Bridge
Madison Ave Bridge
Park Ave Bridge
Alexander Hamilton Bridge
Macombs Dam Bridge
Washington Bridge
Queensboro Bridge
Triborough Bridge
Hell Gate Bridge
125th St
135th St
145th St
155th St
Jerome Ave
Grand Concourse
Boston Post Road
Pelham Parkway
Gun Hill Road
Fordham Road
Kingsbridge Road
Sedgwick Ave
Mosholu Parkway
Bedford Park Blvd
Van Cortlandt Park South
Riverdale Ave
Broadway
Dyckman St
Isham St
Inwood Hill Park
Fort Tryon Park
Cloisters
Fort George Hill
Audubon Ave
Washington Heights
Columbia Presbyterian Medical Center
Columbia University
Barnard College
Teachers College
City College
Hamilton Grange
Colonial Park
Morningside Park
Riverside Park


SEE MAP C
#31
S#27
S#25
Long Island City
Astoria
Rockefeller Center
Pharmacy College
Rousevelt Hosp
Coliseum
Columbus Circle
Carnegie Hall
Frick Collection
The Mall
Whitney Museum
Lenox Hill Hospital
Doctors Hospital
Athletic Field
Ballets Cove
Radio Tower (WLIB)
Health Center
Rainey Park
Welfare Island
Rockefeller Institute
Aviation Trades High Sch
Cornell Univ Medical Co
Foundling Hosp
Richman High Sch
Library
Hospital
Park
Main Library
Chrysler Bldg
Tunnel
Goldwater Mem Hosp
St Rita Sch
St Patricks Sch
High Sch
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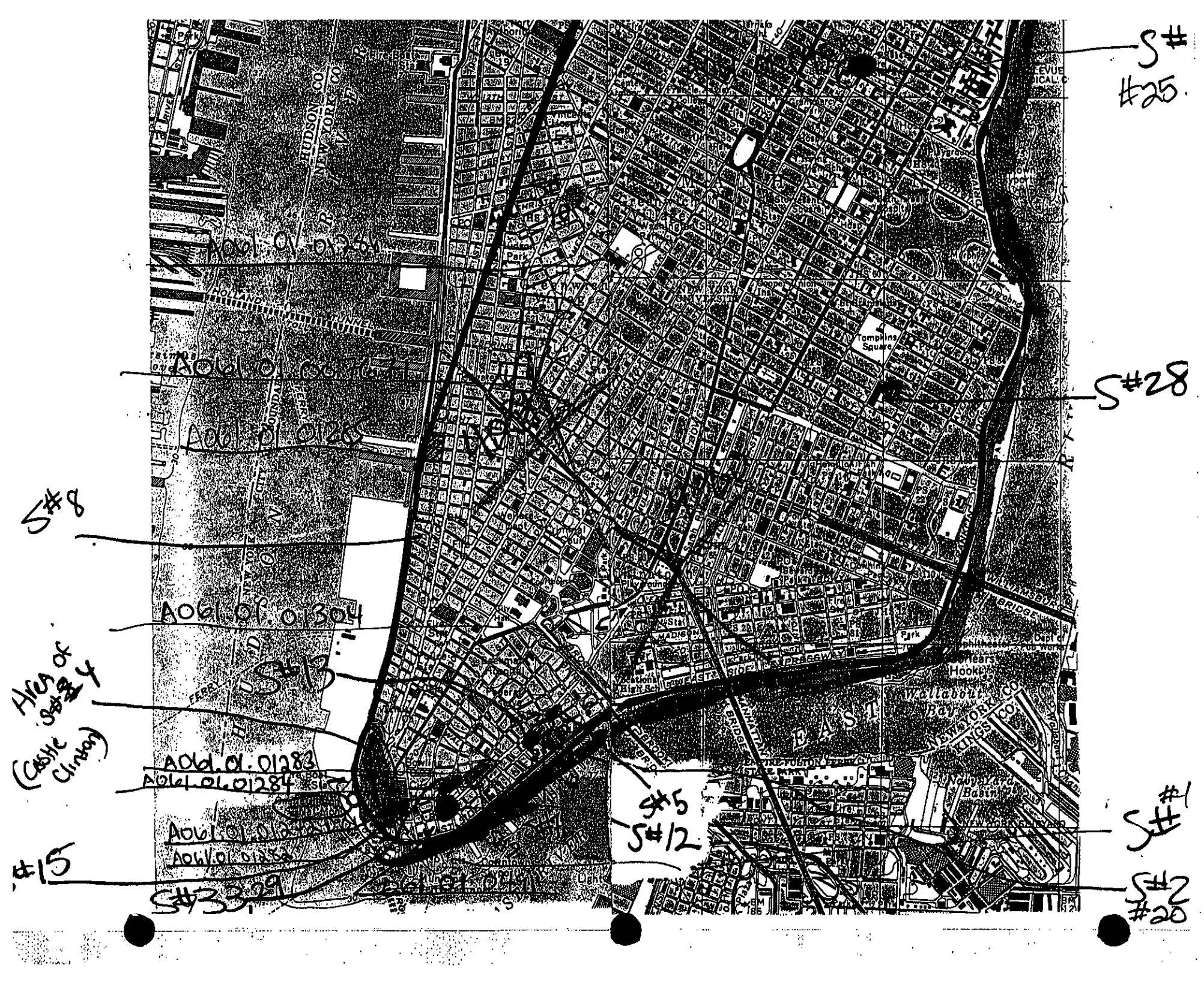
BROOKLYN-BATTERY TUNNEL 4.2 MI.
N.J. TURNPIKE 4.4 MI.
200 000 FEET (N.Y.)
Boat Basin
Hayden Planetarium
American Museum of Natural History
Metropolitan Museum of Art
N Y Historical Society
PS 199
Pharmacy College
Playground
Fire Sta
LINCOLN CENTER
FORDHAM UNIV CAMPION COL
Roosevelt Hosp
Coliseum
Columbus Circle
Park
Carnegie Hall
Library
Hospital
Avialion Trades High Sch
The Lake
The Mall
Frick Collection
Whitney Museum
Boat Basin
Pumping Sta
Westside Airlines Terminal
Play Ground
Police Sta
Times Square
Bus Terminal
ROCKEFELLER CENTER
St Bartholomew Ch
Main Library
Chrysler Bldg
Madison Sq Garden
Herald Sq
Tunnel
SEE MAP C
495
Castle Point
NEW JERSEY
NEW YORK
S#27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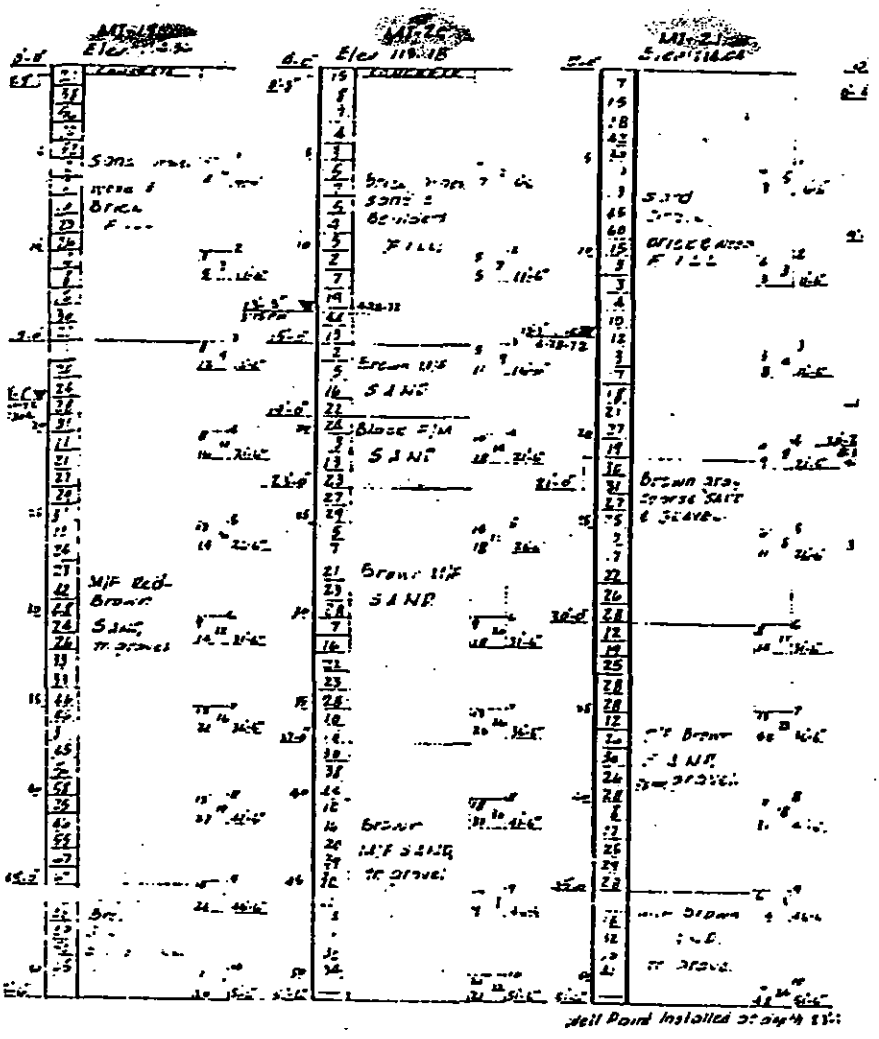
A061.01.01285
S#28
S#8
A061.01.01304
S#13
Area of S#4
(Castle Clinton)
A061.01.01283
A061.01.01284
S#5
S#12
S#1
#15
S#33,29
S#2
#20
HUDSON CO
NEW YORK CO
HOLLAND TUNNEL
Tompkins Square
Wallabout Bay
EAST
NEW YORK CO
KINGS CO
Navy Yard Basin

6.2.7.3 Soil Boring Logs



WATER LEVEL READINGS - MW-21				
TIME	DATE	DEPTH	DATE	DEPTH
6:05 PM				
7				
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12				
1:00 PM				
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6.3 PETER MINUIT PLAZA

6.3.1 Study Area Description

Peter Minuit Plaza is one of the proposed locations for the creation of an access shaft to allow for the entrance and egress of machines/excavators below grade. Since the exact location and types of effects are still undetermined, the APE for this project element includes all of Peter Minuit Plaza, including the Whitehall Street roadbed as far east as the East River (Photographs 6.3-1 through 6.3-6).

6.3.2 Existing Conditions

6.3.2.1 Precontact Archaeological Potential

Cartographic and documentary research concluded that Peter Minuit Park has virtually no precontact potential. Due to its extremely low elevation, actually under water in the precontact period, and extremely uneven topography, it is not likely that the Peter Minuit Park site directly experienced any extensive occupation or use during the precontact period. The site was part of that rock-studded outboard section of the original settlement of New York City, and was referred to as "Kapsee" or "Capske." Various sources use different spellings for the name of these rocks. Grumet suggests that the name was "probably derived from the Dutch kaaphoekje a 'little cape or promontory'" (Grumet 1981:17). The rocky shoreline, if once exposed for precontact use, would not have been ideally suited for long term habitation. Subsequent intensive development over the last 300 years - filling and construction episodes detailed in Appendix 6.3.7.1 - would have disturbed any potential precontact resources if they were ever present.

6.3.2.2 Historical Archaeological Potential

Peter Minuit Park was the subject of both a prior archaeological documentary study (Kearns et al 1992b, 1994), as well as later subsurface testing (Louis Berger & Associates 2000). While the documentary study indicated that most of the park was probably disturbed by the construction of several tunnels and utilities, there were places that were potentially undisturbed and noted to have the potential for 18th and 19th century resources.

Subsequent subsurface investigation documented the extent of prior disturbance, and found that most of the areas previously identified as potentially sensitive were also disturbed (Appendix 6.3.7.1). The 1999 archaeological excavations in Peter Minuit Plaza also identified one *in situ* landfill retaining structure at five to nine feet below current grade (Louis Berger 2000:44). Only a limited extent of a cobb-type wharf structure was uncovered in one extended pit in the initial testing phase; no vertical guideposts were located. From the documentary sources it appears this structure was built between 1734 and 1776. Small and restricted intact layers of original eighteenth century fill deposits were recovered from one area directly above the retaining structure (Ibid.). Cultural material (identified as land-side trash rather than shipboard refuse) was also recovered from what appeared to be the river bottom at the relatively shallow depth of 5.4 feet below current grade.

The draft excavation report concluded that:

- Mapping the 18th century fill retaining structure would help determine its precise purpose and document the location of the 18th century shoreline.
- Landfill deposits in this area have limited research value.
- Fill consists mostly of domestic and architectural debris, while no evidence from the military, crafts, and maritime activities which took place here was present.
- No evidence of buildings or other structures dating to the 17th through 20th centuries were encountered. And,
- No traces of 19th century transportation systems were encountered.

Draft recommendations called for the monitoring of excavations greater than 4.5' below grade in Area 1, the documentation of any 19th century transportation-related features encountered in future construction-related excavations, and for no further archaeological investigations for the New Whitehall Ferry Terminal and Peter Minuit Plaza Improvements Project (Louis Berger & Associates 2000:45).

6.3.3 Summary of Archaeological Potential

The construction of an extensive transportation network in this area through the 19th and 20th centuries, has caused subsurface disturbance to most of the park and Whitehall Street roadbed. However, recent archaeological excavations identified one area of sensitivity, an 18th century fill retaining structure, where Pit 1 and 1A were placed at the northeast corner of the triangular shaped park, near the intersection of Water and Whitehall Streets. The subsurface testing demonstrated that if historical resources do still exist, they are probably limited to small pockets between and around existing utilities and tunnels, and that the depth of the river bottom is variable, and could be encountered as shallow as five feet below grade, and possibly deeper (Figure 6.3-6).

6.3.4 Proposed Project Effects

Proposed construction plans (SYSTRA Drawing CT-01 March 1, 2002) indicate that there will be no construction in Peter Minuit Park. Therefore, potential resources will not be affected.

6.3.5 Recommendations

Since the Peter Minuit APE will not be affected by proposed construction, no additional archaeological investigations are recommended. Should project plans change, potential effects on archaeological resources would be reassessed. If adverse effects to potential resources are identified, additional archaeological investigations, including the review of boring logs, additional documentary research, and subsurface testing, will be warranted.

6.3.6 Figures and Photographs

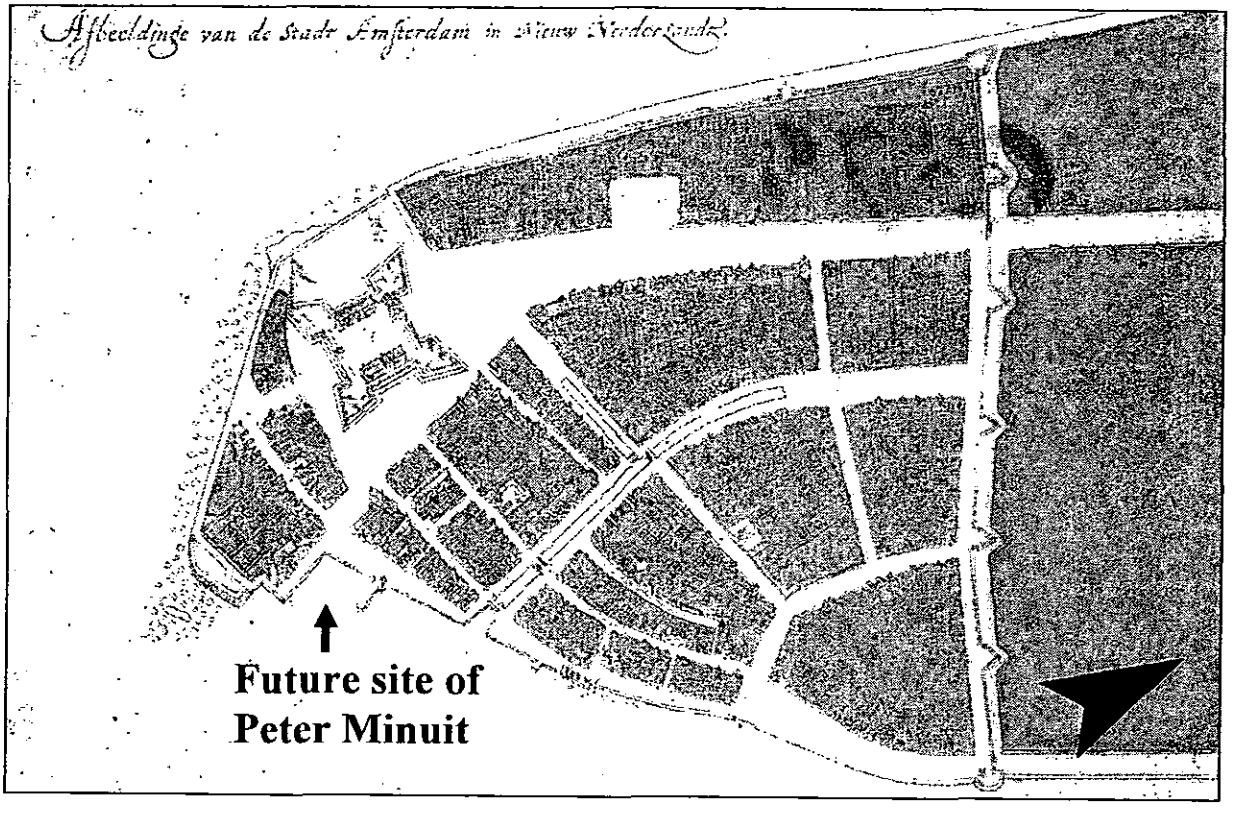


FIGURE 6.3-1

Afbeeldinge van de Stadt Amsterdam in Nieuw Neederlandt. Castello 1660.

No Scale

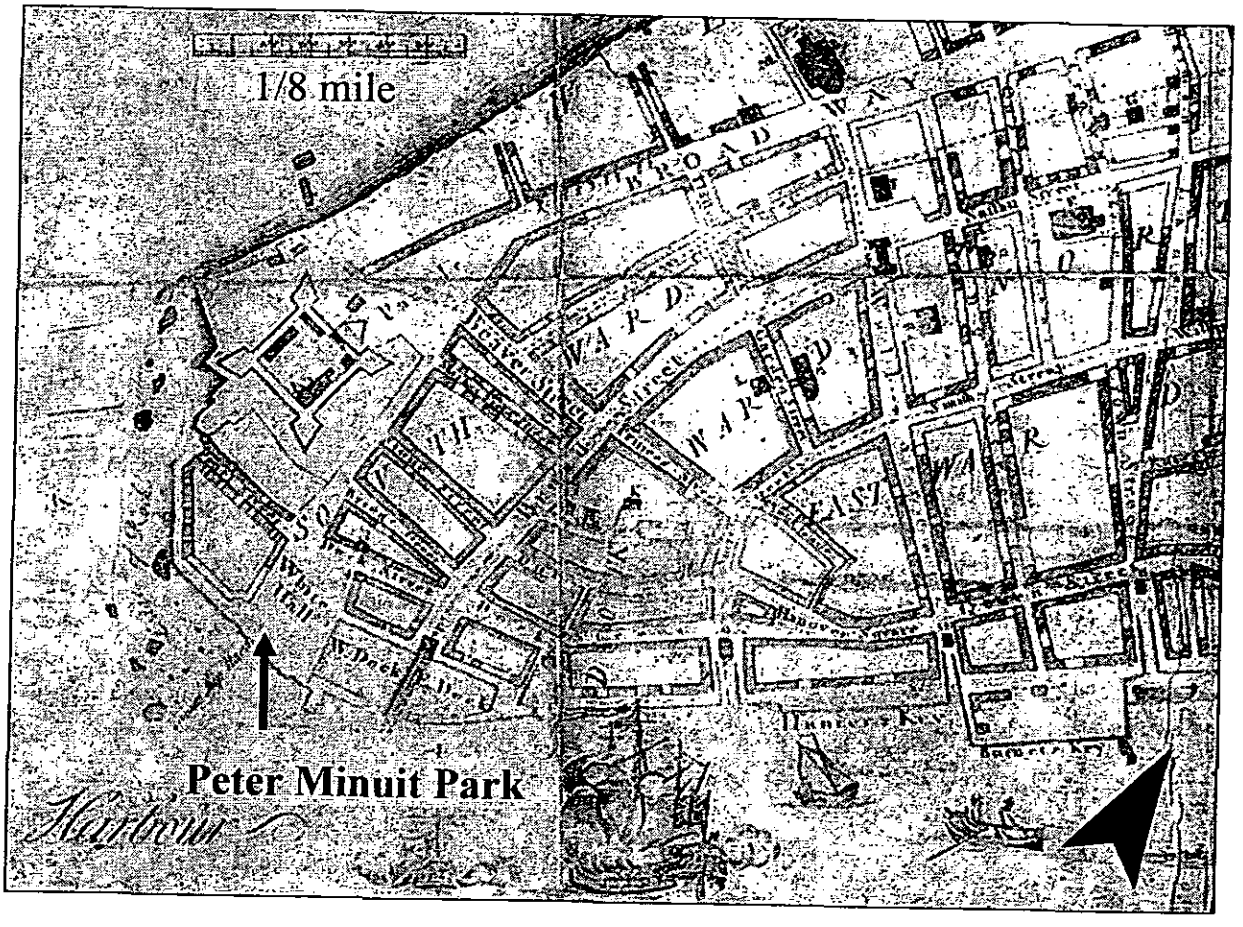


FIGURE 6.3-2

A Plan of the City of New York from an actual Survey. Lyne 1730.

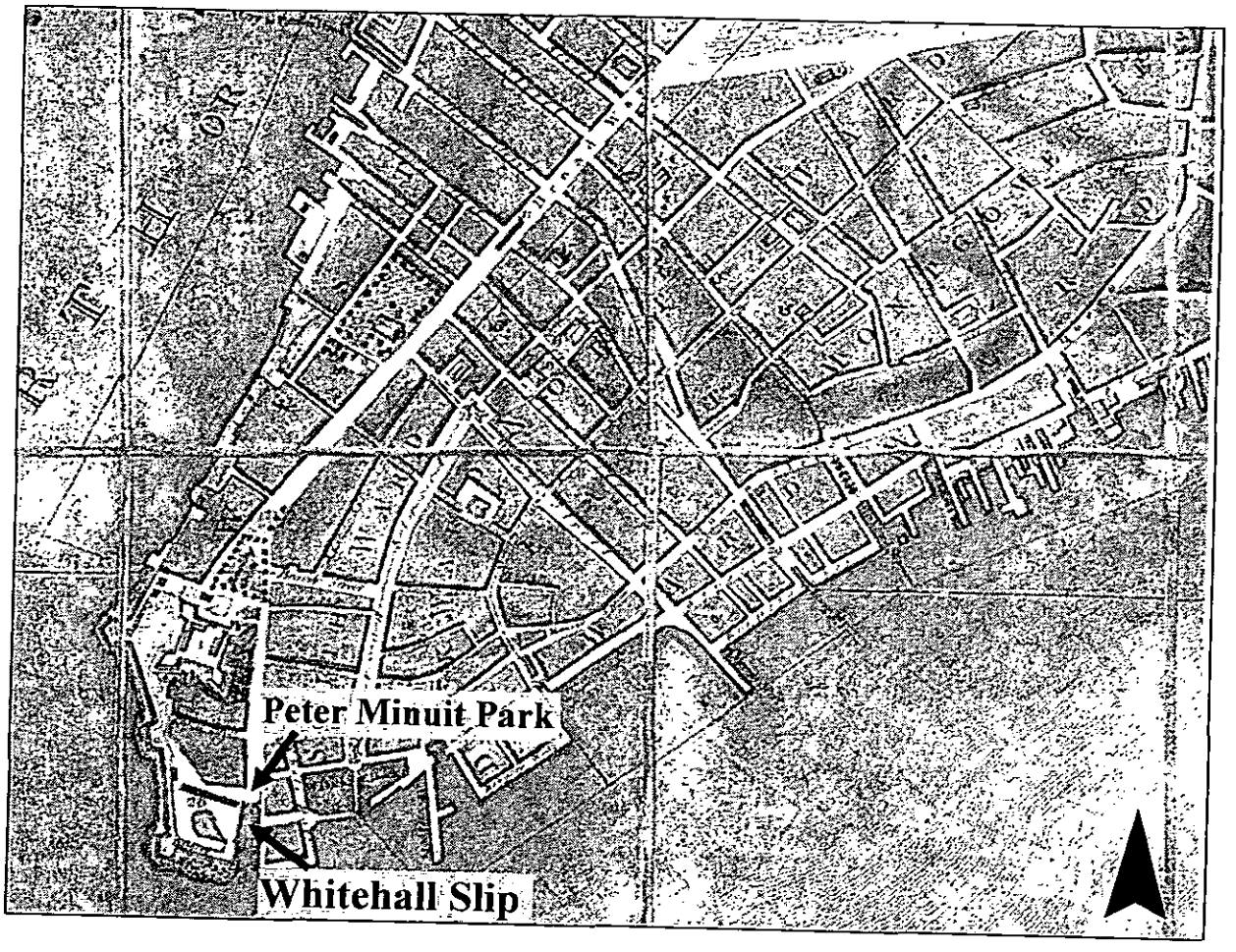


FIGURE 6.3-3

Plan of the City of New York. Ratzer 1766/1767.
Peter Minuit Park.

No Scale

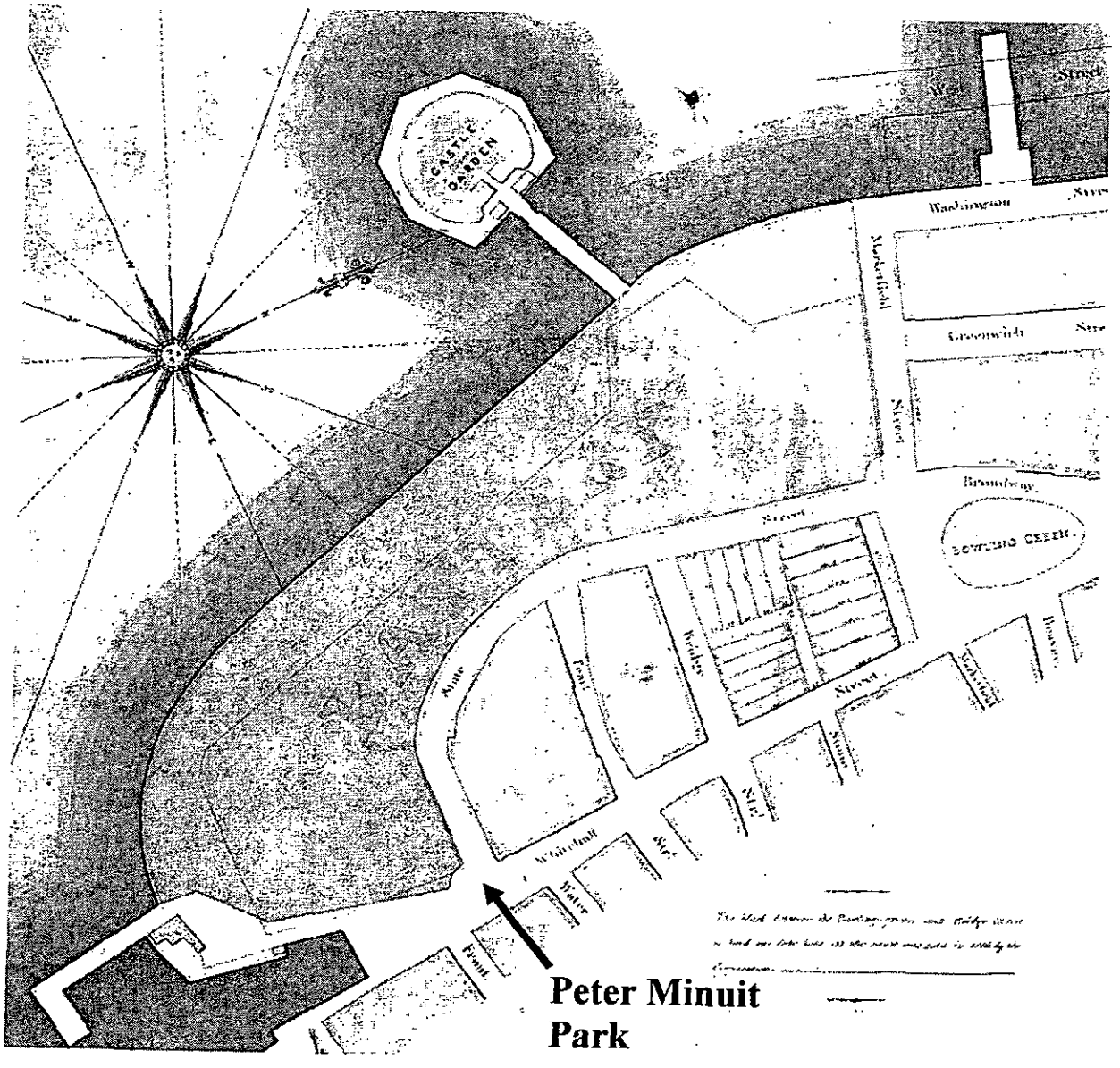


FIGURE 6.3-4

Map of Peter Minuit Park. Ewen 1827.
Peter Minuit Park.

No Scale

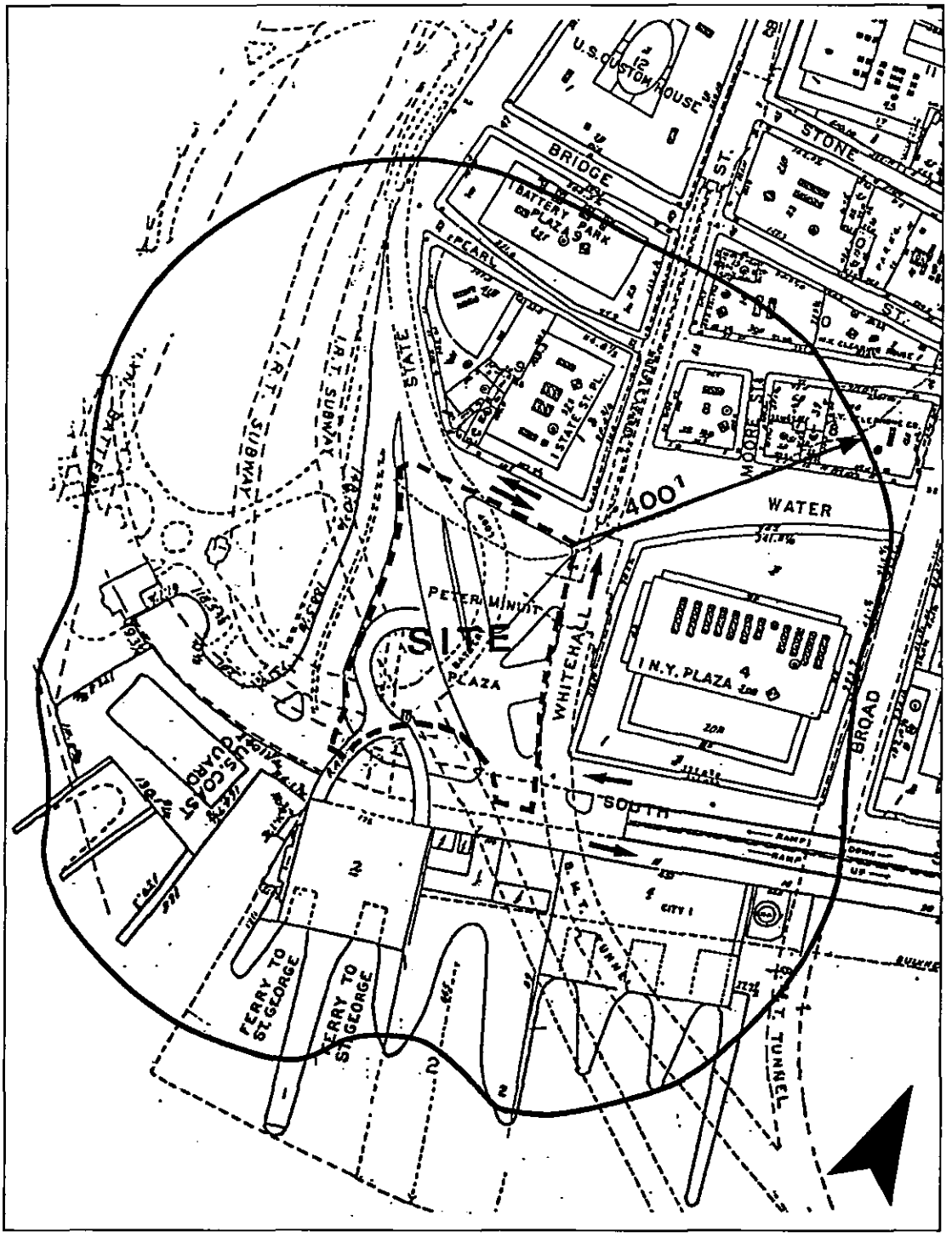


FIGURE 6.3-5

Proposed Peter Minuit Park Site. Kearns et al. 1992.

Approximate Scale: ½ inch = 100 feet

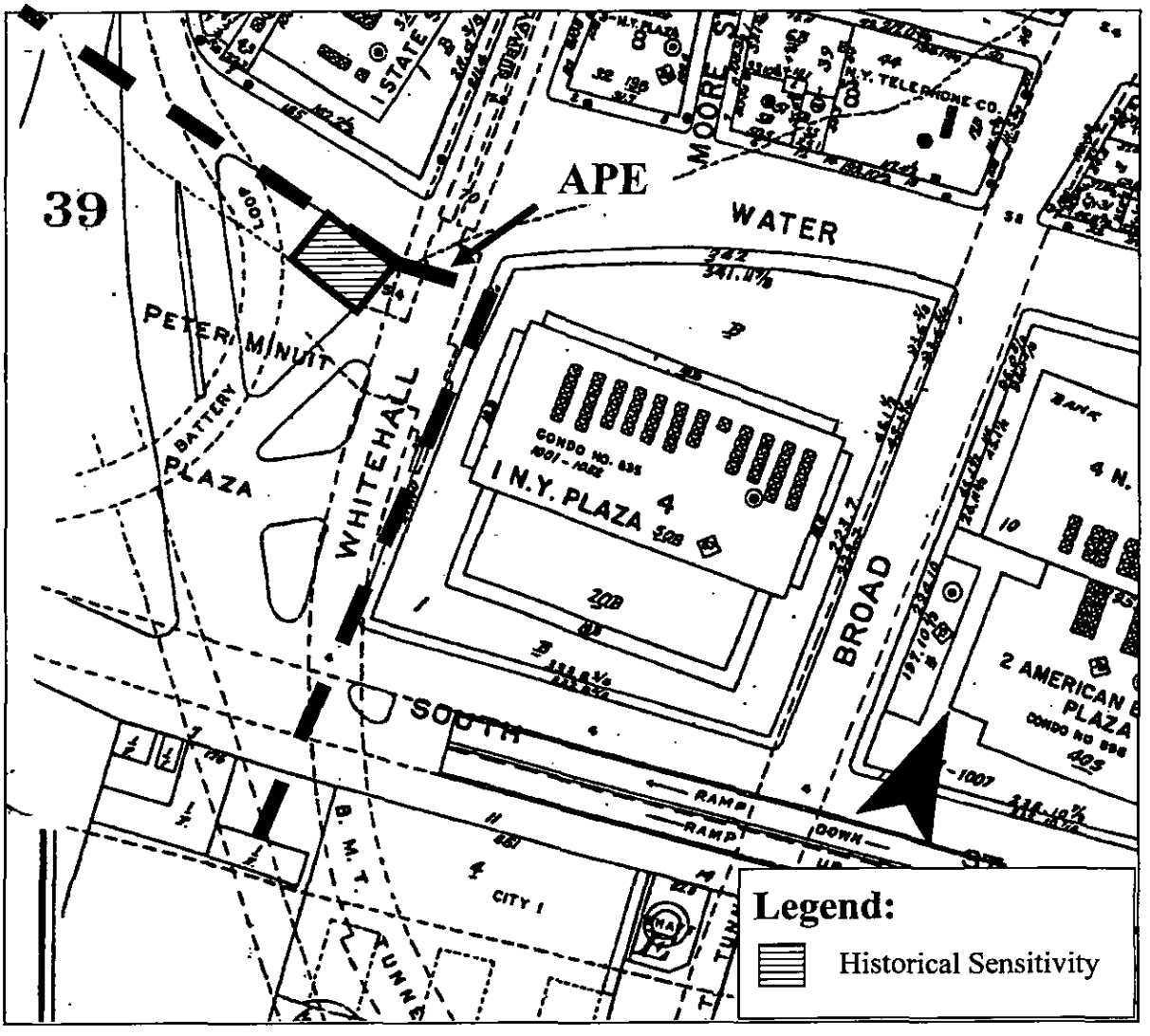
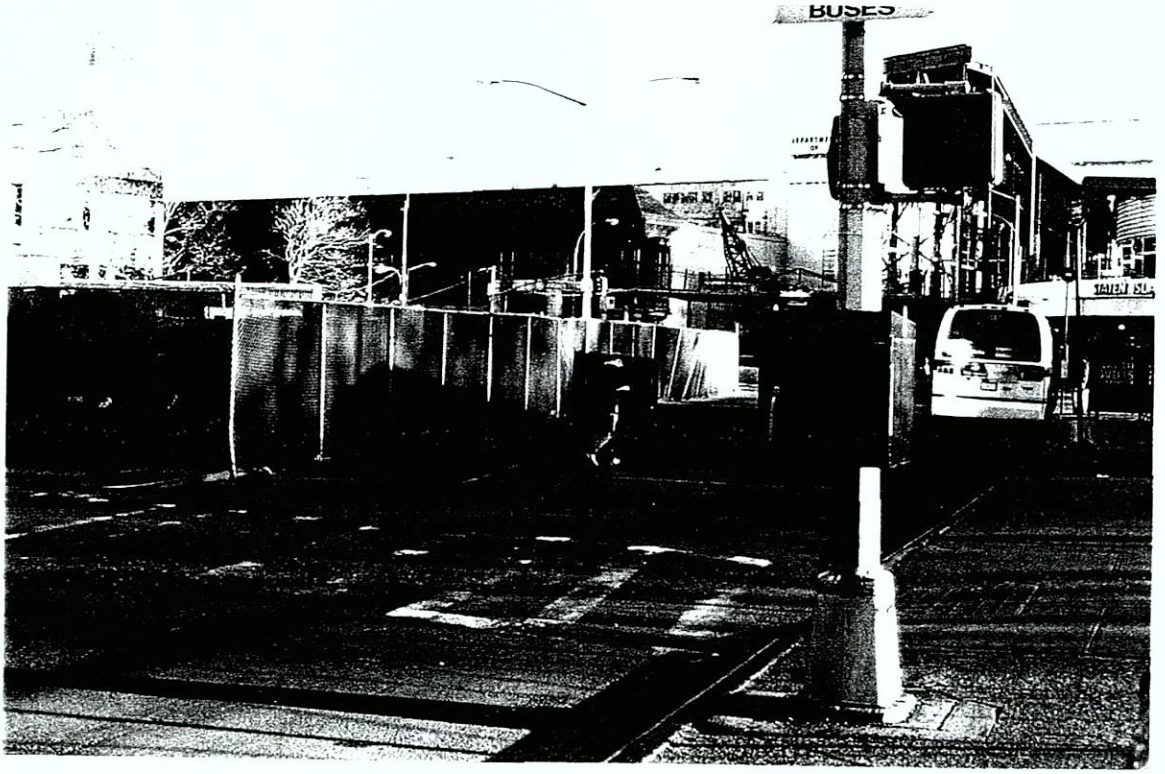


FIGURE 6.3-6

Area of Potential Archaeological Sensitivity.
Peter Minuit Park. Based on Louis Berger and Associates 2000.

Approximate Scale: ¾ inch = 100 feet



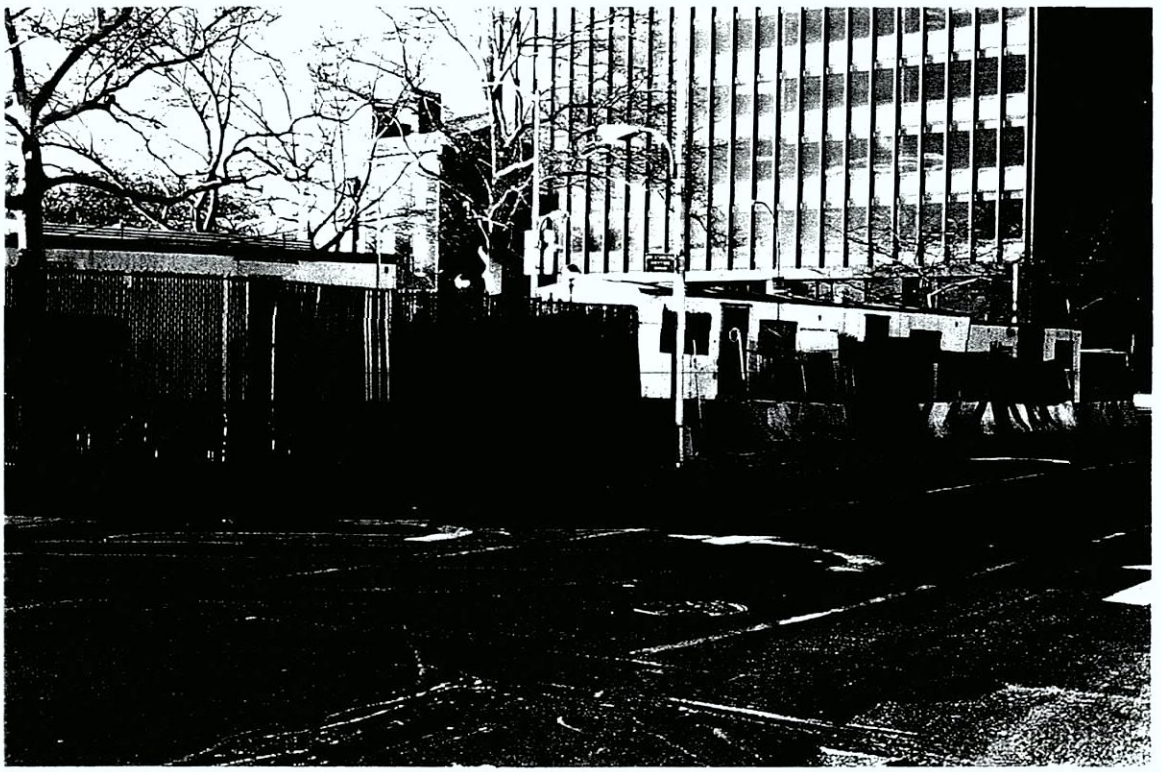
Photograph 6.3-1: Facing southeast on State Street towards Peter Minuit Park.



Photographs 6.3-2: Facing southwest on South Street and Whitehall Street towards Peter Minuit Park.



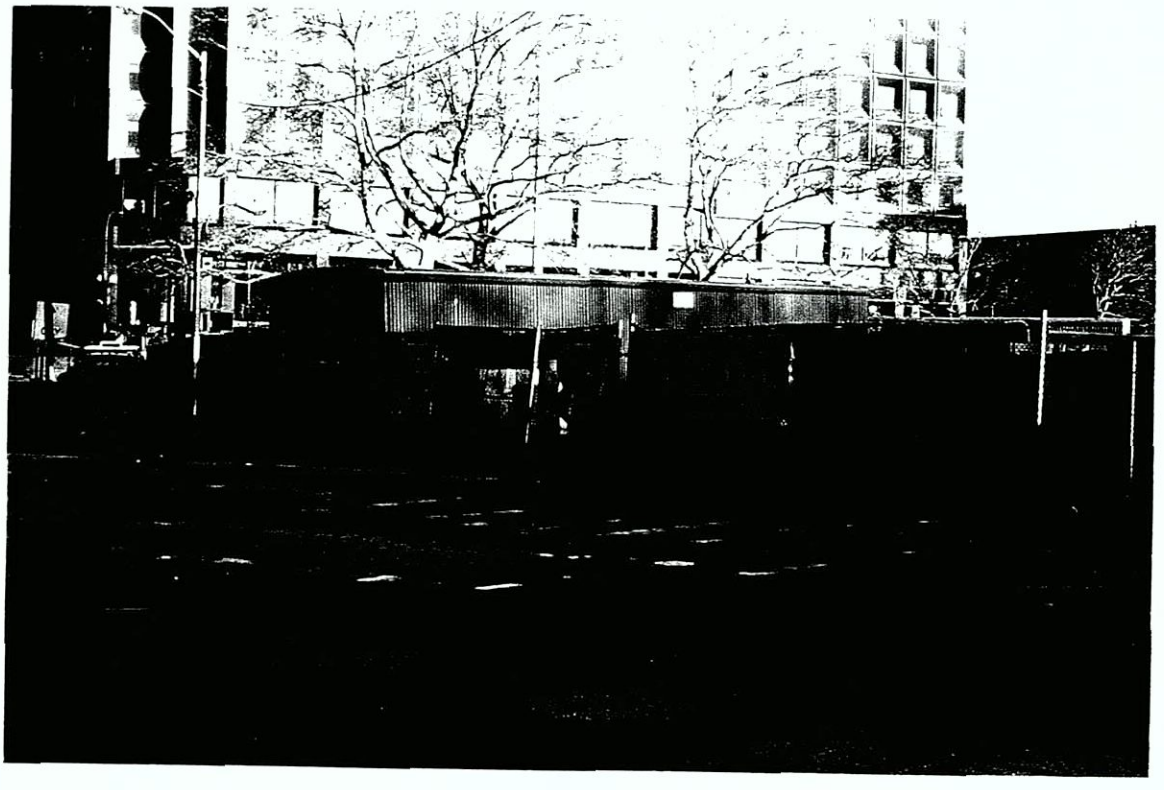
Photograph 6.3-3: Facing southwest on South Street and Whitehall Street towards Peter Minuit Park.



Photographs 6.3-4: Facing north on South Street and Whitehall Street towards Peter Minuit Park.



Photograph 6.3-5: Facing west on Whitehall Street and South Street towards Peter Minuit Park. Note that park is under construction.



Photographs 6.3-6: Facing east toward Peter Minuit Park at the change over of Water Street and State Street.

6.3.7 Appendices

6.3.7.1 Documentary Assessment of APE

Peter Minuit Plaza

Peter Minuit Plaza is bounded by Whitehall Street on the east, South Street on the south, State Street on the north, and the East River on the west.

Cartographic History

Castello 1660:	What becomes Peter Minuit Plaza in the APE is predominantly land under water at this time. Only a small section of the plaza bordering State Street as far south as the southern boundary of adjacent Block 9, appears present. A sea wall with fencing above it forms the boundary along the East River.
Miller 1696:	No additional filling within the APE is depicted, but there is now a gun emplacement along the river within what is now Peter Minuit Park.
Lyne 1730:	A "Ledge of Rock" is shown just south of the shoreline along what will become Peter Minuit Park. At the foot of Whitehall Street, just west of what is now South Street, was Hunts Ship Yard.
Buchnerd 1735:	The north half of Whitehall Street had been filled as far west as Front Street, half way between what are now Water and South Streets. At the foot of Whitehall Street at Water Street was the White Hall Slip. The remainder of the APE appeared to be outboard of the shoreline.
Carwitham 1740:	Same as Lyne-Bradford 1731.
Grim 1744/1813:	Much of Peter Minuit Park had been created south of Whitehall Street and State Street. The Whitehall Slip was still present southeast of Water Street.
Maerschalck 1755:	In addition to the filling of Peter Minuit Park, several structures are shown adjacent to what is now State Street, within the APE. The boundaries of the park are formed by a U shaped wall along the river.
Montresor 1766:	Peter Minuit Park now contains both a military hospital and a battery. A pond appears to lie within the center of the park.
Ratzer 1766/67:	Barracks are shown on the southeastern border of State Street within the APE. The pond is still present, and appears to be filled by a small water channel from Whitehall Slip. Walls of the battery bound the southern and western sides of Peter Minuit Park.
Holland 1776:	Same as Ratzer 1766/67.
McComb 1789:	The "Lower Barracks" are still present within the APE, and so is the battery along the river's edge.
Taylor Roberts 1797:	By this time all of the structures appear to have been removed from the APE, which now simply labeled "The Battery." Whitehall Slip still extends inland almost to Front Street.
Bridges 1803:	Same as Taylor Roberts 1797.

Hill 1804:	Same as Taylor Roberts 1797.
Commissioners' 1811:	Same as Taylor Roberts 1797.
Hooker 1824:	Same as Taylor Roberts 1797.
Ewen 1827:	Peter Minuit Park fell within the Battery, and Whitehall Street had been filled to mid-way between Front and South Streets.
Colton 1836:	While Peter Minuit Park remained unchanged from 1836, Whitehall Street had been filled as far as South Street, and the slip had been relocated off of the foot of South Street. Although a pier had been constructed off of Whitehall Street, it appeared to extend southeast from South Street, outside of the APE.
Endicott 1842:	Water lines are shown on Whitehall, Pearl, and State Streets within the APE.
Perris 1849/50:	Same as Colton 1836, although there are now more piers off of Whitehall Street at South Street. These are now labeled Staten Island Ferry, Hamilton Ferry, and South Ferry. They all appear to be just outside of the APE.
Dripps 1852:	Same as Perris 1849/50.
Perris 1857:	Same as Perris 1849/50.
Perris 1859:	Same as Perris 1849/50.
Dripps 1867:	Same as Perris 1849/50. Horse or cable car lines are shown running down Whitehall Street and State Street.
Viele 1874:	Peter Minuit Park was depicted as land under water prior to historical development
Robinson 1885:	A series of rail tracks has been laid on State and Whitehall Streets, and through what is now Peter Minuit Park, but was then labeled as Battery Park. Along the southeastern edge of the river, the U.S. Barge Office had been created. Its northwestern corner may fall within the APE.
Sanborn 1894:	Same as Robinson 1885.
Bromley 1916:	The South Ferry Elevated Station had been constructed within Peter Minuit Park, with el lines both curving north up Front Street and veering west toward State Street. In addition to these, the B.M.T. subway had been built beneath Whitehall Street, and the Battery Loop for another subway line was constructed within the APE. Another subway line with a tunnel to Brooklyn had also been constructed across the APE, beneath the el station. In addition to these, the Ferry to Hamilton Avenue in Brooklyn was still located along the shoreline. Peter Minuit Park effectively became a major transportation hub in Lower Manhattan.
Bromley 1925:	Same as Bromley 1916.
Bromley 1955:	Same as Bromley 1916.
Bromley 1974:	Between 1955 and 1974, the elevated station and lines were removed from the plaza, and three small landscaped plazas were installed.
Sanborn 2001:	Same as Bromley 1974.

Street Elevations of the APE are as follows:

Data Source	Water Street at Whitehall
1885 Robinson	5.7'
1913 Hyde	5.8'
2001 Sanborn	5.8'

Precontact Sensitivity

Due to its extremely low elevation, actually under water, and extremely uneven topography, it is not likely that the Peter Minuit Park site directly experienced any extensive occupation or use during the precontact period. The site was part of that rock-studded outboard section of the original settlement of New York City, and was referred to as "Kapsee" or "Capske." Various sources use different spellings for the name of these rocks. Grumet suggests that the name was "probably derived from the Dutch kaaphoekje a 'little cape or promontory'" (Grumet 1981:17). Subsequent intensive development over the last 300 years - filling and construction episodes detailed below - would have destroyed any potential precontact resources if they were ever present.

Historic Sensitivity

Most of Peter Minuit Park was land under water in the early 17th century. The original shoreline ran north near State Street, turning north along Whitehall Street to Pearl Street, then running east along Pearl Street. West of Whitehall Street where the shoreline curved there was a projection of land from Pearl Street known as Schreyers Hook or Kapsee (see above). Near this area, the British kept a battery of guns from 1638 to 1687, and thus the 22-acre park that was eventually created here was named for this battery (Gold 1988:4). Battery Park, located directly west of Peter Minuit Park, was once much larger than it is, and encompassed much of the APE.

Filling at Peter Minuit Park was begun by 1660 when a small projection extended into water near State Street (Castello 1660; Figure 6.3-1). During the 17th century what is now State Street became a center of trade and marketing (Kearns et al 1992b:7). In 1647 Governor Stuyvesant, reacting to the tremendous growth in trade in the area, issued an ordinance regulating shipping, and requiring large ships to anchor between Capske Point (approximately the east side of Whitehall Street) and Wall Street (Stokes 1915:25). Despite the growth in development and fill episodes to the north of Peter Minuit Park, the project APE experienced little filling during this time. Maps do suggest that prior to the APE being filled, "Hunt's Ship Yard" may have been located on or close to the APE (Kearns et al 1992b:8). Its exact location on the modern landscape is unknown.

By 1730 the APE was filled past the line of present-day Front Street (Lyne 1730; Figure 6.3-2), and by 1744 it was labeled the "Half Moon Battery" (Grim 1744). Filling was ordered to allow for the creation of the battery in 1734 (Kearns et al 1992b:8). By 1766 there were both a military hospital and a battery present, as well as a small pond (Montresor 1766). Also by this time the Staten Island Ferry had been located on the east side of Whitehall Slip (Ratzer 1766/67; Figure 6.3-3).

In the ensuing decade, two additional buildings had been added to the battery in the vicinity of the earlier pond (Holland 1776). Stokes confirms that the pond was filled in 1773 when it was declared a nuisance (Stokes 1915:165). An act of State Legislature directed that it be turned into a park in 1790 (Stokes 1915:943). By 1797 the barracks had been removed, and the battery had become an open green space planted with trees (Taylor-Roberts 1797).

As 19th century filling continued, Whitehall Street was expanded further east and the park was enlarged. At the turn of the 19th century, the western section of Peter Minuit Park fell into Battery Park, while the eastern section contained Whitehall Slip. This was the terminus for several ferry lines to Brooklyn, Staten Island, and New Jersey (Kearns et al 1992b:10). In 1805 the City Council recommended that "Whitehall Slip again be partially filled and that a new L-shaped pier be built on the west side of the slip" (Ibid.). After 1815, this structure was designated as Pier 1. At that time, Whitehall Slip extended inland (north) to the mid-point between South and Front Streets, and slightly west of the present-day line of Whitehall Street (Ewen 1827; Figure 6.3-4).

In 1822 the Common Council resolved that a bulkhead should be extended across Whitehall Slip from Pier 1 "in a line with the southern side of South Street, which continued the filling of the slip southward to South Street" (Kearns et al 1992b:11). This is evident by 1824 when Pier 1 was still present, and fill had extended the full width of South Street (Hooker 1824). More fill was added to the bulkhead along South Street consisting of debris from the great fire of 1835 (Costello 1887:239).

> *The area of Whitehall Slip was gradually occupied by maritime news offices and ferry facilities during the decades. In 1864 a cast iron ferry building was built by the Union Ferry Company in the area formerly occupied by news offices and ferry facilities. The process of filling in land to approximately 50 feet below South Street, where it intersected with Whitehall, largely ended with this construction. Further construction included the U.S. Barge Office.*
>
> (Kearns et al 1992b:11)

Whitehall eventually grew into a major transportation hub, and formed the terminus for the omnibus and horse drawn stage lines. Later, horse drawn trolleys and elevated railroad lines terminated here (Robinson 1885). By the turn of the century, the area was a "maze of intersecting surface and overhead tracks converging at the South Ferry Elevated Station" (Kearns et al 1992b:12).

In the 20th century subway construction affected much of the APE. Specifically, the Whitehall Loop and IRT tunnel to Brooklyn were in use by 1905. The South Ferry Station was built on a turnaround loop, which allowed inbound trains to be dispatched back uptown with greater flexibility. The difficulty in constructing this complex system of tunnels in close proximity to the shoreline was further compounded by the fact that it was built under a large and active elevated terminal (Cudahy 1988:33). Between 1906 and 1917 the BMT line and tunnel to Brooklyn was constructed here, and finally in the 1940s the area was further disturbed by the construction of the Battery Tunnel beneath South Street (Kearns et al 1992b:12). Shortly thereafter, Peter Minuit Park was created.

> *Whitehall Street/Battery Park was still playing a dual role as park and transportation facility as late as 1946 when a City Planning Commission report on the proposed construction of present day Peter Minuit Park commented on the division that 'the portion of Battery Park proposed to be eliminated and included within the lines of the plaza is in use as a park. The remainder of the area to be included within the plaza is presently utilized for street purposes and as a means of access to the terminal for the Staten Island Ferries.' The construction of the Peter Minuit Plaza by 1952 reorganized the area to permit traffic access to the ferries and the East River Drive...The portions of Battery Park were eliminated and the leftover pockets of land were mostly utilized as traffic islands, although mapped as a park.*
>
> (Kearns et al 1992b:13)

There is currently a maze of subsurface tunnels and utilities running beneath and around the park, and under Whitehall Street (Figure 6.3-5).

An intensive study of the archaeological potential of Peter Minuit Park completed in 1992 concluded that there may be sections of it which were, or are, potentially sensitive for a number of historical period resources. These included river bottom remains; landfill deposits and landfill retaining devices; remains of fortifications from the 17th and 18th centuries; port and ferry related structures from the 19th century; and, finally, land transportation elements from the 19th century. However, the disturbance record indicated that the site of 19th century port and ferry related structures was entirely affected, and, therefore, was no longer considered as a potential resource.

Subsequent to the completion of the archaeological assessment, test pit excavations were undertaken for the Whitehall Ferry Terminal Project (Lois Berger & Associates 2000:Management Summary). The testing plan originally called for the machine-assisted trenching of four areas, with a total of seven pits proposed. However, the testing plan was modified in the field and one pit was eliminated, while another was enlarged (Ibid.).

Where test pits were completed, it was noted that much of the mid-18th to early 19th century landfill in the APE was disturbed by later construction (Louis Berger & Associates 2000:43). Landfill was typically found to a depth of five to seven feet below grade, with mixed assemblages indicating disturbance. For example, 20th century artifacts were found under levels of 18th century material (Ibid.). The majority of fill encountered was considered to be redeposited 19th and 20th century material, with 18th century artifacts mixed in.

According to the field results report,

> *In most of the test pits excavated as part of this investigation, excavations did not reach deeper than such construction-disturbed landfill deposits. These deposits surround and cover a variety of underground urban infrastructure, both abandoned and active. Among the elements of infrastructure encountered by these excavations were sewer lines (including a brick sewer in Pit 3A), piping of unidentified function, and subway tunnels.* (Louis Berger & Associates 2000:43)

Despite the extensive disturbance, a fill retaining device, or landfill structure, and intact historic fill was found in one of the test pits. The structure was located between five and nine feet below grade, and appeared to lie on what was once the river bottom. It appeared to be a cobb-type wharf, made of heavy timber framework. Timber "cells" were typically four to eight feet in horizontal dimensions, with wooden flooring to hold in the fill (Ibid.:44). The feature probably post dated 1734, when the construction of the Half Moon Battery began, and was completed by 1776 when the battery was completely filled (Ibid.).

Above the landfill structure were layers of original 18th century deposits, which, despite their undisturbed nature, "also appeared to be of limited research value" (Louis Berger and Associates 2000:44). No direct association could be made between artifacts in the landfill and a particular point of origin. As such, it was determined that they did not have the potential to yield important information about 18th century New York.

A second test pit (Pit 2B) was also undisturbed, and yielded evidence of river bottom deposits (Ibid.). Included in the deposit were pottery sherds and architectural debris which appeared to be a trash deposit. While the original archaeological assessment anticipated the depth of the river bottom between eight and 12' below grade based on a review of soil boring logs, in was in fact encountered at 5.4' below grade (Ibid.). This illustrates the fact that the river bottom naturally varied in elevation, as well as the difficulty with interpreting soil boring logs.

The draft test pit excavation report concluded that:

- Mapping the 18th century fill retaining structure would help determine its precise purpose and document the location of the 18th century shoreline.
- Landfill deposits in this area have limited research value.
- Fill consists mostly of domestic and architectural debris, while no evidence from the military, crafts, and maritime activities which took place here was present.
- No evidence of buildings or other structures dating to the 17th through 20th centuries were encountered. And,
- No traces of 19th century transportation systems were encountered.

Draft recommendations called for the monitoring of excavations greater than 4.5' below grade in Area 1, the documentation of any 19th century transportation-related features encountered in future construction-related excavations, and for no further archaeological investigations for the New Whitehall Ferry Terminal and Peter Minuit Plaza Improvements Project (Louis Berger & Associates 2000:45).

6.3.7.2 Site File Search Results, NYCLPC, NYSOPRHP and NYSM

SITE FILE SEARCH RESULTS

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

~~Village~~ City 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 ~~21~~ 19

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 SAPO
4064 X		1- A061.01.1271 X	was that NYAC did a
7248 X		~~2- A061.01.0014 D03~~	survey in the 1970's
		3- A061.01.0623 X D023	2nd found historic Remains.
		4- A061.01.06763 X	no other info was found.)
		~~5- A061.01.0001~~	
	209 Water St. South Street NR 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 @ SHPO		A061.01.01286 X	
		A061.01.0541 X	
		A061.01.00542 X	
		A061.01.09531 X	

ATIONAL REGISTER ELIGIBLE and LISTED ___ Eligible ___ Listed ___ Building Inventory

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

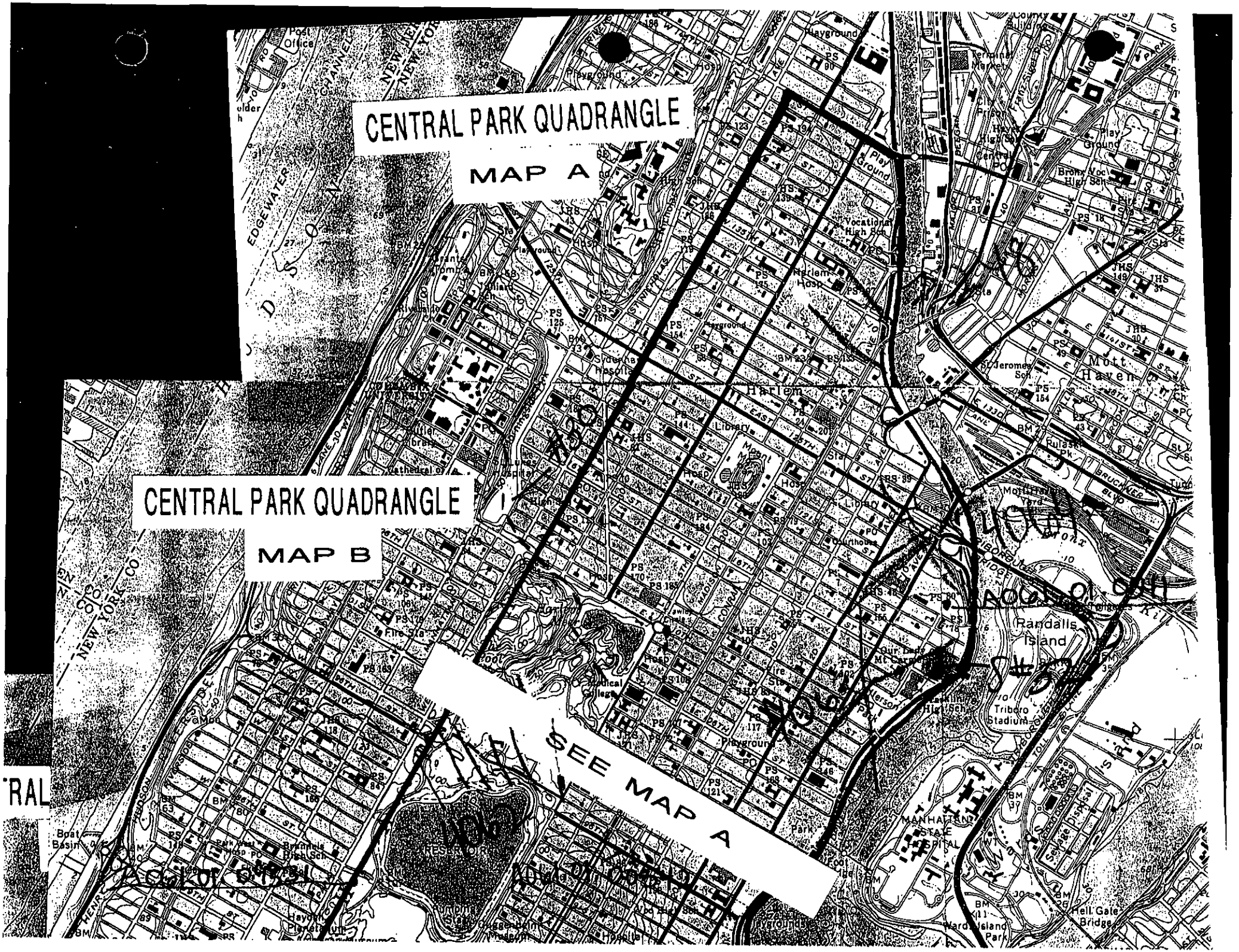
EVIOUS SURVEYS

<17 previous surveys w/in Radius>

8 Westside Highway Program – 1983
William D. Hersey – 1963 Castle Clinton at the Battery
Broad Street Financial Center Greenhouse January 1985
X
64th Pearl Street (17th Landfill) Arnold Pickman & Nan Rothschild May 1981
Stone Street Historic District 1977, 8/17 NYC Landmarks Pres. Comm. Tracker
9 Barclays Bank Site – 100 Water St. Berger – 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block Kardon & Larrabee – July 1981

209 Water St. – Schuyler – ? Date
East River Reach – New York Harbor Collection Kardon & Larrabee October 1977
10 Sheridan Square – 1983 – Rutgers University
Lower Eastside Service Center – Louis Berger Jan '98
750 Sixth Ave. HPI – February 1998
Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1989 / December 1989
32 East River Plaza HPI Sept. 1988
Stone Street Historic District NYC Landmark Pres. Comm. February 1998

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


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A
Harlem
Randalls Island
Triboro Stadium
Mott Haven
Harlem Hosp
Vocational High Sch
Sydenham Hospital
Library
Courthouse
Medical College
Boat Basin
Hell Gate Bridge
Ward Island Park
Manhattan State Hospital
Sewage Disposal
Playground
Terminal Market
Post Office
Edgewater
Hudson
New York Co
Bronx Voc High Sch
St Jeromes Sch
Our Lady Mt Carmel
Fire Sta
Park
Hospital
Hayden Planetarium
Guggenheim Museum
Pumping Station
Reservoir
TRAL


SEE MAP C
Long Island City
Astoria
Hallets Cove
Welfare Island
Rainey Park
Gibbs Pt
Health Center
Doctors Hospital
Athletic Field
Vocational High Sch
Lenox Hill Hospital
Whitney Museum
Frick Collection
The Mall
Pharmacy College
Roosevelt Hosp
Coliseum
Columbus Circle
Carnegie Hall
Rockefeller Center
St Bartholomew Ch
Main Library
Chrysler Bldg
Tunnel
Goldwater Mem Hosp
Cornell Univ Medical Col
Richman High Sch
Aviation Trades High Sch
Rockefeller Institute
Library
Fire Sta
Playground
Park
Hosp
Cem
Library
Radio Tower (WLIB)
St Georges Ch
Immaculate Co
Cresceni
Ravenswood
Hallets Pt
Pot Cove
Vernon
Queens Co
New York Channel
Corrections Hosp
Rapid Transit
Emphasis Bldg
Vinoy
Hospital
Playground
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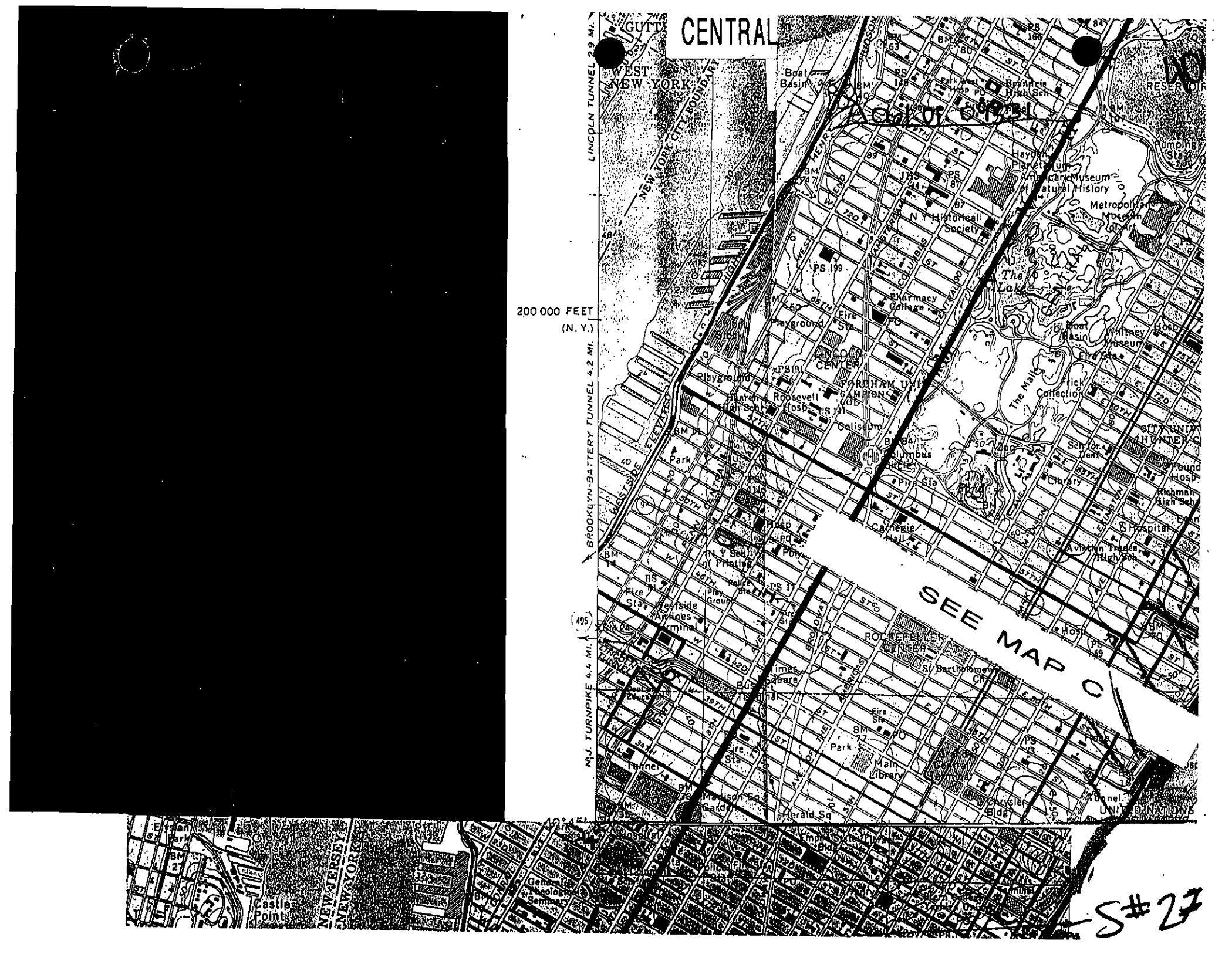

CENTRAL
WEST NEW YORK
NEW YORK CITY BOUNDARY
LINCOLN TUNNEL 2.9 MI.
BROOKLYN-BATTERY TUNNEL 4.2 MI.
N.J. TURNPIKE 4.4 MI.
200 000 FEET
(N. Y.)
Boat Basin
Brannels High Sch
Hayden Planetarium
American Museum of Natural History
Metropolitan Museum of Art
N Y Historical Society
The Lake
Pharmacy College
Playground
Fire Sta
LINCOLN CENTER
FORDHAM UNIV
Roosevelt Hosp
Coliseum
Columbus Circle
Fire Sta
Carnegie Hall
Whitney Museum
Frick Collection
The Mall
Library
Hospital
Aviation Trades High Sch
Richman High Sch
Park
N Y Sch of Printing
Westside Airlines Terminal
Play Ground
Police Sta
SEE MAP C
ROCKEFELLER CENTER
St Bartholomew Ch
Times Square
Bus Terminal
Fire Sta
Park
Main Library
Chrysler Bldg
Tunnel
Madison Sq Garden
Herald Sq
UNITED NATIONS
Castle Point
NEW JERSEY
NEW YORK
S#27

S#35
S#28
S#25
S#2
S#15
S#8
Tompkins Square
Park
MANHATTAN BRIDGE
MANHATTAN BRIDGE
Williamsburg Bridge
Williamsburg Bridge
Brooklyn Bridge
Brooklyn Bridge
Pier 17
Pier 11
Wall St Ferry
Pier 15
Pier 14
Pier 13
Pier 12
Pier 11
Pier 40
Pier 34
Pier 32
Pier 30
Pier 26
Pier 25
Pier 24
Pier 23
Pier 22
Pier 21
Pier 20
Pier 19
Pier 18
Pier 17
Pier 16

7.0 NEW PROJECT ELEMENTS – SHAFT/SPOILS REMOVAL SITES

7.1 VIETNAM VETERANS PLAZA SHAFT SITE

7.1.1 Study Area Description

In Lower Manhattan, Vietnam Veterans Plaza and a portion of the basement of the building at 55 Water Street were evaluated as a potential muck removal tunnel site. Since the 55 Water Street basement was excavated in the 1960s when the structure was built, it lacks archaeological potential. Therefore, the APE for this project element includes areas of potential effect within the plaza excluding the basement's location (Photographs 7.1-1 through 7.1-4).

7.1.2 Existing Conditions

7.1.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

According to Grumet the very southern tip of Manhattan was called Kapsee in the 17th century (Grumet 1981:68). This was described as a ledge of rocks at the southernmost point of Manhattan Island, probably in the vicinity of what is now Battery Park (Ibid.:17). To the north, the landform termed Ashibic was probably a narrow ridge or ancient cliff north of Beekman Street in Lower Manhattan, that was bounded by marsh to the south (Ibid.:3). In addition, "Catiemuts" was the term probably used to describe a "fort or hill located near Pearl Street and Park Row," also several blocks west of the project site (Ibid.:8).

No precontact sites were identified within the project site. However, NYSM Site #4060 was reported northeast of the project site somewhere on the east side of Manhattan near the Manhattan Bridge. It was simply described as an unnumbered village on Arthur C. Parker's map, with no detail of age, location, or size (see Appendix 7.1.7.2).

The preservation of precontact sites in an urban environment is rare, because precontact deposits tend to be shallowly buried in non-alluvial environments and are vulnerable to disturbance from historical land use and development. This is particularly true in Lower Manhattan, where intensive development of the urban center has been transpiring for more than three hundred years. Despite this, some precontact material has been recovered in recent years from archaeological excavations in Lower Manhattan. For example, in 1980 during the excavation of Stone Street, as part of the Staadt Huys block, aboriginal pottery and lithics were found in the lowest levels of the excavation (Baugher-Perlin et al. 1982:12). In the later Broad Street field investigation led by Joel Grossman, an *in situ* contact period feature was found in direct association with the Dutch West India storehouse (Karen Rubinson, personal communication to Cece Saunders, June 27, 1989). These artifacts are evidence of Native American occupation, but they do not represent habitation or midden sites with significant research potential.

When assessing site potential for Native American resources, archaeologists rely on several indicators: past environmental features of the site landscape, ethnographic accounts published archaeological reports, and predictive models based on precontact settlement pattern data. Ethnographic accounts and archaeological material do document the presence of Native Americans in Lower Manhattan. As reported by Bolton, Skinner and Parker, the southern tip of Manhattan, at the confluence of two major water systems, was probably exploited by pre-Colonial inhabitants for shellfish harvesting and perhaps even habitation (Bolton 1972; Skinner 1919; Parker 1920). West of the site near Pearl Street, where the c.1600 shoreline ran, early chroniclers reported abundant shellfish remains and speculated that the area functioned as a canoe landing (Geismar 1986:7).

Archaeological Potential

This section of the APE was beneath the East River at the time of the earliest historical development (Viele 1874). Cartographic and documentary research suggests that there is no precontact potential within this APE (Appendix 7.1.7.1). The lack of any indicators of a precontact living surface in the soil borings taken on or near Vietnam Veterans Plaza (either peat or soils indicative of a habitable environment) suggests that this section of the APE lacks precontact potential. Furthermore, because the site was formerly occupied by Coenties Slip, it would have been periodically dredged over a period of at least 100 years (ca.1730s to 1840s; Figures 7.1-1 through 7.1-6) to keep it open to passage which would have extensively disturbed the river bottom. Therefore, this APE has no precontact potential.

7.1.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

While there are numerous historically important places in the vicinity, there are no archaeological sites within the APE currently listed on the National Register of Historic Places, nor are there any with New York City Landmark status. A site file search at the New York State Museum (NYSM) in Albany, and the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) listed the following historic sites nearby:

OPRHP #	Site Name and Date	Location
A061.01.0491	Municipal Ferry Pier ca. 1909	11 South Street
A061.01.0490	Battery-Castle Clinton pre-1812	Battery Park
A061.01.0604	209 Water Street cellar excavation	209 Water Street
A061.01.0623.DO.23	Telco Block (Block 74W)	John, Front, Fulton, Water Streets
A061.01.1271	175 Water Street Site	175 Water Street
A061.01.1272	Hist. Landfill Site 17th c.+	64 Pearl Street
A061.01.01272.D0.14	Historic Landfill Site	64 Pearl Street & 34 Water Street
A061.01.1282	Ronson Project Site/Dutch West India Co. Warehouse, etc. 17th-20th c.	Pearl, Bridge, and Whitehall Streets
A061.01.1283	Barclays Bank Site	75 Wall Street

OPRHP #	Site Name and Date	Location
A061.01.1284	Block 35 - Assay Site	Old Slip between Front and South Streets
A061.01.1285	Site 1 Washington St. Urban Renewal Project 17th c., 1826	West & Hubert Streets
A016.01.1286	NYU Law Library Expansion	Sullivan Street near Washington Square
A016.01.01304	City Hall Park Site	City Hall Park
A061.01.006763	Schermerhorn Row	Fulton, Front, John and South Streets

Resource categories include a ferry landing, a foundry, Dutch living surfaces, and 17th through 20th century residential and commercial features and landfill. Only the first two sites listed above, the Municipal Ferry Pier and Castle Clinton at Battery Park, are currently listed on the National Register of Historic Places, although several of the sites listed fall within the South Street Seaport Historic District.

West of the project site is the Fraunces Tavern Block Historic District, listed on the State and National Register of Historic Places and designated a New York City Historic District by the New York City Landmarks Preservation Commission. The block, bounded by Broad, Pearl and Water Streets and Coenties Slip, contains mostly early 19th century buildings that escaped the "Great Fire" of 1835. Eleven buildings within the district date between 1827 and 1833. Also within the district is the renovated 1719 Fraunces Tavern at 54 Pearl Street, now a museum. Although these are all standing structures rather than archaeological sites, their historic importance relates directly to the project area.

In addition to these inventoried archaeological and historic sites, much archaeological research has been undertaken in Lower Manhattan that is not reflected in the inventory. For example, archaeological salvage excavations were completed within Block 32 at 55 Water Street, when a new building was constructed in the late 1960s (Huey 1984:17). In addition to the extensive number of artifacts found in the remaining landfill within the block (most of the block had been affected by foundation excavations and little remained by the time archaeologists were permitted to proceed), the original log crib footing under the northeast end of Cruger's Wharf, dating to 1740, was visible (Ibid.:18). Cribbing extended 175' southeast from Water Street, along the original line of Old Slip. Artifacts within the landfill were able to address research issues pertaining to colonial trade patterns and waterfront development (Ibid.:23).

Elsewhere in Lower Manhattan, archaeological research at Block 31, bounded by Pearl, Wall, and Water Streets, revealed that the site possessed landfill associated with a series of water lot grants dating to 1694-95 and some of the earliest commercial activities associated with the waterfront in that area. By the middle of the 18th century and into the early 19th century, the block was mixed residentially, with a cluster of chemist/druggists, artists and small scale merchants (Louis Berger & Associates 1987:11). The block was eventually used as brokerages and for warehousing; by the 1820s it was all commercial.

Stage IB testing performed at the site exposed extensive yard deposits, middens, privies, wells, cisterns, and house and outbuilding foundations. The rear yard areas were concentrated within the center of the block. Deposits along the street fronts were destroyed by late 19th and 20th century construction. Most of the deposits dated from between 1780 to1820. Home lot and commercial activities were reflected in the archaeological deposits (Louis Berger & Associates 1987:4).

Historical Potential

The documentary and cartographic research, coupled with a review of soil borings taken nearby, strongly suggests that the Vietnam Veterans Plaza APE is potentially sensitive for historic period resources (Figure 7.1-8). These could include 19th century fill and fill retaining devices, including wharves, piers, bulkheads, and sunken ships, beneath the entire APE. The Middle Pier, which was built ca.1796, may have also been incorporated into the landfill and therefore, the APE is potentially sensitive for this resource. Resources potentially extend from the surface down to the deepest reported fill, at 19.4' below grade, and possibly to what may have been the 17th century river bottom extending down to 24.4' below grade.

Previous archaeological studies on the wharves and piers of Manhattan have focused primarily on resources dating to the 18th and very early 19th centuries (Berger 1990). Piers and wharves which may be located in the APE should be assessed for significance with regards to the type of joinery techniques employed and whether they bear evidence of the effects of utilizing steam driven piles. These joinery methods are rarely described in the historic literature, and may be sensitive to "temporal and geographic differences in craftsmanship and technology" (Berger 1990:V-24).

7.1.3 Summary of Archaeological Potential

The Vietnam Veterans Plaza APE lacks the potential for precontact period resources for several reasons. First, it is in a location which was probably not attractive for habitation. Second, soil borings taken nearby have no silt or loam layers, indicative of a potential precontact living surface; and third because the plaza was formerly the site of Coenties Slip which was dredged historically. In contrast, the APE is potentially sensitive for a number of historic period resources which could include 19th century fill, and fill retaining devices beneath the entire APE. The Middle Pier, which was built ca.1796, and adjacent wharves may have also been incorporated into the landfill and, therefore, the APE is potentially sensitive for this resource. Resources potentially extend from the surface down to the deepest reported fill, at 19.4' below grade, and possibly to what may have been the 17th century river bottom extending down to 24.4' below grade (Figure 7.1-8).

7.1.4 Proposed Project Effects

Proposed construction entails potential cut and cover construction for the creation of a conveyor and underground conveyor system could potentially affect Vietnam Veterans

Plaza from a surface down to an unknown depth. If the existing underground arcade is utilized, there will be no effects to potential resources. However, if construction occurs outside of the arcade, then there is the potential to affect 18th and 19th century waterfront features from the surface down to about 25 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.

7.1.5 Recommendations

Because potential historical resources relating to the 18th and 19th centuries may be present beneath Vietnam Veterans Plaza, further investigation of subsurface conditions may be necessary.

Additional soil borings would help to establish the potential depth of resources to verify that the effect assessment is correct. 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 sites 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 prepared in consultation with SHPO. It is expected that the additional documentary research will aid in the formulation of a specific subsurface testing plan.

For areas with potential historic sensitivity, a subsurface testing plan will be warranted to test these potentially sensitive areas. Its goal would be to establish the presence or

[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.

absence of cultural resources, their horizontal and vertical extent, site integrity, and, their 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 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.

7.1.6 Figures and Photographs

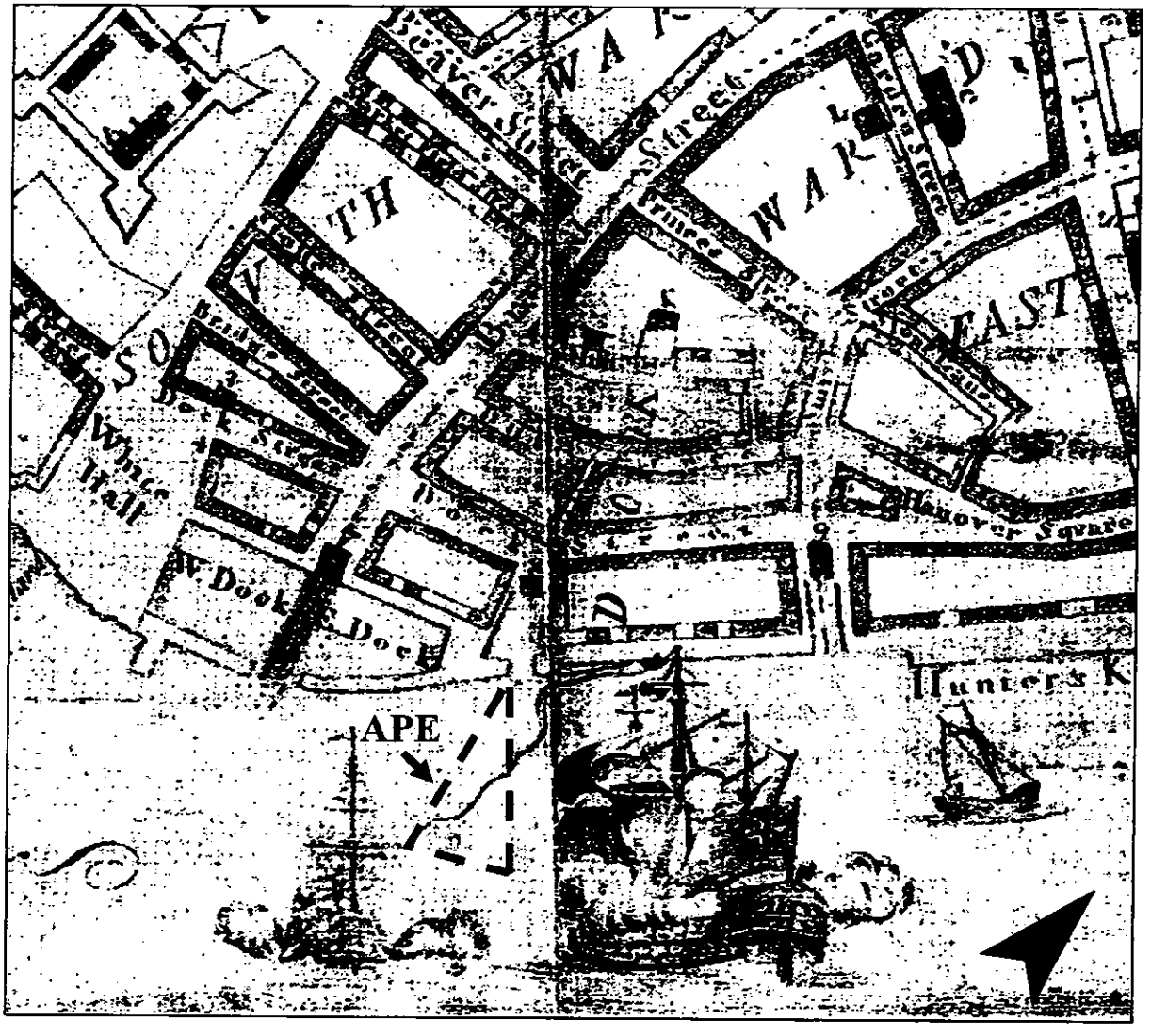


FIGURE 7.1-1

A Plan of the City of New York From an Actual Survey. Lyne 1730.
No scale

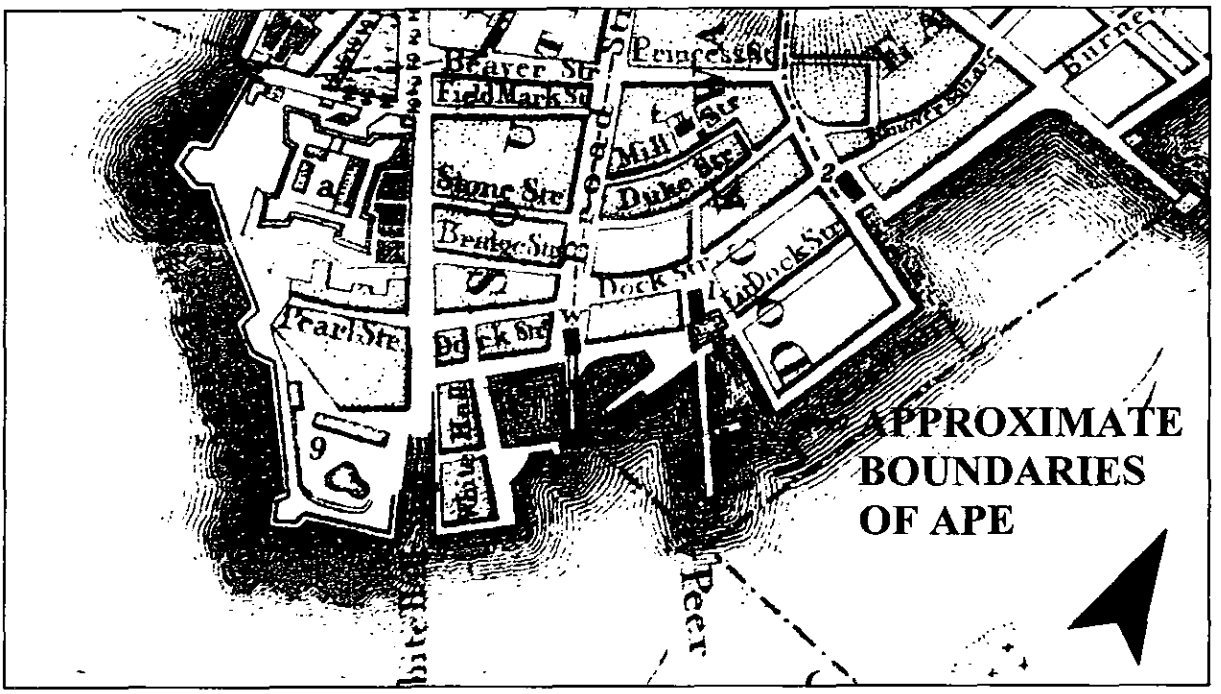


FIGURE 7.1-2

Plan of the City of New York. Vietnam Veterans Plaza. Ratzer 1766/67.
No scale

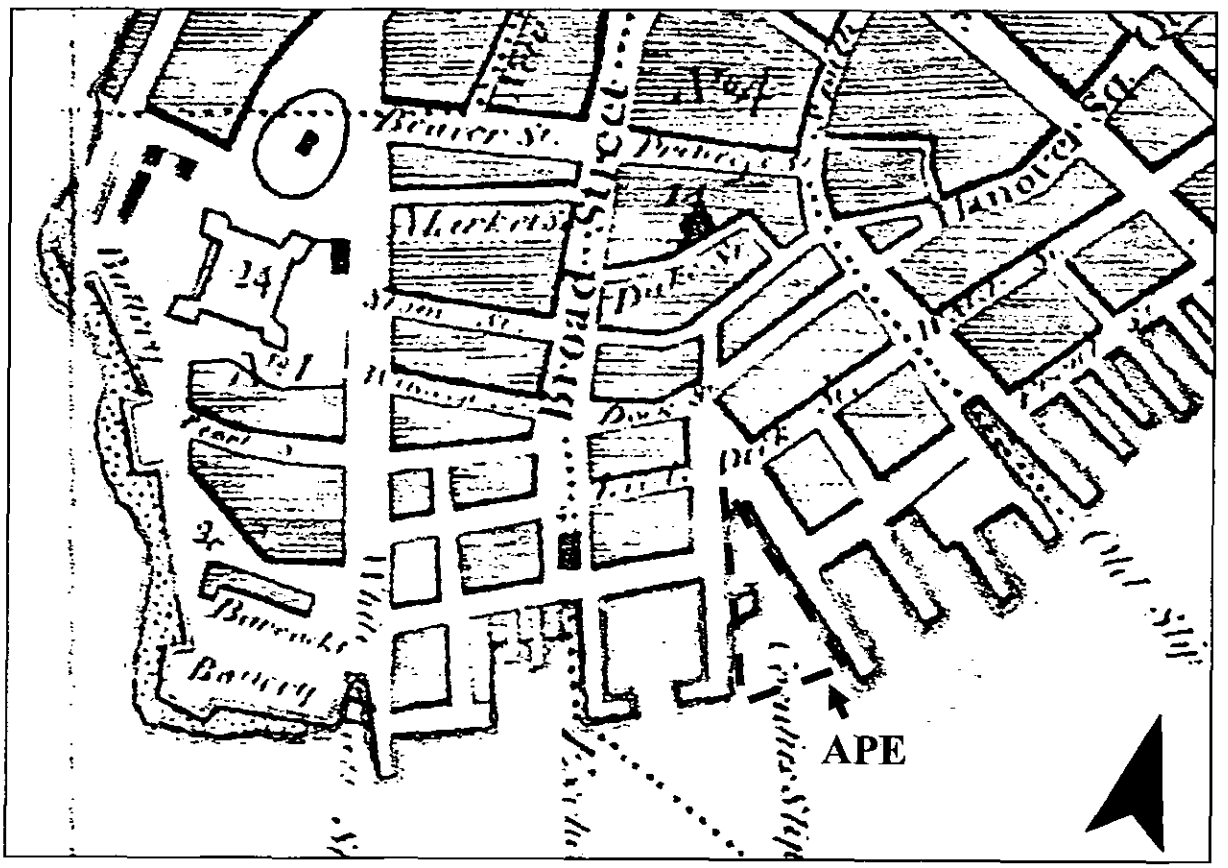


FIGURE 7.1-3

The New-York Directory and register for the Year 1789. McComb 1789.
No scale

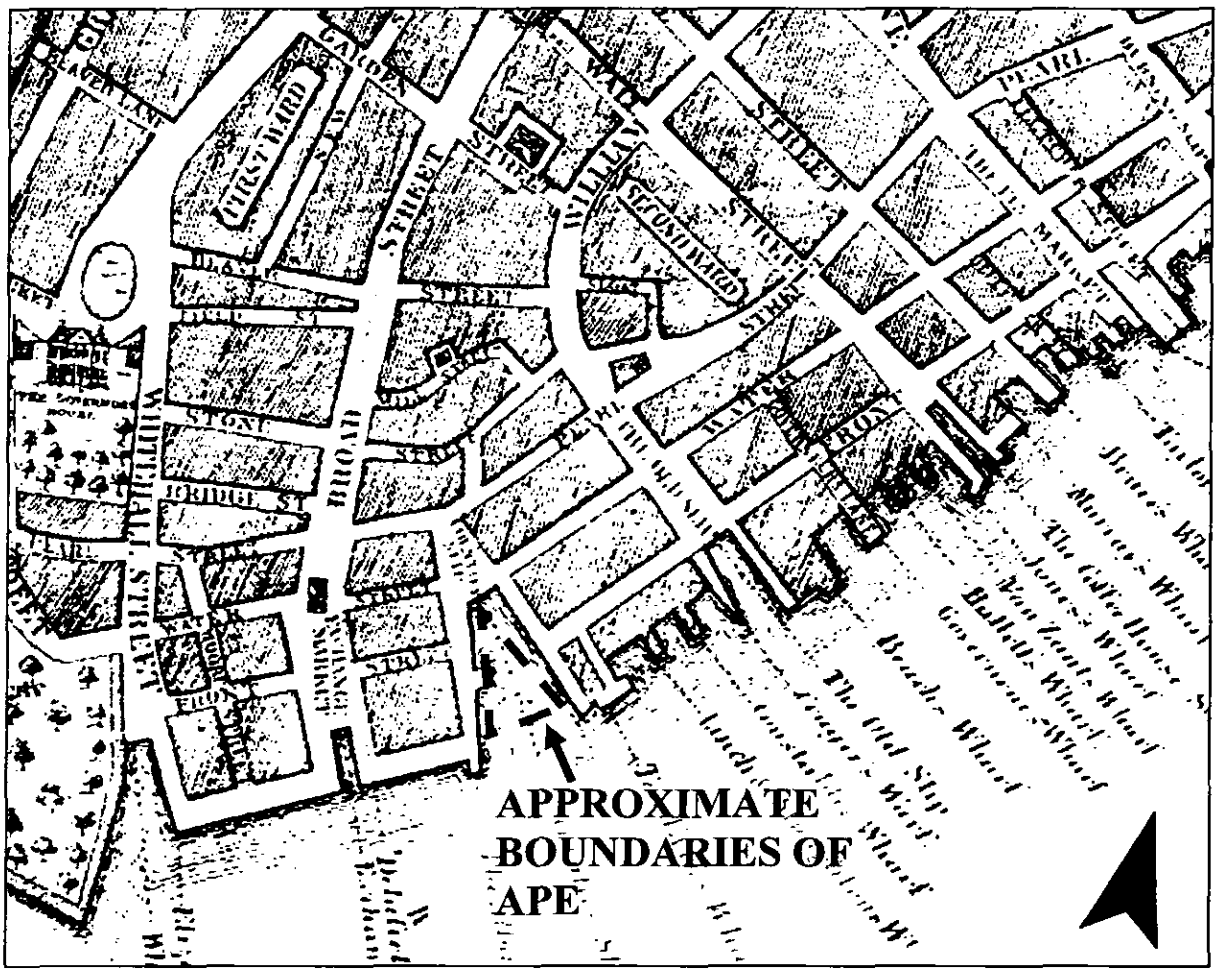


FIGURE 7.1-4

A New and Accurate Plan of the City of New York in the State of New York in North America. Vietnam Veterans Plaza. Taylor Roberts 1797.
No scale

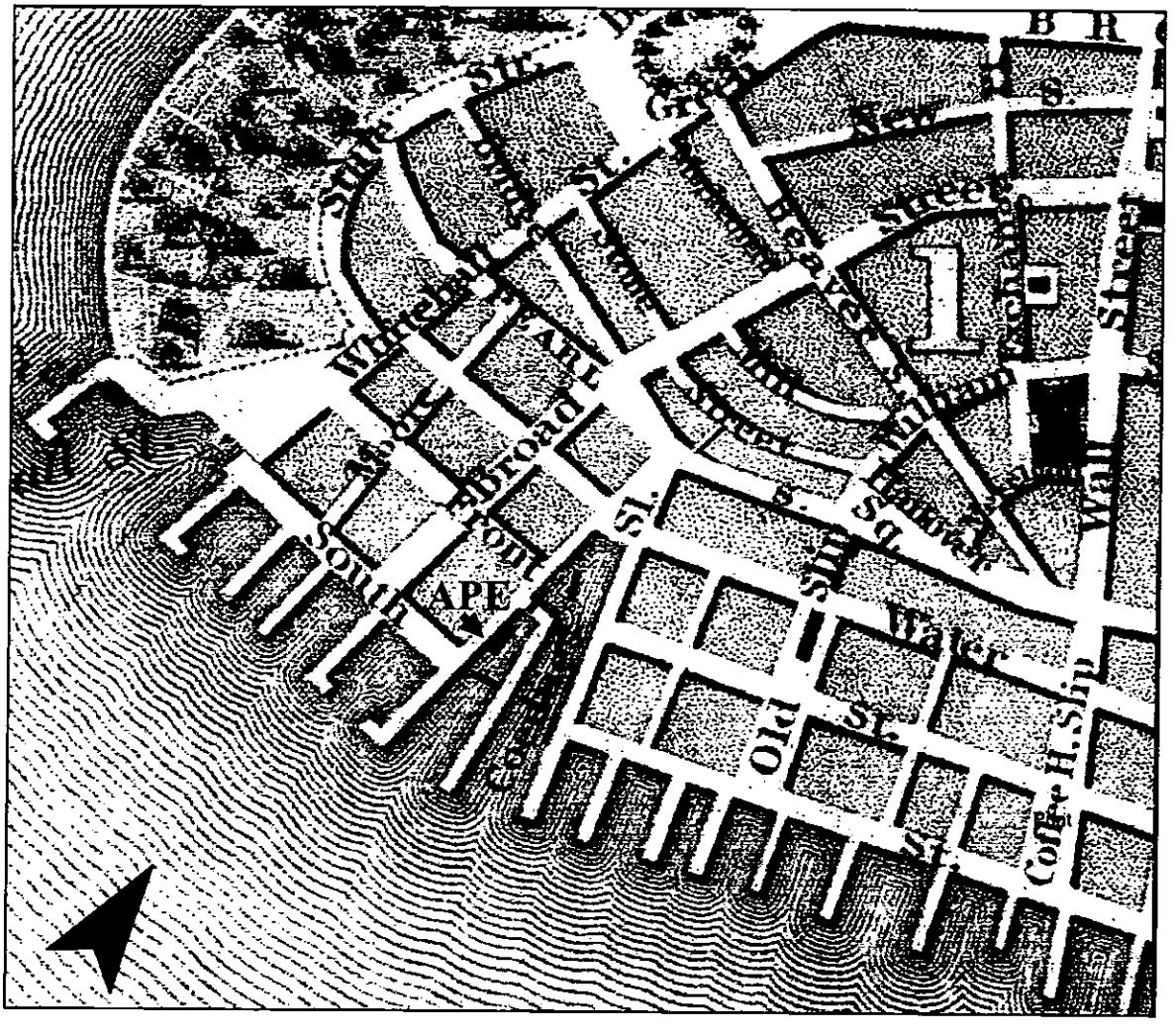


FIGURE 7.1-5

Topographical Map of the City and County of New York.
Vietnam Veterans Plaza. Colton 1836.
No scale



FIGURE 7.1-6

Map of the City of New York Extending Northward to 50th Street.
Vietnam Veterans Plaza. Dripps 1852.
No scale

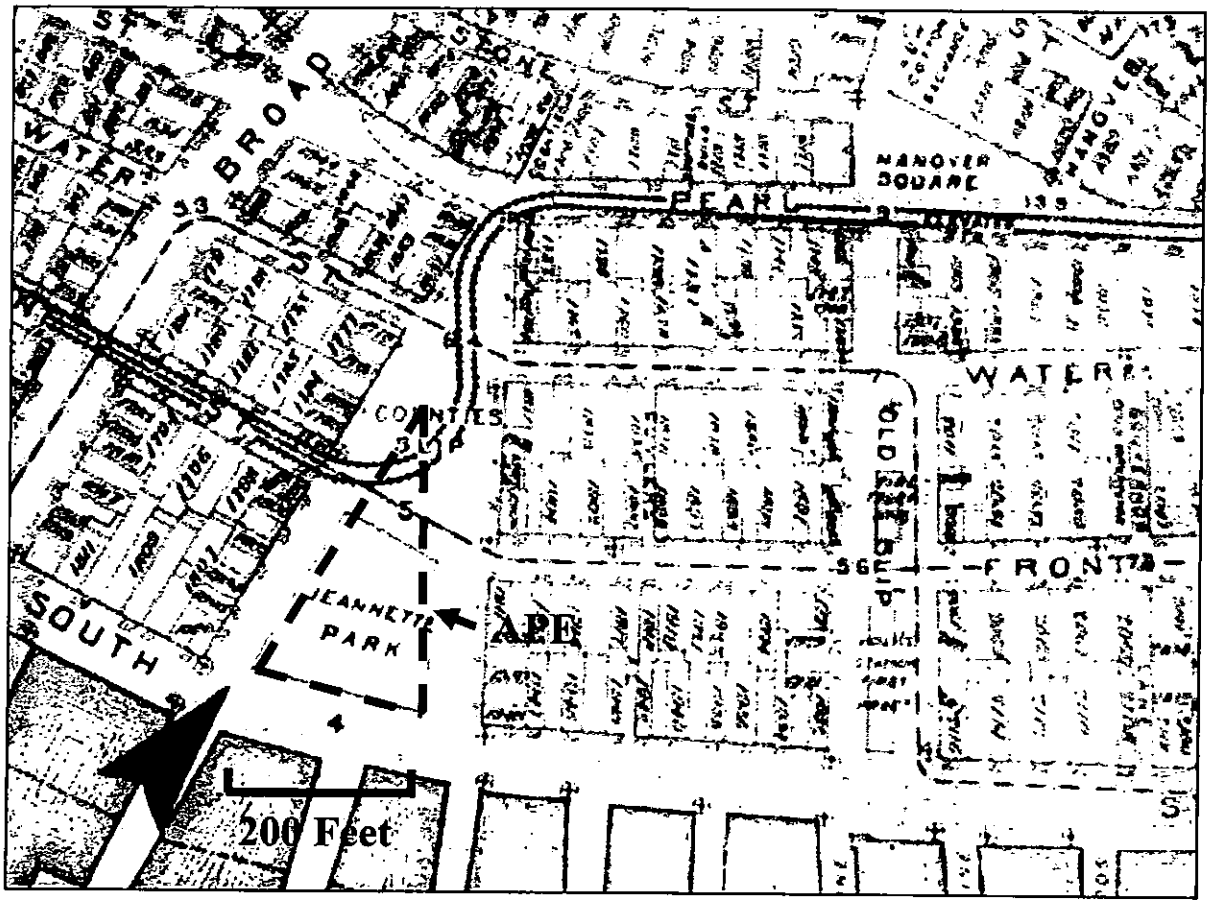


FIGURE 7.1-7

Atlas of the City of New York. Vietnam Veterans Plaza. Robinson 1885.

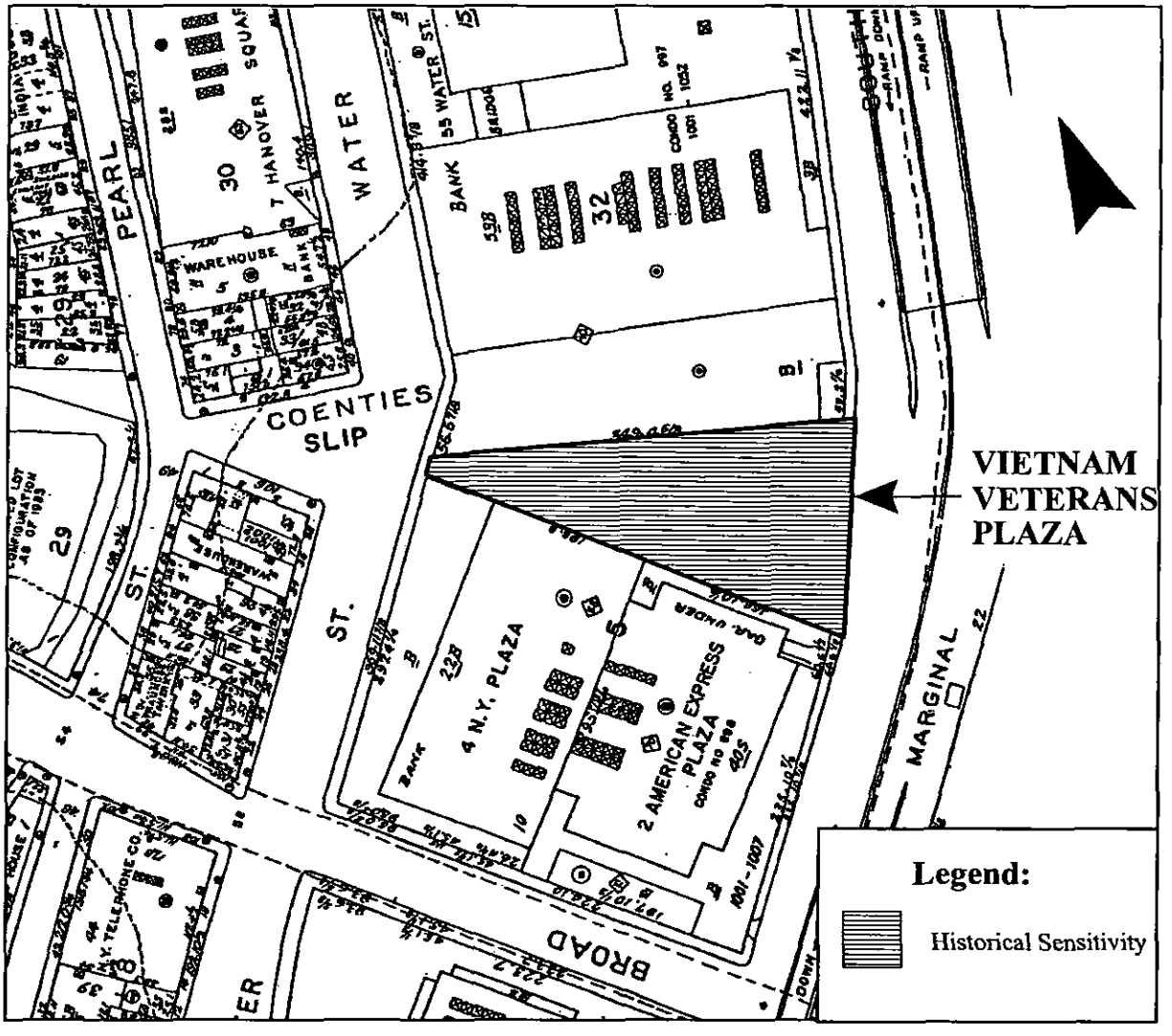
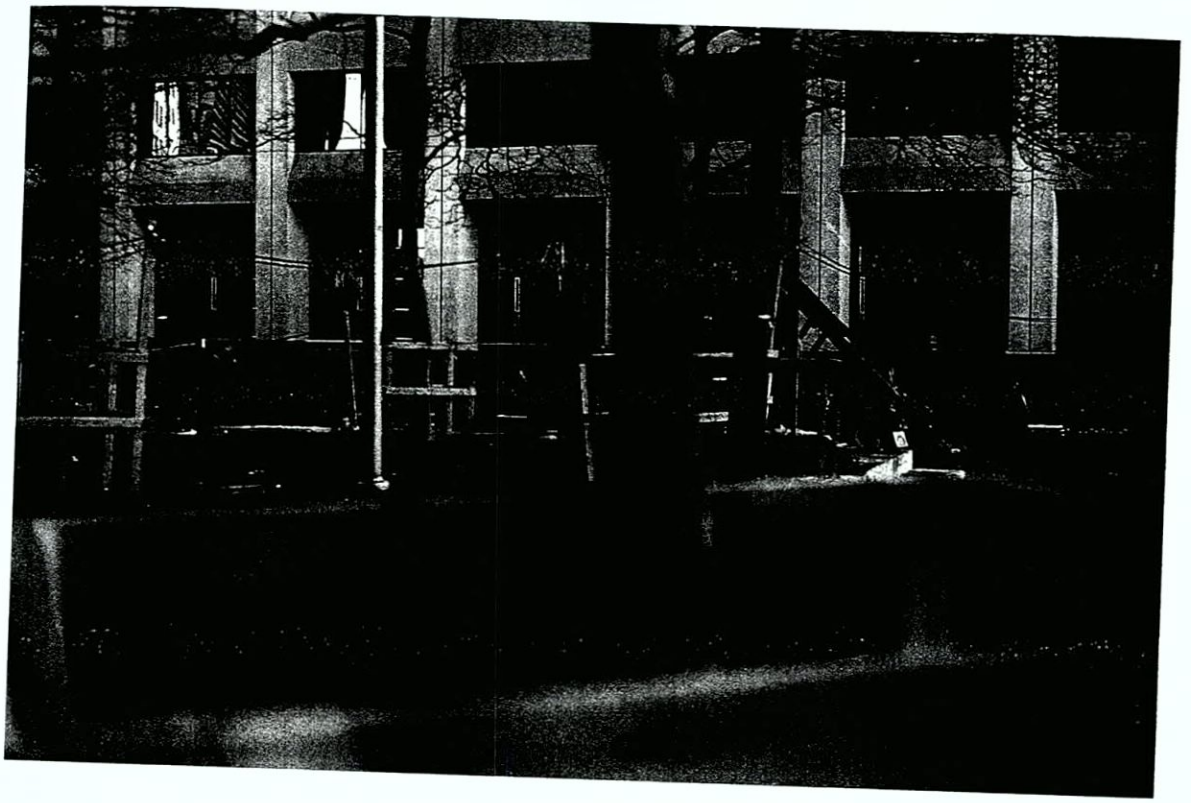


FIGURE 7.1-8

Area of Potential Archaeological Sensitivity.
Vietnam Veterans Plaza. Sanborn 2001.

Approximate Scale: ½ inch = 75 feet



Photograph 7.1-1: Looking north from Water Street towards Vietnam Veterans Plaza towards a potential Shaft Site.



Photograph 7.1-2: Looking northeast towards 55 Water Street at the Vietnam Veterans Plaza. Note sunken space in foreground.



Photograph 7.1-3: From Vietnam Veterans Plaza closer to Water Street, looking northeast towards 55 Water Street.



Photograph 7.1-4: From the corner of Vietnam Veterans Plaza and Pearl Street looking east towards Water Street.

7.1.7 Appendices

7.1.7.1Block History

Vietnam Veterans Plaza between Water Street and South Street was historically Coenties Slip until the park was built above it in the late 19th century. For the following discussion the APE will be referred to by its historic name.

Cartographic History

Castello 1660:	The APE is depicted as land under water.
Miller 1696:	Water Street has been created north of Coenties Slip, and a curving quay wall of wood that enclosed the east basin of the Great Dock (not labeled at this time) is visible just north of the APE. Where Coenties Slip will eventually be is under water.
Lyne 1730:	Coenties Slip has been created crossing Water Street.
Buchnerd 1735:	The APE is unchanged from the Lyne 1730.
Carwitham 1740:	The east dock lies just south of Coenties Slip, and "Long Bridge" and Coenties Slip is still shown crossing Water Street.
Grim 1744/1813:	The APE is unchanged from the Carwitham 1740.
Maerschalck 1755:	The APE is unchanged from the Carwitham 1740.
Montresor 1766:	The Great Basin is still present, but Coenties Slip is no longer shown crossing Water Street, as it had been filled. Southeast of Water Street the APE is still land under water.
Ratzer 1766/67:	Despite the fact that Montresor 1766 indicated that Coenties Slip was filled, on this map it appears to be open for passage inland to Pearl Street.
Holland 1776:	This map shows Coenties Slip as a broad opening in the shoreline which extends as far northwest as Pearl Street.
McComb 1789:	Coenties Slip is shown filled at Water Street, but the APE from Water Street to South Street is still open for passage. Wharves appear to border both sides of the slip, and a small pier had been constructed perpendicular to the southwestern wharf, extending out from it northeastward into the slip. This small pier lies approximately where Front Street will eventually be created.
Taylor Roberts 1797:	The APE is unchanged from the McComb 1789 map. A pier extending out into the East River form the southwest side of Coenties Slip is labeled "The Albany Pier."
Bridges 1803:	Coenties Slip is open for passage from South Street inland as far northwest as Water Street. However, the small pier which was present in the middle of the slip on earlier maps has been expanded. A perpendicular addition to the pier – which parallels the wharves on either side of Coenties Slip - was built extending as far south as South Street. The addition resulted in the pier forming an L shape, with the long addition bisecting Coenties Slip. The entire pier falls within the APE.

Hill 1804:	The APE is unchanged from the Bridges 1803 map.
Commissioners' 1811:	The APE is unchanged from the Bridges 1803 map.
Hooker 1824:	The APE is unchanged from the Bridges 1803 map.
Colton 1836:	The APE is unchanged from the Bridges 1803 map.
Endicott 1842:	Water lines are shown running on either side of Coenties Slip.
Perris 1849/50:	Sometime between 1842 and 1849/50 Coenties Slip was filled between Water and Front Streets. A portion of the pier which appeared on earlier maps was either removed or encompassed in the fill. The section of the pier which previously bisected Coenties Slip now extends off of the shoreline at Front Street and appears to have been elongated. It is not clear if this is the same pier present on earlier maps, or if it is a replacement.
Dripps 1852:	The APE is unchanged from the Perris 1849/50 map, but the pier which bisects Coenties Slip is now labeled "Middle Pier."
Perris 1852:	The APE is unchanged from the Perris 1849/80 map.
Perris 1857:	The APE is unchanged from the Perris 1849/50 map.
Dripps 1867:	The APE is unchanged from the Perris 1849/50 map.
Viele 1874:	This map indicates that the APE was land under water prior to historical development.
Robinson 1885:	By this time Coenties Slip had been filled between Front and South Streets, and Jeanette Park was established on this newly filled land. Trolley lines were present on Coenties Slip between Water and Front Streets.
Robinson 1893:	The APE is unchanged from the Robinson 1885.
Hyde 1913:	The APE is unchanged from the Robinson 1885.
Bromley 1916:	The APE is unchanged from the Robinson 1885.
Bromley 1925:	The APE is unchanged from the Robinson 1885.
Bromley 1955:	By this time the trolley tracks had been removed from Coenties Slip, and two small one-story structures had been built on the north and south sides of Jeanette Park.
Bromley 1974:	The construction of 55 Water Street in the late 1960s included the installation of a basement beneath the northern half of Jeanette Park. The remainder of the park, from Water Street to South Street, is depicted as vacant.
Sanborn 2001:	Since 1974 improvements have been made to the park and it has been renamed Vietnam Veterans Park, but the APE has remained virtually unchanged.

Street Elevations of the APE are as follows:

Data Source	Coenties Slip at Water Street	Coenties Slip at Front Street
1885 Robinson	6.4'	5'
1913 Hyde	6.4'	5'
1955 Bromley	6.4'	5'

Precontact Sensitivity

Vietnam Veterans Plaza, between Water and South Streets, was land under water in the 17th century (Viele 1874). Furthermore, the plaza was formerly the site of Coenties Slip, which was open to passage between Water and Front Streets from ca.1730 to ca.1840, and between Front and South Streets from ca.1730 until it was filled sometime between 1867 and 1885 (Lyne 1730; Maerschalck 1755; Ratzer 1766/67; Holland 1776; McComb 1789; Taylor Roberts 1797; Colton 1836; Endicott 1842; Perris 1849/50; Figures 7.1-1 through 7.1-4). During this period it would have been periodically dredged to allow for the unencumbered passage of ships, which would have extensively disturbed the river bottom.

Soil borings taken from this section of the APE showed miscellaneous fill from the surface down to 16.3' below grade. Fill and sunken timber was encountered to 19.4' below grade, and fine mica sand was reported to 24.4' below grade (Boring 1.1.120, WPA 1937). The lack of any indicators of a precontact living surface, either peat or silt indicative of a habitable environment, suggests that this section of the APE lacks precontact potential. Therefore, these two factors – the lack of potential sensitivity and extensive historical disturbance – indicate that Vietnam Veterans Plaza lacks the potential for precontact resources.

Historical Sensitivity

Although the APE was land under water at the time of European Contact, early efforts to bolster trade in New Amsterdam incited City leaders to concentrate on developing the waterfront. This ultimately led to the construction of the Great Dock in 1675, with its curving quay wall running just south of what is now Vietnam Veterans Plaza (Miller 1696). Gradually, filling allowed for the creation of Water Street just north of the APE by 1730 (Lyne 1730, Figure 7.1-1), although the APE remained open for docking and passage for some time (Ratzer 1766/67; McComb 1789; Taylor Roberts 1797; Colton 1836; Dripps 1852; Figures 7.1-2 through 7.1-6).

The gradual filling that pushed the shoreline southwest left a ships' berthing area or slip open to the East River. This was called Coenties Slip, along with nearby Coenties Alley, which cuts through Block 29 north of the APE on the north side of Pearl Street. The name was derived from that of Conraet ten Eyck and his wife Annetje (antje, Antie, Antey, Entie = Annie, or according to amateur cartographic David Grim, "Jane"), who lived at the north corner of present Water Street (then Little Dock Street) and Coenties Slip, out of the APE. Although it was occasionally referred to as Conrads Alley, an anagram of both their names became popular, resulting in Coenties (Co-enties) Alley, which would have been pronounced co-ENT-yess (Stokes 1915:247,271).

The earliest reference to a wharf at what became Coenties Slip is a request to the mayor's court from the nearby residents to complete the wooden bulkheading of the wharf by Long Mary's tavern on the north side of Pearl Street in 1671. This was followed by the court's authorizing the payment of eight *stuivers* per cartload to the public carters for

filling in the wharf's wooden framework (Stokes 1922:279,281). Pearl Street and this early wharf fall north of the APE.

During this period the most common type of wharf constructed was made of timber. The two types of timber wharves are "crib" and "cobb." Crib wharves are made out of rough timbers that are placed in alternating rows of "headers" (running lengthwise) and "stretchers" (spanning the width). In most cases a floor is built at the base to support the fill placed within. The cobb wharf is an openwork variant of the crib wharf. Its name comes from the cobblestone fill used to fill and sink the wharf. The least common wharf is that made out of wrecked or burned ships. After securing the ship in the desired place, the framework of the hull is filled in much the same manner as a cobb wharf. While the primary function of these wharves was to provide docking space, in some cases they were later used as bulkheads for the continuing landfill along the East River. Most of the bulkheads constructed were of stone, although in some cases timber bulkheads were driven into the river bottom.

The Dongan Charter of 1686 granted all unencumbered lands to the City of New York (Ibid.: 28), which allowed the city to expand eastward 200 feet, to the low water mark in the East River. With the population of Manhattan increasing, soil removed from new building sites was deposited along the lower East River bank, extending the shoreline one block to the east (from Water to Front Street) by 1700 (Buttenwieser 1987:27,31). In 1696, Alderman Cortlandt petitioned the common council for permission to create, at his own expense, a "A Slip or Inlett . . . before the Citty Hall [Stadt Huys]," which was later called Coenties Slip (Stokes 1922:394). Despite the private means by which Coenties Slip was created, it appears to have been for public or at least municipal use. When the city sold the old City Hall in 1699, the common council decreed that the slip itself should "Remaine Continue and Abide for Ever A Publick Slip for the Publick use & Benefitt of the Citty" (Ibid.:417). As a location associated with the City Hall (which contained the jail), the slip and its paved margins were naturally associated with crime and punishment. Coenties Slip below Pearl Street was the location of the city's pillory, cage and ducking stool, from 1692 to 1703 (Stokes 1918:972).

In 1691 a fish market was established at the foot of Coenties Slip near Pearl Street, north of the APE. Although no formal market structure stood on the site for many years, in the 1720s a wood building was erected for this purpose (DeVoe 1862:113). The first Exchange Market was built northwest of the project site near Broad Street and the end of "Heern Gracht," now Broad Street (NYCLPC 1982:97). The second Exchange Market that stood from 1752 to 1797 was on Broad Street between Front and Water Streets, southwest of the APE (Ibid.; Ratzer 1766/67, Figure 7.1-2).

Coenties Slip within the APE remained open for passage from the early 18th century when it was first fashioned into a slip, until it was eventually filled. Between Water and Front Streets, filling occurred sometime between 1842 and 1849/50 (Colton 1836; Endicott 1842; Perris 1849/50; Dripps 1852; Figures 7.1-5 and 7.1-6). The remainder of the APE between Front and South Streets was filled between 1867 and 1885 (Dripps 1867; Robinson 1885). A pier, built between 1776 and 1789, was located near Front

Street within the slip (Holland 1776; McComb 1789; Figures 7.1-3). In 1796 the Common Council decided to grant funds "towards the running out of a Pier in the middle of Coenties Slip from the L to and beyond the new Street of 70 feet wide whenever the said Pier shall be completed (Stokes 1926:1334). The small section of the pier perpendicular to sides of Coenties Slip was eventually removed or became part of the landfill when Front Street was filled between 1842 and 1849/50 (Endicott 1842; Perris 1849/50; Dripps 1852; Figure 7.1-6). The extension of the pier was eventually renamed The Middle Pier, and ran through the center of the slip extending off of the foot of Front Street out to South Street until at least 1867 (Stokes 1928:669; Dripps 1867). This was also removed or incorporated into the landfill when this section of the APE was filled between 1867 and 1885 (Dripps 1867; Robinson 1885; Figure 7.1-7). Since the slip was filled, the APE has been predominantly utilized as a public park. However, in the late 1960s/early 1970s when the extant building at 55 Water Street was built, its basement was constructed southward beneath the northeastern half of the plaza (Sanborn 1974, 2001).

Soil borings taken from Water Street near Coenties Slip contained miscellaneous fill from the surface down to 16.3' below grade. Fill and sunken timber was encountered to 19.4' below grade, and fine mica sand was reported to 24.4' below grade (Boring 1.1.120, WPA 1937).

The cartographic research and review of soil borings strongly suggest that the Vietnam Veterans Plaza APE is potentially sensitive for a number of historic period resources. These could include 19th century fill, and fill retaining devices beneath the entire APE. The Middle Pier, which was built in 1796, may have also been incorporated into the landfill and, therefore, the APE is potentially sensitive for this resource. Resources potentially extend from the surface down to the deepest reported fill at 19.4' below grade, and possibly extend down to what may have been the 17th century river bottom extending down to 24.4' below grade.

7.1.7.2 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

4059 X
4060 X
4061 X
4062 X
4063 X
4064 X
4178 X

* Missing

209 Water St. South Street Seaport HP

* Missing

* 576 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 2003
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
A061.01.0541 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.

ATIONAL REGISTER ELIGIBLE and LISTED ___ Eligible ___ Listed ___ Building Inventory

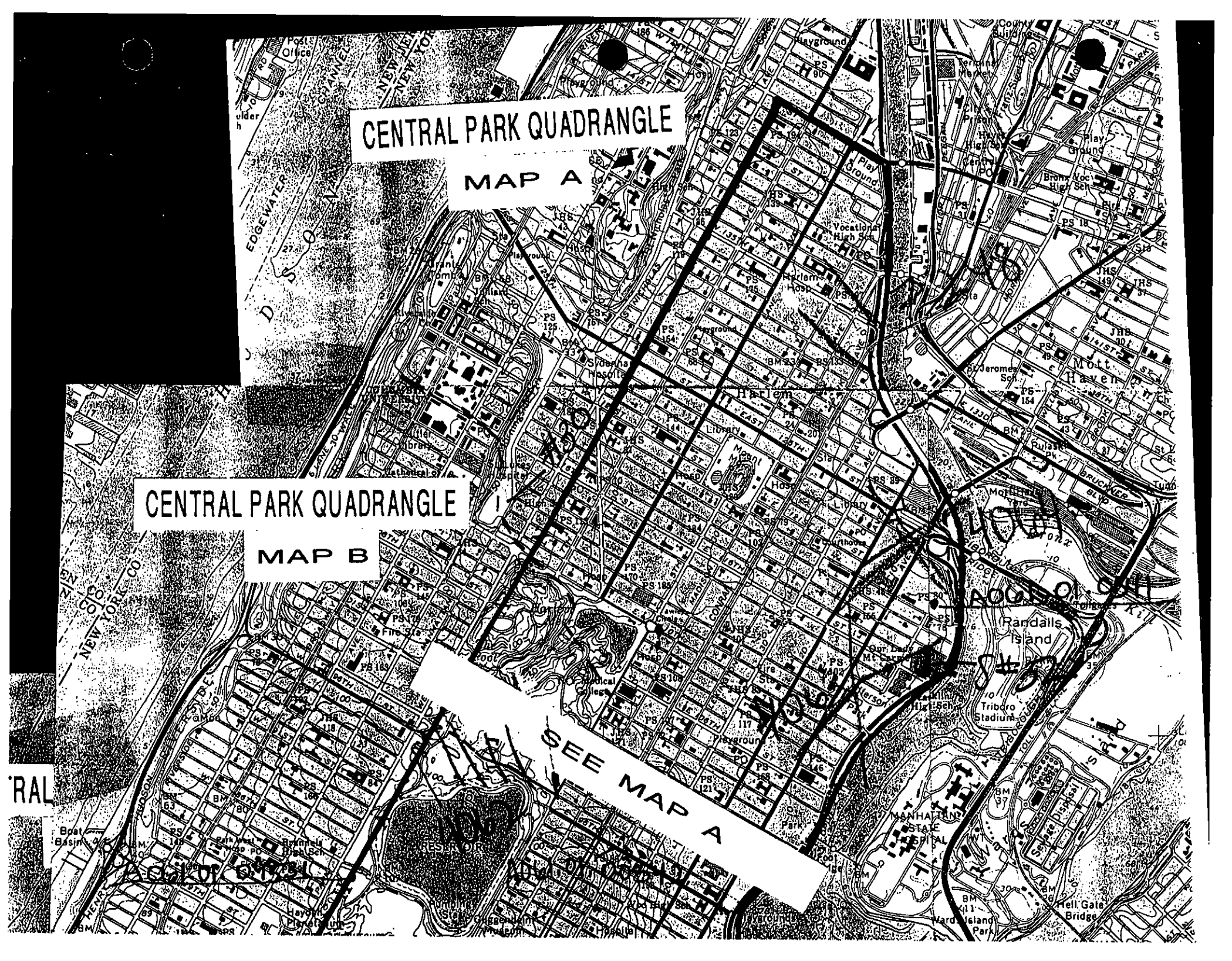
ilding Inventory #	NR Status	Form Copied	Property Description	Reads Checked
06101.000604	NRL	✓	South Street Seaport Historic District 209 Water Street	

EVIOUS SURVEYS <17 previous surveys w/in Radius>

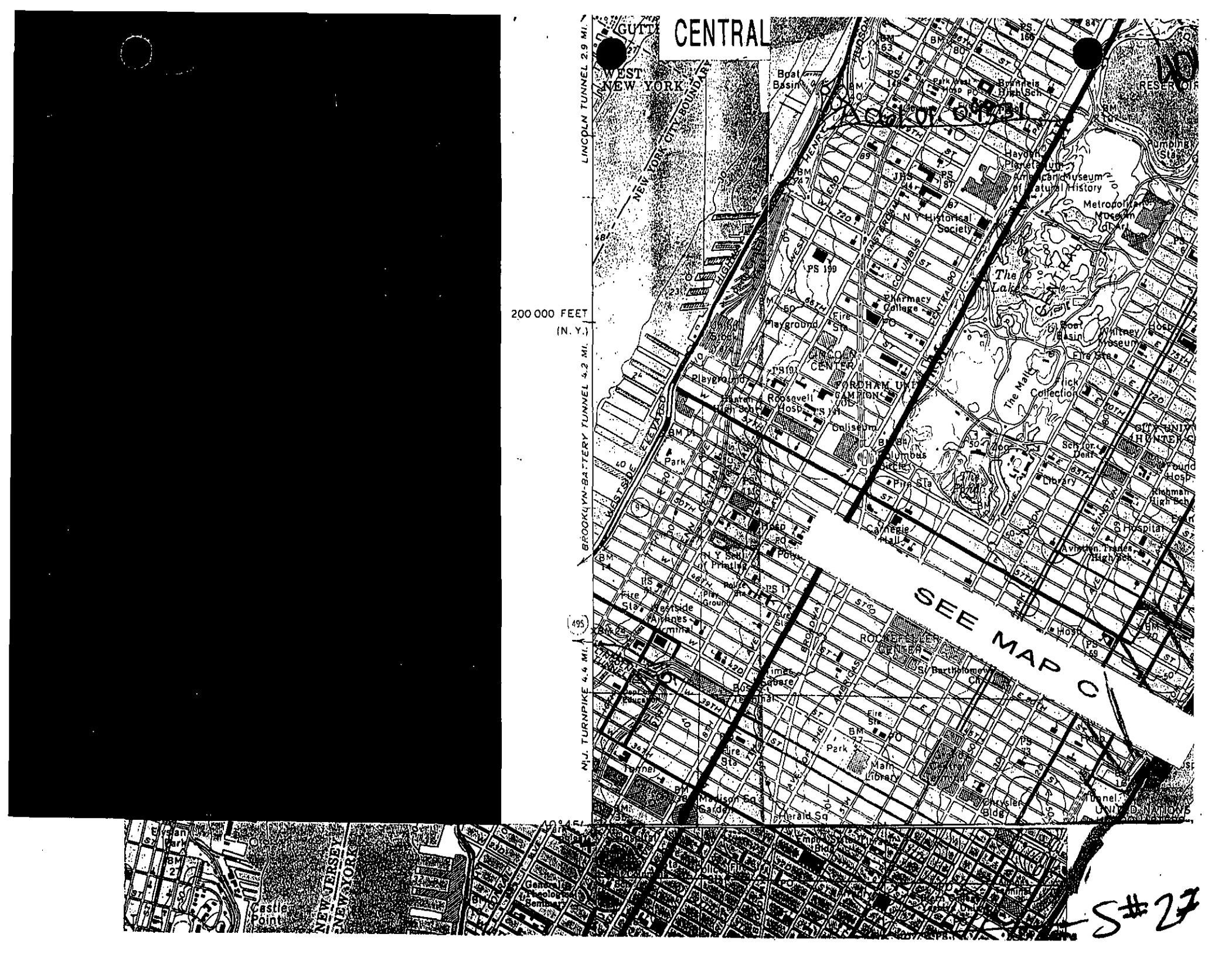
8 Westside Highway Program – 1983
William D. Hersey – 1963 Castle Clinton at the Battery
Broad Street Financial Center Greenhouse January 1985
X
64th Pearl Street Fill 7th Landfill Arnold Pickman & Nan Goth Schild May 1981
Stone Street Historic District 1977, 81 NYC Landmarks Pres. Comm. Tracker
9 Barclays Bank Site – 100 Water St. Berger – 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block. Kardon & Larrabee – Aug 1971

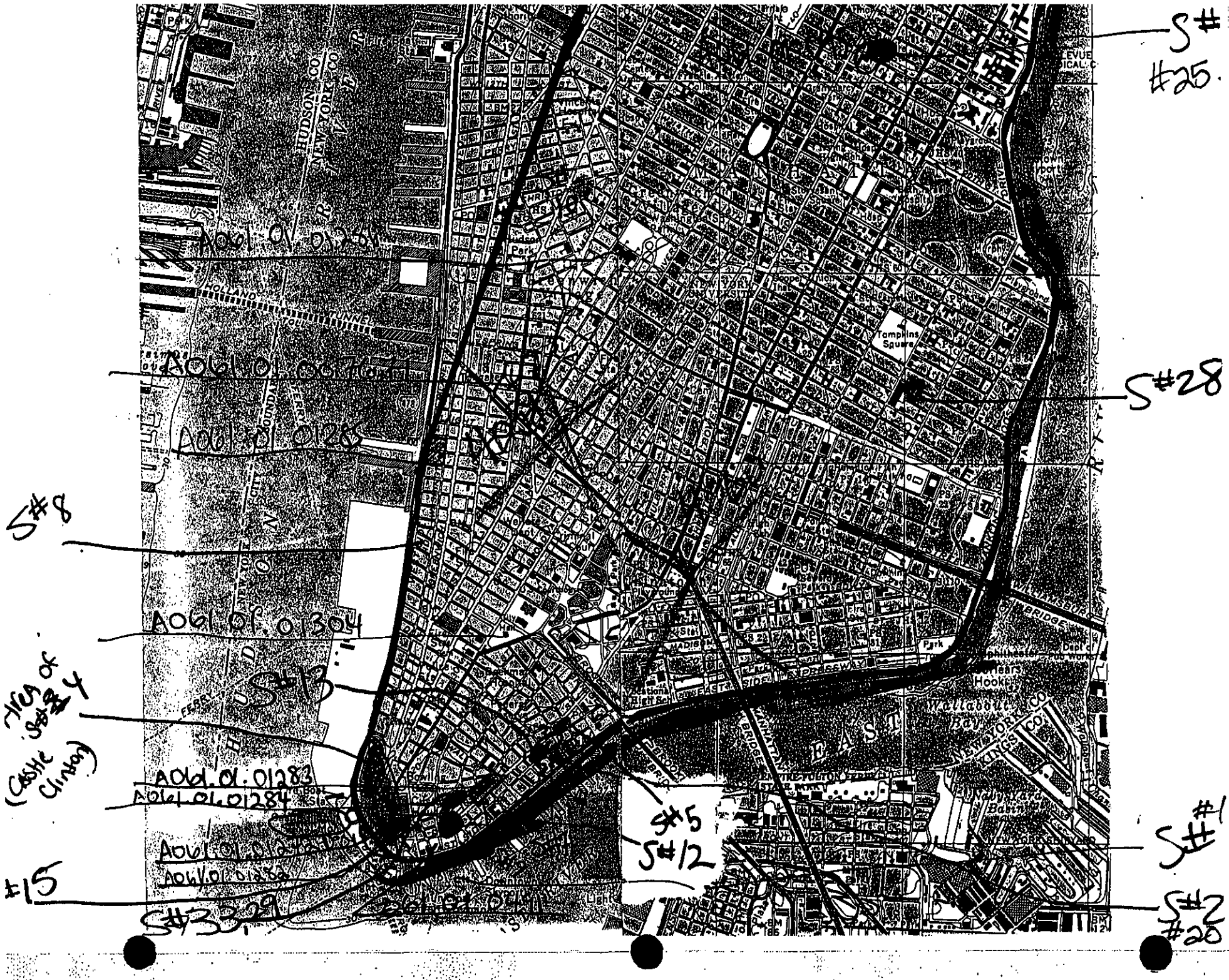
209 Water St. – Schuyler – ? Date
East River Reach – New York Harbor Collection Kardon & Larrabee October 1977
10 Sheridan Square – 1983 – Rutgers University
Lower Eastside Service Center – Louis Berger Jan '98
27 750 Sixth Ave. HPI February 1998
Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1981 / December 1989
32 East River Plaza HPI Sept. 1998
Stone Street Historic District NYC Landmark Pres. Comm. February 1998

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


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A
Harlem
Mott Haven
Randalls Island
Triboro Stadium
Hell Gate Bridge
Ward's Island Park
Boat Basin
Sydenham Hospital
Harlem Hosp
Vocational High Sch
Play Ground
Terminal Market
Bronx Voc High Sch
St Jeromes Sch
Library
Courthouse
Fire Sta
Post Office
Hayden Planetarium
Guggenheim Museum
Hospital
Park
Playground
EDGEWATER
NEW YORK CO
RESERVOIR
TRAL

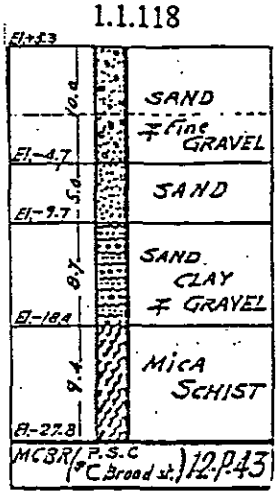

SEE MAP C
S#27
S#25
1000
0
DEPTH CURVES
SHORELINE SHO
4 FEET I
THIS MAP CO
FOR SALE BY
A FOLDER DESCRIBING


CENTRAL
WEST NEW YORK
NEW YORK CITY BOUNDARY
LINCOLN TUNNEL 2.9 MI.
200 000 FEET (N. Y.)
BROOKLYN-BATTERY TUNNEL 4.2 MI.
N.J. TURNPIKE 4.4 MI.
Boat Basin
Brannels High Sch
Hayden Planetarium
American Museum of Natural History
Metropolitan Museum of Art
N Y Historical Society
The Lake
Pharmacy College
Playground
Fire Sta
LINCOLN CENTER
FORDHAM UNIV
Roosevelt Hosp
Coliseum
Columbus Circle
Pire Sta
Carnegie Hall
Whitney Museum
Frick Collection
The Mall
Library
Hospital
Avington Trades High Sch
Richman High Sch
Found Hosp
Park
Westside Airlines Terminal
Play Ground
Police Sta
Times Square
Bus Terminal
ROCKEFELLER CENTER
St Bartholomew Ch
Main Library
Chrysler Bldg
Herald Sq
Madison Sq Garden
Tunnel
UNITED NATIONS
SEE MAP C
Castle Point
NEW JERSEY
NEW YORK
S#27

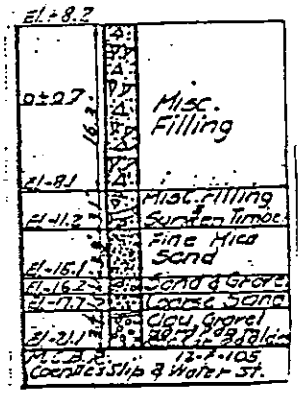

S#
#25.
A061.01.01284
A061.01.00776
A061.01.01285
S#28
S#8
A061.01.01304
S#13
Area of S#4
(Castle Clinton)
A061.01.01283
A061.01.01284
A061.01.01282
A061.01.01282
S#5
S#12
S#1
#15
S#33,29
S#2
#20
HUDSON CO
NEW YORK CO
HOLLAND TUNNEL
Tompkins Square
Wallabout Bay
NEW YORK CO
KINGS CO
EAST
Navy Yard Basin

7.1.7.3 Soil Boring Logs

1.1.118



1.1.120



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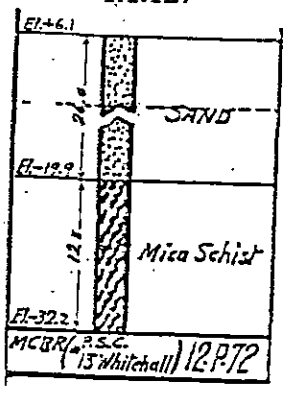
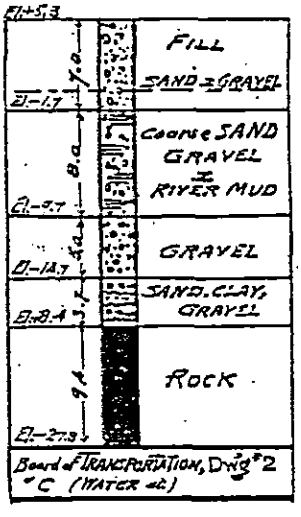
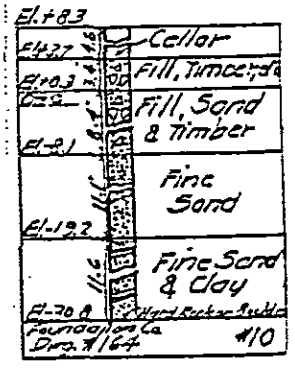


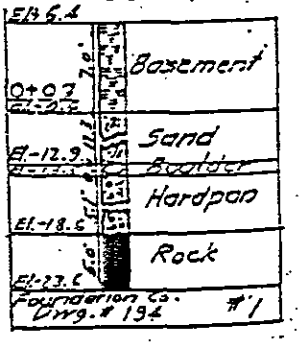
1.1.232



1.1.353



1.1.364



7.2 KIPS BAY SHAFT SITE

7.2.1 Study Area Description

A potential shaft site or staging area may be located east of Second Avenue between East 32nd and 33rd Streets. The Kips Bay APE includes a portion of East 33rd Street from Second Avenue to a point about 535 feet east, adjacent sidewalks, and an access road between East 32nd and 33rd Streets which parallels Second Avenue but is separated from it by a divider (Figure 7.2-1, Photographs 7.2-1 and 7.2-2). This section of the APE along Second Avenue was historically part of Block 938.

7.2.2 Existing Conditions

7.2.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

The Wickquasgeck Road, a Native American trail, ran from the northern to the southern tip of Manhattan. It was well traveled, connecting settlements at the southern part of the island with those in the north (Grumet 1981:68). According to Grumet's map, the trail was west of the project site except for a protrusion at approximately East 57th Street, where it appeared to run near the west side of Second Avenue. Arthur C. Parker also reported traces of occupation north of the APE, in the vicinity 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 there was a knoll on the west side of Second Avenue between 57th and 53rd Streets that might have offered distinct advantages to the precontact peoples (Randel 1820). Grumet shows a stream originating at Fifth Avenue and crossing the trail at about East 50th Street and Second Avenue.

South of the APE a precontact site is shown by Grumet at approximately East 10th Street. It consists of a second Native American trail crossing from planting fields located west of the APE near the Hudson River to a habitation site that Grumet calls "Schepmoes." Again the location is questionable; Schepmoes was not an Indian word, but was rather the name of a prominent Dutch settler who had extensive land holdings in Lower Manhattan. Beauchamp identified the "Kil of Schepmoes," a name mentioned in a 1639 deed, as a stream running from the East 50s to Kips Bay at about East 35th Street (Grumet 1981:51). This sounds very similar to the geography mentioned in the previous paragraph, and they may well be one and the same site.

Archaeological Potential

While much of the APE has experienced extensive subsurface disturbance, sections of the APE are potentially sensitive for precontact archaeological resources (Figure 7.2.-6). The

site was depicted on predevelopment maps as on well-drained, elevated land and in proximity to a fresh water stream and the East River. Although there are no known precontact sites in the immediate vicinity, Kips Bay in the East River was once only a few feet from the eastern end of the APE on East 33rd Street. A stream formerly flowed through the block to the north, and East 33rd Street was near the bottom of the slope leading to this streambed (Viele 1874). The precontact topography suggests that this APE is potentially sensitive for precontact resources, except where extensive subsurface disturbance occurred. If they were once deposited within the APE, they would lie buried beneath historic fill below East 33rd Street which varied between about six and 18' below grade. If precontact resources extended about another five feet below the lowest depth of fill, then resources may be located between about six and 23' below grade within this section of the APE.

7.2.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

Previously inventoried historic sites in the area include NYS Site A061.01.009530, where an archaeological investigation of the Bernard M. Baruch College Site B was undertaken on the block between East 24th and 25th Streets, and Third and Lexington Avenues, about seven blocks south of the APE (Yamin et al 1997). Excavations undertaken at Site B, where a row of historic backyards was documented, found a subsurface drainage network with piping and slate-capped brick drains, as well as cobbled surfaces dating to the 19th century (Ibid.).

Archaeological Potential

The Kips Bay APE was part of a large tract of land that stretched along the East River between East 41st and East 29th Streets and was owned by the Kip family. Jacob Hendricksen Kip was the first to build on it and is reported to have constructed his mansion overlooking Kips Bay in 1655. This house was destroyed by fire in 1696 but was rebuilt. According to Riker's *History of Harlem,* the mansion stood on the south side of East 35th Street, two blocks north of the APE, about 100 feet east of Second Avenue (Stokes 1928:112).

Elbert Kip was allocated a number of parcels from his father's estate shortly after 1804, including the APE. He built his house on the south side of what is now East 33rd Street on both the 1807 Commissioners' Map and the 1820 Randel map, within the APE (Figure 7.2-2). The larger building, probably his dwelling, had a peaked roof and porches (or possibly a Dutch roof line), and its long side faced the river. A smaller structure, probably a barn or stable, was west of the house, also in the current roadbed within the APE. A large pier jutted out into Kips Bay opposite the house south of East 33rd Street. It is not clear how long the Elbert Kip structures remained in the APE; two similar structures were in the same location in 1850, surrounded by a garden wall, but they were either relocated or demolished by 1857 (Perris and Hutchinson 1850/1851; Perris 1857/1862).

In the early 1850s, the section of the APE within the city block, then number 938, was part of the "43 Lots" of the Kips Bay Farm. After it was sold and subdivided, development began by 1852, when both corners of Second Avenue were occupied by structures (Dripps 1852). By 1869, the lots along Second Avenue had been sold off and each held a four-story building within the APE, and lots fronting East 33rd Street were developed between 1860 and 1880.

It is probable that these dwellings were served by city sewer lines, since sewers were mapped on Second Avenue in 1849 (WPA Project 1936: No. 609). Water lines were mapped for the APE by 1865 and may have been available earlier (Viele 1865). After the buildings were removed, most of their back yard areas, which fell south of the APE, were covered by a large building with a deep basement. Therefore, this section of the APE was found to lack historic sensitivity due to lack of potential deposition or later disturbance (Appendix 7.2.7.1). The back yards of both the ca. 1852-1860 buildings which stood on the block along Second Avenue, as well the ca. 1860-1880 buildings along East 33rd Street, have since been buried under the Kips Bay Plaza underground parking and towers and are either destroyed or partially protected. In any case it is highly probably that city water and sewer were available at the time they were built, diminishing the possibility of archaeological resources such as privies and wells/and or cisterns.

In contrast, the early 19th century Elbert Kip estate, with house, yard and outbuilding, were once located within the APE on East 33rd Street and associated features may still be present (Figure 7.2-6). It is probable that wells, privies and/or cisterns were associated with this estate and that portions of them may remain extant under the utilities beneath the roadbed. Wells could potentially be as deep as 40', the depth of the water table, and possibly deeper. Therefore, deeper levels below introduced fill, which ranges from six to 18' below grade, may have been protected from the effect of utilities installation.

7.2.3 Summary of Archaeological Potential

The 33rd Street roadbed portion of the APE is potentially sensitive for precontact resources. Other sections of the APE have been too disturbed to have retained potential sensitivity. Precontact resources would be located below fill levels on East 33rd Street, which soil borings report range from about six to 18' below grade. Therefore, precontact potential may exist below this depth for another five feet, indicating that resources may lie between about six and 23' below grade (Figure 7.2-6).

In addition, the early 19th century Elbert Kip estate, with house, yard and outbuilding, were once located within the APE on East 33rd Street (Figure 7.2-6). It is highly probable that wells, privies and/or cisterns, were associated with this estate and that these shaft features may remain extant under the utilities beneath the roadbed. Wells can potentially be as deep as 40' below grade, and possibly deeper, and thus would be below the maximum 18' of fill reported in soil borings. Therefore, there may have been deep levels which were protected

from the effect of utilities installation. Potential shaft features may be located beneath the fill, which ranges between six and 18' below grade, to about 40' below grade, the depth of the water table, and possibly deeper.

7.2.4 Proposed Project Effects

Proposed construction plans call for the creation of a shaft to allow for the insertion of boring machines or for spoils removal. The shaft would measure about 30 feet by 50 feet and a staging area between 40,000 and 80,000 square feet would be needed. Since the Kips Bay Shaft Site is potentially sensitive for precontact resources that are estimated to lie between six and 23 feet below grade, and early 19th century residential features beneath fill layers ranging from six to 18 feet below the surface down to about 40 feet below grade, proposed shaft excavations would affect these resources. Any surface work necessary to create the staging area would probably be shallow and, therefore, would probably not affect potential prehistoric and historic resources.

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.

7.2.5 Recommendations

It is possible that the APE was occupied or otherwise used by Native Americans during the precontact period, and certain that the APE was occupied during the historic period. There is a moderate likelihood that precontact resources, if they were present, still exist underneath the fill that covers the East 33rd Street section of the APE. Additionally there is a moderate to high likelihood that early 19th century historic remains exist in that same area.

Because potential resources relating to the precontact period and the early19th century may be present beneath the Kips Bay APE, further investigations of subsurface conditions may be necessary. Additional soil borings, as an indicator of both potential precontact or historic sensitivity, would help to establish the potential depth of resources to verify that the effect assessment is correct. 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 sites 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 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 determine the presence of cultural resources, and if such resources exist, establish their horizontal and vertical extent, the integrity of the site, and potential significance with respect to eligibility requirements 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 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.

7.2.6 Figures and Photographs

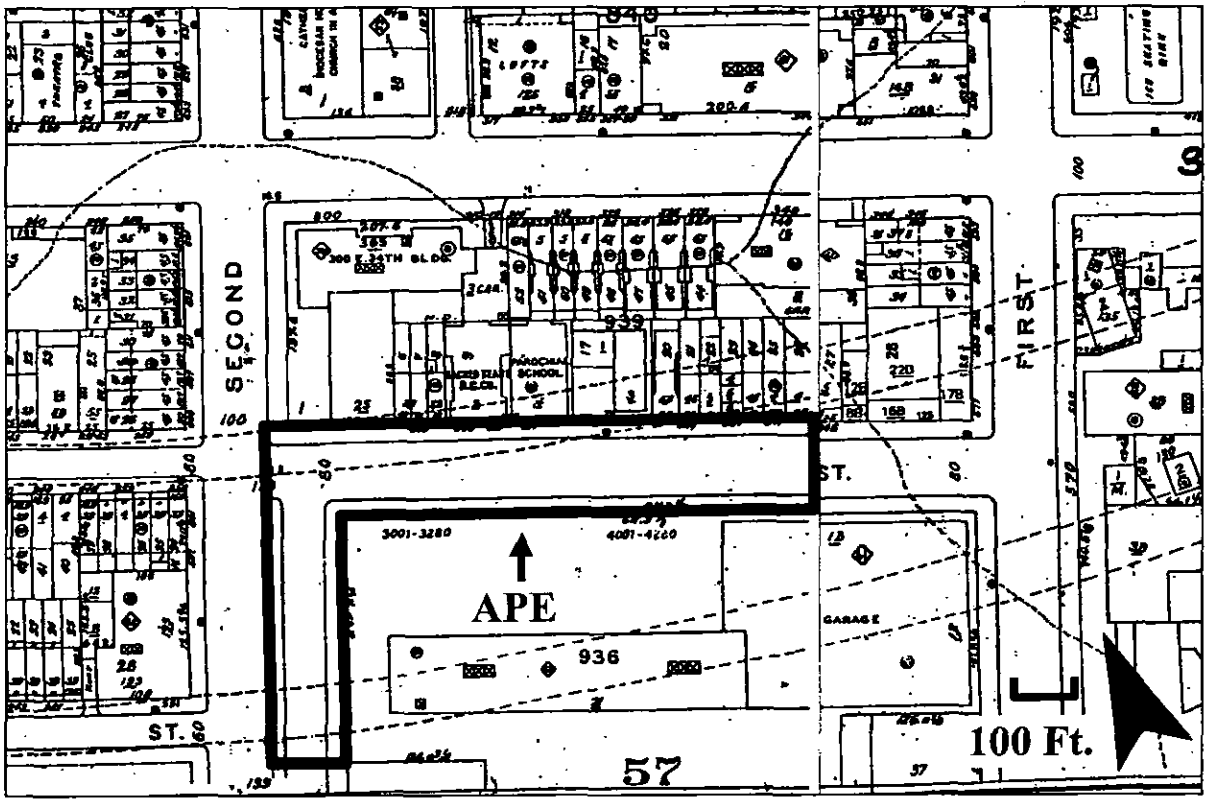


FIGURE 7.2-1

Insurance Maps. Kips Bay Shaft Site. Sanborn 2001.

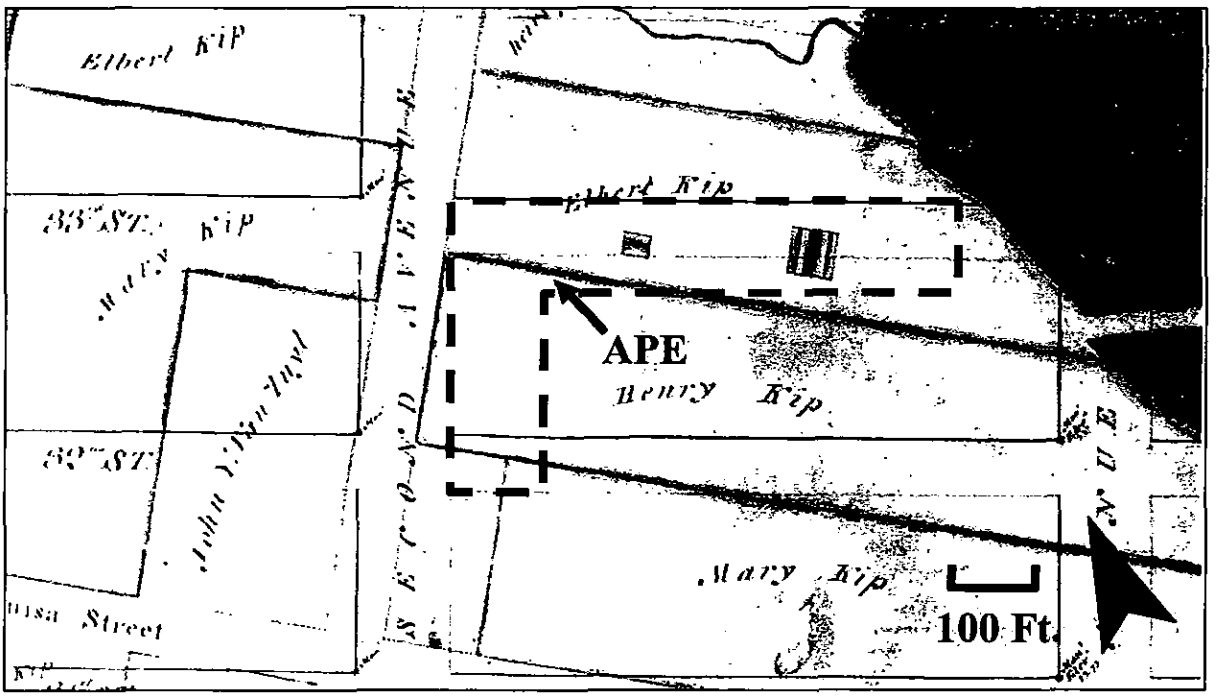


FIGURE 7.2-2

Farm Maps. Note the Elbert Kip house, barn and dock, with Kips Bay and stream at upper right. Randel 1820.

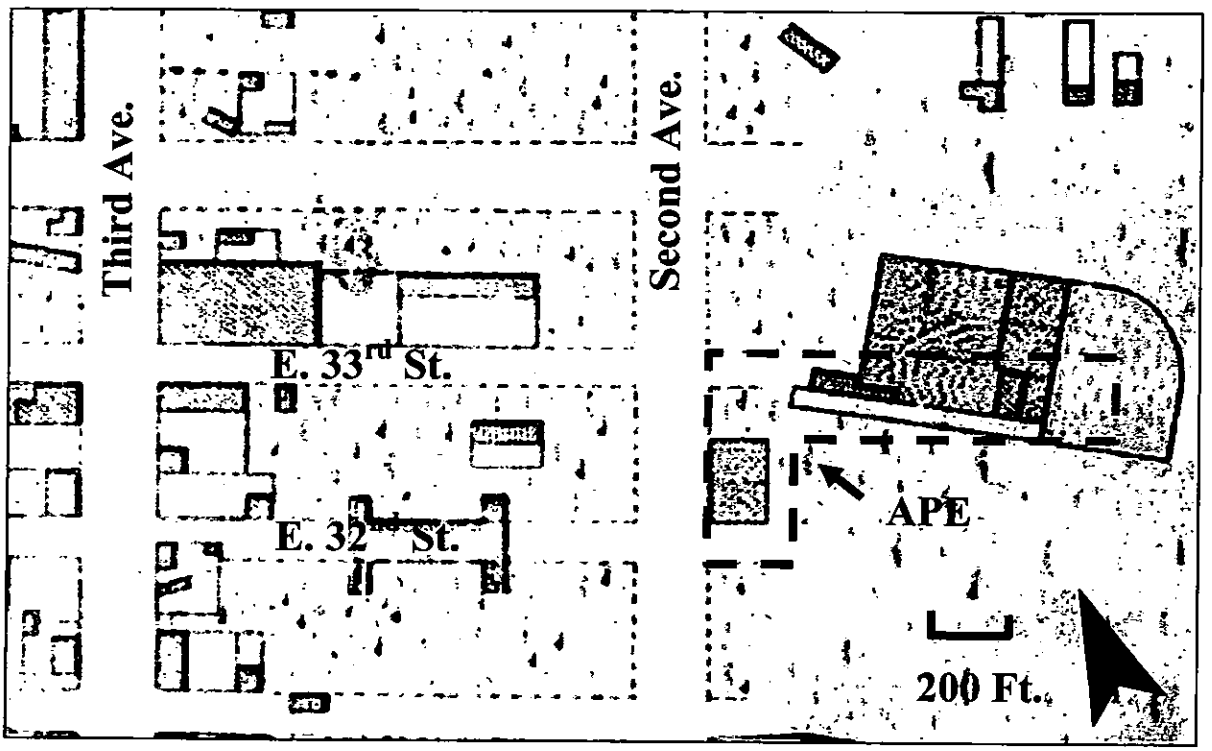


FIGURE 7.2-3

Maps of the City of New York. Note Elbert Kip house in APE.
Perris and Hutchinson 1850/51.

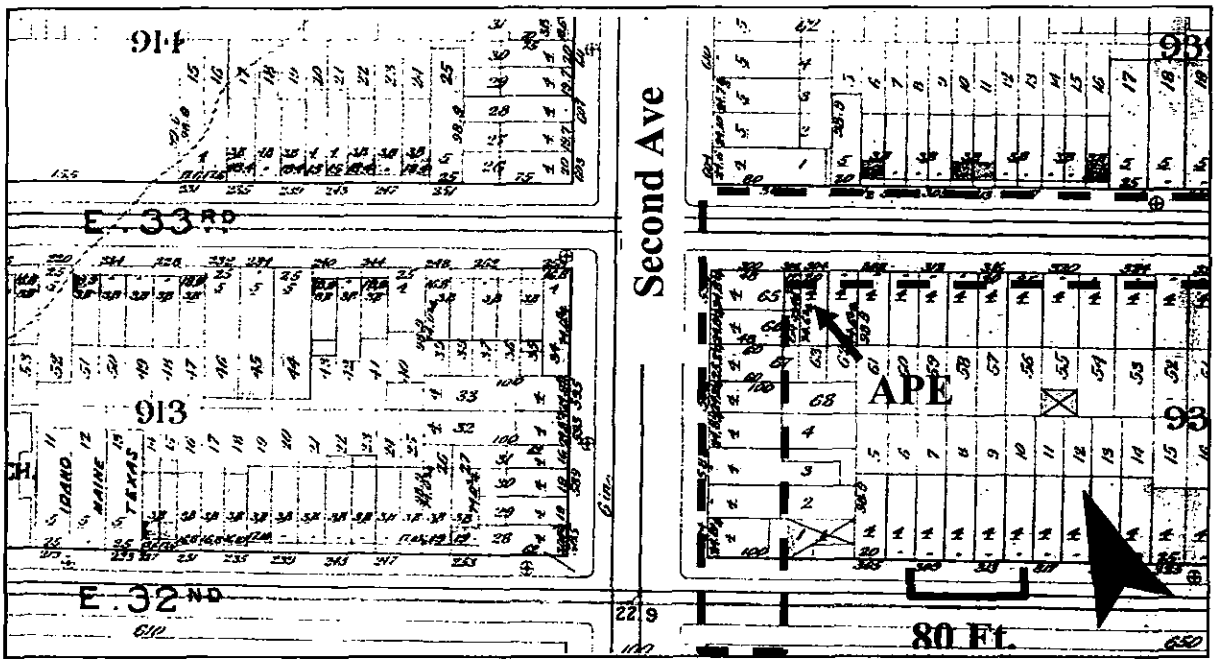


FIGURE 7.2-4

Atlas of the City of New York, Borough of Manhattan. Kips Bay Shaft Site. Bromley 1902.

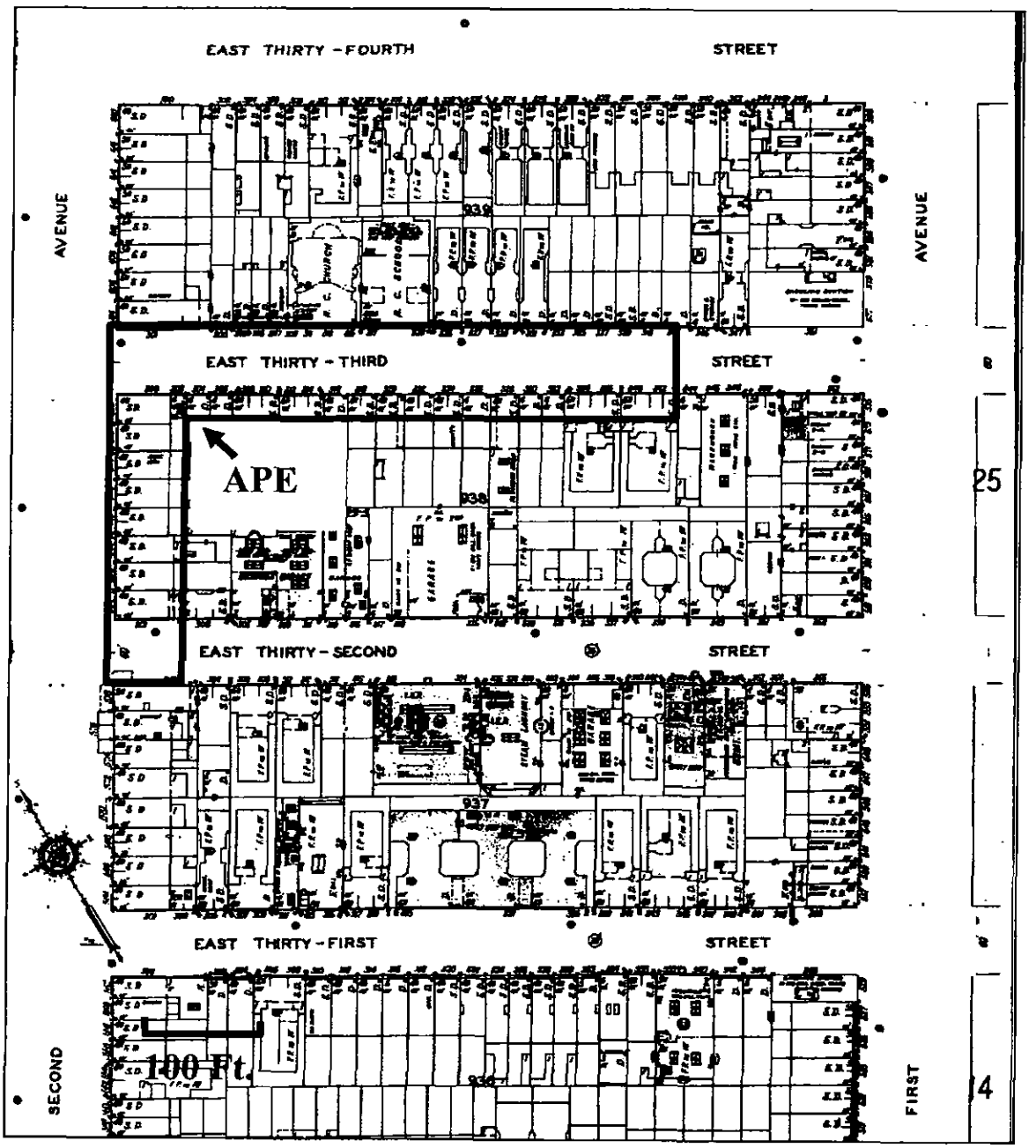


FIGURE 7.2-5

Insurance Maps. Kips Bay Shaft Site. Sanborn 1929.

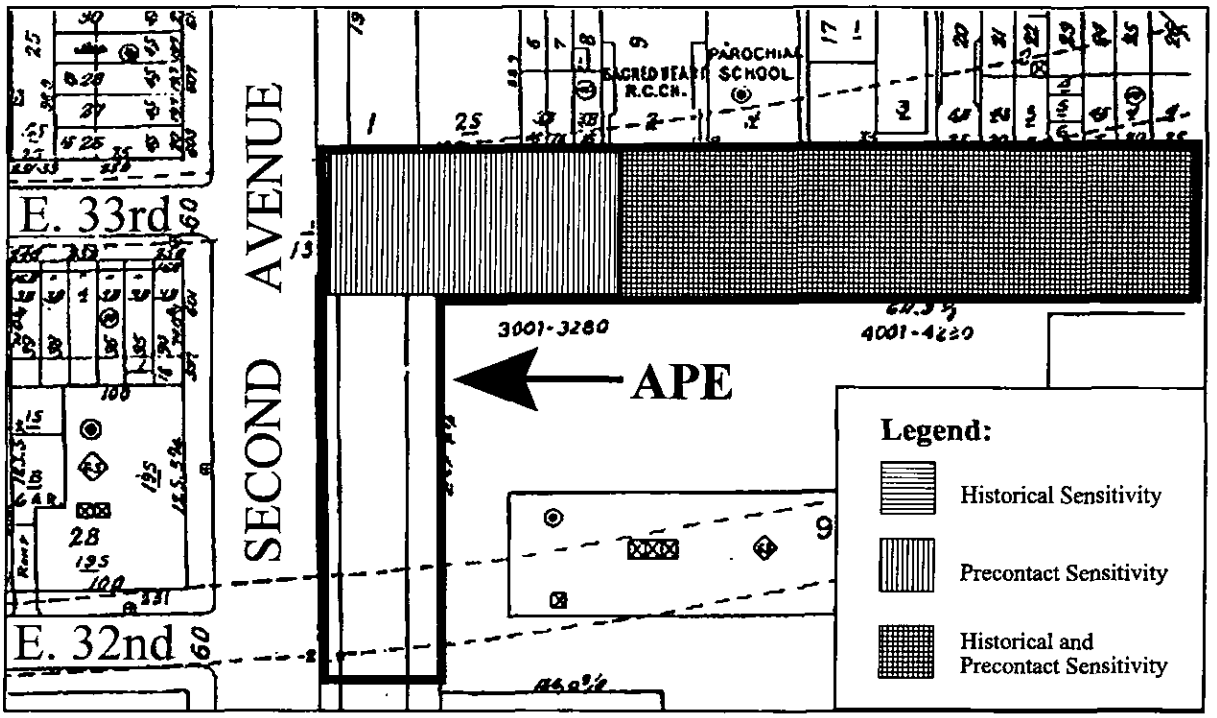
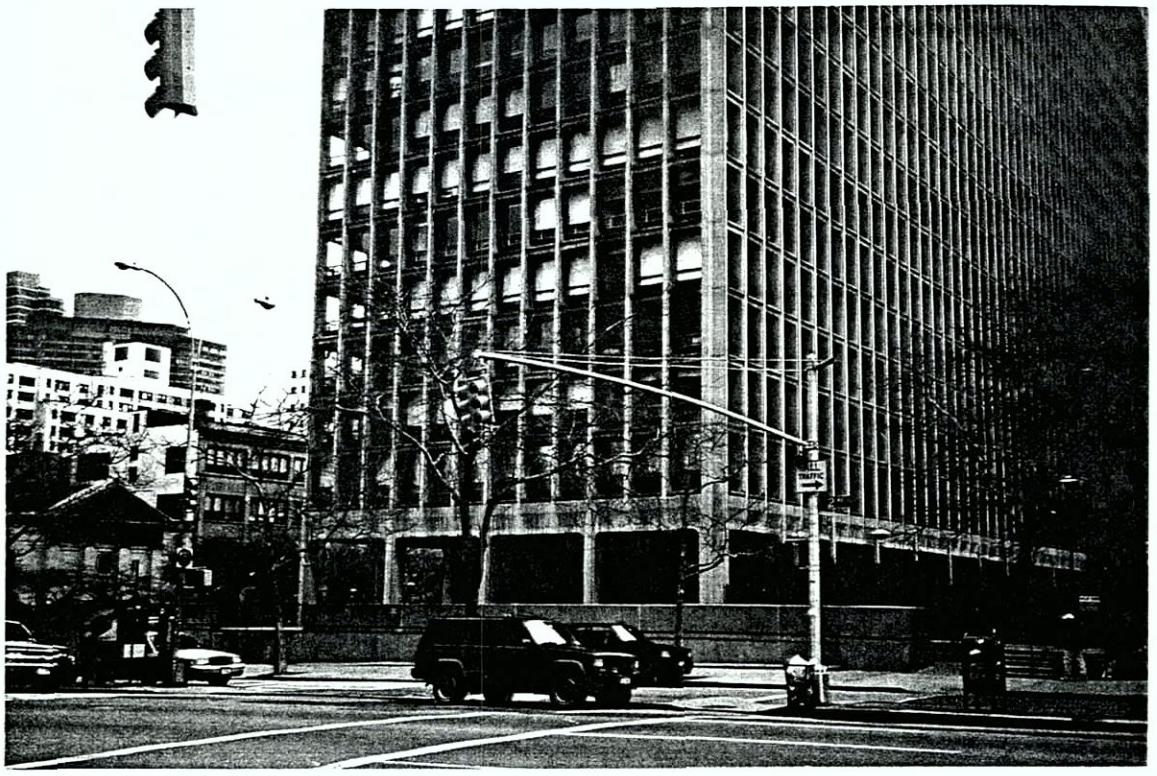


FIGURE 7.2-6

Area of Potential Archaeological Sensitivity.
Kips Bay Site. Sanborn 2001.

Approximate Scale: ½ inch = 60 feet



Photograph 7.2-1: View to the northeast from the corner of East 32nd Street and Second Avenue towards Kip's Bay Plaza.



Photograph 7.2-2: View to the southeast towards East 33rd Street across from Second Avenue. Note underground parking garage with entrance ramp in front of Kip's Bay Plaza.

7.2.7 Appendix

7.2.7.1 Documentary Assessment of APE

Cartographic History

Ratzer 1766/1767: The APE is labeled "Kep's Bay," and a stream is prominent, but no streets are shown.

Commissioners 1807: Second Avenue and East 33rd Street are both mapped in, with a dock on the East River south of East 33rd Street, and one large and one small Kip building on East 33rd Street in the APE.

Randel 1820: The same dock and two buildings are shown, and the parcel within the APE is labeled Elbert Kip.

Perris and Hutchinson 1850/1851: Part of Kips Bay has been filled in and the shoreline east of the APE has been straightened. There is now a smaller dock off the shoreline. A walled yard or garden is in place along the east side of Second Avenue occupying the southern two-thirds of the block. There are still two structures in the roadbed of East 33rd Street, but their footprints are different, and they are surrounded by walls lined up with the old farm lines, and gardens. The remainder of the APE is vacant.

Dripps 1852: There are now structures on both corners of the block on Second Avenue, and a large and a small structure just north of the East 33rd Street roadbed. The footprint of the large structure lines up with the street. It is not clear if the former buildings have been moved or are new, or if a different map maker accounts for the discrepancy.

Perris 1857/1862: The section of the block fronting Second Avenue within the APE has been divided into eight lots, each with a brick dwelling flush with the street and a back yard, except for the two most northerly lots, which have been combined into one lot, with a dwelling on the corner and a stone structure on the lot just south of it. The block fronting East 33rd Street is lined with brick structures and two stone ones on smaller lots, all with back yards just south of the APE.

Viele 1874: Buildings are not indicated on this map, but Kips Bay has been filled in east of First Avenue. A large rock outcrop is shown on East 31st Street, in the center of the block, which slopes down to a stream along East 34th Street. Second Avenue is fairly flat at the bottom of the slope, and East 33rd Street slopes slightly east toward the river.

Robinson 1880: Brick buildings line both Second Avenue and East 33rd Street, except for the back yards of the two corner lots. A 12" water main is shown on the west side of Second Avenue, with a 6" water main on the north side of East 33rd Street. Second Avenue is paved in granite or Belgian block, and East 33rd Street is cobblestone. A sewer line is more or less centered on both Second Avenue and East 33rd Streets.

The elevation is 15.6' at the center of the intersection. The APE is shown as part of the 43 Lots of Kips Bay Farm.

Robinson 1885: The buildings are much the same as in 1880, except that the backyard of the corner lot now has three buildings on it. The Second Avenue el is in place. The area is still called Kips Bay Farm, and the intersection elevation at Second Avenue and east 33rd Street is still 15.6'.

Sanborn 1890: The APE is the same as it was in 1885, but the buildings are shown to be four stories high.

Bromley 1902: The APE is the same as in 1890, but sidewalks are shown and the elevation at southeast corner of Second Avenue and East 33rd Street is now 18.5', which is about three feet greater than it was in 1885.

Sanborn 1910: The APE is much the same as it was in 1890 and 1902, except that six-story apartment buildings have been built at 308-314 and 334-342 East 33rd Street. Information has been added indicating that the dwellings along Second Avenue all have basements and nearly all have stores on the ground floor. No basements are indicated on East 33rd Street for structures at #302-306, 326 and 330-348. The Block is now numbered 938.

Bromley 1925: The APE is the same as above except that the building at 346 East 33rd Street is labeled as a warehouse and East 32nd Street now has several large garages.

Sanborn 1929: The APE is same as above, except that some commercial occupations (e.g. upholsterer, carpenter. plumber, and cabinetmaker) are labeled along East 33rd Street.

Bromley 1934: The APE is the same as it was in 1925.

Sanborn 1951: The APE is the same as it was in 1934 except 592 Second Avenue is vacant and 326 East 33rd Street has become a convent (Sacred Heart Church and a Parochial School are across the street).

Bromley 1955: All buildings on Block 938 are gone except for three in the northeast corner of the block that was originally under the waters of Kips Bay, outside of the APE. The corner elevation is still 18.5'.

City of New York 1957: This map shows a change in the street system. The building line has been pushed back 38.74' on the east side of Second Avenue and 20' on the south side of East 33rd Street.

Bromley 1974: The building line has been set back approximately 80' along Second Avenue and East 33rd Street has been widened from 60' to 80', with all 20' being removed from the south side of the street. The block is now occupied by a one-story garage with a basement that runs the length of East 33rd Street, with a 21-story apartment building south of it. The block is now labeled 936, because it is now part of a large consolidated block running from East 30th to East 33rd Streets. The corner elevation is still 18.5'.

Precontact Sensitivity

Since Native American occupation is known to have occurred on or near the same locations as 18th and 19th century historic settlement, and since there was a stream along what is now East 34th Street emptying into Kips Bay near the eastern end of the APE, there is the potential for precontact archaeological resources. The site was depicted on predevelopment maps as on well-drained, elevated land and proximity to a fresh water stream and the East River. Although there are no known Indian sites in the immediate vicinity, Kips Bay in the East River was once only a few feet from the eastern end of the APE on East 33rd Street. A stream used to flow through the block to the north, and East 33rd Street was near the bottom of the slope leading to this streambed (Viele 1874). The precontact topography suggests that this APE is potentially sensitive for precontact resources.

Cartographic research indicates that much of the APE was historically disturbed by multiple construction episodes of structures with basements. However, the Eats 33rd Street section of the APE remained devoid of intensive development and has the best potential for having retained precontact sensitivity. If precontact resources were once deposited within the APE, they would lie buried beneath historic fill.

Soil borings taken from the East 33rd Street roadbed vary considerably with regard to the depth of reported fill. Borings done along East 33rd Street in 1935 and 1980 show varying amounts of fill, even though the surface elevations correlate over time. For example, soil boring 4, taken in 1980, shows concrete sidewalk and fill (sand, some gravel, trace to little silt, some brick, etc.) to a depth of 7' below grade (The City of New York, Department of Special Services, Bureau of Building Design, Engineering Services, Subsurface Exploration Section, "Reconstruction of Combined Sewer in E. 33rd Street," Jan. 4, 1980). Nearby borings from 1935 show between 11' and 6.5' of fill, up to a potential 4' discrepancy (Borings 27 and 28, WPA 1935). Two 1980 borings showed fill to a depth of 7' and 9' (Borings 6 and 7). This fill also contained brick fragments, as well as glass (The City of New York, Department of Special Services, Bureau of Building Design, Engineering Services, Subsurface Exploration Section, "Reconstruction of Combined Sewer in E. 33rd Street", Jan. 4, 1980). The 1935 borings taken in approximately the same location showed 15' to 18' of fill, the latter consisting of sand and clay, with an 8' to 9' discrepancy from the 1980 borings (Borings 29 and 30, WPA1935).

The depth of potential precontact resources may extend beneath the fill, which as described above, varied between about six and 18' below grade along East 33rd Street. If precontact resources extended about another five feet below the lowest depth of fill, then resources may be located between about six and 23' below grade within this section of the APE.

Historical Sensitivity

The Kips Bay APE was part of a large tract of land that stretched along the East River between East 41st and East 29th Streets and was owned by the Kip family. Jacob Hendricksen Kip was the first to build on it and is reported to have constructed his mansion overlooking Kips Bay in 1655. This house was destroyed by fire in 1696 but was rebuilt. According to

Riker's *History of Harlem,* the mansion stood on the south side of East 35th Street, two blocks north of the APE, about 100 feet east of Second Avenue (Stokes 1928:112).

During the Revolutionary War, British frigates were anchored in Kips Bay opposite the APE, and one of the most important battles of the war took place in the adjacent block:

> *Howe and Washington had both set up their headquarters in the farmhouse [on East 35th Street] where five generations of Kips had been born. In the East River, not many feet off the shore of this house, Howe's five frigates anchored early in the morning of the hot September day on which he attacked New York, and up the steep rocks at the foot of Thirty-fourth Street his infantry clambered, after the cannonade had thrown the small defending company of citizens into a panic.* (Cooper 1948:25-26).

The British occupation was hard on the farm, known as Kipsborough or Kipsberry. The soldiers raided the apple orchards and cut down both woodlands and apple trees for firewood. They also commandeered livestock for their tables. They may even have made use of the lagers, porters and ales from the Kip family brewery, produced from hops grown on a plantation inland from the river.

The property remained in the family, undivided, for 150 years until Samuel Kip died intestate in 1804. It was then divided into lots, and four streets were laid out running east and west along the early patent lines, from the Eastern Post Road to the East River. Another four streets ran north and south, and all but the main street, Kips Bay Street, were named for members of the family: Maria, Louisa, Susan, Elbert, Samuel, Eliza, and Cornelius (Stokes 1928:115)[2]. The old Kip house was probably demolished in late 1851, when the grade for East 35th Street was established, shortly before the street opened (Ibid.:112).

Elbert Kip was allocated a number of parcels from his father's estate shortly after 1804, including the APE. His house is clearly shown on the south side of what is now East 33rd Street on both the 1807 Commissioners' Map and the 1820 Randel map, within the APE (Figure 7.2-2). The larger building, probably his dwelling, had a peaked roof and porches (or possibly a Dutch roof line), and its long side faced the river. A smaller structure, probably a barn or stable, was west of the house, also in the current roadbed within the APE. A large pier jutted out into Kips Bay opposite the house south of East 33rd Street. It is not clear how long the Elbert Kip structures remained in the APE; two similar structures were in the same location in 1850, surrounded by a garden wall, but they were either relocated or demolished by 1857 (Perris and Hutchinson 1850/1851, Figure 7.2-3; Perris 1857/1862).

In the early 1850s, the section of the APE within the city block, then number 938, was part of the "43 Lots" of the Kips Bay Farm. It lay directly south of what was called the "Bridge Line," a boundary which must have run from the bay to a bridge over the stream (Farm

[2] The new streets were laid out at a slight angle to the old ones, and it has been suggested that a difference in orientation between true and magnetic north is responsible.

Histories Vol. 6, No.61). It was acquired jointly in 1835 by two men, Samuel Jones, holding a ⅔ interest, and James Lorimer Graham a ⅓ share. Jones and Lorimer quickly sold the APE parcel to the Farmer's Loan and Trust Company on December 31, 1836 which still held the eight lots along Second Avenue between East 32nd and East 33rd Streets in 1844 (City Register). Each lot was valued at $300. Development had begun by 1852, when both corners of Second Avenue were occupied by structures (Dripps 1852). By 1869, the lots along Second Avenue had been sold off and each held a four-story building, with values ranging from $12,000 to $5,500 apiece.

It is probable that these dwellings were served by city sewer lines, since sewers were mapped on Second Avenue in 1849 (WPA Project 1936: No. 609). Water lines were mapped for the APE by 1865 and may have been available earlier (Viele 1865). Other utilities, such as electricity, gas, postal cable, and telephone ducts, had been added by 1939, buried with a cover ranging between 3' and 5'5" (WPA Project 1936: No. 609). A site visit confirmed that within the APE are sewer manholes, electric lines and water for fire hydrants under the median strip, gas hookups and manholes between the median and the sidewalk, and storm drains at the end of the parking lot ramps on East 33rd Street. There are also trapdoors in the median near the corner of East 33rd Street and Second Avenue.

Water and sewer lines were clearly mapped by 1880, by which time both Second Avenue and East 33rd Street in the APE were lined with brick row houses with back yards (Robinson 1880). The only gaps were behind the Second Avenue corner houses, and the most northerly back yard was filled with buildings too by 1885 (Robinson 1885; Bromley 1902, Figure 7.2-4). The Second Avenue frontage changed very little through 1951, although later maps indicated that the dwellings were all four-stories tall, had shops on the ground floor, and had basements. East 33rd Street changed a bit more; some of the four-story row houses in the block were replaced by larger six-story apartment buildings with basements, a warehouse, a plumber's shop and commercial garages (Bromley 1934, Sanborn 1929, Figure 7.2-5).

The block had been almost completely cleared of buildings by 1955; only three remained, and they were in the northeast corner of the block outside of the APE, on what was formerly a part of Kips Bay that had been filled in by 1850 (Bromley 1955, Perris and Hutchinson 1850/1851, Figure 7.2-3). Kips Bay Plaza, a large, exposed-concrete apartment complex, was constructed on a three-block parcel stretching from East 30th to East 33rd Streets, between First and Second Avenues (Sanborn 2001; Figure 7.2-1). In the process, East 32nd and East 31st Streets were discontinued. The southern building was finished in 1960, the northern, including the APE, in 1965. Designed by I.M. Pei & Associates and S.J. Kesler, the 21-story height of the buildings was balanced by setbacks and open space, a concept originated by the architect Le Corbusier (Willensky and White 1988:205).

According to the plans for widening Second Avenue and East 33rd Street completed by the Department of Public Works for the Manhattan Borough President's Office, when plans were to build N.Y.U. Bellevue Houses on the APE and two adjacent blocks, the building line on Second Avenue was pushed back 38.74', leaving a concrete barrier where the sidewalk had been, with an additional traffic lane inside it (City of New York, January 15, 1957). East

33rd Street was widened by 20 feet, all of which was taken from the south side of the street within the APE (Bromley 1974).

As a result of widening the streets to provide setbacks, the location of the ca.1860 brick row houses that once fronted on Second Avenue are now under the sidewalk and streetbed. However, their back yards have been covered by the tower and underground parking facility of Kips Bay Plaza. Potential archaeological resources such as wells, cisterns or privies are now buried under this structure, out of the APE. A soil boring completed through the sidewalk on Second Avenue about 25' south of East 33rd Street, after the construction of Kips Bay Plaza, shows 8" of concrete followed by miscellaneous fill (cinders, traces of red brick and sand) to a depth of 13.5' below grade, with another layer of sand (possible fill) to 15' below grade (Boring M77, Raymond International 1971). The water table was reached at 22.2' below grade, below the fill, so the bottom of any potential historic wells would not have been disturbed. At no point along Second Avenue in proximity to the APE was there less than 3' of fill or more than 18' (City of New York, Rock Data, Vol.2, Sheet 6, Dec.10, 1935).

The East 33rd Street setback covered only the front half of the ca. 1860 building locations on that street, but two construction episodes have no doubt effectively destroyed any remnants of the back yards, where archaeological resources such as privies and/or cisterns or wells would have been located. The first of these episodes occurred between 1902 and 1910, when 6-story apartment buildings with basements replaced the row houses at what were then 308-314 and 334-342 East 33rd Street (Bromley 1902, Figure 7.2-4; Sanborn 1910). The second was the 1960 construction of Kips Bay Plaza, with its large underground garage system and 21-story building (Bromley 1974).

The early 19th century Elbert Kip house and barn locations and much of the yard, however, are now under the present sidewalk and streetbed of East 33rd Street, where they would not have been affected by the Kips Bay Plaza construction. Only a foot or two of the buildings, on their northernmost sides, would have been affected by the earlier row house construction (Figure 7.2-6).

The elevation in the center of the intersection of Second Avenue and East 33rd Street was 15.6' from 1880 until 1902, when it increased to 18.5', where it remains today (Robinson 1880/1881, Bromley 1902). This 2.9' increase in elevation can be partially explained by its location, which was first taken at the intersection and then later at its southeast corner in 1880. More likely it is due primarily to the addition of fill connected with increased underground utilities and installation of the Second Avenue elevated train.

Interpretation of soil borings can be subjective, so that what is classified as fill may differ from individual to individual, making it more difficult to pinpoint exact depths of potential cultural resources. Thus, borings done along East 33rd Street in 1935 and 1980 show varying amounts of fill, even though the surface elevations correlate over time. For example, soil boring 4, taken in the approximate location of the Elbert Kip barn or outbuilding in 1980,

shows concrete sidewalk and fill (sand, some gravel, trace to little silt, some brick, etc.) to a depth of 7' below grade (The City of New York, Department of Special Services, Bureau of Building Design, Engineering Services, Subsurface Exploration Section, "Reconstruction of Combined Sewer in E. 33rd Street," Jan. 4, 1980). Nearby borings from 1935 show between 11' and 6.5' of fill, up to a potential 4' discrepancy (Borings 27 and 28, WPA 1935). Two 1980 borings, on either side of the house location, showed fill to a depth of 7' (Boring 6, west end of the house) and 9' (Boring 7, east end of the house). This fill also contained brick fragments, as well as glass (The City of New York, Department of Special Services, Bureau of Building Design, Engineering Services, Subsurface Exploration Section, "Reconstruction of Combined Sewer in E. 33rd Street", Jan. 4, 1980). The 1935 borings taken in approximately the same location showed 15' to 18' of fill, the latter consisting of sand and clay, with an 8' to 9' discrepancy from the 1980 borings (Borings 29 and 30, WPA 1935).

Ground water was observed, in Boring 5 under the north sidewalk, between the probable barn or stable and the house at a point ranging between 16' and 41.1' below grade over a period of ten days. This is only about 200' from the former streambed (The City of New York, Department of Special Services, Bureau of Building Design, Engineering Services, Subsurface Exploration Section, "Reconstruction of Combined Sewer in E. 33rd Street", Jan. 4, 1980). Even with six to 18' of fill, the bottom of a well could potentially go to a depth of 40' or lower and, therefore, portions of it may have been protected from later effects.

7.2.7.2 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 ~~21~~ 19

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 SAPO
4064 X		1- A061.01.1271 X	was that NYAC did a
7248 X		~~2- A061.01.0014 D03~~	survey in the 1970's
		3- A061.01.0623 X D023	2nd found historic Remains.
		4- A061.01.06763 X	no other info was found.)
		~~5- A061.01.0001~~	
	209 Water St. South Street NR 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 @ SHPO		A061.01.01286 X	
		A061.01.0541 X	
		A061.01.00542 X	
		A061.01.09531 X	

ATIONAL REGISTER E. GIBLE and LISTED ___X___ Eligible ___ ___1___ Listed ___ ___X___ Building Inventory

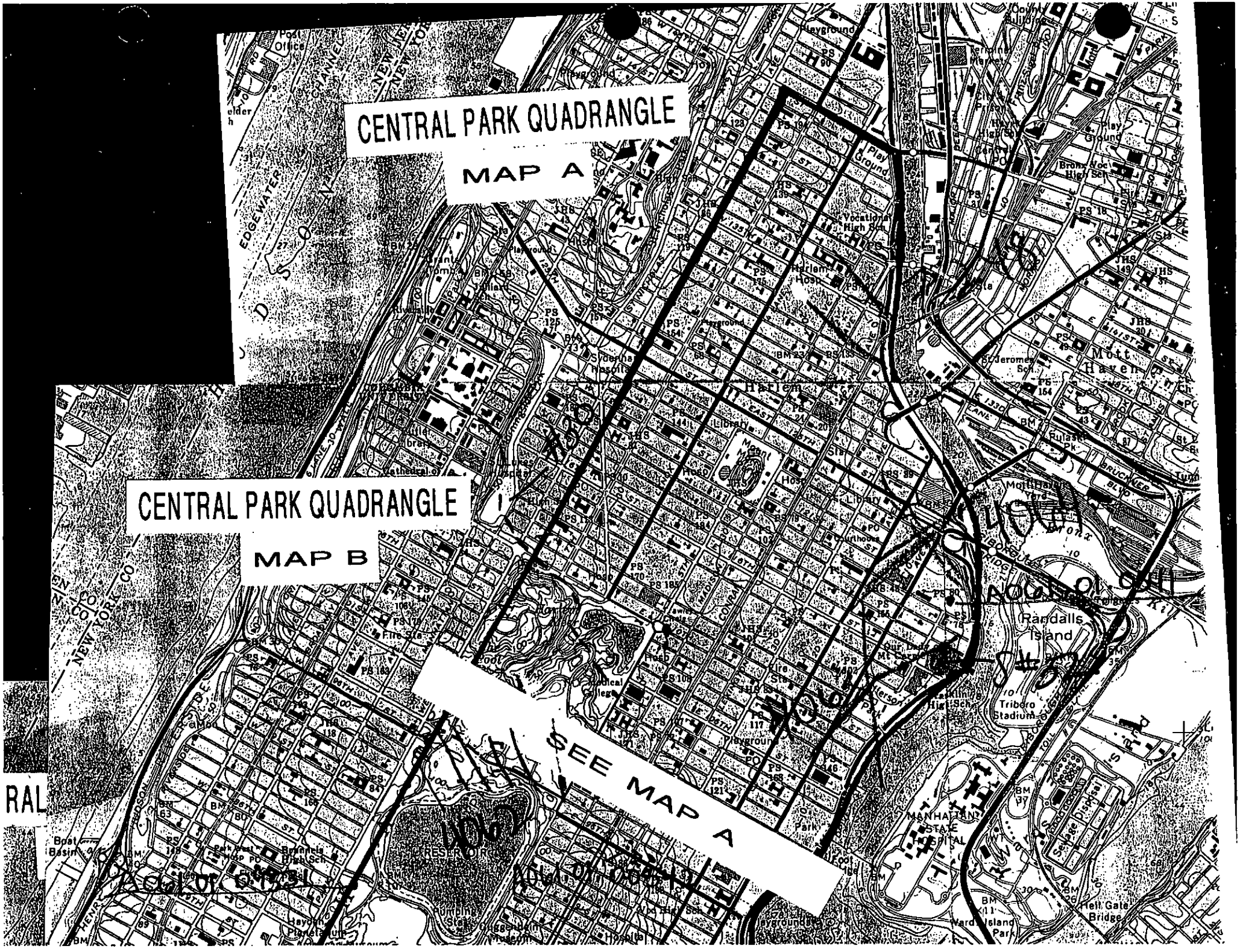
ilding Inventory #	NR Status	Form Copied	Property Description	Roads Checked
06101.000604	NRL	✓	South Street Seaport Historic District 209 Water Street	

EVIOUS SURVEYS <17 previous surveys w/in Radius>

8 Westside Highway Program – 1983
William D. Hersey – 1963 Castle Clinton at the Battery
Broad Street Financial Center Greenhouse January 1985
X
64th Pearl Street 17th Landfill Arnold Pickman & Nan Rothschild May 1981
Stone Street Historic District 9/17, 8/17 NYC Landmarks Pres. Comm. Tracker
9 Barclays Bank Site – 100 Water St. Berger – 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block Kardas & Larrabee July 1991

5 209 Water St. – Schuyler – ? Date
East River Reach – New York Harbor Collection Kardas & Larrabee October 1977
10 Sheridan Square – 1983 – Rutgers University
Lower Eastside Service Center – Louis Berger Jan '98
27 750 Sixth Ave. HPI February 1998
Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1989 / December 1989
32 East River Plaza HPI Sept. 1998
Stone Street Historic District NYC Landmark Pres. Comm. February 1998

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


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A
Randalls Island
Mott Haven
Harlem
Tribboro Stadium
Hell Gate Bridge
Ward's Island Park
Boat Basin
RAL


SEE MAP C
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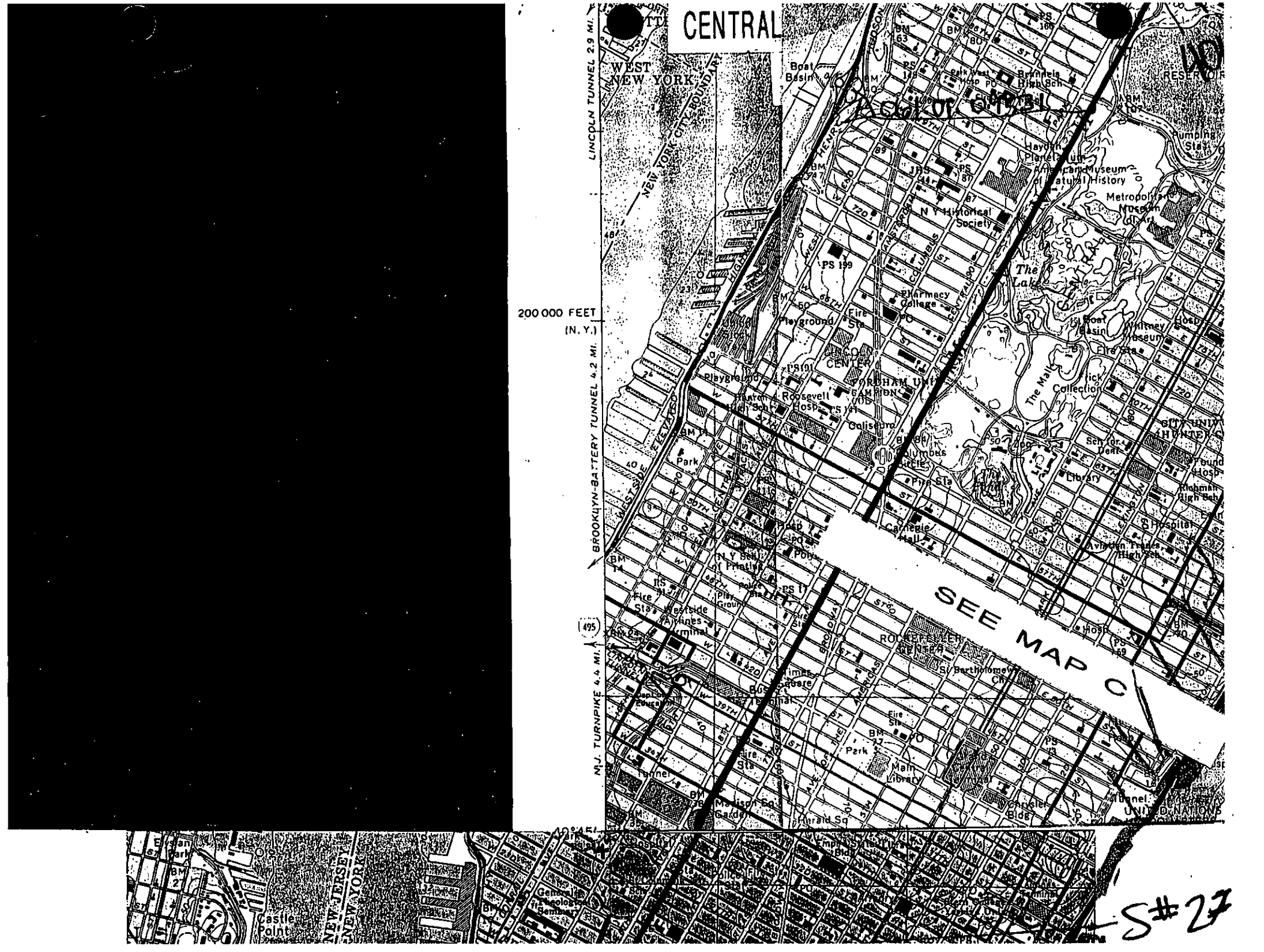
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WEST NEW YORK
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N.J. TURNPIKE 4.4 MI.
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Boat Basin
Brandeis High Sch
Hayden Planetarium
American Museum of Natural History
Metropolitan Museum of Art
N Y Historical Society
The Lake
Pharmacy College
Playground
Fire Sta
LINCOLN CENTER
FORDHAM UNIV CAMPION
Roosevelt Hosp
Coliseum
Columbus Circle
Pire Sta
Carnegie Hall
Park
Westside Airlines Terminal
Play Ground
Fire Sta
Times Square
Bus Terminal
Main Library
Madison Sq Garden
Herald Sq
Chrysler Bldg
Tunnel
UNITED NATIONS
Whitney Museum
Frick Collection
The Mall
Library
Sch for Deaf
Richman High Sch
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Aviation Trades High Sch
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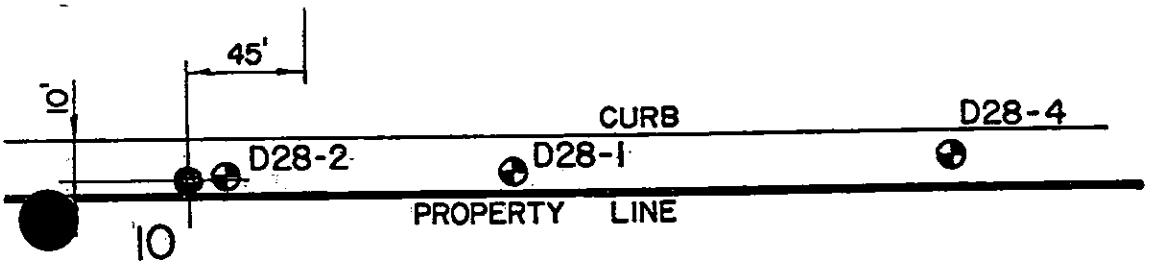
7.2.7.3 Soil Boring Logs



LOCATION PLAN

SCALE : 1" = 50'

'OR REFERENCE ONLY)

THE CITY OF NEW YORK

DEPARTMENT OF GENERAL SERVICES

DIVISION OF PUBLIC STRUCTURES

BUREAU OF BUILDING DESIGN

'RUCTION OF COMBINED SEWER IN E.33rd STREET

BETWEEN 1st AVENUE AND 2nd AVENUE

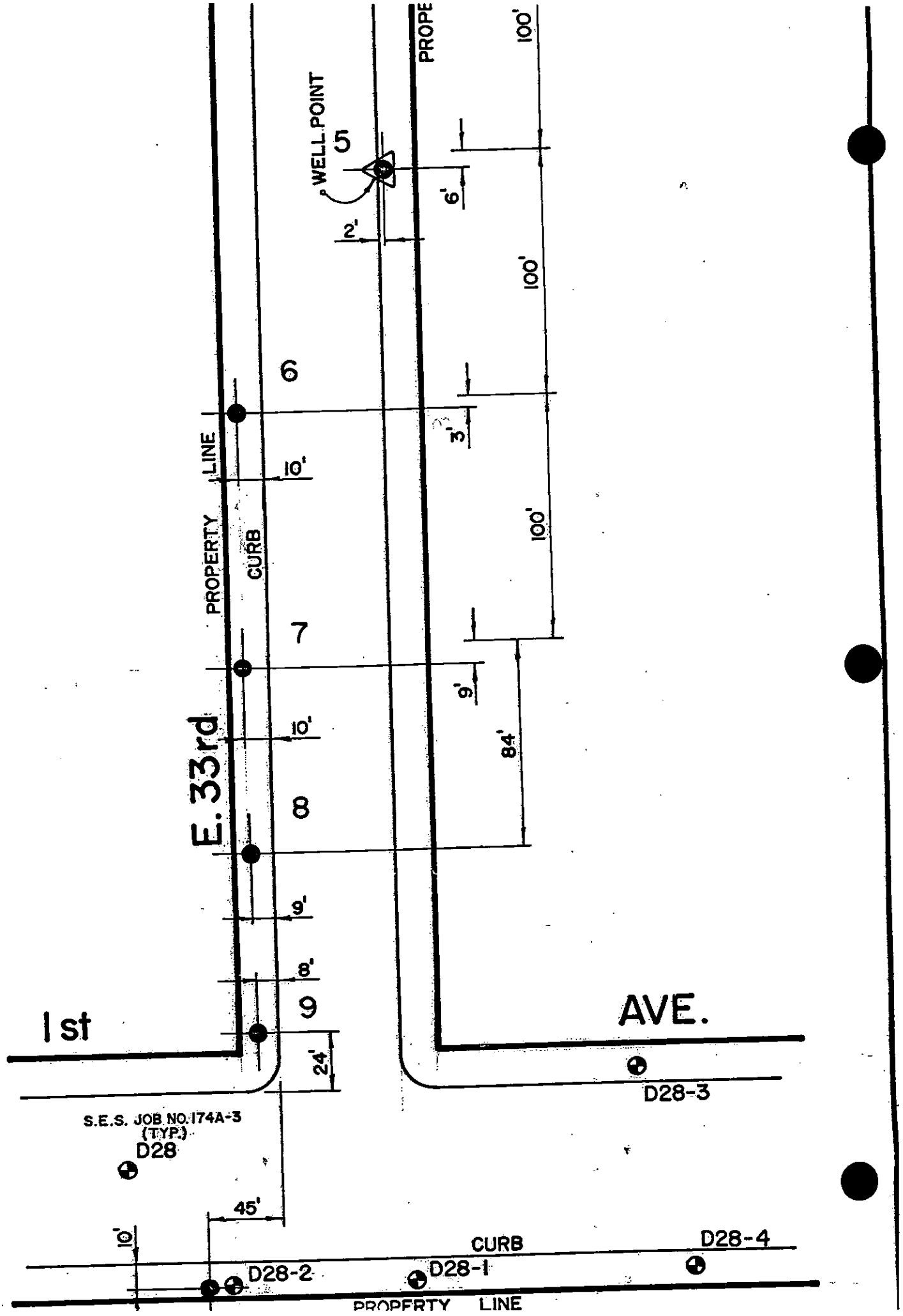
BOROUGH OF MANHATTAN

PREPARED BY:

ENGINEERING SERVICES

SUBSURFACE EXPLORATION SECTION

RECORD OF BORINGS	B-1
J. 4, 1980	SCALE: AS SHOWN / SHEET 1 OF 1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S.E.S. JOB NO. 174A-3
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D28-4
D28-2
D28-1
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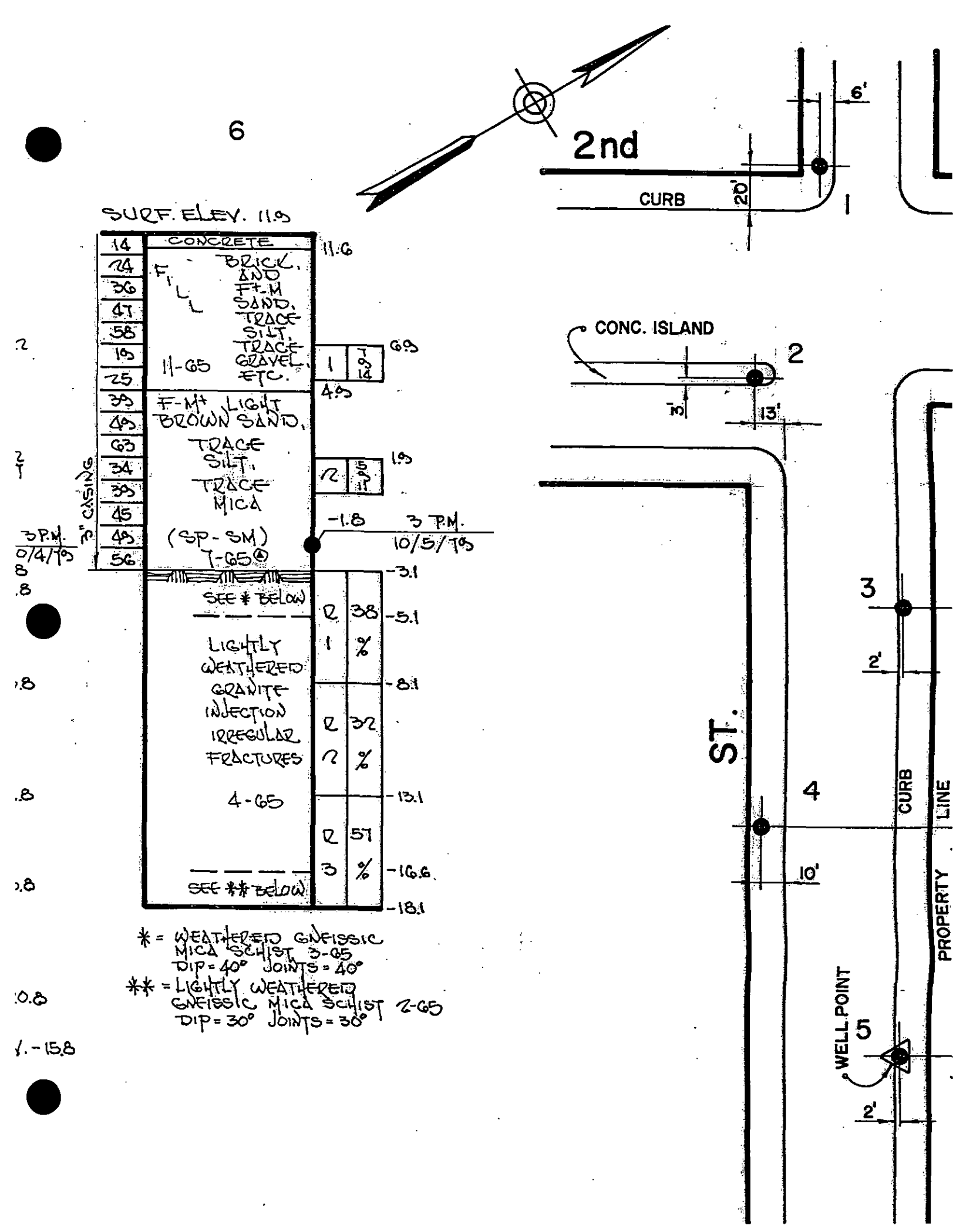
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58
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63
34
39
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49
56
CONCRETE
11.6
FILL
BRICK AND F+M SAND, TRACE SILT, TRACE GRAVEL, ETC.
11-65
1
9
14
6.9
4.9
F-M+ LIGHT BROWN SAND, TRACE SILT, TRACE MICA
(SP-SM)
T-65
2
5
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-1.8
3 P.M.
10/5/65
3" CASING
3 P.M.
10/4/65
SEE * BELOW
-3.1
R 38
1 %
-5.1
LIGHTLY WEATHERED GRANITE INJECTION IRREGULAR FRACTURES
4-65
-8.1
R 32
2 %
-13.1
R 57
3 %
-16.6
SEE ** BELOW
-18.1
* = WEATHERED GNEISSIC MICA SCHIST 3-65
DIP = 40° JOINTS = 40°
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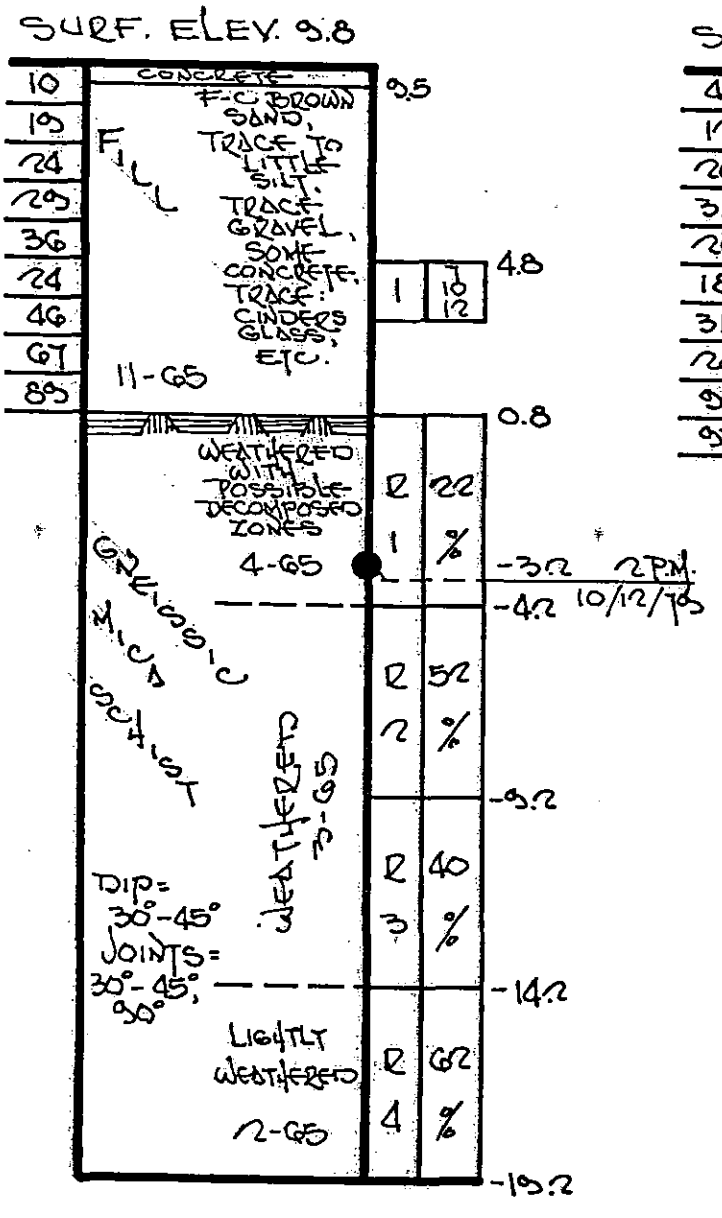
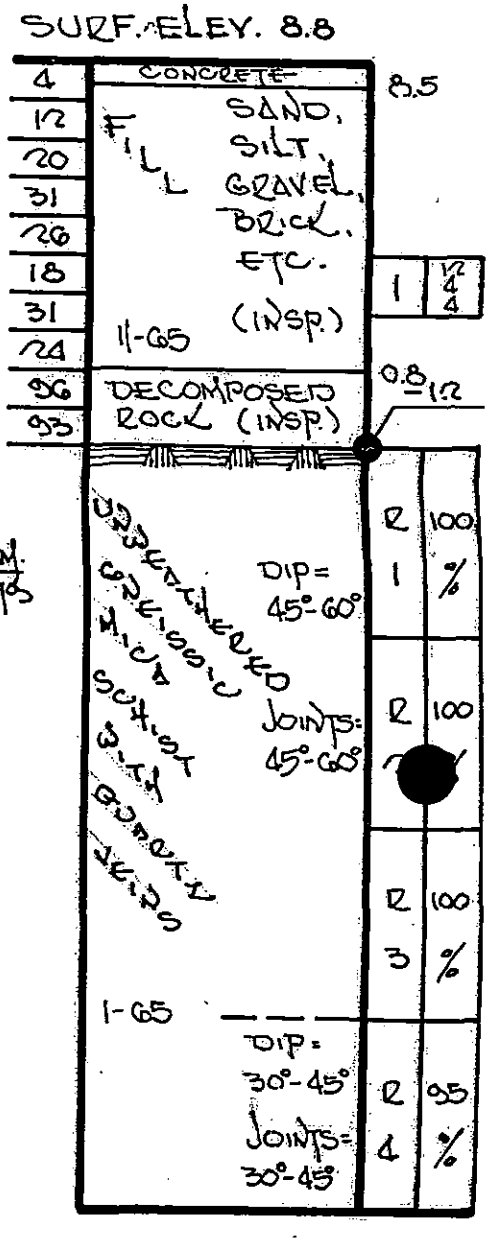
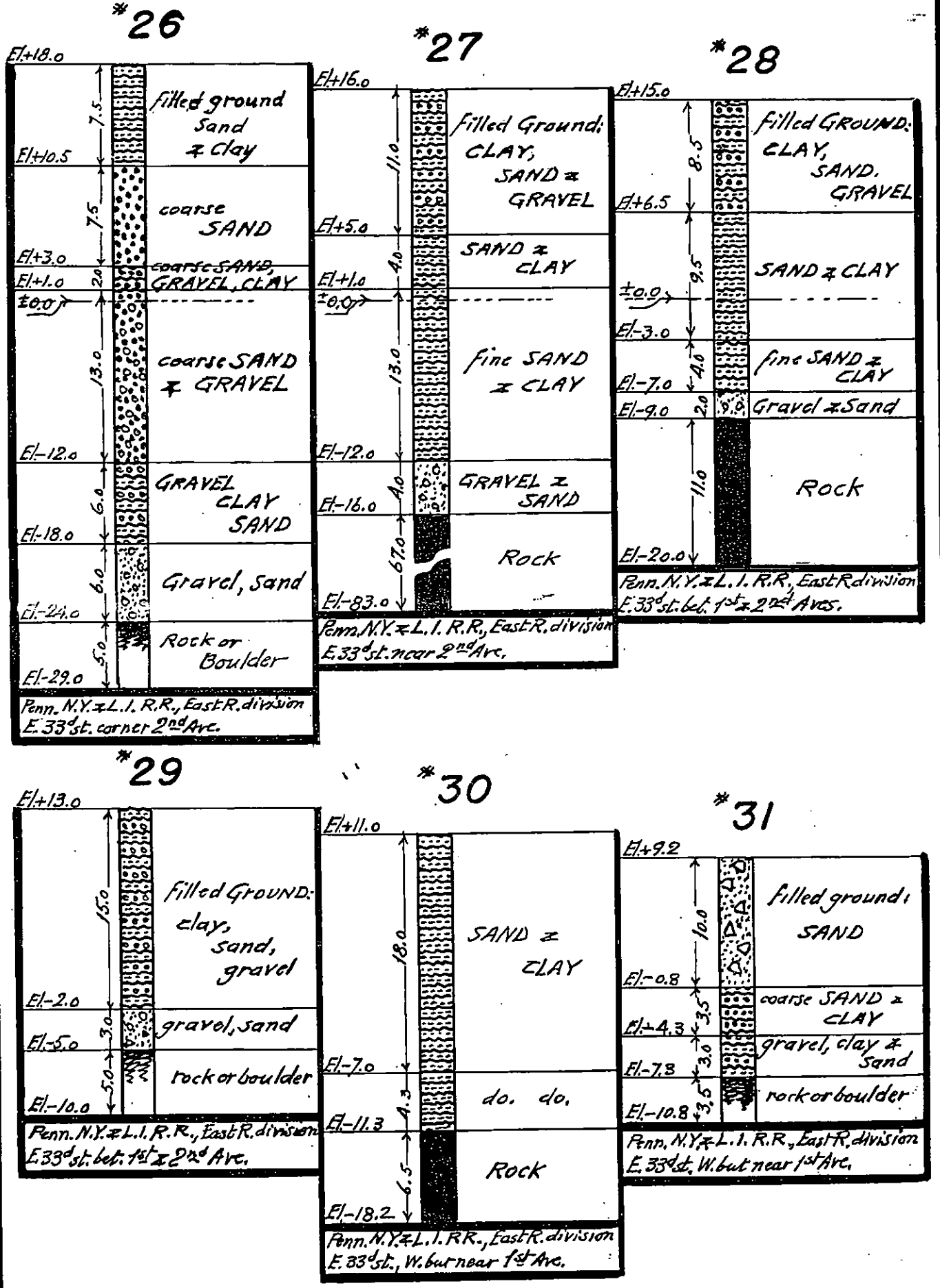
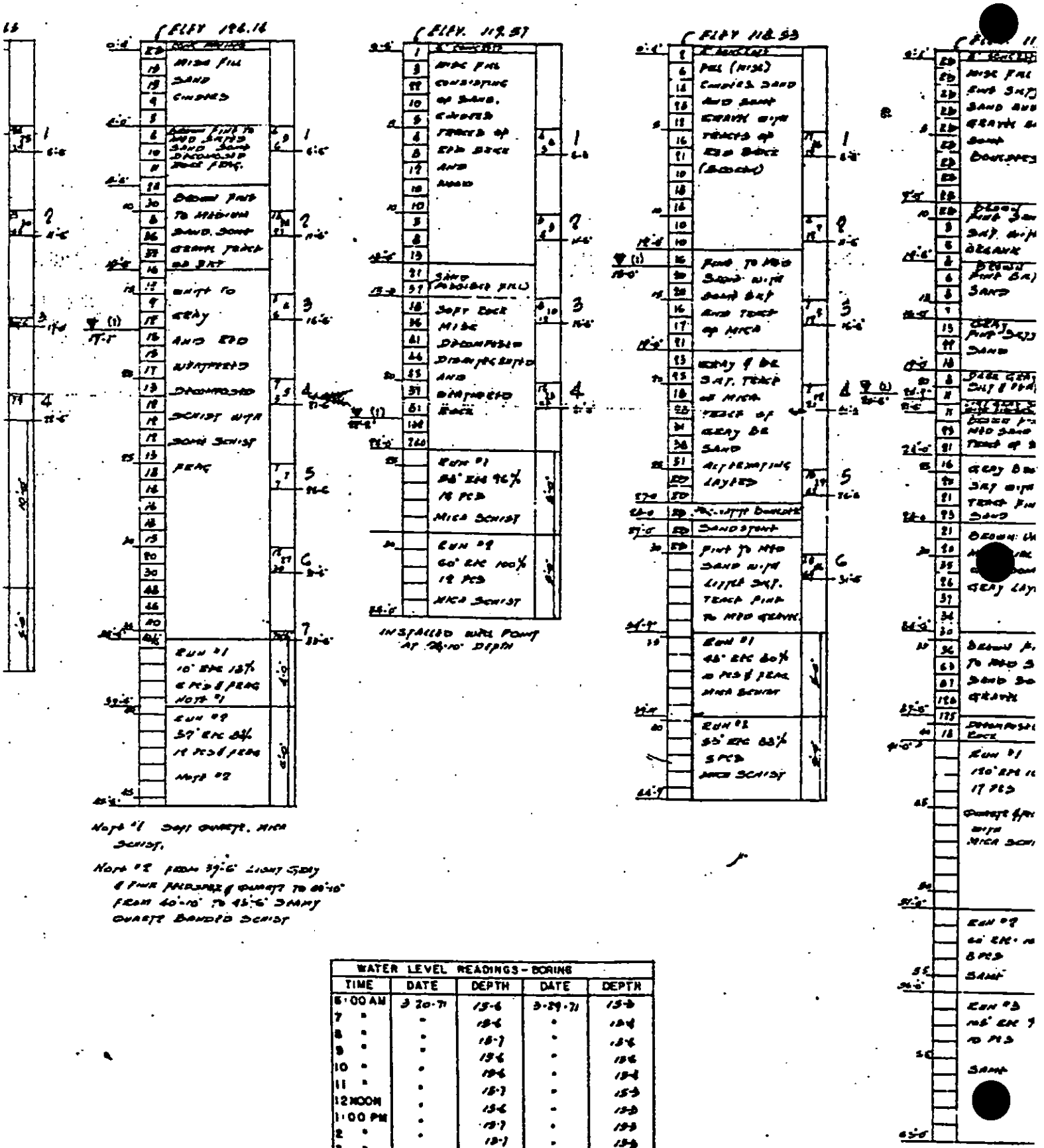






ROCK DATA VOL. 2, SHEET 6



WATER LEVEL READINGS - BORING				
TIME	DATE	DEPTH	DATE	DEPTH
8:00 AM	3-20-71	15-6	3-29-71	15-3
7 "	"	15-6	"	15-4
8 "	"	15-7	"	15-5
9 "	"	15-6	"	15-6
10 "	"	15-6	"	15-4
11 "	"	15-7	"	15-3
12 NOON	"	15-6	"	15-3
1:00 PM	"	15-7	"	15-3
2 "	"	15-7	"	15-3
3 "	"	15-6	"	15-3
4 "	"	15-7	"	15-4
5 "	"	15-7	"	15-4
6 "	3-20-71	15C	3-29-71	15-4

7.3 ST. VARTAN PARK SHAFT SITE

7.3.1 Study Area Description

The western end of St. Vartan Park, located between East 35th and 36th Streets directly east of Second Avenue, is being evaluated as a potential shaft site or staging area. The APE for this project element is the section of the park and adjacent sidewalks east of Second Avenue bounded by East 35th and 36th Streets, Second Avenue, and the Queens-Midtown Tunnel approach (Figure 7.3-1; Photographs 7.3-1 through 7.3-4). The APE encompasses former Lots 56-63, the western side of Lot 55, and Lots 1-8 on Block 941 (Figure 7.3-2, Bromley 1902).

7.3.2 Existing Conditions

7.3.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

No specific records with direct evidence for precontact sites have been found for this APE. However, Grumet (1981) reports two Native American trails that appear to pass near the APE with evidence of settlements nearby. One of these was the Wickquasgeck Road which traversed the length of Manhattan from north to south connecting various settlements, some of which appear to have been located near the west side of Second Avenue (Grumet 1981:68). Also, a habitation site called "Schepmoes" was recorded by Grumet at about East 10th Street and Second Avenue, in association with another Native American trail. The reported location of the site may not be correct, however. Grumet concluded that "Schepmoes" was not a Native American name, but instead was the name of a Dutch settler who had extensive land holdings in Lower Manhattan. In a 1636 deed, a stream described as running from the East 50s to Kips Bay at around East 35th Street (which could have crossed the APE) is identified as the "Kil of Schepmoes", and could be the actual location of the site (Grumet 1981:51; see Figure 7.3-3, Vielé 1865, 1874 for location of streams).

Archaeological Potential

The APE is located between two streams which ran approximately parallel to the future locations of East 34th Street and East 36th Street and once emptied into Kips Bay on the East River (Figure 7.3-3, Vielé 1865, 1874). Although the area is indicated as being marshy in places on historic maps, especially around the streams, dry land was also present (British Headquarters 1782). Large hills and bluffs were also located to the north, south, and northwest of the APE (Figure 7.3-3, Vielé 1865, 1874). The area would have held advantageous precontact resources in its riverine and estuarine environments, which could have been prime areas for hunting, fishing and, just east of the APE, collecting of shellfish. Additionally, the area is near outcrops and hills that could have provided shelter or protection for local inhabitants. While marshy lands within the APE are unlikely to have been habitation sites, the later presence of 17th through 19th century structures indicates that discrete sections of habitable land were present in the APE amid

the swampland (Figure 7.3-4, Randel 1820; Doughty 1858). While there is evidence that a structure dating from at least the 19th century was present on the precontact surface (Figure 7.3-4, Randel 1820), it cannot be assumed that potential precontact remains were entirely destroyed.

Soil borings indicate that the APE contains a layer of fill from seven to 15' deep that either represents building demolition debris or added fill introduced in the mid-19th century (WPA 1935; Raymond International, Inc. 1970; see Section 7.3.7.3). If this level is introduced fill, it could have protected the precontact surface from later intrusions, except for where deep shafts may have been excavated, such as 19th century wells. Subsurface precontact resources such as middens (trash heaps) or even shell mounds could have substantial depth (up to perhaps 5'), and so there exists the possibility of encountering such resources. The likelihood of encountering surface remains--for example, habitation sites--is low, given probable superficial post-contact disturbances. Overall, sensitivity for precontact resources is moderate, and potential resources may lie below the fill between about seven to 20' below grade.

7.3.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

Previously inventoried historic sites in the area include NYS Site A061.01.009530, where an archaeological investigation of the Bernard M. Baruch College Site B was undertaken on the block between East 24th and 25th Streets, and Third and Lexington Avenues, about ten blocks south of the APE (Yamin et al 1997). Excavations undertaken at Site B, where a row of historic backyards was documented, found a subsurface drainage network with piping and slate-capped brick drains, as well as cobbled surfaces dating to the 19th century (Ibid.).

Archaeological Potential

The APE was originally part of Kips Bay Farm, a large tract associated with the descendents of Jacob Hendricksen Kip who had emigrated to New Amsterdam from the Netherlands prior to 1635 (Stokes 1928:111). In 1746-7, the farm belonged to a Samuel Kip and was referred to at one point as "Kipsborough" or "Kipsberry" (Ibid.:115). Samuel Kip was the father of Jacobus Kip, who had a son also named Samuel. The property remained in the family, undivided, for 150 years until Samuel Kip died intestate in 1804. After this, the area of Kips Bay Farm was laid out into lots and divided among various heirs (Ibid.). The area was gridded at an angle about 10 degrees off of the modern grid and streets were named after said heirs. One such street, Eliza Street, crossed the APE from north to south (Figure 7.3-4, Randel 1820).

A structure, probably a residence, was present on the property associated with John Van Tuyl and Catherine Kip (Figure 7.3-4, Randel 1820). The structure appears to have been located partially within what is now the Second Avenue roadbed and partially in the APE, in the area of future Lots 63, 62 and 61, probably beneath the area where buildings were constructed in the later 19th century (Ibid.). In the early 19th century, it was

probably located not far from the stream that once crossed what is now Second Avenue. It is most likely that shaft features, such as privies and wells, were once associated with this structure and may be present within the APE, as well as structural foundations of the house itself and any associated cellars. By 1850, the Van Tuyl/Kip structure was no longer present (Perris and Hutchinson 1850-51).

Across East 35th Street, just south of the APE, the house of Jacobus Kipp was constructed in 1654. The residence is described on the south side of East 35th Street, 100 feet east of Second Avenue, partly in the East 35th Street roadbed (Stokes 1918: 950). This would place the house just outside of the APE, south of former Lots 6 and 7 on Block 941 (Figure 7.3-2, Bromley 1902). This structure was destroyed by fire in 1696, and a second house was constructed on the same site which was not demolished until 1851 (Ibid.). A structure, most likely the second Kip house, is depicted on an 1820 map partially in the future route of East 35th Street (Figure 7.3-4, Randel). Later, the house is shown just south of the road (Perris and Hutchinson 1850-51). While the house itself does not appear to fall within the APE, it appears to have been located no less than 30' south of it and possibly only 15' south. Also, the certainty of the exact location of the original Kip dwelling, destroyed in 1696, is questionable so it is possible that it could have been located north of the replacement structure, which would place it on or near the APE. There is the possibility that historic remains exist within the APE that are associated with both these residences, dating from 1654 to 1851.

In the mid-19th century, low lying areas within the APE were filled, probably at the same time that Kips Bay was filled to allow for the creation of First Avenue (Dripps 1852; Perris 1857). Soil borings indicate that the APE now contains at least seven and possibly up to 15' of fill (see Appendix 7.3.7.3). Any pre-1850s remains would be located beneath this fill and are likely to have been protected by the fill.

After the Kip structure was razed, the APE was subdivided into lots and it was intensively developed (Perris 1857-62). Nearly all of the lots within the APE had open backyards which covered up to one-half of the lot space, with the exception of Lots 58, 59 and 60, where structures covered all or nearly all of the lot area (Ibid.). While plumbing was available on Second Avenue and East 35th Street by 1865 (Vielé), its availability does not ensure that the structures in the APE were hooked to municipal water when they were first built. Therefore, shaft features from the second half of the 19th century could be present in the former areas of backyards. These would include privies and wells, which would be located within the fill layer, although the wells would have been dug to at least the depth of the water table, which is recorded at 6'8" and 18' below grade, and possibly deeper to access potable water (Borings 2-2 and 2-3, Raymond International, Inc. 1970). None of the 19th century structures in the APE are shown to have a basement, which suggests that 19th century development may have not affected any earlier historic or precontact era resources that could potentially lie beneath the fill layer.

By 1901 Block 941 was acquired and slated for use as a public park (City of New York). In the following year, construction and improvements began, which entailed the removal of all 19th century structures, and the park was completed in 1905 (Stokes 1918:971). By

1951, an access road for the Queens Midtown Tunnel divided the park, which by this time was labeled as a playground (Sanborn 1951). The APE is currently occupied by basketball and handball courts. Various utilities appear to be present, some of which may have affected the APE. However, there is no indication that the entire APE or large sections of it have been previously affected. In fact, the construction of the park may well have helped preserve any archaeological resources beneath it.

Overall, the APE is considered moderately sensitive for historic remains. Historic resources from the 17th through early mid-19th century may be found below seven to 15' below the surface, beneath the fill observed in soil borings. If the water table was lower in the historic era, wells could have been deeper than 20' below the surface. Specifically, there is the potential for foundations and footings of the John Van Tuyl and Catherine Kip house from the early 1800s, which may be found in the northwest corner of the APE (Figure 7.3-4). There is also the possibility that resources associated with one or two of the Kip residences that were present just south of the APE may also exist within the APE (Ibid.). Specifically, there is a high possibility that remains of the Van Tuyl/Kip structure and shaft features associated with either the Van Tuyl/Kip structure or the Kip residence to the south still exist beneath former Lots 63, 62 and 61. The APE is also moderately sensitive for shaft features such as wells and privies from the second half of the 19th century that may have existed where lots once had back yards. Later construction of the park may have preserved these resources, which if present, would largely have been located in and beneath the fill, from the surface down to about 20 feet below grade.

7.3.3 Summary of Archaeological Potential

The entire APE is considered to be moderately sensitive for precontact resources at a depth of between seven and 20' below the surface (Figure 7.3-5). There is also the potential for 17th through early mid-19th century resources throughout the APE below the fill, which ranges from seven to 15 feet below grade. Particularly, the APE is highly sensitive for early 19th century resources in the former area of Lots 61, 62 and 63. The APE is also moderately sensitive for shaft features associated with mid-19th century dwellings from the surface to 20' below grade or deeper.

7.3.4 Proposed Project Effects

Proposed construction plans call for the creation of a shaft to allow for the insertion of boring machines or for spoils removal. The shaft would measure about 30 feet by 50 feet and a staging area between 40,000 and 80,000 square feet would be needed. Since the St. Vartan Park Shaft Site is potentially sensitive for precontact resources that are estimated to lie between seven and 20 feet below grade, and 17th to mid-19th century residential features, from the surface down to about 20 feet below grade, proposed shaft excavations would affect these resources. Any surface work necessary to create the staging area would probably be shallow and would most likely only affect potential historic resources.

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.

7.3.5 Recommendations

It is possible that the APE was occupied or otherwise used by Native Americans during the precontact period, and certain that the APE was occupied during the historic period. There is a moderate likelihood that precontact resources, if they were present, still exist underneath the fill that covers the APE. Additionally there is a moderate to high likelihood that 17th to 19th century historic remains exist in that same area, and a moderate likelihood that 19th century remains exist in, and below, the fill itself.

The construction of the park in the beginning of the 20th century may not have staved off all subsurface effects, but may have also resulted in the protection of below-ground resources. Because potential precontact and historical resources relating to the 18th and 19th centuries may be present beneath the St. Vartan Park APE, further investigations of potential archaeological resources will be necessary.

Additional soil borings, as an indicator of both potential precontact or historic sensitivity would help to establish the potential depth of resources to verify that the effect assessment is correct. 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, particularly since only a few water table depths are available for this APE, but cannot always substitute for field verification.[1] Following the review of soil borings, some sites 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 prepared in consultation with SHPO. It is expected that

[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.

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 determine the presence of cultural resources, and if such resources exist, establish their horizontal and vertical extent, the integrity of the site, and potential significance with respect to eligibility requirements 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 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.

7.3.6 Figures and Photographs

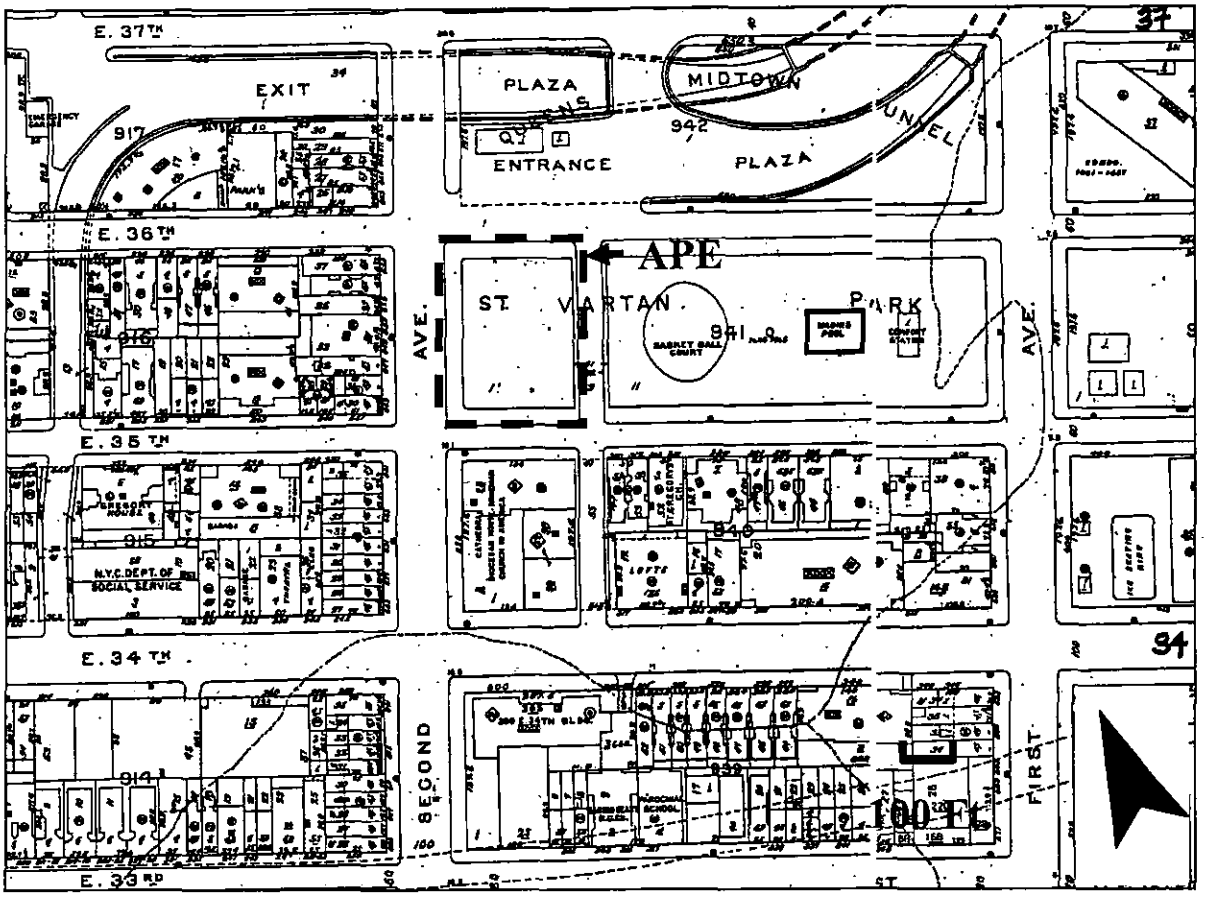


FIGURE 7.3-1

Insurance Maps. St. Vartan Park Shaft Site. Sanborn 2001.

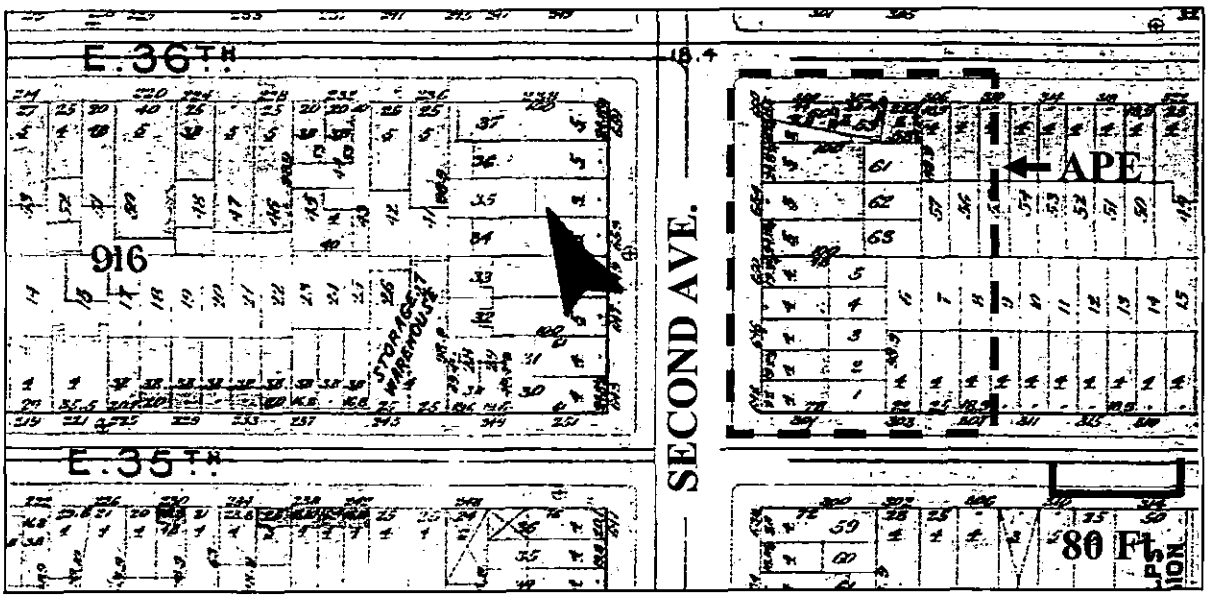


FIGURE 7.3-2

Atlas of the City of New York, Borough of Manhattan.
St. Vartan Park Shaft Site.
Lots 1-8, 56-63 and the west half of Lot 55 are in APE.
Bromley 1902.

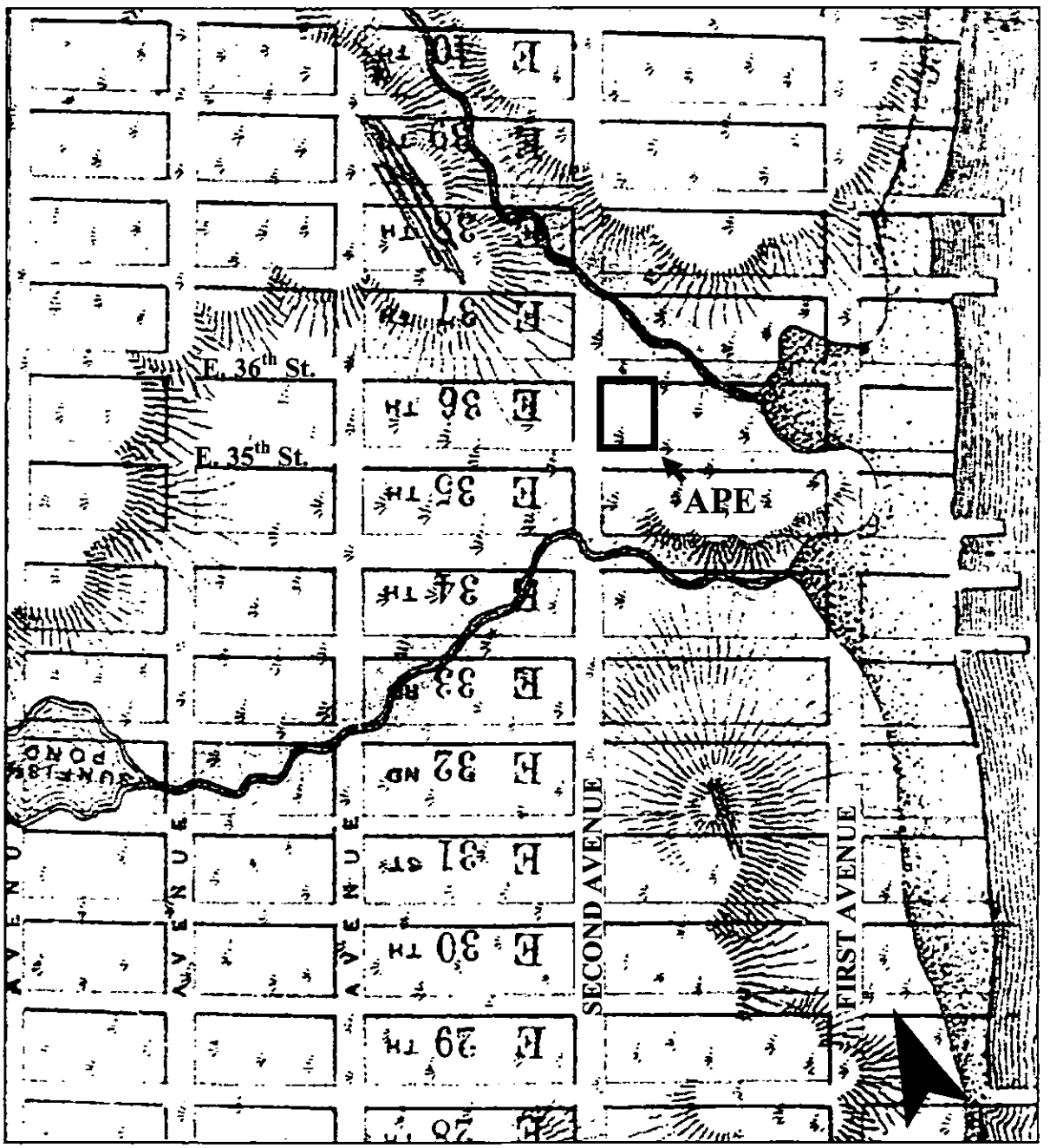


FIGURE 7.3-3

Topographical Atlas of the City of New York, Including the Annexed Territory.
St. Vartan Park Shaft Site APE. Viele 1874.
No scale

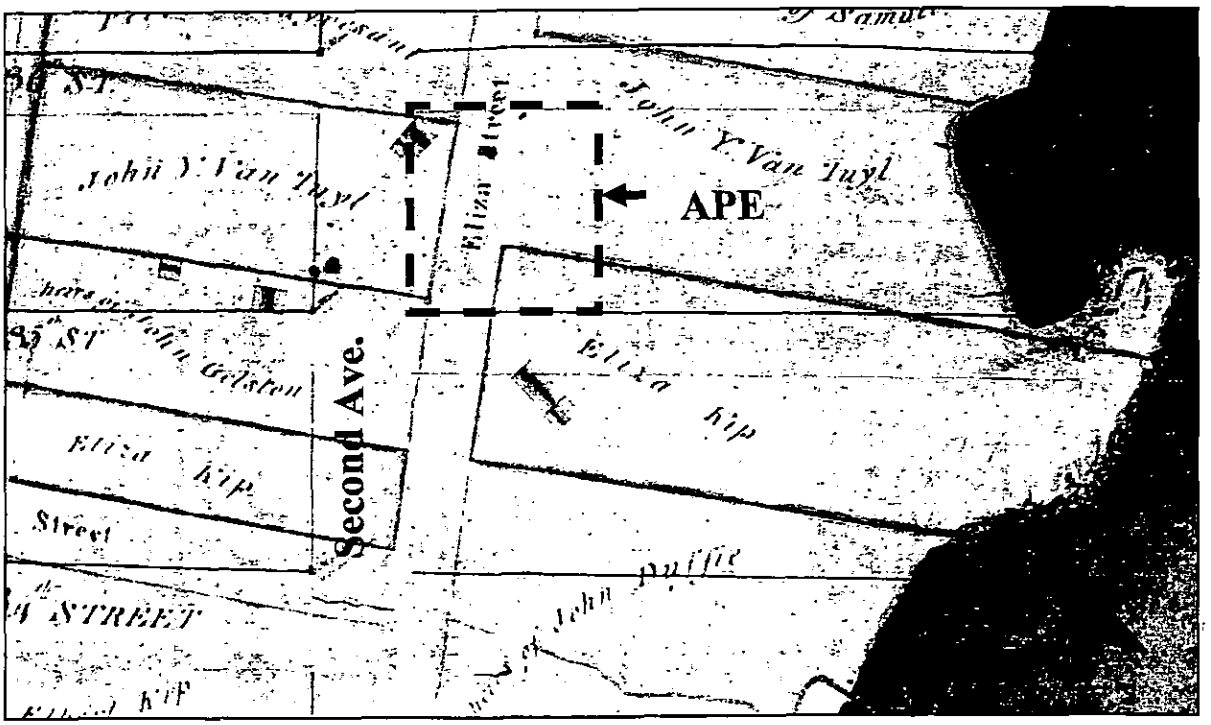


FIGURE 7.3-4

Farm Maps. Note the Van Tuyl residence within the APE and old Kip residence just south of the APE. Randel 1820.

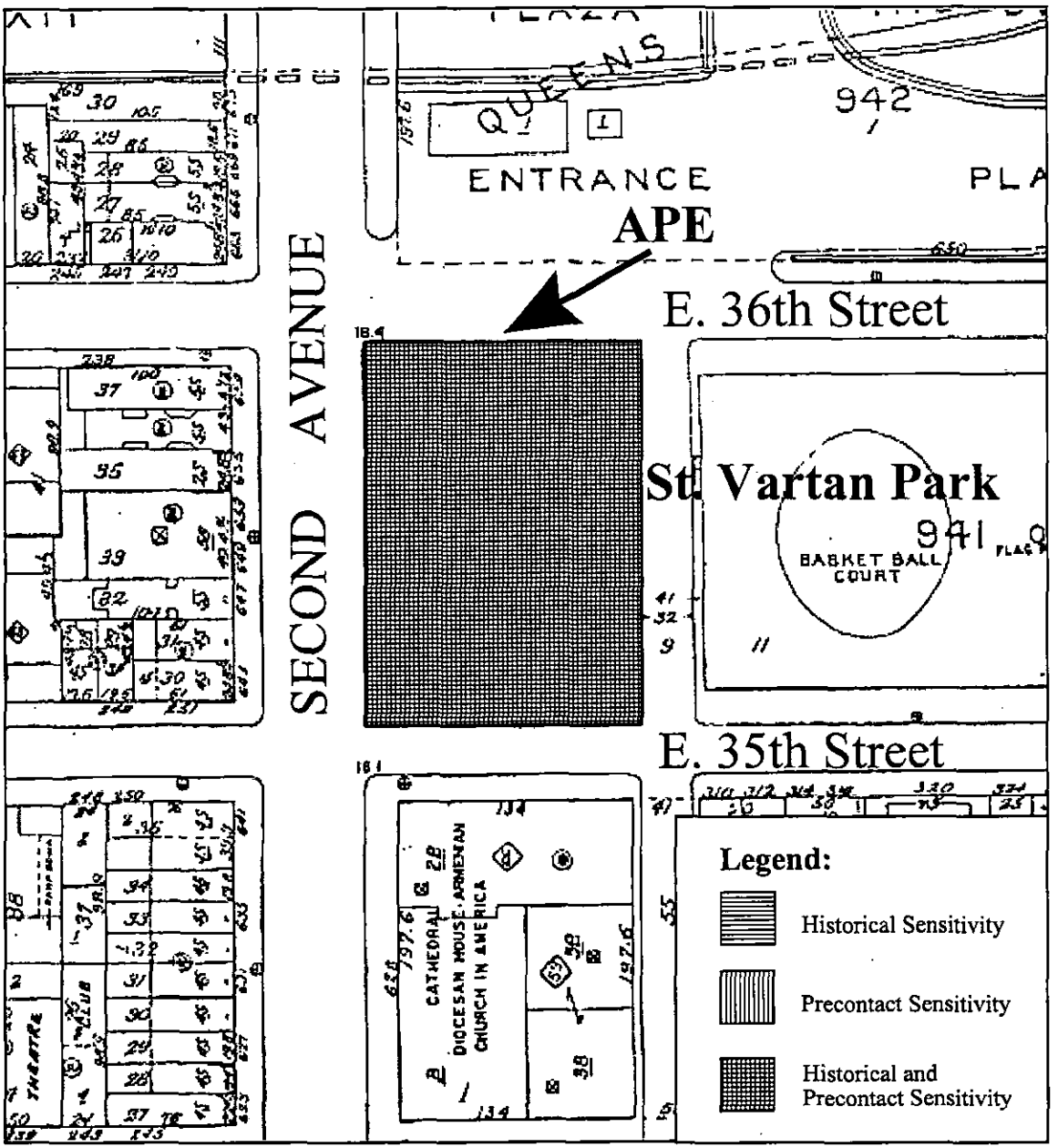


FIGURE 7.3-5

Area of Potential Archaeological Sensitivity.
St. Vartan Park. Sanborn 2001.

Approximate Scale: ½ inch = 50 feet



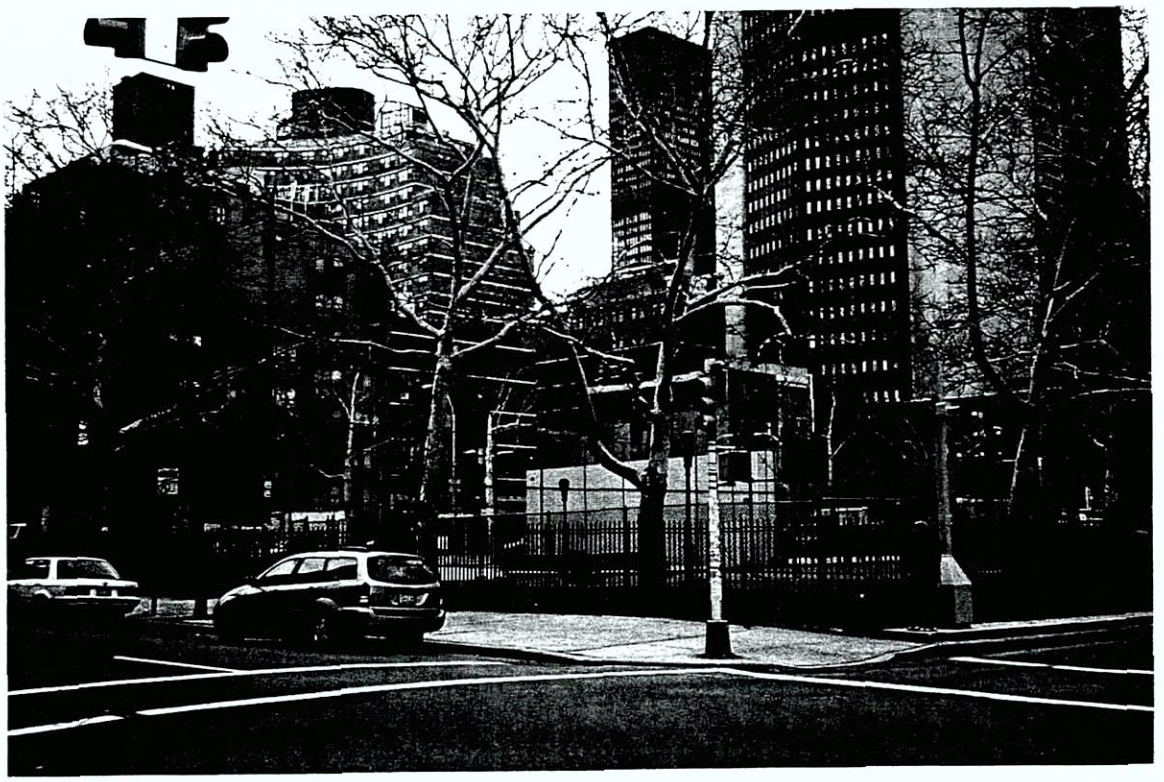
Photograph 7.3-1: From the corner of East 36th Street and Second Avenue looking southeast towards approach to Midtown Tunnel at St. Vartan's Park. Note potential Shaft Site.



Photograph 7.3-2: On the corner of East 36th Street and Midtown Tunnel approach looking southwest towards St. Vartan's Park.



Photograph 7.3-3: On the corner of East 35th Street and Second Avnue, looking northeast towards St. Vartan's Park.



Photograph 7.3-4: On the corner of East 35th Street and the Midtown Tunnel approach looking towards St. Vartan's Park.

7.3.7 Appendices

7.3.7.1 Documentary Assessment of APE

St. Vartan Park Shaft Site, East 35th to 36th Streets, East Side of Second Avenue:

The St. Vartan Park shaft site is located on the east side of Second Avenue between East 35th and East 36th Street. The site comprises the western end of Block 941 and is separated from the remainder of the block by a one-way access road that serves as an entrance to the Queens Midtown Tunnel to the north (Figure 7.3-1, Sanborn 2001). The APE encompasses former Lots 55-63 and 1-8, all of which had been developed during the latter half of the 19th century, after which the block was acquired by the city and was redeveloped as a park (Perris 1857; Figure 7.3-2, Bromley 1902; Sanborn 1910).

Cartographic History:

British Headquarters Map 1782: Kipp's (sic) Bay is shown on the East River, east of the APE. Two streams drain into it. Later maps indicate that the APE is located between the two streams (see e.g. Figure 7.3-3, Vielé 1865, 1874). This map indicates that the streams are immediately surrounded by marshy areas, leaving a narrow strip of dry land between the two marshes. A house is shown on this strip of land that may be the Kip residence (see Figure 7.3-4, Randel 1820, Stokes 1918:950), however the scale of the map is too small to determine its precise location. A large hill is depicted just northwest of the APE and a smaller hill is shown to the south.

Commissioner's Plan 1814: Kips Bay is also shown on this plan, but the scale and quality of the map does not permit further detail.

Randel 1820: Figure 7.3-4. Lots and streets in the area of the APE have been laid out at an angle approximately 10 degrees east of the current alignment of Second Avenue and its cross streets. The APE is bisected roughly from north to south by Eliza Street, associated with the Kips Farm lots. The majority of the APE is shown as part of two large parcels present on either side of Eliza Street belonging to John Y. Van Tuyl. A dwelling on the lot to the west is constructed at an angle such that one half of the structure from corner to corner is shown within the APE. The southwest corner of the APE is part of a lot belonging to Eliza Kip and a large structure noted as the Kip residence in Stokes is shown partially in the current East 35th Street roadbed, immediately south of the APE (Stokes 1918:950). Very small portions of lots owned by Peter B. Stuyvesant and the Heirs of John Gelsten occupy the northwest and southwest corners of the APE, respectively, but these are vacant.

Just east of the APE, a small bay is shown at the end of what will become Block 491 and First Avenue, with what appears to be a jetty separating it from the slightly larger Kips Bay to the south. One or two small streams are shown emptying into the small bay and a larger stream meets Kips Bay at approximately East 34th Street.

Colton 1836: Eliza Street (unlabeled) is shown still bisecting the APE, and East 35th and East 36th Streets are also present. The northern stream noted on earlier maps is shown here crossing the APE from the northwest to the southeast, slightly further south than on Randel 1820 or Viele 1874 (see Figures 7.3-3 and 7.3-4). A structure is indicated on the southwest corner of the APE at Second Avenue and East 35th Street. The large hill to the northeast is labeled Murray's Hill.

Perris and Hutchinson 1850-51: Second Avenue, East 35th and 36th Streets are present according to their current alignment, Eliza Street is not shown. East 35th and 36th Streets are not shown extending more than 50-70' east of Second Avenue. The structure belonging to Van Tuyl that was partially located on the APE (Randel 1820) is no longer present. The Kip residence on East 35th Street is still shown, albeit it is shown entirely within Block 942 to the south and not extending into East 35th Street (Ibid.). The APE is otherwise shown as vacant land.

Dripps 1852: There is no development shown on the APE at this time. The bay still extends into the eastern portion of the block, outside of the APE.

Perris 1857-62: The bay at the eastern end of Block 941 has been filled in and the block is almost entirely developed. Within the APE the following lots and buildings are shown (lot numbers from Bromley 1902 are given in parentheses):

176 East 36th Street (55) The western half of this lot falls within the APE. A brick structure with commercial use occupies the front half of the lot, with a yard of equal size in back.

174 and 172 East 36th Street (56 and 57) Brick structures occupy half of each lot with yards in back. The structure on Lot 56 is indicated as commercial use.

170 East 36th Street (58 and part of 59) This lot is occupied by a large frame structure on the east side and a large, slightly irregularly shaped structure is on the west (a parallelogram angling westward from the street). The second structure is coded as "special hazards." Very narrow spaces are open at the back of the lot, between the two structures, and along the west side of the special hazards structure.

588 and 586 Second Avenue (part of 59 and 60) Two side-by-side brick structures take up nearly all of these lots, except for a small rectangular yard in the southeast corner of Lot 60. Both structures are indicated as commercial use.

(Between 586 and 578) Second Avenue (61, 62 and 63) This entire area is covered by a coal yard.

578, 576, 574, 572 and 570 Second Avenue (5, 4, 3, 2 and 1) Each of these lots has an equally-sized brick structure with commercial use indicated and a yard in back. Lot 5 is as deep as the coal yard while Lots 1-4 are about 1/5th shorter.

177, 179 and 181 East 35th Street (6, 7 and 8) Each lot has a brick structure in front, of which Lots 7 and 8 have commercial use, and a yard in back. Lots 7 and 8 are slightly deeper than Lot 6.

Doughty 1858: This map, produced by a city surveyor, indicates the topography at the time showing East 35th Street in cross section from the Post Road (currently Lexington Avenue) to First Avenue (at the time, the East River). In the area of the APE, the northeast corner of Second Avenue and East 35th Street is shown with an elevation of only 1.9' above the high water line, which is described as "20.6' below the underside of the SW corner of the Alms House water table" and is shown equal to the East River. Moving towards the east about 95', a small hill is encountered that rises to an elevation of about 7' above the water line for about 100' heading east before dropping to elevations averaging 3' above the water line. Outside of the APE, a small canal or stream is encountered around 150' before a steep rise above the East River, which is shown at the current location of First Avenue.

Outside of the APE to the west the land rises irregularly to a high point of 66.1' above high water on the west side of the Post Road.

It may be that that the historic Kip residence shown on earlier maps (e.g. Randel 1820), though now demolished, was once located on the higher ground noted east of Second Avenue within the APE. No structures or monuments are indicated on this map.

Dripps 1863: A transportation line is shown along Second Avenue, just outside of this APE. The APE itself is located at the intersection of four lots, one in the north owned by Kip, and at least two owned by Y. Van Tuyl comprising the majority of the APE. No structures are portrayed here.

Vielé 1865: This topographical map shows the APE as situated between streams located on either side of the APE running along East 34th Street and from East 37th to East 36th Street, both emptying into the East River. The northern stream passes close by the northeast corner of the APE. The southern stream passes through a large pond located approximately 1,500' to the southwest. The streams are surrounded by marshlands; however the APE is depicted as meadowland. The eastern end of the block, outside of the APE, is within the bay. Sewer lines are indicated on Second Avenue and East 35th Street. Bluffs are indicated north, west, and south of the APE.

Vielé 1874: Figure 7.3-3. This topographic map is similar to Vielé 1865. The bay previously indicated at the eastern side of the block has been filled in (see also Perris 1850-51). A large hill is located to the south of the APE peaking at East 31st Street between First and Second Avenues, and there are lower bluffs and rock outcrops located to the north of the

APE at approximately East 37th Street. There are no sewers indicated on this map.

Robinson 1880-81: The APE is similar to Perris 1857-62, with the following exceptions: the East 36th Street roadbed, just outside the APE to the north, is indicated as cobblestone; the street numbers of the structures within the APE have changed; and, the coal yard on Second Avenue is no longer present. Specifics are noted below using the original Perris street numbers with lot numbers from Bromley 1902 in parenthesis, with the new street numbers listed after:

176, 174 and 172 East 36th Street (Lots 55, 56 and 57) These street numbers are now shown as 310, 308 and 306.

170 East 36th Street (58 and part of 59) The street numbers of these two structures are now 304 and 302 (these numbers are extrapolated, as actual numbers are not shown on atlas in front of these two buildings).

588 through 570 Second Avenue (part of 59, 60-63, 1-5) The coal yard that once occupied Lots 61, 62 and 63 is no longer present, and brick structures now occupy those three lots for a total of ten structures facing Second Avenue within the APE. The street numbers for those ten structures are now 660 through 642, from north to south.

177, 179 and 181 East 35th Street (6, 7 and 8) The street numbers of these three structures are now 301, 303 and 305.

Robinson 1885: The APE is similar to that portrayed on Robinson 1880-81. Street numbers for the houses on East 35th Street (Lots 6, 7 and 8) that were shown as 301, 303 and 305 on Robinson 1880-81 are here shown as street numbers 303, 305 and 307, respectively. Outside the APE, transportation lines are shown on Second Avenue, East 36th and East 35th Street, and a railroad line is also shown on Second Avenue.

Bromley 1902: Figure 7.3-2. The APE is generally the same as on the earlier Robinson atlases (1880-81, 1885). Further information is provided on each structure within the APE, and lot numbers are in parentheses.

310, 308 and 306 East 36th Street (55, 56 and 57) The three brick structures shown are each four stories tall.

304 East 36th Street (58) The irregularly shaped frame structure covers the entire lot except for a narrow alley on the east side. The structure has two stories.

302 East 36th Street (59) The irregularly shaped two-story brick structure covers the entire lot except for a very small triangular yard in back.

300 East 36th Street/660 Second Avenue (60) The irregularly shaped brick structure on the corner covers the entire lot, but number of stories is not indicated.

658 Second Avenue (60) This triangular area appears to be part of Lot 60, and a two story brick structure covers it, leaving a very small, narrow triangular yard in back.

656, 654 and 642 Second Avenue (61, 62 and 63) These three lots are of equal size, with equally-sized five story brick structures in front and smaller yards in back.
650, 648, 646, 644 Second Avenue and 642 Second Avenue/301 East 35th Street (5, 4, 3, 2 and 1) These five lots are of equal size, each with a four story brick structure on the front half of the lot and an equally sized yard in back.
303, 305 and 307 East 35th Street (6, 7 and 8) Each of these three lots have equally sized brick structures, each four stories, on the front half of the lot and a yard on the back half of the lot.
Sidewalks, which are included in the APE, are shown on this atlas: East 36th and 35th Street sidewalks are approximately 15' wide and the Second Avenue sidewalk is slightly wider.

Sanborn 1910: All previous development shown on the APE is now gone. All of Block 941 is labeled St. Gabriel's Park, probably named for the Roman Catholic Church and Parochial School on Block 942 to the north. Within the park, several one-story structures are shown in a horse-shoe pattern, the western two of which fall within the APE. Each of these two curved structures begin around 45' towards the center of the block from East 36th and 35th Street, within former Lots 55 and 8, respectively. These structures are partially located over the back 10-15' of the former structures on these lots. The buildings then extend westward, arcing toward each other through the former back yards of Lots 56, 57, 62, 63, 6 and 7.

Bromley 1925: An additional small structure is shown between the two structures on the APE shown on Sanborn 1910. The two structures appear slightly smaller on this atlas. Within the APE, the park is shown with winding paths leading from the northwest and southwest corners to interior paths encircling the complex of structures.

Sanborn 1929: The APE is the same as shown on Sanborn 1910. Additionally, a fire hydrant is indicated on the south side of East 36th Street near the corner of Second Avenue, the first shown within the APE.

Bromley 1934: The APE is the same as shown on Bromley 1925. This and subsequent Bromley atlases do not show the fire hydrant present on some Sanborn maps (1929, 1951).

City of New York 1940: This plan drawn up for the President's Office, Borough of Manhattan, shows East 35th Street with the south entrance of the Queen's Midtown Tunnel bisecting the block 130' east of Second Avenue, forming the eastern boundary of the APE. This plan also shows the intended widening of East 35th Street between Second Avenue and the tunnel entrance from 30' to 40' wide. This planned widening appears to affect only the sidewalks, which are each shown 5' narrower from the intersection of East 35th Street and the tunnel approach towards Second Avenue. Second Avenue sidewalks at East 35th Street are also shown 5' narrower. It is unclear if the widening of East 35th Street

actually took place, as subsequent maps and atlases consistently show East 35th Street 30' wide, as it had been shown previously (Sanborn 1929, 1951, 2001; Bromley 1934, 1955, 1974).

Sanborn 1951: The Park is shown entirely divided by the road that serves as a one-way entrance to the Midtown Tunnel, defining the eastern boundary of the APE. No structures are shown within the APE, and it is labeled as a playground. The fire hydrant at the corner of East 36th Street near Second Avenue is indicated on this map.

Bromley 1955: The Park is in the same configuration shown on Sanborn 1951 and is labeled St. Gabriel's Playground. The sidewalk on the eastern edge of the APE (included within the APE) is shown approximately 5' wide.

Bromley 1974: The APE is the same as shown on Bromley 1955.

Sanborn 2001: Figure 7.3-1. The APE is the same as shown on Bromley 1955, except that the playground is now labeled St. Vartan Park. The fire hydrant shown on earlier Sanborn maps (1929, 1951) is not indicated here.

Street Elevation Table:

Data Source	Second Avenue & E.36th St.	Second Avenue & E.35th St.	Tunnel Approach & E.36th St.	Tunnel Approach & E.35th St.	First Avenue & E.36th St. (560' east of APE)	First Avenue & E.35th St. (560' east of APE)
1865 Vielé	18'	16'	n/a	n/a	8' (pre-First Avenue)	9' (pre-First Avenue)
1880-81 Robinson	18.5'	16.2'	n/a	n/a	7.6'	7.6'
1902-1974 Bromley	18.4'	16.1'	n/a	n/a	7.5'	7.5'
1940 City of New York	n/a	15.6'	n/a	14.0'	n/a	n/a
2001 Sanborn	18.4'	16.1'	n/a	n/a	n/a	n/a

Tax and Directory Table:

Note: Lot numbers are shown in parentheses after the street address.

LOCATION: East side of Second Ave, E. 35th to E. 36th Street.	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 941								
642 Second Ave 570 Second Ave	No Reels	No Reels	No Reels	No Street #'s	NA	No Street #'s	Wilson	Joseph Wilams
644 Second Ave 572 Second Ave	No Reels	No Reels	No Reels	No Street #'s	NA	No Street #'s	J. Murphy	John Murphy
646 Second Ave 576 Second Ave	No Reels	No Reels	No Reels	No Street #'s	NA	No Street #'s	J. Murphy	John Murphy
648 Second Ave 578 Second Ave	No Reels	No Reels	No Reels	No Street #'s	NA	No Street #'s	J. Murphy	John Murphy
650 Second Ave	N/A	N/A	N/A	N/A	NA	N/A	J. Humes	James Humes
652 Second Ave	N/A	N/A	N/A	N/A	NA	N/A	Catherine Kipp	Nasser
654 Second Ave	N/A	N/A	N/A	N/A	NA	N/A	Catherine Kipp	Nasser
656 Second Ave	N/A	N/A	N/A	N/A	NA	N/A	Catherine Kipp	Martin Dieche
658 Second Ave	N/A	N/A	N/A	N/A	NA	N/A	C. Appleby	C. Appleby
660 Second Ave	N/A	N/A	N/A	N/A	NA	N/A	H. J. Anderson	J. Devlin

No reels for 21st ward prior to 1854
No reels for 16th ward prior to 1842
The street numbers that are in bold smaller font are from the Perris 1851 maps. At some point after 1858 the street numbers changed. Those street #'s (in the larger font above the Perris street #'s) are found in the 1869 and 1876 tax assessments.

*Perris Maps 1857

LOCATION North side of East 35th St. First and Second Ave.	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 941								
181 E. 35th Street	No Reels	No Reels	No Reels	No Reels	NA	G. Hagerty	See Bromley Map 1902 addresses	Bromley Map 1902 addresses
179 E. 35th Street	No Reels	No Reels	No Reels	No Reels	NA	JH + JD Lyon	Bromley Map 1902 addresses	Bromley Map 1902 addresses
177 E. 35th Street	No Reels	No Reels	No Reels	No Reels	NA	Isaac Van Cleef	Bromley Map 1902 addresses	Bromley Map 1902 addresses

*Bromley Maps 1902

LOCATION: North side of East 35th St. First to Second Ave	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 941								
307 E. 35th Street	No Reels	No Reels	No Reels	No Reels	NA	See Perris Maps 1857 addresses	G. Hagerty	Durr + Hagerty
305 E. 35th Street	No Reels	No Reels	No Reels	No Reels	NA	See Perris Maps 1857 addresses	J. Sowentha l	Peter S. Hickey
303 E. 35th Street	No Reels	No Reels	No Reels	No Reels	NA	See Perris Maps 1857 addresses	J. Hermes	J. Hermes
301 E. 35th Street	No Reels	No Reels	No Reels	No Reels	NA	See Perris Maps 1857 addresses	Not for this yr	Not for this yr

Bromley Maps 1902

LOCATION : South side of East 36th St. First to Second Ave	1808	1820	1834	1844	1851 Directory	1858	1869	1876
BLOCK 941								
310 E. 36th Street	No reels	No reels	No reels	No reels	NA	No street #'s	W. Metzger	John F. Gasch
308 E. 36th Street	No reels	No reels	No reels	No reels	NA	No street #'s	Thomas J. Coleman	John F. Gasch
306 E. 36th Street	No reels	No reels	No reels	No reels	NA	No street #'s	Thomas J. Coleman	John F. Gasch
304 E. 36th Street	No reels	No reels	No reels	No reels	NA	No street #'s	Thomas J. Coleman	Thomas J. Coleman
302 E. 36th Street	No reels	No reels	No reels	No reels	NA	No street #'s	Thomas J. Coleman	Not for this yr.
300 E. 36th Street	No reels	No reels	No reels	No reels	NA	No street #'s	Not for this yr.	Not for this yr.

No Reels for 21st ward prior to 1854.

Precontact Sensitivity:

The APE is located approximately 500' west of the former shore of the East River, between two streams which once emptied into small coves within what was later known as Kips Bay (Figure 7.3-3, Viele 1865, 1874). The area is indicated as once being marshy in places, especially around the streams, which near the APE ran approximately parallel to the future locations of East 34th Street and East 36th Street (Ibid.). The northern stream may have passed through the APE. A narrow strip of meadowland is indicated between the streams at the area of the APE (British Headquarters 1782). Large hills are shown rising just one block north of the APE above the northerly stream and two blocks south of the APE below the stream to the south, and bluffs culminating in a large rock outcrop are found one half block away to the northwest (Figure 7.3-3, Vielé 1865, 1874). A fresh water source, labeled "Sunfish Pond," connected with the southern stream approximately 1,500' southwest of the APE (Ibid.).

Although there were no previously reported precontact sites in proximity to the APE, this does not preclude their potential presence. Grumet (1981) reports two Native American trails that appear to pass near the APE. One of these was the Wickquasgeck Road which traversed

the length of Manhattan from north to south connecting various settlements, some of which appear to have been located near the west side of Second Avenue, although none are recorded at the precise location of the APE (Grumet 1981:68). Additionally, a habitation site called "Schepmoes" was recorded by Grumet as being located at about East 10th Street and Second Avenue, associated with a second Native American trail. This specified location of the site is questionable, however, as "Schepmoes" is not a Native American word or place name but rather was the name of a Dutch settler who had extensive land holdings in Lower Manhattan. In a 1636 deed, a stream described running from the East 50s to Kips Bay at around East 35th Street is identified as the "Kil of Schepmoes," and could be the actual location of the site (Grumet 1981:51; see Vielé 1865 for location of streams).

Overall, the area would have held advantageous precontact resources, given its access to protected riverine and estuarine environments which could have been prime areas for hunting, fishing and, just east of the APE, collecting of shellfish. Additionally, the area is near outcrops of the type that could have provided shelter or protection for local inhabitants. Marshy lands within the APE are unlikely to have been habitation sites, but the presence of the Kip farmhouse just south of the APE, the Van Tuyl house in the northwest corner of the APE, and topographic evidence of a hill near the southwestern end of the APE, all indicate that discrete sections of habitable land were present in the APE amid the swampland (Randel 1820; Doughty 1858).

While the area was part of Kips Farm, possible agricultural practices would have disturbed the surface area up to a depth of about a foot. Additionally, early historic shaft features associated with the Van Tuyl or the Kip residence such as house foundations, cellars, wells or privies would have also affected precontact resources, although wells may not have been used, given their proximity to streams. By 1865, sewer lines were present along Second Avenue and East 35th Street (Vielé), but that does not necessarily mean that mid-19th century structures were initially connected to these public utilities. Nearly all of the developed lots had yards and it is likely that privies and wells were utilized by some occupants of these lots, of which the wells could have penetrated the precontact surface.

Soil borings indicate that there may be between seven and 15' of fill below grade within the APE (WPA 1935; Raymond International, Inc. 1970; see Section 7.3.7.3), which may have protected potential precontact resources. However, precontact resources may have been disturbed in discrete areas where deep shaft features were excavated. Nineteenth century wells would have extended into the water table, alternately recorded at 6'8" and 18' below grade, and possibly deeper to access potable water (Raymond International, Inc. 1970, Borings 2-2 and 2-3). The deepest layers of fill, however, probably cover what were former low-lying marshland, and the former streambeds – neither of which would have been habitable. Overall, given that subsurface precontact resources such as middens (trash heaps) could have substantial depth (up to perhaps 5'), there exists the possibility of encountering such resources. The likelihood of encountering surface remains--for example, habitation sites--is low, given post-contact disturbances. Overall, sensitivity for precontact resources is considered to be moderate, and potential resources could lie beneath the fill between about seven and 20' below grade.

Historical Sensitivity:

The APE, currently consisting of the west end of Block 941, was originally part of Kips Bay Farm, a large tract associated with the descendents of Henrick Kip who had emigrated to New Amsterdam from the Netherlands prior to 1635 (Stokes 1928:111). In 1746-7, the farm belonged to a Samuel Kip and was referred to at one point as "Kipsborough" (Ibid.:115). Samuel Kip was the father of Jacobus Kip, who had a son also named Samuel. After the death of Jacobus' son Samuel in 1804, the area of Kips Bay Farm was laid out into lots and divided among various heirs (Ibid.).

Streets named after family members were gridded at an angle approximately 10 degrees off of the current alignment, and included four streets running approximately east-west between current East 39th and East 27th Street and four streets running approximately north-south between Lexington and First Avenues, not counting the Eastern Post Road (about the current location of Lexington Avenue), which bounded the farm on the west (Stokes 1918: Plate 176). Running north-south, Eliza Street crossed the APE on its west end (Figure 7.3-4, Randel 1820). The APE at one time included portions of several lots. In 1820, Randel indicates that two small portions of lots belonging to Peter B. Stuyvesant and the Heirs of John Gelsten occupied the northwest and southwest corners of the APE, respectively, while larger sections are shown belonging to Eliza Kip and John Y. Van Tuyl (Ibid.). Conveyance records, however, indicate these lots passed through several hands after initially being divided among several of Kips family members, including Henry, Cornelius, Catherine, and other, unnamed Kip heirs. Catherine Kip is listed as the daughter of Samuel, heir of Jacobus Kip, and the wife of John G. Van Tuyle. These lots were eventually sold in city lots by the mid 1800s, according to the Conveyance Records (Vol. 5: 643, 657, 663, 746; Plate XIV, R. D. 364). Tax tables (see above) indicate that Catherine Kipp (sic) still owned Lots 63, 62 and 61 (652, 654 and 656 Second Avenue) as of 1869, but they were sold by 1879.

A structure, probably a residence, was present on the property associated with John Van Tuyl and Catherine Kip (Figure 7.3-4, Randel 1820). It is possible that the structure dates to at least 1804, when the Kip Farm was divided into separate properties for individual Kip heirs (see above). The structure appears to have been located partially within what is now the Second Avenue roadbed and partially in the APE, in the area of future Lots 63, 62 and 61, probably beneath the area where buildings were constructed in the later 19th century. In the early 19th century, it would have likely been located near the stream described above, fronting onto the former Eliza Street. It is most likely that shaft features such as privies and wells were once associated with this structure and may be present within the APE, as well as structural foundations of the house itself and any associated cellars. By 1850, the Van Tuyl/Kip structure was no longer present (Perris and Hutchinson 1850-51).

Across East 35th Street, just south of the APE, the house of Jacobus Kipp was constructed in 1654. The residence is described as being located on the south side of East 35th Street 100 feet east of Second Avenue, partly in 35th Street (Stokes 1918:950). This would place the house just outside of the APE, south of former Lots 6 and 7 on Block 941 (Figure 7.3-2, Bromley 1902). According to an 1858 survey (Doughty), the house would have been located on a hill that elevated it above surrounding marshy land (British Headquarters 1782; Figure

7.3-3, Vielé 1865, 1874). This structure was destroyed by fire in 1696 and a second house was constructed on the same site which was not demolished until 1851 (Stokes 1918:950.). In 1820, a house that is most likely the Kip residence is shown partially in the location of the future East 35th Street roadbed (see Randel, Figure 7.3-4; Stokes 1918:950). Later, the house is shown just south of the road (Perris and Hutchinson 1850-51). While the house itself does not appear to fall within the APE, it appears to have been located no less than 30' south of it and possibly only 15' south. Also, it is difficult to be certain about the absolute location of the original structure destroyed in 1696, which could have been located further north of the replacement structure. There is the possibility that historic remains, such as wells and privies associated with these residences, still exist in the APE. Potential resources associated with these structures would date from 1654 to 1851.

Evidence for landscape modification in the area of the APE is clear. The east end of the block, outside of the APE, was once part of Kips Bay (on the East River) and does not appear to have been filled in to allow for the creation of First Avenue until the mid-1850s (Dripps 1852; Perris 1857). The two streams shown on topographic maps appear to have been filled as well, possibly at the same time (Vielé 1865, 1874). Soil borings also indicate that the APE now has about seven and possibly up to 15' of fill below grade (see Section 7.3.7.3), which was probably introduced at the same time that the bay was filled in. Any pre-1850s remains will be located beneath this fill and are likely to have been protected by the fill.

After the block was filled in, it was subdivided into city lots and developed. While no structures were shown in the APE in 1850-51 (Perris), the APE is shown completely developed by 1857-62 (Perris). By 1857-62 the structures were of mixed commercial and residential use, and three lots still owned by Catherine Kipp (sic) at the time (Lots 63, 62 and 61) were shown as a coal yard (Perris 1857-62). By 1880-81, after the property was no longer owned by Catherine Kip, and the coal yard was replaced by three brick structures (Robinson).

Nearly all of the lots within the APE had open back yards occupying up to one-half of the lot space, with the exception of Lots 58, 59 and 60, where structures covered all or nearly all of the lot area. The skewed shape of these three lots may reflect old lot divisions from when the Kip Farm was first divided. While municipal water was available along Second Avenue and East 35th Street by 1865 (Vielé), it is not clear if the occupants of structures in the APE were connected to it when they were first built between 1852 and 1857-62 (Perris). Available tax records do not give a clear indication of the status of the occupants, but the mixed commercial/residential nature of the structures indicates the presence of working class residents. In some cases, several lots were owned by one individual during the latter half of the 19th century, but it is probable that at least some buildings were rented out or housed boarders (see Tax Table above). Overall, this indicates that shaft features from the second half of the 19th century could be present in the former areas of backyards which may represent the occupants of these structures. These would include privies and wells, which would be located within the fill layer, although the wells would have penetrated into the water table, which is recorded at 6'8" and 18' below grade (Borings 2-2 and 2-3, Raymond International, Inc. 1970). If the water table was lower in historic times, wells would have been concomitantly deeper.

Additionally, none of the 19th century structures associated with the development of the block are depicted as having basements (Robinson 1880-81; Bromley 1902). Thus, it is possible that the mid-19th century development in the APE did not affect to any great degree any possible earlier historic or precontact era resources present beneath the fill layer.

According to Stokes (1918:971), the land for St. Vartan Park, originally called St. Gabriel's Park, was originally acquired in 1903, although maps indicate that by 1901 Block 941 was already slated to be a public park (City of New York). In the following year construction and improvements began, which entailed the removal of all 19th century structures. The park was completed in 1905, according to the Department of Parks (Stokes 1918:971). St. Gabriel's Park (or Playground), was undoubtedly named for St. Gabriel's Catholic Church located on Block 942 to the north, until it was renamed in the late 20th century (Sanborn 1910; Bromley 1955). Structures and small paths present in the park during the first 50 years or so of its existence appear to be unsubstantial (Sanborn 1910; Bromley 1925), and it is doubtful that more than the surface was affected by the construction of the park.

Plans were drawn up by 1940 to bisect the block, from north to south, with an approach to the Queens Midtown Tunnel (City of New York). By 1951, the plan was implemented and a narrow road leading to the tunnel divided the park, which by this time was labeled as a playground (Sanborn). By 1974, the Diocesan House-Armenian Church in America cathedral was constructed immediately south of the APE and St. Gabriel's Playground was renamed St. Vartan Park, as St. Gabriel's Church had been razed in 1939 to make way for the entrance to the Queens Midtown Tunnel (Bromley 1974; Figure 7.3-1, Sanborn 2001).

The APE is currently occupied by basketball and handball courts. The following possible disturbances have been noted: Utility poles, street-sign supports, and traffic light supports are present on the sidewalks surrounding the APE, and additionally there are lampposts in the basketball court. A manhole is present within in the APE in the basketball courts (marked "City of NY"). Fire hydrants were observed near the corner of East 35th Street and Second Avenue on the west side of the park, and also at East 36th Street and Second Avenue. Sewage grates were observed at the corner of East 35th Street and the Tunnel Approach on the east side of the APE as well as a storm drain next to a traffic light on East 36th Street on the north side of the APE. Last, a possible fuel tank was noted on the south side of the park near the corner of East 35th Street and Second Avenue. These observances indicate that the APE has been disturbed by more recent development in discrete areas, but there is no indication that the entire APE or large sections of it has been previously affected. In fact, the construction of the park may well have helped preserve any archaeological resources beneath.

In sum, the St. Vartan Park APE is considered moderately sensitive for historic era resources. Historic remains from the 17th through mid-19th century could be found in and beneath the fill, which ranges from seven to 20 feet below the surface. In particular, shaft features and possibly structural foundations of the John Van Tuyl and Catherine Kip house from the early 1800s are likely to have existed in the northwest corner of the APE, and shaft features may be present which may be associated with one of two Kip residences dating from the mid 17th

through mid 19th century, although the structures were cartographically depicted just south of the APE. There is a high possibility that remains of the Van Tuyl/Kip structure and associated shaft features lie beneath former Lots 63, 62 and 61, thus historic sensitivity for these former lots is high. The APE is also moderately sensitive for shaft features such as wells and privies from the second half of the 19th century that may have existed in the back yards of structures built between 1852 and 1857-62, which could be found in and beneath the fill down to about 20 feet below grade, or possibly deeper. Later construction of the park may have preserved these resources, which if present, would have probably been located in and beneath the fill, from the surface down to at least seven to 20' below grade, and possibly deeper.

7.3.7.2 Site File Search Results, NYCLPC, NYSOPRHP and NYSM

SITE FILE SEARCH RESULTS

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

~~Village~~ City 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

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
7248 X		~~2- A061.01.0014 D03~~	survey in the 1970's
		3- A061.01.0623 X D023	2nd found historic Remains.
		4- A061.01.06763 X	no other info was found.)
		~~5- A061.01.0001~~	
	209 Water St. South Street NR 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 @ SHPO		A061.01.01286 X	
		A061.01.0541 X	
		A061.01.00542 X	
		A061.01.09531 X	

ATIONAL REGISTER E. GIBLE and LISTED ___ X ___ Eligible ___ ___ Listed ___ ___ X ___ Building Inventory

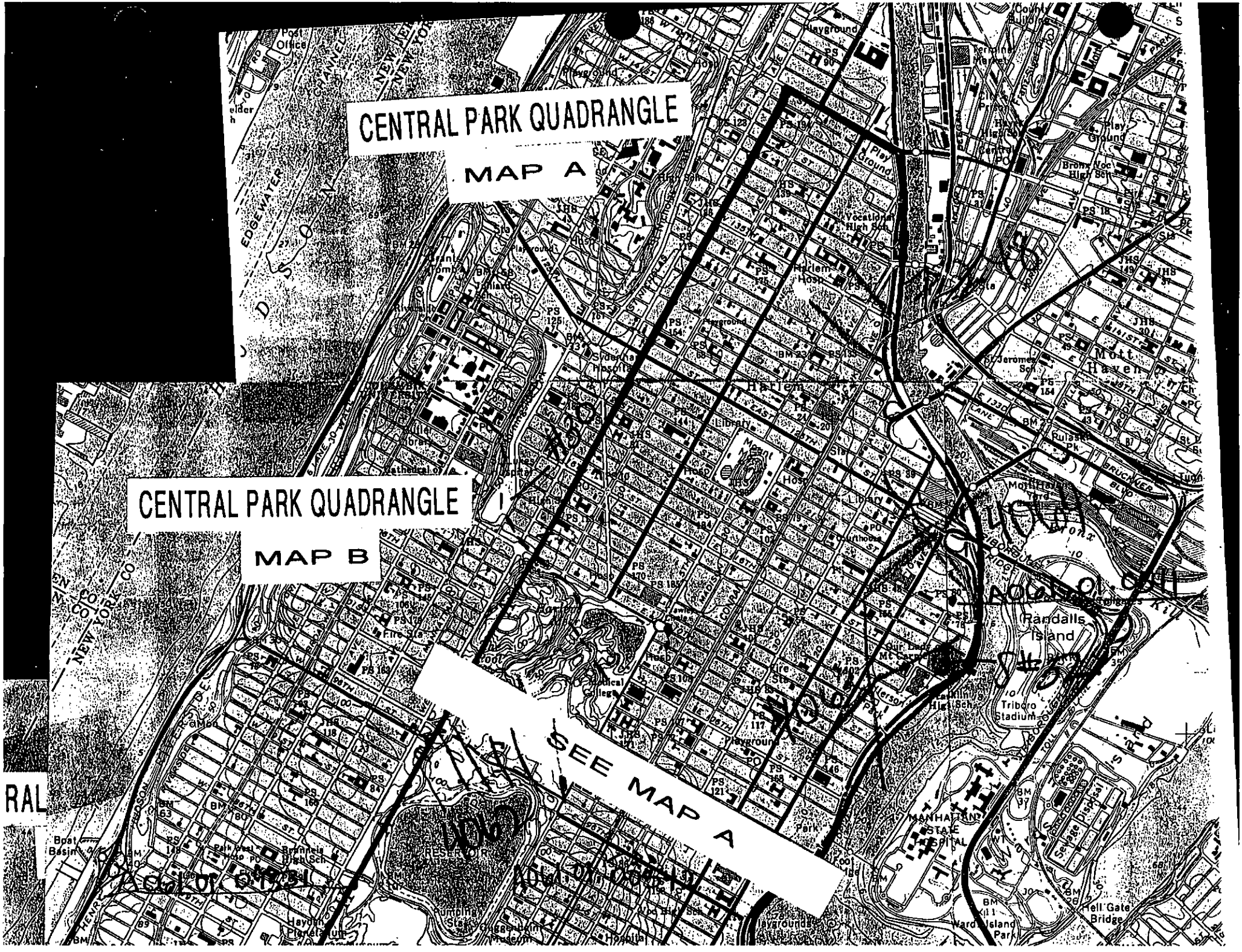
ilding Inventory #	NR Status	Form Copied	Property Description	Roads Checked
06101.000604	NRL	✓	South Street Seaport Historic District 209 Water Street	

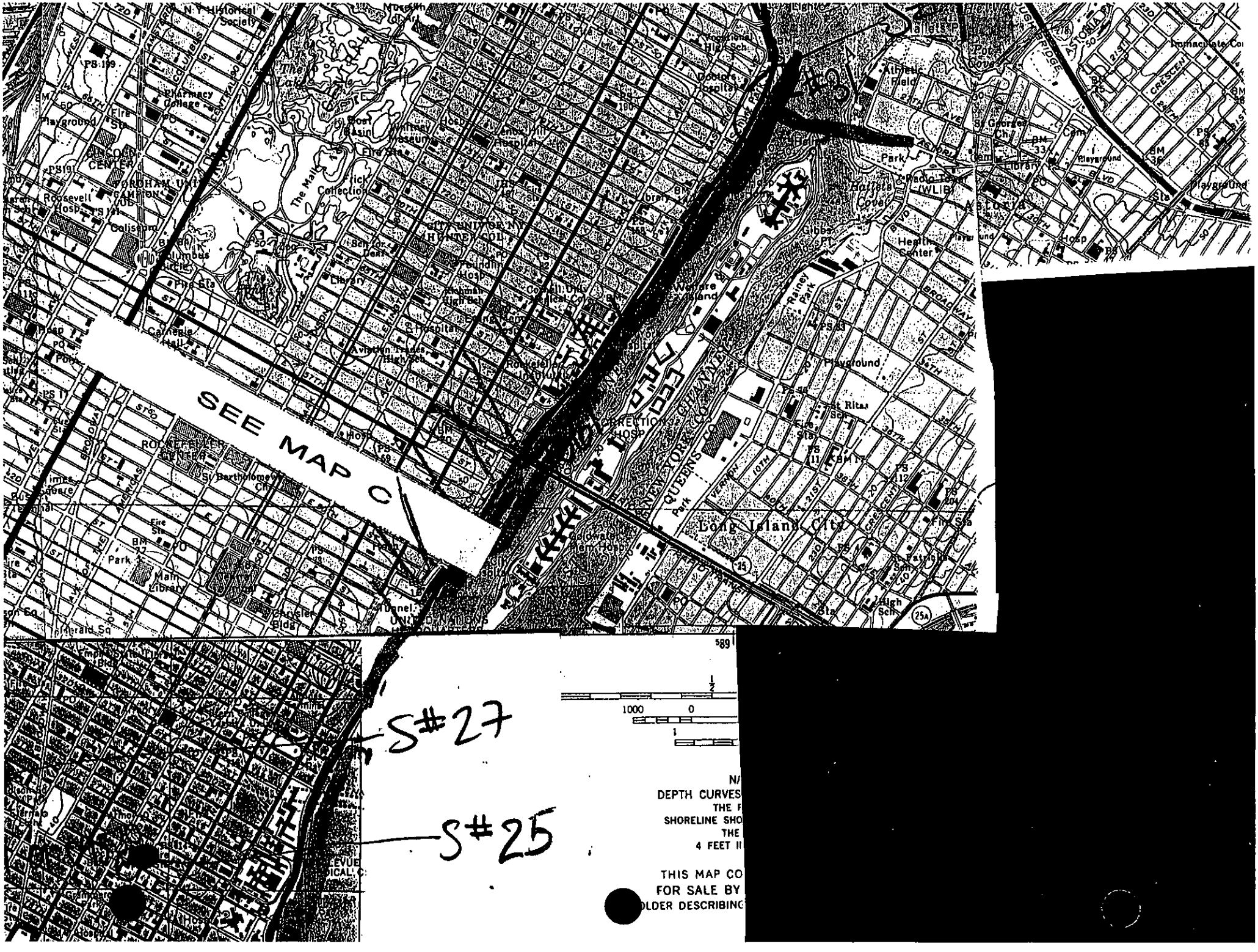
EVIOUS SURVEYS <17 previous surveys w/in Radius>

8 Westside Highway Program – 1983
William O. Hersey – 1963
Castle Clinton at the Battery
Broad Street Financial Center Greenhouse January 1985
X
64th Pearl Street 17th Landfill Arnold Pickman & Nan Rothschild May 1981
Stone Street Historic District 9/17, 8/17 NYC Landmarks Pres. Comm. Tracker
9 Barclays Bank Site – 100 Water St. Berger – 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block Kardas & Larrabee July 1981

5 209 Water St. – Schuyler – ? Date
East River Roads. New York Harbor Collection Kardas & Larrabee October 1977
10 Sheridan Square – 1983 – Rutgers University
Lower Eastside Service Center – Louis Berger Jan '98
27 750 Sixth Ave. HPI – February 1998
Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1989 / December 1989
32 East River Plaza HPI Sept. 1998
Stone Street Historic District NYC Landmark Pres. Comm. February 1998

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


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A
RAL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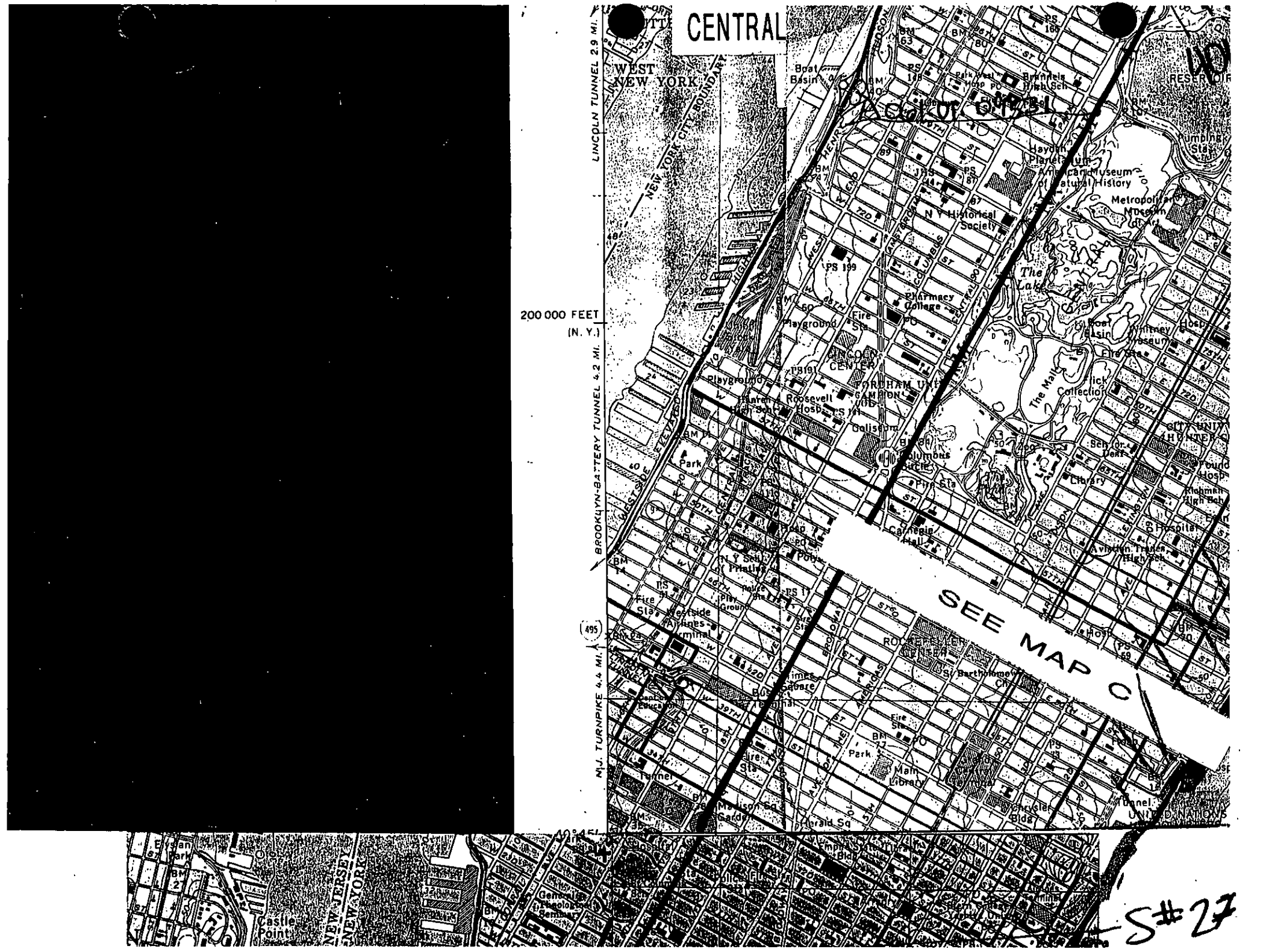
CENTRAL
WEST NEW YORK
NEW YORK CITY BOUNDARY
LINCOLN TUNNEL 2.9 MI.
BROOKLYN-BATTERY TUNNEL 4.2 MI.
N.J. TURNPIKE 4.4 MI.
200 000 FEET
(N. Y.)
Boat Basin
Brunnels High Sch
Hayden Planetarium
American Museum of Natural History
Metropolitan Museum of Art
N Y Historical Society
PS 199
Pharmacy College
Playground
Fire Sta
LINCOLN CENTER
FORDHAM UNIV
Roosevelt Hosp
Coliseum
Columbus Circle
Carnegie Hall
The Lake
The Mall
Whitney Museum
Flick Collection
Library
Sch for Deaf
Hospital
Aviation Trades High Sch
Richmond High Sch
Pumping Sta
RESERVOIR
Park
N Y Sch of Printing
Westside Airlines Terminal
Times Square
Bus Terminal
ROCKEFELLER CENTER
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Main Library
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Tunnel
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495
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General Theological Seminary
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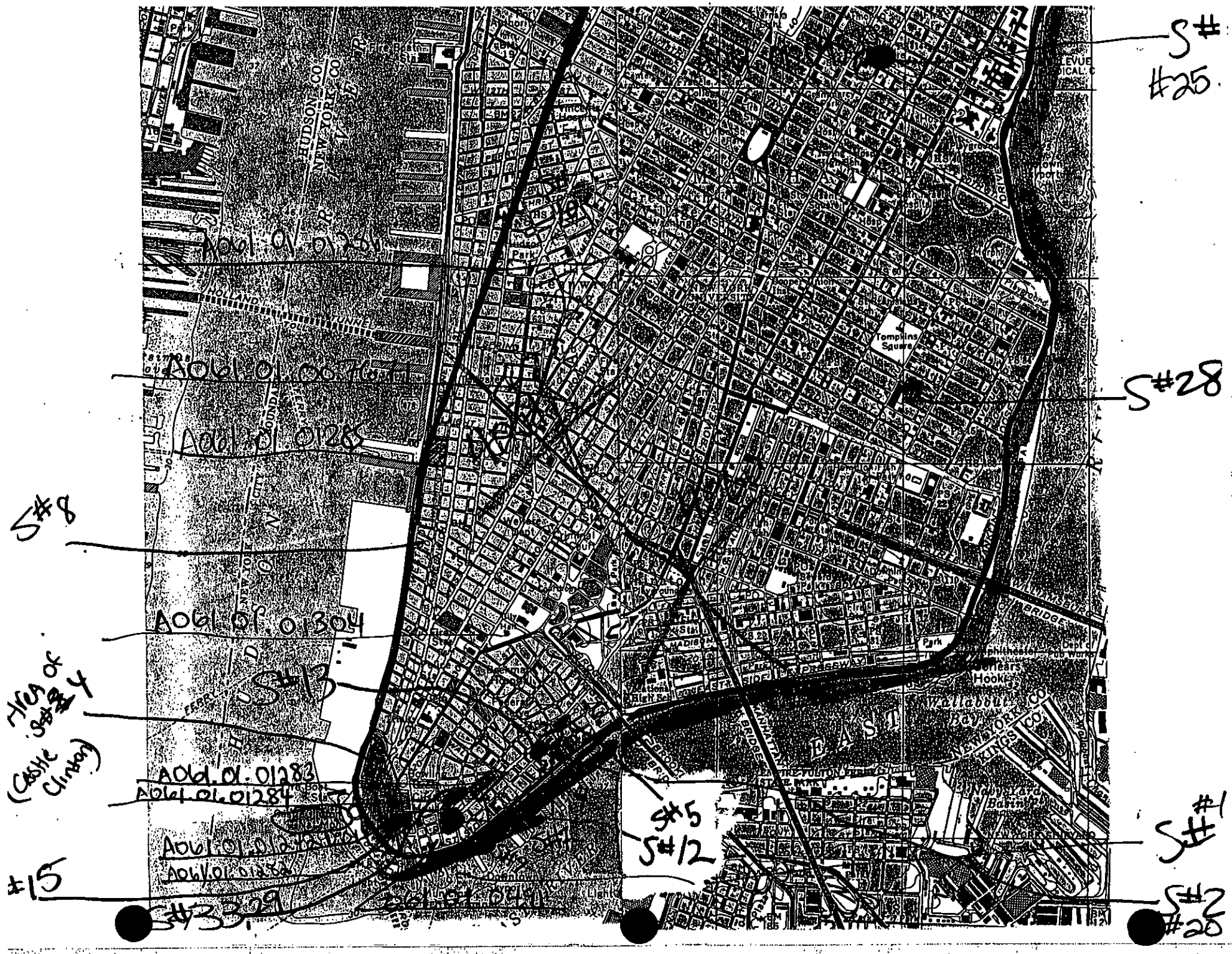
S# #25
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S#8
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S#13
Area of S#4 (Castle Clinton)
A061.01.01283
A061.01.01284
S#5
S#12
S#1
#15
S#2
#20
Tompkins Square
Wallabout Bay
Navy Yard Basin
HUDSON CO
NEW YORK CO
KINGS CO
EAST

7.3.7.3 Soil Borings

Location: Second Avenue at East 35th Street, west side
Boring 2-2, Raymond International Inc., 1970
Elevation: not provided with boring log
1-13': Brown sand (fill)
13-17': Gray silt
17'-19': Soft broken rock
19'-29': Drilled rock
Water table encountered at 6' 8" below grade

Location: Second Avenue at East 36th Street, east side
Boring 2-3, Raymond International Inc., 1970
Elevation: not provided with boring log
1-10': Sand, gravel, cobbles, fill
10-20': Brown clayey silt and sand
20-25': Gray, coarse, fine sand, gravel, boulders, some silt
26': Cored boulder
Water table reached at 18' below grade
(boring abandoned before bedrock was reached)

Location: Second Avenue, west side, between East 35th and 36th Streets
Boring #19, W.P.A. Rock Data, Vol. 2, Sheet 6, 1935
Elevation: 18.1'
0-7': Earth fill
7-16': Gravel and clay
16-23.9': Sand and fine gravel
23.9-33.9': Hard rock
Water level not recorded

Location: Second Avenue, east side, between East 35th and 36th Streets
Boring #18: W.P.A. Rock Data, Vol., 2, Sheet 6, 1935
Elevation: 16.6'
0-15': Earth fill
15-19.5': Clay, sand and gravel
19.5-29.5': Hard rock
Water level not recorded

7.4 EAST 66TH STREET SHAFT SITE

7.4.1 Study Area Description

The East 66th Street roadbed between Second and Third Avenues, including a driveway for Manhattan House, is being evaluated as a potential shaft site or staging area (Photographs 7.4-1 through 7.4-3). The East 66th Street APE includes the East 66th Street roadbed, the Manhattan House driveway, and abutting sidewalks from Second Avenue to a point about 600' to the west. What was historically the northeastern section (40 feet wide) of Block 1420, between East 66th and East 65th Streets, is included in the APE.

7.4.2 Existing Conditions

7.4.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

Arthur C. Parker reported a site in the area of East 59th 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 66th Street Shaft site (Appendix 7.4.7.2).

The Eastern Post Road, which followed the route of an old native trail, formerly passed through the project area immediately west of the East 66th Street Shaft Site (Bolton Grumet). 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 (1981: 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. To the north of the shaft site, the former road followed Third Avenue until just above 66th Street where it turned southeastward. The road then diagonally crossed Block 1420 to the west of the small bluff or hill. The road followed this southeast route until it connected with Second Avenue at 62nd Street where it continued directly south.

Archaeological Potential

This section of the APE was partially covered by a small hill during the precontact era. The subsequent removal or this hill during the 19th century (c.1836-1850) would have obliterated any potential prehistoric resources in this location. A single soil boring taken at the corner of East 66th Street and Second Avenue confirmed that there was no evidence of natural soils between the historical "fill" and bedrock (Raymond International, Inc., Borings 2-45). Therefore, this APE lacks any precontact potential.

7.4.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

Although not explored archaeologically, the Old Dove Tavern was once located one block to the northwest of Block 1420 (Block 1401). Noted on 18th century maps and documents as a popular establishment, the Dove served New Yorkers before, during, and after the Revolutionary War. In fact, according to local lore, Nathan Hale may have been executed near the Dove. Today, a sign commemorating the Dove Tavern is located on the northwest corner of East 65th Street and Third Avenue.

Archaeological Potential

Documentary research concluded that the East 66th Street Shaft Site APE might be potentially sensitive for the resource categories of *Residential and Transportation* (Appendix 7.4.7.1; Figure 7.4.1-5).

Historical dwellings and their surrounding yards can typically offer a wealth of important information about their former inhabitants. The domestic compound characteristically has numerous shaft features and activity areas that can be explored archaeologically. There are three types of shaft features that are found at domestic sites. These are wells, privies (outhouses), and cisterns. In most cases, wells are typically found to extend well below the water table. Because wells can sometimes extend to these great depths, the lower sections often escape disturbance caused by utility installation and surface construction. Although not as deeply buried as wells, privies and cisterns are often found truncated in urban locales. Privies, for example, have been found to extend down to 13' feet below grade in Manhattan, with only the sections closest to the surface disturbed by subsequent construction (Geismar 1986:43). The 1851 Dripps Map depicts a residence at the northeast corner of Block 1420, just after the small hill had been removed, and this may have had shaft features associated with it within the APE.

Car barns and depots were built all over New York City during the 19th century. The first horsecar line in the United States was founded in New York City in 1852. These companies often had several car barns where they would store and repair the passenger cars, and board the horses. These structures were usually divided into sections for car storage, feed storage, stables, offices, and areas for repairing the cars and re-shoeing the horses. In some cases, full blacksmith shops were present within the walls of the car barn. The Third Avenue Depot, which contained a blacksmith shop, was located on Block 1420, partially within the APE, by 1857.

Research indicates that all of the historical development took place within Block 1420 following the removal of the small hill near the eastern part of the block. East 66th Street has already been laid out and once the hill was removed in this location, the street was used as a common thoroughfare. Almost all of the utilities that were introduced to the blocks on both sides of the street were later placed beneath the surface of the road. There

is no indication that any historical resources are present within the 66th Street section of the APE.

The current elevation at East 66th Street is 56.9', which indicates that it has not changed drastically since July 1, 1850, when a map on file at the Manhattan Borough President's Office identified the grade at Second Avenue and 66th Street as 56.8'. A single soil boring taken at East 66th Street reported that bedrock was encountered at eight feet below grade. It was also reported that "no water [was reached] after completion" (Boring 2-46, Raymond International, Inc. 1970). Another soil boring taken at East 65th Street reported that the water table was reached at 17' below grade and bedrock was encountered at 20' below grade (Ibid.: Boring 2-45). It may be possible that mid-19th century shaft deposits are present to the west of Second Avenue. These shaft features could be as deep as 17' below grade and possibly deeper. Because the grade has changed little since the hill was removed from the east side of Block 1420, and there may not have been significant subsurface disturbance in the northeast corner of the block, there is the potential for the presence of historical period features within this portion of the APE.

7.4.3 Summary of Archaeological Potential

The proposed creation of a tunnel boring access shaft in 66th Street and the northeast corner of Block 1420 will have no effect on precontact resources, since none are anticipated. However, there is the potential for mid-19th century historic archaeological resources in the form of deposits from shaft features such as wells, privies, or cisterns, within the rear yard areas of the former house located at the corner of East 66th Street and Second Avenue (Block 1420) (Figure 7.4-6). In addition, the APE may contain the remains of the mid-19th century blacksmith shop associated with the Third Avenue Railroad Company's Depot building (Block 1420). While the features associated with the blacksmith shop would be found perhaps two to four feet below the surface, the depth of potential mid-19th century shaft features associated with the dwelling may extend from the surface (beneath the driveway of the Manhattan House), to at least 17' below grade or deeper.

7.4.4 Proposed Project Effects

Proposed construction plans call for the creation of a shaft up to 85 feet in depth to allow for the insertion of boring machines or for spoils removal. The shaft would measure about 30 feet by 50 feet and a staging area between 40,000 and 80,000 square feet would be needed. Since the East 66th Street Shaft Site is potentially sensitive for mid-19th century residential features and a blacksmith shop associated with a railroad depot from the surface down to about 17 feet below grade, proposed shaft excavations would affect these resources. Any surface work necessary to create the staging area would probably be shallow and would also affect potential historic resources.

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.

7.4.5 Recommendations

There is a moderate to probable expectation of encountering intact, significant historical-period remains within the APE where historical structures were noted. At present, information about subsurface conditions is known from only a single boring taken on East 66th Street. Since this boring indicates potential historic sensitivity, then a subsurface testing plan will be warranted to test potentially sensitive areas.

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 sites 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 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. Iits 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

[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.

take the form of archaeological data recovery. It is possible, however, that given the wide range of areas 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.

7.4.6 Figures and Photographs

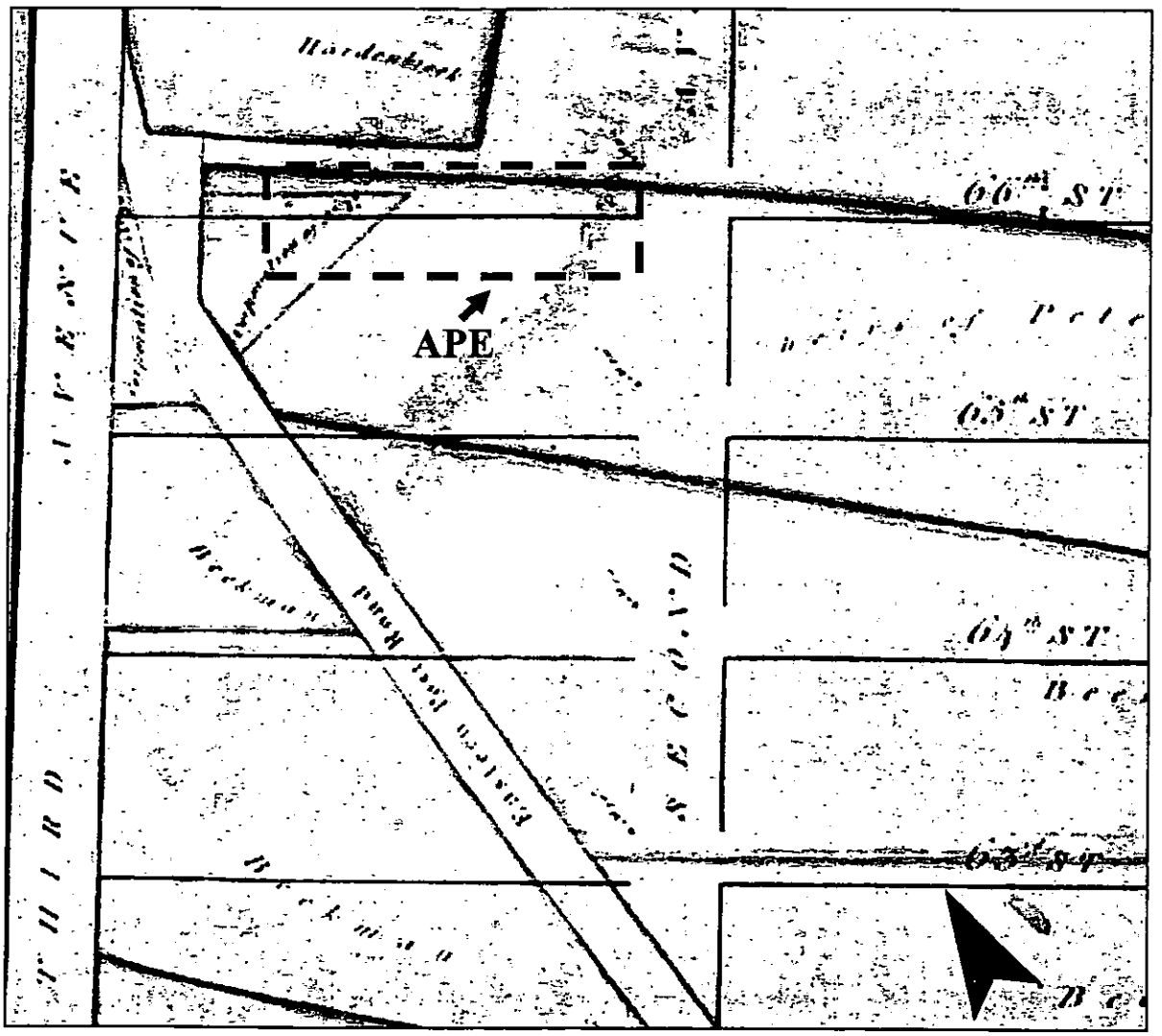


FIGURE 7.4-1

Farm Maps. East 66th Street Shaft Site. Randel 1820.
No Scale

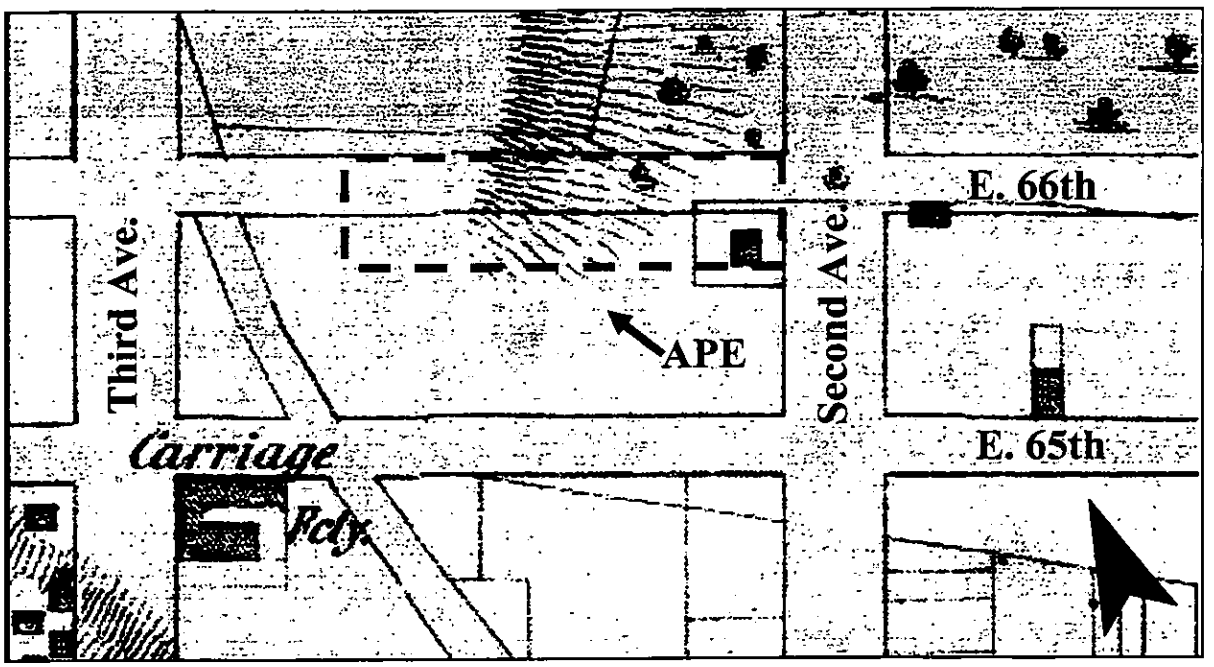


FIGURE 7.4-2

Map of the City of New York North of 50th Street. East 66th Street Shaft Site. Dripps 1851.
No Scale

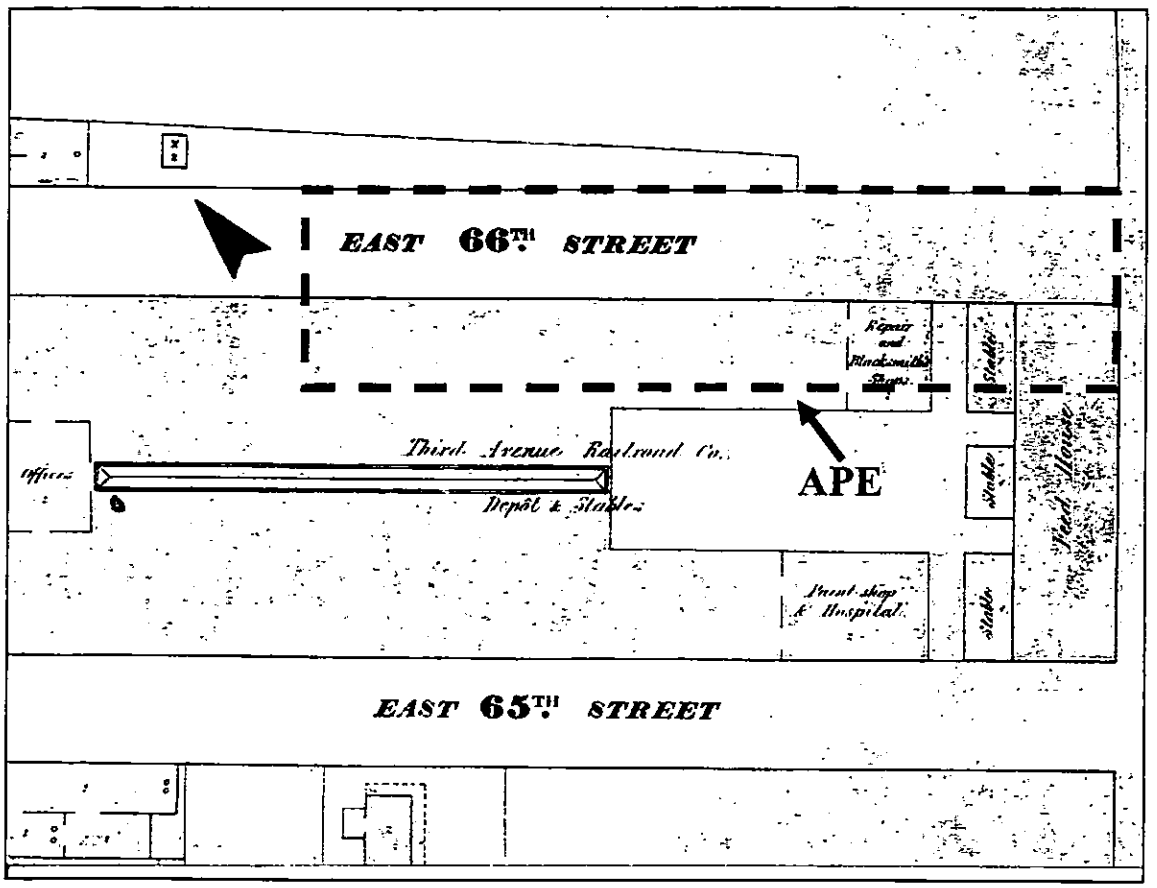


FIGURE 7.4-3

Maps of the City of New-York. East 66th Street Shaft Site.
Perris 1857-62.
No scale

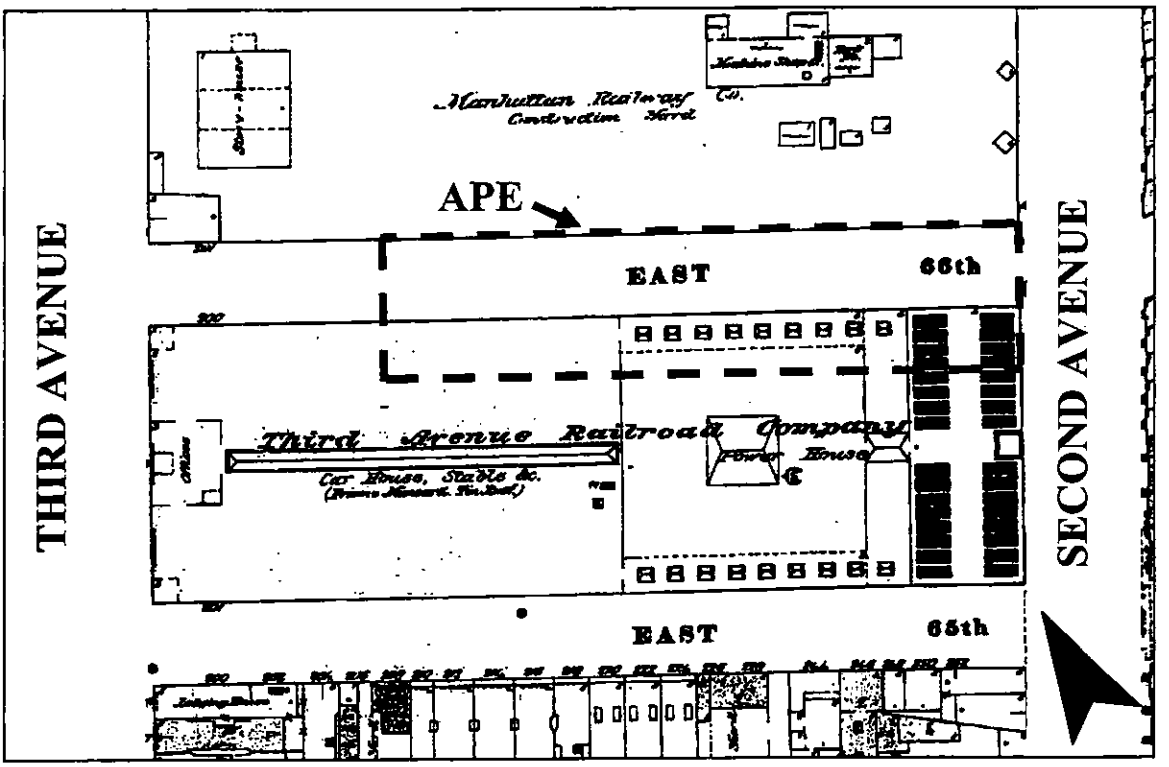


FIGURE 7.4-4

Maps of New York. East 66th Street Shaft Site. Sanborn 1892.

Approximate Scale ½ inch = 70 feet

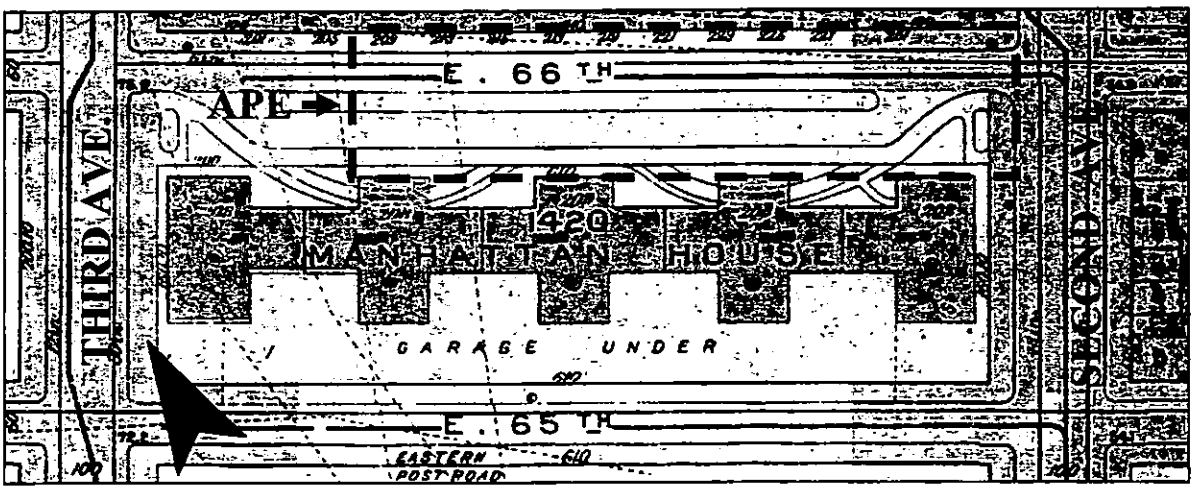


FIGURE 7.4-5

Atlas of the City of New York, Borough of Manhattan.
East 66th Street Shaft Site. Bromley 1955.

Approximate Scale ½ inch = 70 feet

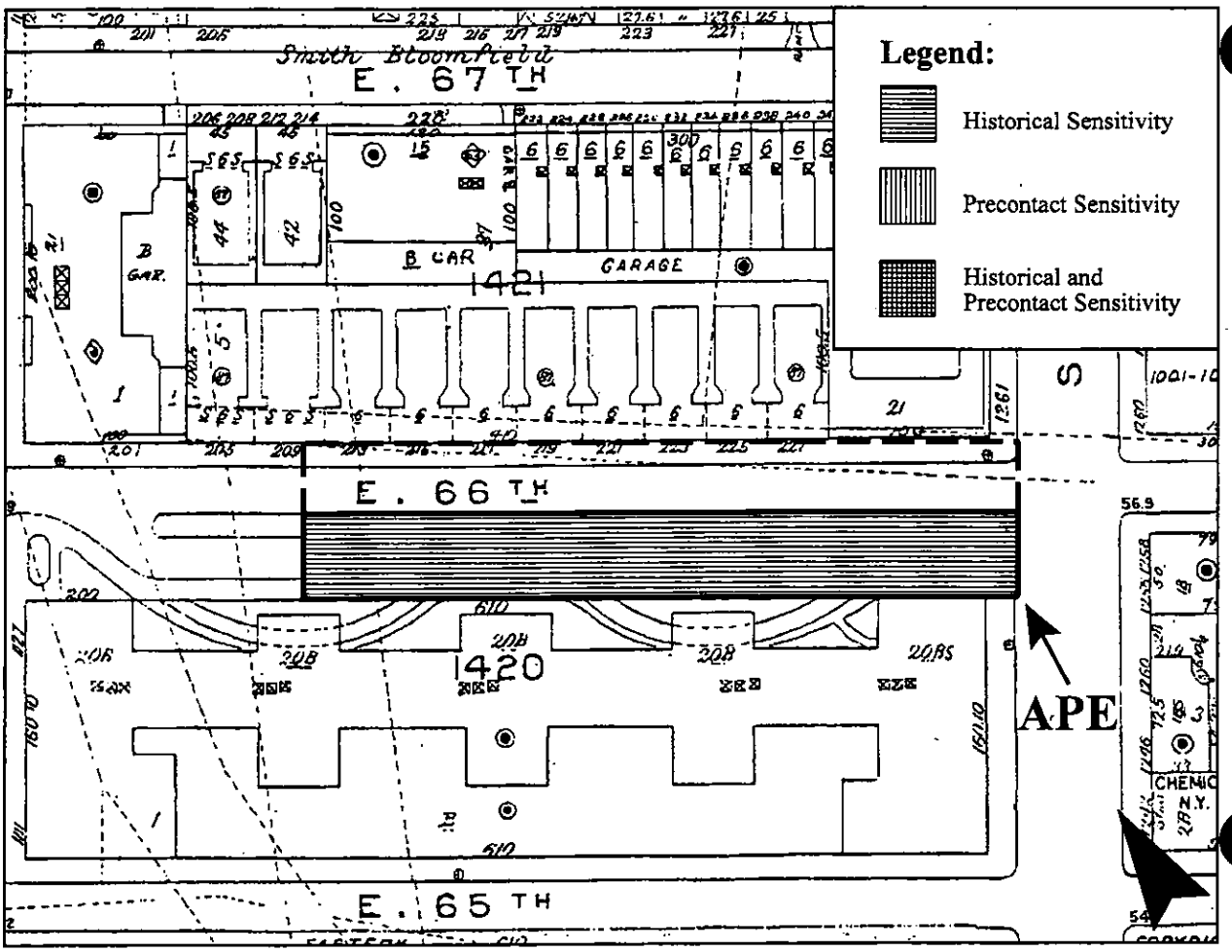


FIGURE 7.4-6

Area of Potential Archaeological Sensitivity. East 66th Street Shaft Site. Sanborn 2001.

Approximate Scale: ½ inch = 60 feet



Photograph7.4-1: On the corner of East 66th Street and Second Avenue looking west down a driveway. Note potential East 66th Street Shaft Site.



Photograph 7.4-2: Near the corner of East 66th Street and Second Avenue looking east up East 66th Street. Note potential Shaft Site.



Photograph7.4-3: From the east side of Second Avenue looking west down East 66th Street.

7.4.7 Appendices

7.4.7.1 Documentary Assessment of APE

Cartographic History

Randel 1820 — Block 1420 is shown as being laid out. East 66th Street is shown as the location of the northwestern edge of the property formerly belonging to the heirs of Peter Van Zandt. The APE, which includes East 66th Street and the northeastern part of Block 1420, are shown as vacant. A small hill is shown on the eastern half of Block 1420 and runs through the northeast corner of the block. The former route of the Eastern Post Road is depicted on the west side of the block, outside of the APE.

Colton 1836: — No structures are depicted within the APE. A small bluff or hill is shown on the east side of Block 1420.

Dripps 1851: — One building is depicted within the APE. A small building is shown on the northeast corner of Block 1420. A fence that connects with another fence following the former Van Zandt northern estate boundary surrounds the building. Trees and a small rise are shown to the west of the structure. The former route of the Eastern Post Road is depicted on the west side of the block, outside of the APE.

Perris 1857-62: — A large brick structure covers most of Block 1420. Identified as the "Third Avenue Railroad Co. Depot and Stables" the "Offices" were located at the west end along Third Avenue. Three "Stables" and the "Feed House" occupied the east end adjacent to Second Avenue. Along East 65th Street, the "Paint Shop & Hospital" were located near the southeast corner of the structure. Near the northeast corner, adjacent to East 66th Street within the APE was the "Repair and Blacksmith's Shops." An open courtyard was located in the center of the eastern part of the block with entrances leading out to both East 65th and East 66th Streets.

Viele 1874: — The predevelopment topography on this map shows the APE and surrounding land as somewhat elevated and hilly, with a water course running one block to the east.

Bromley 1880: — The large brick structure identified as the "Third Ave. R W. Co. Depot and Car Shops" is shown as almost completely covering the entire block. Only a small interior courtyard, just south of the APE, is depicted as open. Although covered by a single structure, the block is shown as divided into numbered lots. A 6-inch water pipe is shown as following the course of East 66th Street within the APE. The former route of the Eastern Post Road is depicted on the west side of the block, outside of the APE.

Robinson 1885: — This map shows the large brick structure, now identified as the "Third Avenue Horse Car Stable," almost covering the entire

block. A small interior courtyard, just south of the APE, is still depicted as vacant. The former route of the Eastern Post Road is depicted on the west side of the block, outside of the APE. East 66th Street remains unchanged.

Sanborn 1892: The map shows the entire block covered by the "Third Avenue Railroad Company Car House." East 66th Street remains unchanged.

Bromley 1902: The APE is unchanged from Robinson 1885.

Sanborn 1907: The APE is unchanged from Sanborn 1902. The eastern half of the structure on Block 1420 is, however, now identified as the N.Y. Transportation Co. Automobile Station."

Bromley 1925: The APE is unchanged from Sanborn 1907. The building covering Block 1420 is identified at the "Third Avenue Railway Company Car Depot."

Bromley 1934: The APE is unchanged from Bromley 1925.

City Map 1948: This map shows the changes in grade for East 66th Street. The map indicates that by that date, the Car Depot had been razed and the new "Manhattan House" had been constructed on the southern 3/4 of Block 1420. At that time, East 66th Street was widened from 60' to 100' across and the street grade was lowered by .05 to .10 feet.

Sanborn 1951: This map was updated from the 1926 map. It shows the APE as unchanged from the 1948 City Map.

Bromley 1955: The map shows the APE as unchanged from the Sanborn 1951.

Bromley 1974: The APE is unchanged from Bromley 1955.

Sanborn 2001: The APE is unchanged from Bromley 1955.

Street Elevations of the APE are as follows:

Data Source	66th Street at Second Avenue
1850 MBPO Map	56.8'
1885 Robinson	56.8'
1902 Bromley	56.9'
1955 Bromley	56.9'
1974 Bromley	56.9'

Precontact Sensitivity

Prior to historical development most of Block 1420 was depicted on maps as a well-drained upland area that gradually sloped down eastward to a tributary of a stream on the adjacent Block 1440 (Colton 1836; Viele 1874). Near the eastern end of Block 1420, a bluff, or small hill, was also depicted within the APE on early historical maps. This hill extended across the East 66th Street 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.

During the 19th century (c.1836-1851), the former hill at the east end of Block 1420 was leveled, obliterating any potential precontact resources in this location. In addition, soil borings taken at East 65th and 66th Streets on Second Avenue, did not indicate the presence of natural soils between the fill and bedrock (Borings 2-45 and 2-46, Raymond International, Inc. 1970s). Further, the NYCLPC has flagged the areas surrounding the former stream that had existed to the southeast of the APE between East 64th and East 63rd Streets, for potential precontact sensitivity. This flagged area extends north only to the southeastern corner of Block 1440, across Second Avenue from Block 1420 (NYCLPC 1982). Given that the hill that once characterized this APE has been razed and the site would have only been moderately sensitive for precontact resources prior to it being disturbed, the APE is not considered potentially sensitive for precontact resources (Appendix 7.4.7.1).

Historical Sensitivity

The majority of Block 1420, which is situated between East 66th and East 65th Streets and Second and Third Avenues, was depicted on historical maps as a well-drained upland area with a small hill or bluff present on the eastern side of the block (Bridges 1811; Randel 1820; Colton 1836; Viele 1874). 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. Although the APE was part of the Common Lands of the City of New York and later the Peter P. Van Zandt Farm during the 17th and 18th centuries, research found that much of the block remained undeveloped until the 19th century when this portion of Manhattan gridded, and the area was divided into blocks and lots (Figures 7.4-1 and 7.4-2; Randel 1820; Dripps 1851). By the late 19th century, much of the surrounding area was fully developed into an urban neighborhood.

The first major road in the area was the Eastern Post Road, a former Native trail that meandered through the east side of Manhattan. Historic maps depict the route of this former road as diagonally crossing the western side of Block 1420 (Figure 7.4-1). 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. By the 19th century, New York City had 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).

During the late 18th century, Peter Praa Van Zandt inherited large tracts of land on the east side of Manhattan from his father Johannes. After inheriting, Peter and his wife Sarah continued to purchase common lands from the City of New York. One of the parcels he purchased included the East 66th Street Shaft site. The boundaries of this tract are clearly marked on the Randel Plan of 1820 (Figure 7.4-1). By this date, the map notes that the property belonged to his heirs and that the APE had not been developed. Peter Praa Van Zandt was an active member of New York Society during the late 18th century. His name appears numerous times in public documents and on April 16, 1776 he was elected to represent New York at the Provincial Congress (Stokes 1928). His will, dated October 5, 1810 and proved in September 18, 1812, indicates that his main residence was located on his lower farm several blocks to the south of the APE at East 60th Street and Second Avenue (Ibid: 156). This residential complex is depicted on early 19th century maps (e.g., Randel 1820). Following his death, the bulk of the estate passed to his son John, who then sold off sections of the old farm.

Historic research found that the East 66th Street Shaft Site has the potential to provide information about a possible dwelling which was once located at the corner of East 66th Street and Second Avenue in the APE (Figure 7.4-2). The house, depicted on the 1851 Dripps map, is the earliest recorded structure on Block 1420. It was built sometime between 1836 and 1851 when the hill in this location was cut down (Colton 1836; Dripps 1851). The area immediately surrounding the house is the likely location of associated domestic shaft features, as the structure was built prior to the introduction of public utilities. In fact, the closest early utility installed, was in 1858 when a 6" water pipe was laid beneath East 65th Street, between First and Third Avenues (Board of Alderman 1859:46). Sewer pipes were not planned for this area until 1866 (Goldman 1988:115).

By 1857, the dwelling house had been replaced by a larger structure, the "Third Avenue Railroad Co. Depot and Stables" (Figure 7.4-3; Perris1857). The "Repair and Blacksmith Shop" was located within the APE near the northeast corner of Block 1420. Unlike the Second Avenue Railroad Depot (Chapter 4.3), the Third Avenue Railway Co. depot and Car Shops, was used for the storage, and more importantly, the repair of horsecars and streetcars. Many of the large car barns located throughout New York City were primarily used as storage facilities and therefore lack (or have little) archaeological visibility. The Third Avenue Depot located within Block 1420, however, had a blacksmith shop that might have below-ground archaeological visibility. That is, there may have been below grade repair pits designed to allow mechanical access to the underside of cars.

Although the car barn took up the majority of the block, real estate valuations for 1858 indicate that the lots were still individually owned.

1858 Real Estate Valuation Table

Owner	Lot Number
Third Ave., RR Co.	1-12, 37-48
James D. Fitch	13-15, 34-36
James Crombie (sic)	16-33

Each lot within the APE was valued between $450 and $700. The 1869 real estate valuation indicates that the entire lot was covered and the Third Avenue Railway Company owned Lots 1-48, which were valued at $275,000. By 1876, the valuation of the property on Block 1420, owned by the Third Avenue Railroad Company, had jumped to $750,000.

Car barns and depots were found throughout New York City during the 19th century to store and service the cars employed by this rapidly expanding transit system. As the City's population grew, new public transportation companies addressed the problems associated with getting people from place to place. Because boats were not practical and not everyone could afford their own horse and buggy, new "horsecar" companies offered paying customers rides in long horse-drawn cars up and down some of the major roads in the City. In fact, the first horsecar line in the United States was founded in New York City in 1852. These companies often had several car barns where they would store and/or repair passenger cars and board horses. These structures were usually divided into sections utilized for car storage, feed storage, stables, offices, and areas for repairing the cars and re-shoeing the horses. In some cases, full blacksmith shops were present within the walls of the car barn, such as the one which stood within the APE. Car barn blacksmith shops were manned by a skilled craftsman who made and repaired iron objects by heating them and hammering them into shape on an anvil. The iron was initially heated in a forge until it became pliable. Then, the *farrier*, an individual who primarily makes horseshoes, was able to shape and weld the metal into a shoe. The forge was the key feature within the blacksmith shop. The mid-19th century forge which was located at the car barn in the APE would have probably been constructed of brick. The main base would probably have been set into the ground and there might have had iron water pipes beneath it to keep the iron plates of the hearth cool. Within the hearth a coal fire would usually be simmering, partially fueled by the air from a handy bellows. The blacksmith could then heat the iron that he needed to form into tools or horseshoes.

The Third Avenue Railroad Company was one of the first company's to anticipate the growing transportation needs of the City in the 1850s. By 1857, the company had established several car barns along its route including the one considered far "up town" between 65th and 66th Streets (Lightfoot 1981: Plate 118). By 1870, traffic at the barn had necessitated cars leaving every 45 seconds during rush hours and one each minute during the rest of the day. In order to maintain its scheduled runs, the company hired 1,000 employees and owned 1,600 horses and 250 cars. During the last decade of the 19th century, the old car barn, depicted on the 1892 Sanborn (Figure 7.4-4) was no longer

considered efficient enough to suit the company's needs and the growing population. In 1896 a new car barn, designed in the elaborate French Second Empire style was constructed on Block 1420. The building was primarily a storage terminal, which lacked a basement, and stood from 1896 until 1949 when the structure was razed.

Although horsecars became a popular form of transportation in many U.S. cities, numerous individuals objected the unsanitary street conditions caused by the horses. In addition, there was a large portion of the population who believed that the horses were overworked and mistreated. These problems, together with the introduction of new technology over the next century, caused the horsecar to be replaced for a short while by the cable car, which was in turn replaced by the more efficient and longer running electric streetcar. By the early 20th century there were three main streetcar companies in New York, the Third Avenue Railway, New York Railways, and the Brooklyn and Queens Transit Company (Cudahy 1988:56). The majority of the car barns owned by these streetcar companies were used as storage houses for the hundreds of cars needed to keep this above ground transportation system running. A few of these buildings also served as repair houses for the streetcars. By the mid-20th century, when most New Yorkers opted to travel instead by subway, gasoline buses eventually replaced streetcars as the main mode of surface transportation.

Current Sanborn maps indicate that the APE has remained relatively unchanged since 1950 when the Manhattan House was constructed within the southern 2/3 of Block 1420 (Figure 7.4-5). At that time, the northernmost 40 feet of the block was paved over to create a driveway in front of the building along East 66th Street. A map from 1948 indicates that East 66th Street was essentially expanded from 60' to 100' across. When the Manhattan House was constructed, a concrete median with a low stonewall was built, dividing the driveway from the street. Today the northern part of East 66th Street provides access to vehicles traveling west. During the last quarter of the 20th century, the eastern and western ends of the driveway were eventually opened to provide vehicle access going east through the former driveway, which now acts as a thoroughfare.

No detailed plans of existing utility lines under East 66th Street were found. Historic maps indicate that a 6" water main lies beneath the street bed. In addition, the visual inspection indicated that sewer access and storm drains were present throughout the street. The installation of these utilities likely caused effects all along the roadbed.

Because only two soil borings were found for the area close to the East 66th Street Shaft site, only limited conclusions can be drawn from the data recorded. The closest study included two borings taken on Second Avenue. Results indicate that bedrock may be extremely close to surface level within Second Avenue at East 66th Street. A single boring taken in this location encountered bedrock at a depth of eight feet below the surface. According to this boring no natural soils remain between the fill and bedrock at this location. A soil boring taken at East 65th Street found that it was questionable as to whether any natural soils exist between the fill and bedrock, which was encountered at 17' below grade to the south of the current APE (Raymond International, Inc., Borings 2-45 and 2-46).

In conclusion, within the APE there may be potential historical period archaeological resources related to the dwelling which was present in the APE in 1851 at the northeast corner of former Block 1420. Potential shaft features may extend from the surface down to bedrock, which may be located at as deep as 17' below grade, and possibly deeper. Potential resources related to the late 19th century blacksmith shop within the car barn may also lie within the APE, but these are expected to be much shallower, and could extend from the surface down to only two to four feet below grade.

7.4.7.2 Site File Search Results, NYCLPC, NYSOPRHP and NYSM

SITE FILE SEARCH RESULTS

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

~~Village~~ City 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

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 SAPO
4064 X		1- A061.01.1271 X	was that NYAC did a
7248 X		~~2- A061.01.0014 D03~~	survey in the 1970's
		3- A061.01.0623 X D023	2nd found historic Remains.
		4- A061.01.06763 X	no other info was found.)
		~~5- A061.01.0001~~	
	209 Water St. South Street NR 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 @ SHPO		A061.01.01286 X	
		A061.01.0541 X	
		A061.01.00542 X	
		A061.01.09531 X	

ATIONAL REGISTER E. GIBLE and LISTED ___X___ Eligible ___ ___1___ Listed ___ ___X___ Building Inventory

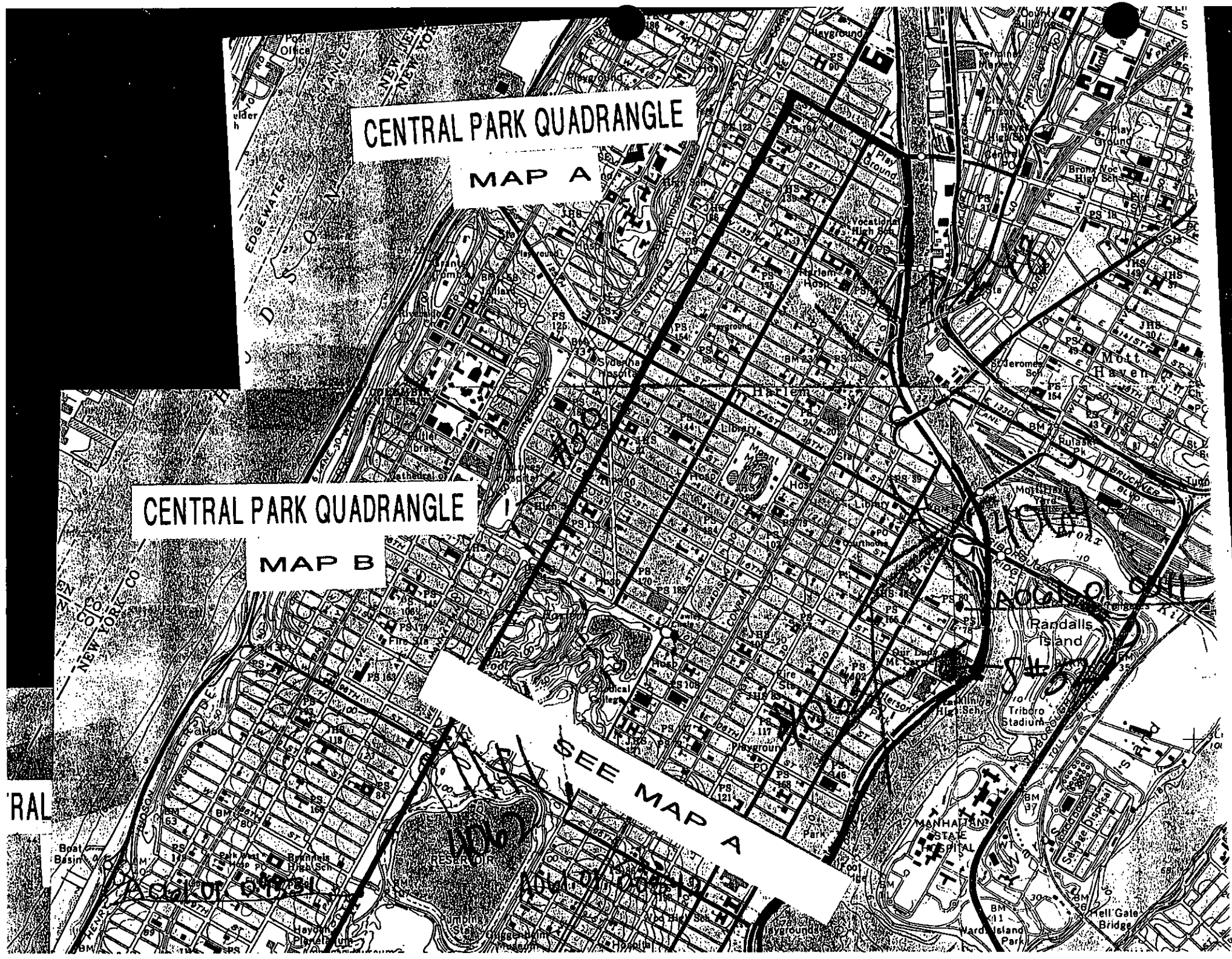
ilding Inventory #	NR Status	Form Copied	Property Description	Roads Checked
06101.000604	NRL	✓	South Street Seaport Historic District 209 Water Street	

EVIOUS SURVEYS <17 previous surveys w/in Radius>

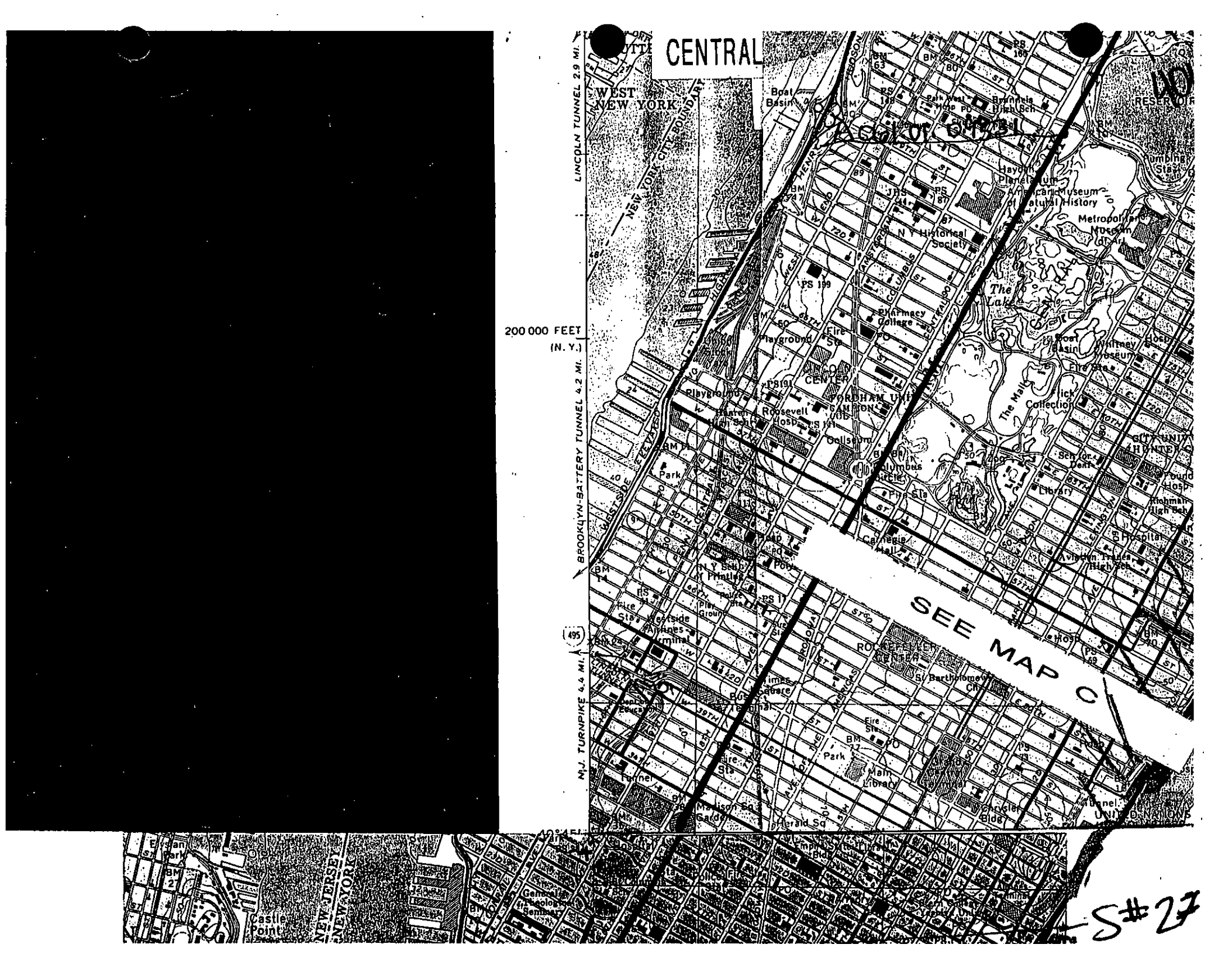
8 Westside Highway Program – 1983
William O. Hersey – 1963 Castle Clinton Ad – the Battery
Broad Street Financial Center Greenhouse January 1985
X
64th Pearl Street 17th Landfill Arnold Pickman & Nan Rothschild May 1981
Stone Street Historic District 1978 NYC Landmarks Pres. Comm. Tracker
9 Barclays Bank Site – 100 Water St. Berger – 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block Kardon & Larrabee – July 1981

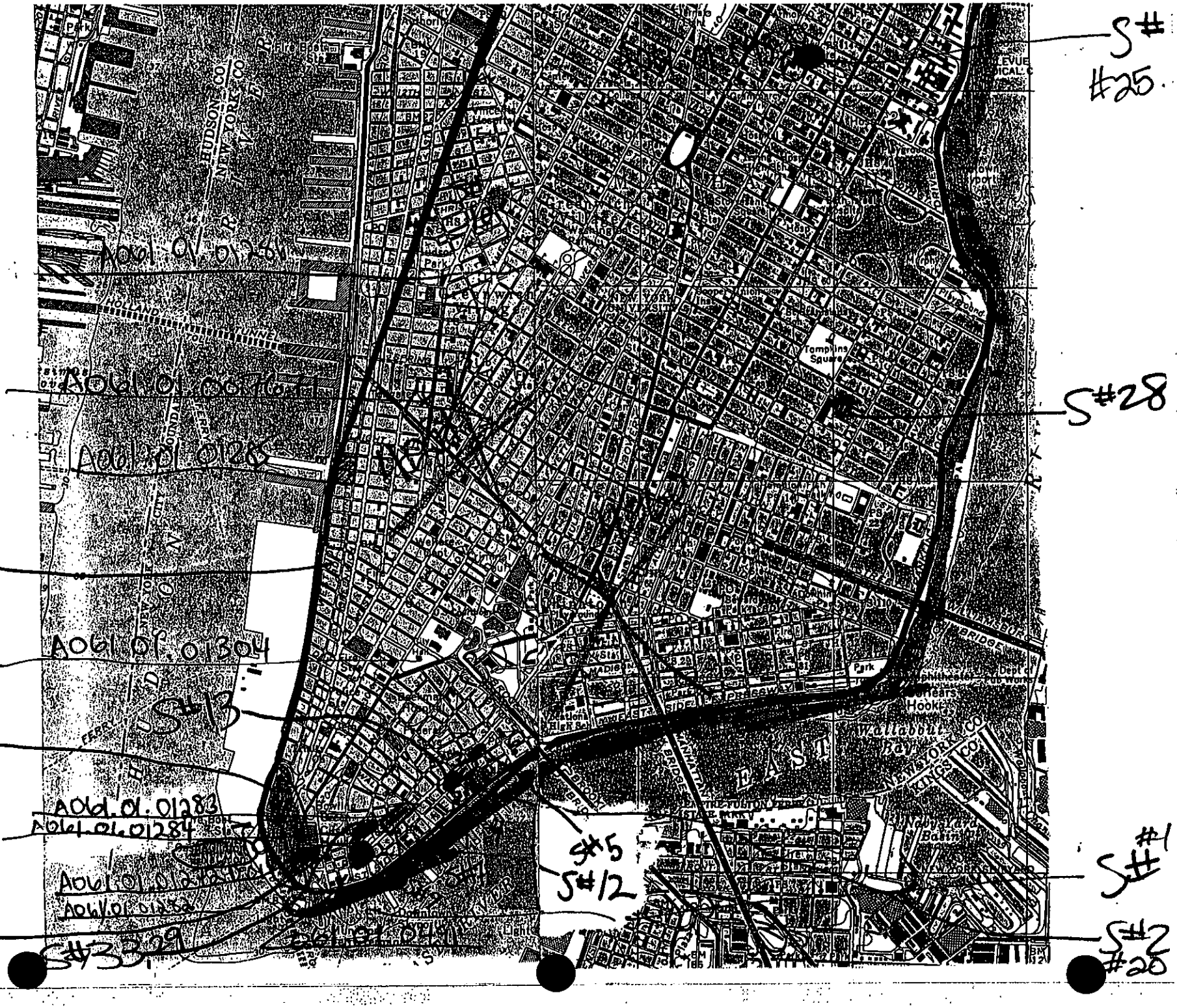
5 209 Water St. – Schuyler – ? Date
East River Roads New York Harbor Collection Kardon & Larrabee October 1977
10 Sheridan Square – 1983 – Rutgers University
Lower Eastside Service Center – Louis Berger Jan '98
27 750 Sixth Ave. HPI – February 1998
Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1989 / December 1989
32 East River Plaza HPI Sept. 1998
Stone Street Historic District NYC Landmark Pres. Comm. February 1998

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

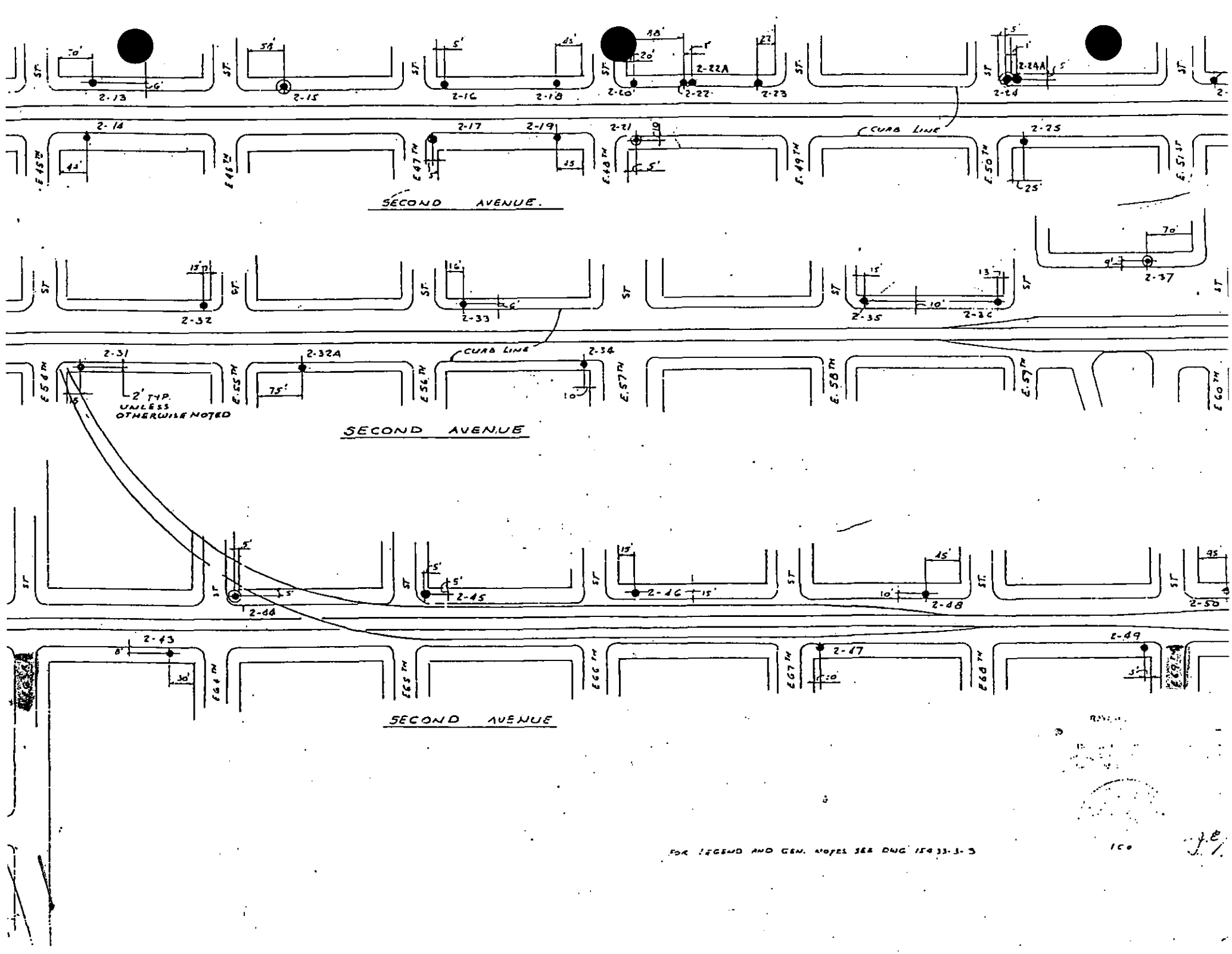

CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A


SEE MAP C
S#27
S#25
1000
0
DEPTH CURVES
SHORELINE SHO
4 FEET
THIS MAP CO
FOR SALE BY


CENTRAL
WEST NEW YORK
NEW YORK CITY BOUNDARY
LINCOLN TUNNEL 2.9 MI.
200 000 FEET
(N. Y.)
BROOKLYN-BATTERY TUNNEL 4.2 MI.
N.J. TURNPIKE 4.4 MI.
495
Boat Basin
Brunnels High Sch
Hayden Planetarium
American Museum of Natural History
Metropolitan Museum of Art
N Y Historical Society
PS 199
Pharmacy College
Playground
Fire Sta
LINCOLN CENTER
FORDHAM UNIV CAMPION
Roosevelt Hosp
Coliseum
Columbus Circle
Fire Sta
Carnegie Hall
The Lake
Boat Basin
Whitney Museum
Fire Sta
The Mall
Frick Collection
Library
Sch for Dept
Hospital
Aviation Trades High Sch
Richman High Sch
Pumping Sta
RESERVOIR
Park
N Y Sch of Printing
Police Sta
Play Ground
Fire Sta
Westside Airlines Terminal
SEE MAP C
ROCKEFELLER CENTER
St Bartholomew Ch
Times Square
Bus Terminal
Fire Sta
Park
Main Library
Chrysler Bldg
Tunnel
Madison Sq Garden
Herald Sq
UNITED NATIONS
Elysian Park
Castle Point
NEW JERSEY
NEW YORK
General Theological Seminary
S#27


S#
#25
A061.01.01286
A061.01.00767
A061.01.01285
S#28
S#8
A061.01.01304
S#13
Area of S#4
(Castle Clinton)
A061.01.01283
A061.01.01284
S#5
S#12
S#1
#15
S#2
#20
S#33
HUDSON CO
NEW YORK CO
HOLLAND TUNNEL
Tompkins Square
Park
Wallabout Bay
EAST
Navy Yard Basin
NEW YORK CO
KINGS CO
WILLIAMSBURG BRIDGE
Dept of Pub Works
Hook

7.4.7.3 Soil Boring Logs


2-13
2-15
2-16
2-18
2-20
2-22
2-22A
2-23
2-24
2-24A
2-14
2-17
2-19
2-21
CURB LINE
2-25
E.45TH
E.46TH
E.47TH
E.48TH
E.49TH
E.50TH
E.51ST
SECOND AVENUE.
2-32
2-33
2-35
2-36
2-37
2-31
2-32A
CURB LINE
2-34
2' TYP. UNLESS OTHERWISE NOTED
E.54TH
E.55TH
E.56TH
E.57TH
E.58TH
E.59TH
E.60TH
SECOND AVENUE
2-44
2-45
2-46
2-48
2-50
2-43
2-47
2-49
E.64TH
E.65TH
E.66TH
E.67TH
E.68TH
SECOND AVENUE
FOR LEGEND AND GEN. NOTES SEE DWG 154 33-3-3

2-45

EL. 155.69

0.0		Roller Bit	MISC. FILL, GRAVEL, SAND, SILT, CINDERS	1 3 4 6'-6
	5	20		
		11		
		7		
		8		
		13		
(1) 9'-5"		27		2 12 16 11'-6
12'-6		46		
		53	BR. MED. SILTY SAND, TR OF GRAVEL.	
		51		
	15	48		3 19 17 16'-6
		23		13
17'-0		31		
18'-0		89	SOFT ROCK	
			DRILLED ROCK REC. 8'-7 48 pc's	10'-0
28'-0				
			DRILLED ROCK REC 10-0 44 pc's	10'-0
38'-0				
			DRILLED ROCK REC. 9'-9 24 pc's	10'-0
48'-0				
			DRILLED ROCK REC. 10'-0 26 pc's	10'-0
58'-0				
			DRILLED ROCK REC. 9'-9 17 pc's	10'-0
68'-0				
			DRILLED ROCK REC. 10'-7 20 pc's + FRAG	10'-0
78'-0				
			DRILLED ROCK REC. 6'-3 20 pc's + FRAG.	6'-0
84'-3				
			DRILLED ROCK REC. 9'-9 16 pc's.	10'-0
94'-3				
			DRILLED ROCK REC. 9'-7 11 pc's.	10'-3
104'-0				

2-46

EL 158.91

0.0		Roller Bit	CONCRETE	
	5	10		
		11	SAND, GRAVEL, COBBLES FILL	1 8 9 6'-6
		16		
		16		
		10		
8'-0		6		
		22		
10'-0			ROCK	
	15			
17'-0			DRILLED ROCK REC. 5' 5 pc's + FRAG.	5'-0
	20		DRILLED ROCK REC. 33' 21 pc's + FRAG.	5'-0
22'-0				

NO WATER AFTER COMPLETION.

2-47

EL. 158.74

0.0		Roller Bit	CONCRETE	
1.0				
		16		
		10		
		19	BROWN SAND GRAVEL BOULDER FILL	1 17 9 6'-6
	5	21		
		22		
		38		
		39		
	10		DRILLED BOULDER FROM 11" TO 13' REC. 18"	
	15	18		
▼(1) (16'-0)		20		2 8 11 18'-0
		32		14
		33		
20'-0		46		
22'-0			DISINTEG. ROCK	
			DRILLED ROCK NO REC.	5'-0
27'-0				
			DRILLED ROCK REC 7½" 4 pc's.	5'-0
32'-0				
			DRILLED ROCK REC. 3" FRAG ONLY	5'-0
37'-0				
			DRILLED ROCK REC. 3" FRAG. ONLY	5'-0
42'-0				
			DRILLED ROCK REC. 3" FRAG. ONLY	5'-0
47'-0				

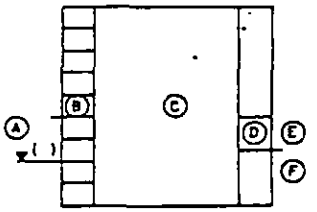
2-48

EL. 160.97

0.0		Roller Bit	CONC. SIDEWALK	
0'-6			MISC. FILL, BR. SAND GRAVEL, SILT ETC.	1 10 20 6'-6
	5	18		
		32		
		17		
9'-0		46		
		21		
	10	16		2 11 10 11'-6
		12	RED BR. FINE SILTY MICA SAND, POSSIBLE DECOM. ROCK	
		19		
	15	27		
		30		3 16 15 16'-6
17'-0		20		16
▼(bottom) (17'-5)		31		
		50		
	20	51	DECOMP. GRAY GREEN MICA SCHIST ROCK	4 16 23 21'-6
		34		26
		40		
		48		
24'-0		110		
	25		DRILLED ROCK REC. 1'-3 FRAGM's.	8'-0
32'-0				
34'-6			DRILLED ROCK REC. 1'-11 FRAGM's	2'-6
			DRILLED ROCK REC. 1'-8 FRAGM's.	7'-0
41'-6				
			DRILLED ROCK REC. 2'-1 FRAGM's.	6'-6
48'-0				
			DRILLED ROCK REC 2'-2 FRAGM's	7'-0
55'-0				
			DRILLED ROCK REC 3'-1½ FRAGM's.	3'-6
58'-6				
			DRILLED ROCK REC. 2'-7 25 pc's + FRAG	5'-0
63'-6				
			DRILLED ROCK REC. 4'-1 9 pc's + FRAG	5'-6
69'-0				
			DRILLED ROCK REC. 3'-3½ SMALL pc's + FRAG.	4'-0
73'-3				
			DRILLED ROCK REC. 9'-6 38 pc's.	10'-0
83'-3				
			DRILLED ROCK REC. 9'-6 44 pc's.	9'-9"
92'-0				

SET WELL POINT @ 34'-6

FOR LEGEND & GEN NOTES SEE DWG. 15933-3-3



(A) WATER LEVEL ( ) HOURS AFTER COMPLET

(B) NUMBER OF BLOWS OF A 300 LB. HAMMI FALLING 18" REQUIRED TO DRIVE A 2½" CASING (UNLESS OTHERWISENOTED) EACH

(C) STRATA DESCRIPTION.

(D) NUMBER OF BLOWS OF A 140 LB. HAMMER (UNLESS OTHERWISE NOTED) FALLING 30" REQUIRED TO DRIVE A 2" SPLIT SPOON E

(E) SAMPLE NUMBER.

(F) DEPTH AT END OF SAMPLE DRIVE.

WATER READINGS - BORING 2-48

DATE	TIME	WATER LEVEL
10-7-69	7 A.M.	18'-1
	8 "	18'-1
	9 "	18'-0
	10 "	18'-0
	11 A.M.	18'-0
	12 Noon	18'-0
	1 P.M.	18'-0
	2 "	17'-11½
	3 "	18'-0
	4 "	18'-0
	5 "	18'-0
10-7-69	6 P.M.	18'-1
10-11-69	7 A.M.	18'-0
	8	18'-0
	9	18'-1
	10	18'-0
	11 A.M.	18'-0
	12 Noon	18'-0
	1 P.M.	18'-1
	2	18'-1
	3	18'-1
	4	18'-0
	5	18'-0
10-11-69	6 P.M.	18'-0

RAYMOND CONCRETE PILE DIVISION

I wish to certify that this report is a complete and accurate log obtained from the said boring logs.

J. E. Brown
J. E. Brown
Vice President

DATE	NO.	DESCRIPTION

DIVISIONS

RAYMOND INTERNATIONAL INC.

TEST BORING REPORT

NEW YORK CITY TRANSIT SYSTEM

BOROUGH OF MANHATTAN

2ND AVE. FROM 34TH ST. TO EAST 126TH ST. ROUTE 19A

DRAWN BY _____ DATE 1-3-70

CHECKED BY _____ SCALE 1" = 10'-0"

CONTRACT 8A.D

NO. | DESCRIPTION | DATE

7.5. BLOCK 1792 SHAFT SITE

7.5.1 Study Area Description

In northern Manhattan, a potential shaft site or staging area is being evaluated on the west side of Second Avenue between East 127th and 128th Streets (Figure 7.5-1). The APE for this project element includes approximately the eastern half of Block 1792 bounded by East 127th and 128th Streets and Second Avenue (Photographs 7.5-1 through 7.5-5). Lots 13 through 36 on Block 1792 fall within the APE.

7.5.2 Existing Conditions

7.5.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

The project corridor in this area was formerly flatlands called Muscoota by Native Americans. This region, which lies between the Harlem River and Morningside Heights northwest of what was once Harlem Creek, was surrounded by swamps (Rubinson 1989:3). "Rechgawanes" is reported by Grumet as the name of a point of land along the western shore near the confluence of the East and Harlem Rivers, and along an obliterated stream that roughly corresponded to the route of East 125th Street (1981:46). This tract could have extended into the current project corridor.

Near this APE, the Wickquasgeck trail ran several blocks to the west through what is now Central Park. An Indian Path veered off this trail at East 110th Street near Fifth Avenue, and headed northeast towards a habitation site on the Harlem River near East 124th Street. This Amerindian Trail was incorporated into the first road system of the village of Harlem. Passing through the meadows of Muscoota to the area called Conykeekst, it crossed First Avenue at East 124th Street and Second Avenue at East 121st Street within the project corridor (Bolton 1922:72, 74-76). Arrowheads and flakes were found in East Harlem in 1855 during the excavation of a cellar on Avenue A between East 120th and 121st Streets (Riker 1904:123). Bolton concluded that this was either a fishing place or an intermittently used place of landing or trading (Bolton 1922:72).

NYSM Site #4063 was reported within a mile south of this section of the APE. Identified by Arthur C. Parker, this village/camp site was described as "...one of larger camps or fishing places of the Reckgawawancks...." (Parker 1920:26). He further characterized it as a "...camp or fishing place ....at Montagne's Point... on shore at Hellgate, just off 110th Street" (Ibid.). The site's boundaries and location are unknown, but it may have extended west into the vicinity of Second Avenue near East 110th Street, south of this APE.

Archaeological Potential

Block 1792 was depicted on the shoreline on historic maps, so in the late precontact period, the area would have bordered marshland. Since water levels have fluctuated over the past few thousand years, it is quite possible that when water tables were lower and the

shoreline was further east, the APE was well inland in the early precontact period. In either situation, the APE may have been conducive to precontact habitation, providing a habitat of rich faunal and floral resources. Soil borings taken nearby indicate peat at 23.5-33' below surface, an indicator of a precontact estuarial environment (Soil Borings WPA IV.4.61, 1940; WPA IV.5.92-96, 1940). This indicator of precontact use suggests that habitation sites may be found in close proximity to the marshland (Appendix 7.5.7.1). As undulating meadow land, slightly elevated on a ridge, the area of the APE would have been suitable for prehistoric settlement (Figure 7.5-2). Some historic maps portray a pond at Second Avenue and East 125th Street (Commissioners 1811) that may have been a source of fresh water. Therefore, this feature would have also made the area favorable to settlement. If precontact resources were present within the APE, it is possible that they now lie buried beneath historic landfill, which may have served to preserve and protect them, on all lots except four which once hosted buried gasoline tanks (Lots 22-25). Unfortunately the lack of available soil borings from directly within the APE makes it impossible to determine, at this time, the precise depth of fill within the APE and, therefore, the potential depth of precontact resources.

7.5.2.2 Historical Archaeological Potential

Historic archaeological resources can take many forms, but those most likely to be preserved included shaft features such as privies, wells, and cisterns, as well as building foundations. Shaft features often survive through later disturbances, because they are cut deep into the ground. They are particularly informative because during or after use, they are used as depositories for rubbish, including bone, ceramic, glass, and metal. If conditions in the shaft are appropriate, normally perishable materials such as leather, cloth and wood may be preserved. Fill from these shaft features can also provide ecological and dietary information from items such as pollen or seeds.

Documentary research concluded that this section of the APE is potentially sensitive only for the resource category of *Residential* (Appendix 7.5.7.1). The shaft site on Block 1792 has the potential to yield privies and/or wells with evidence of domestic occupation, as part of it was formerly the site of a row of residential structures called Dunscomb Place from the mid-19th century, and a large house built in the 1860's. These areas have experienced little to no subsequent disturbance, and most of the Dunscomb Place residences stood through the second half of the 20th century (Appendix 7.5.7.1, Figure 7.5-3).

Other potential residential resources are outbuildings and/or shaft features associated with the Adriance estate that once stood on Third Avenue near East 128th Street in Block 1792 in the early 19th century (Figure 7.5-4). Although the main house would have been outside the APE, there may have been outbuildings or shaft features that fell within the APE (Sackersdorf 1815; Randel 1820; Colton 1836).

Given that a number of residential buildings were constructed in the mid and late 19th century, with back yards that by and large remained clear of construction, there is a high potential for finding shaft structures such as wells and privies on Block 1792 related to these residential episodes (Figure 7.5-8). Specifically, within the APE, Lots 33-36 had

substantial open back yards and no subsequent construction or construction of small buildings without basements. Lots 28½-32 had small back yards, with late 19th century buildings that may not have caused disturbance to the earlier mid-19th century house features (the Ketcham property), as the former did not have basements. Lots 25-28 had smaller back yards, but again the buildings had no basements, so their presence may not have disturbed any potential shaft features associated with the Ketcham property. Lots 21-24 had very small rear yards, but the 20th century installation of buried gasoline tanks for two different gas stations would have disturbed any earlier 19th century resources. The second gas station also affected part of Lot 25, but the exact location of any gas tanks is not known. Of Lots 13-20, only 14-16 had buildings with basements. Since structures were known to have been present here in 1851 (Dripps), shaft features might be expected. Open yard space was minimal in the later 19th century buildings, except for Lots 16 and 20, which at various times had wide open back yards. With no soil borings or water table depths for the APE, fill depth cannot be gauged, and thus feature depth can only be estimated based on borings taken from the adjacent streetbed. The closest borings that show fill depths are at least 100' away; these show fill depths of 14-16' below surface in Block 1791 and no water table depths (Warren George, Inc. B-7, B-8, B-9, 1997). Since the depth of the fill and the water table within the APE is unknown, the depths of potential resources cannot be estimated.

7.5.3 Summary of Archaeological Potential

The Block 1792 shaft site is potentially sensitive for both precontact and historical resources (Figure 7.5-8). Soil borings from Second Avenue, taken between 100 and 200' from the APE, show peat ranging between 23 to 33' below grade. However, no soil borings were available from within the APE, so it can only be estimated that potential precontact resources would lie below historic fill, and may extend to about 33' below grade, the maximum depth of peat reported on nearby borings. These possible resources could range from long term habitation sites to seasonal camps.

Historical resources such as early 19th century farm outbuilding foundations might be found just below the historic surface, which would be expected lie below fill, the depth of which is unknown in the APE. Shaft features such as wells and privies from mid to late 19th century would be expected to extend from the surface down to at least the depth of the water table, which is unknown for this APE. Areas within the APE without subsurface disturbances include yards that were open through the 19th and 20th centuries, and areas which possessed structures that did not have basements. The only areas within the APE that had significant 20th century subsurface disturbance are Lots 22-25, with the construction of two gas filling stations. Therefore, these lots lack sensitivity for potential historical resources, while the remaining lots are potentially sensitive for early to mid-19th century domestic resources, including potential shaft features.

7.5.4 Proposed Project Effects

Proposed construction plans (SYSTRA, March 2002) indicate that no construction will occur on this potential shaft site. Therefore, potential resources would not be affected.

7.5.5 Recommendations

Since the Block 1792 APE will not be affected through the construction of a proposed shaft site/staging area, no additional archaeological investigations are recommended. Should project plans change, potential effects on archaeological resources would be reassessed. If adverse effects to potential resources are identified, additional archaeological investigations, including the review of boring logs, additional documentary research, and subsurface testing, will be warranted.

7.5.6 Figures and Photographs

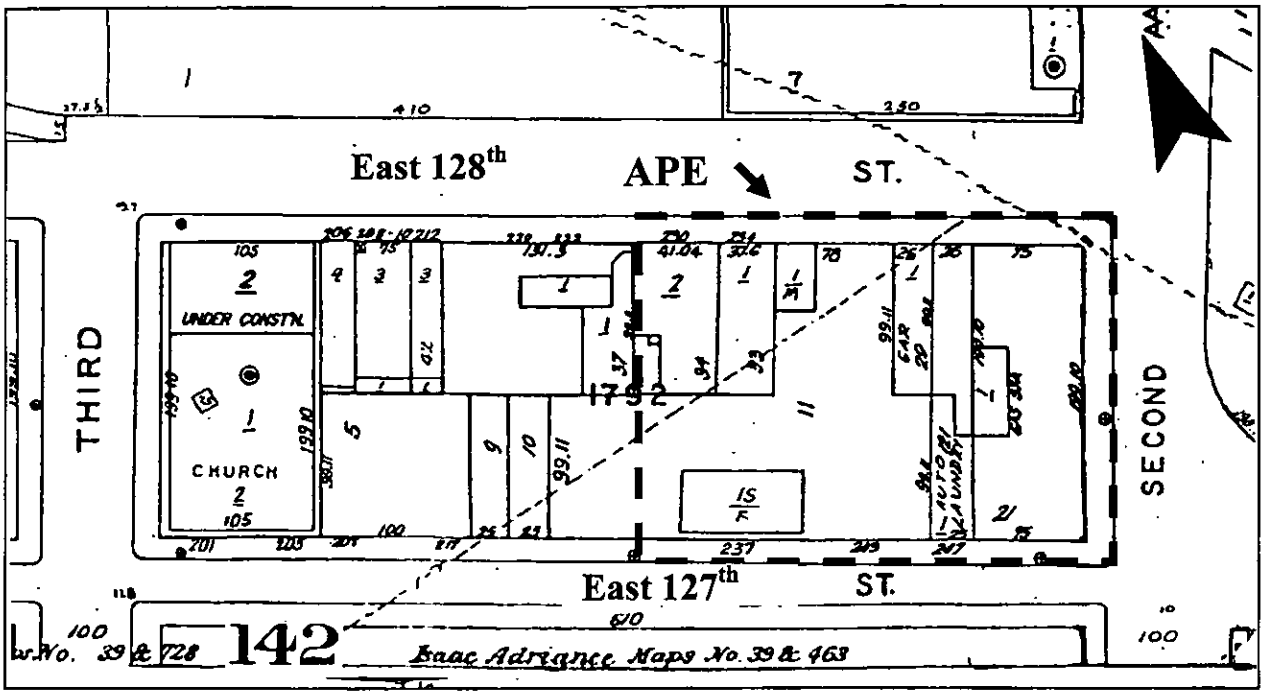


FIGURE 7.5-1

Insurance Maps. Block 1792. Sanborn 2001.

Approximate Scale: ¾ inch = 100 feet

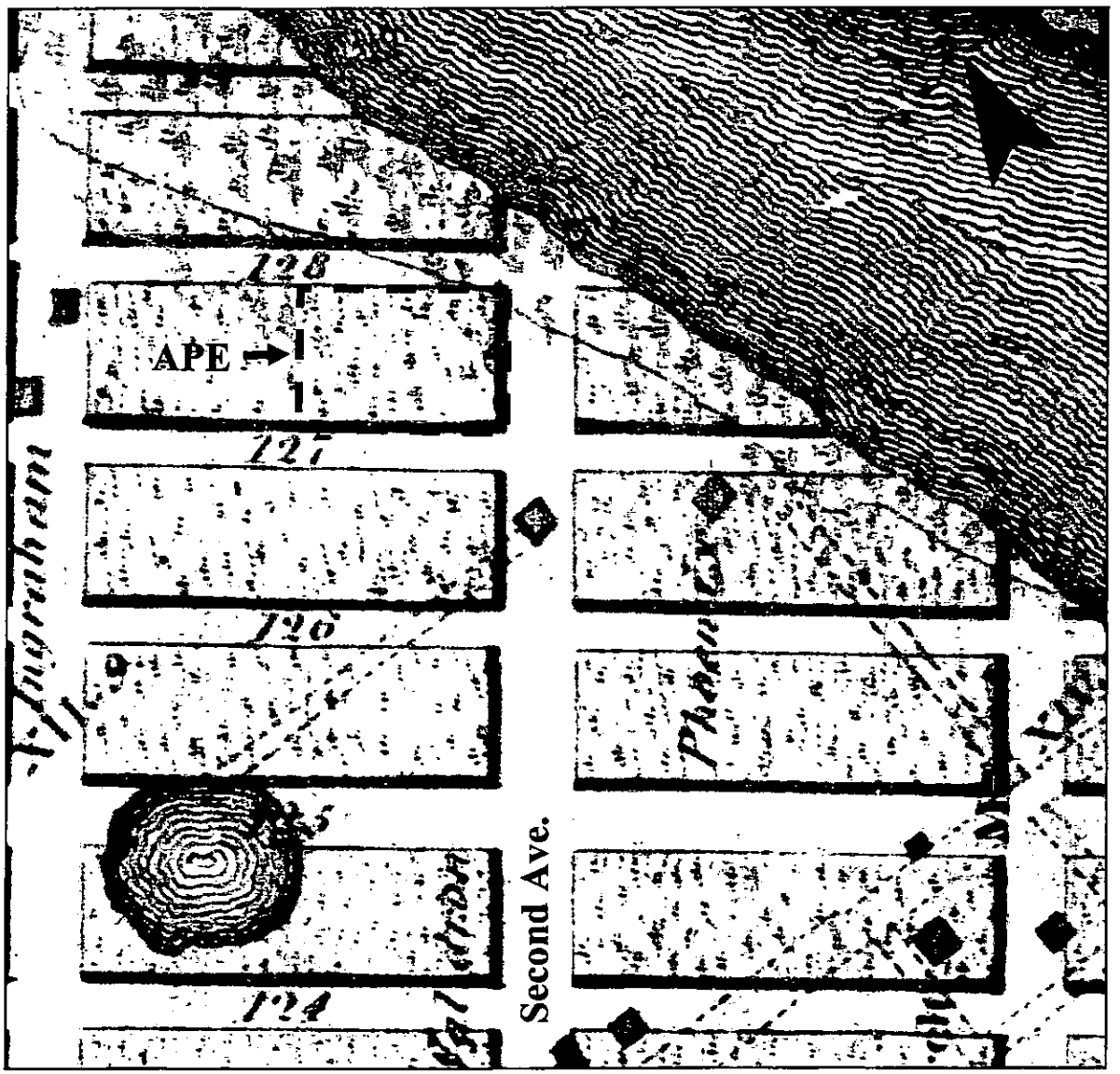


FIGURE 7.5-2

Map of the City of New York and Island of Manhattan as laid out by the Commissioners. Block 1792. Bridges 1807-1811.

Approximate Scale: ½ inch = 100 feet

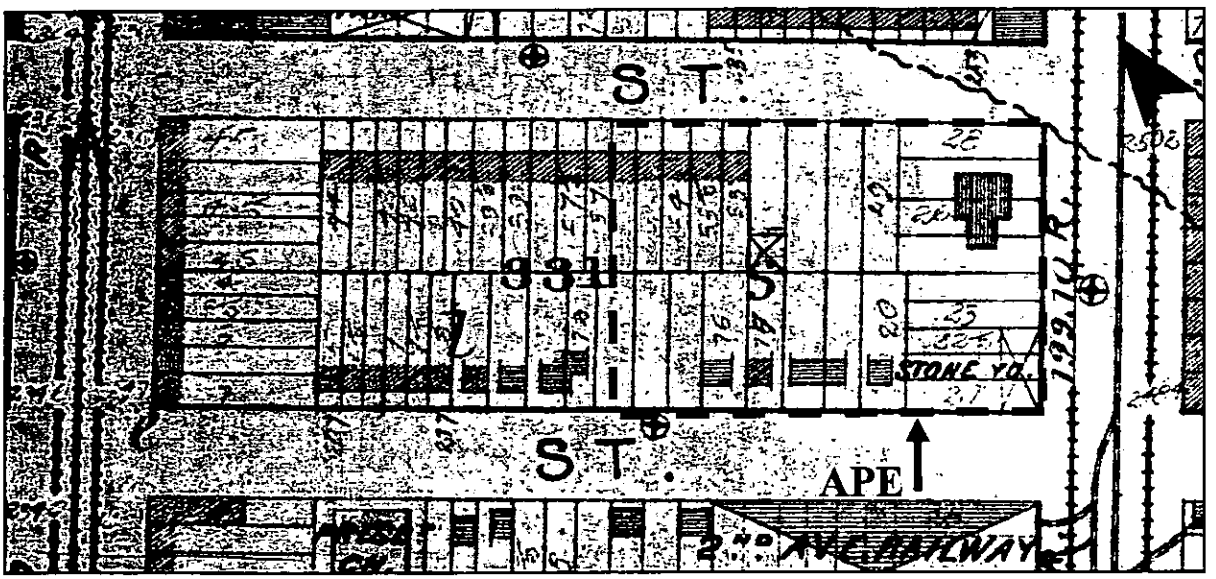


FIGURE 7.5-3

Atlas of the Entire City of New York.
Block 1792. Bromley 1879.

Approximate Scale: ¾ inch = 100 feet

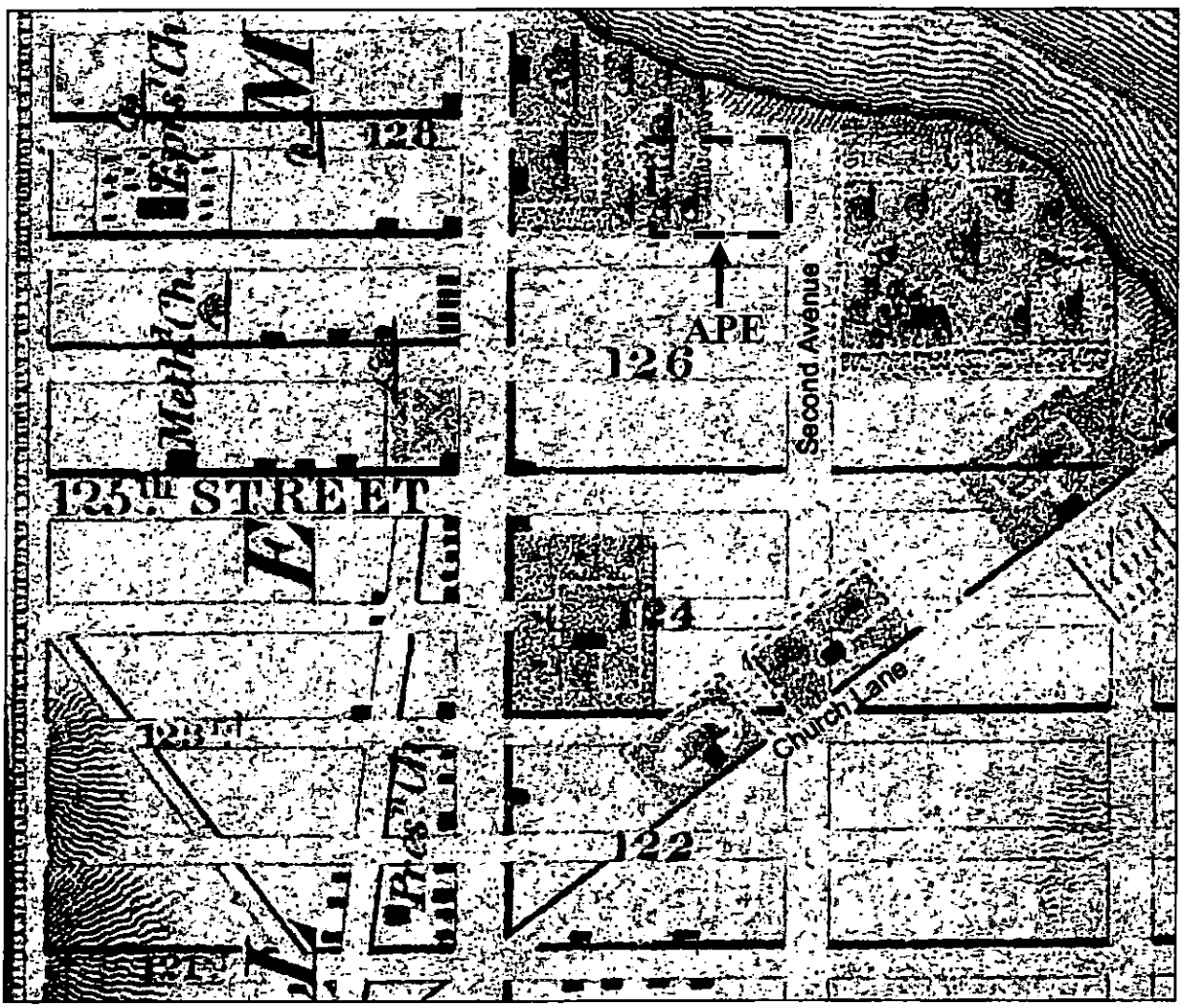


FIGURE 7.5-4

Topographical Map of the City and County of New York
Block 1792. J.H. Colton 1836.

Approximate Scale: ¼ inch = 100 feet

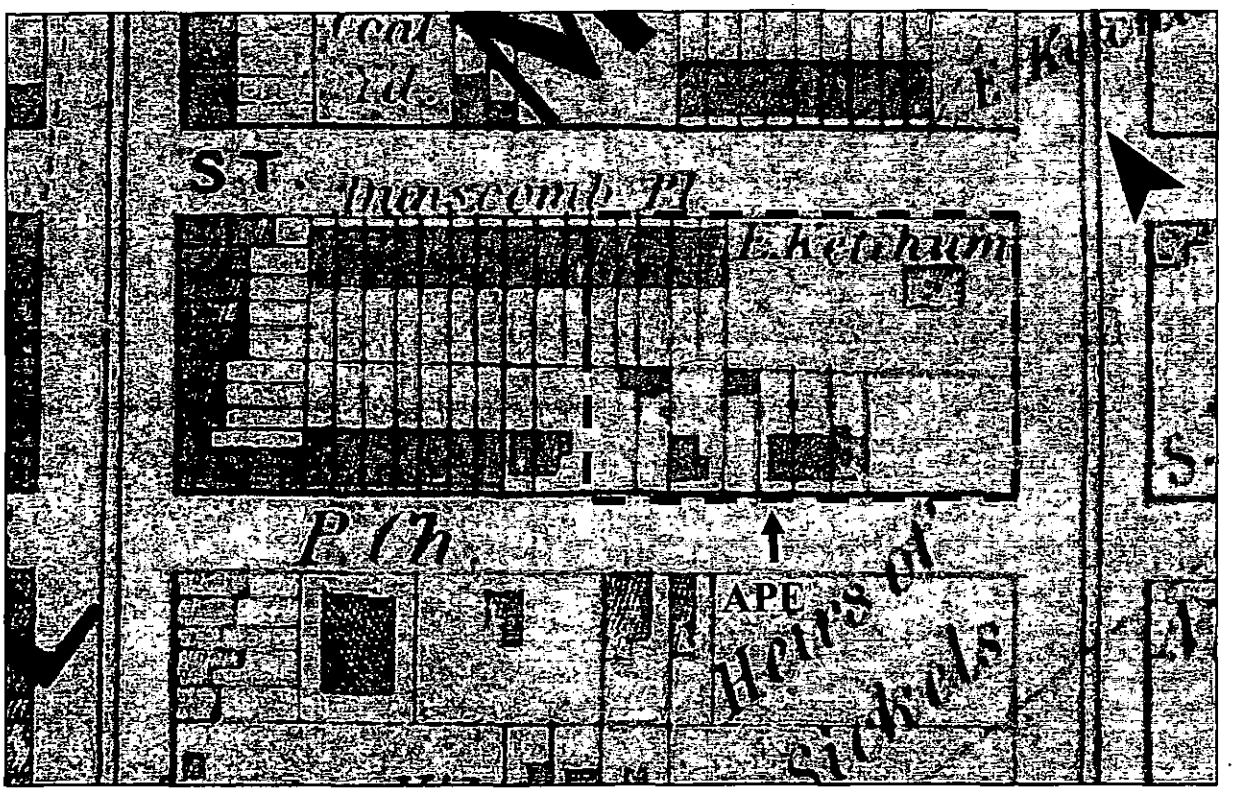


FIGURE 7.5-5

New York City, County, and Vicinity. Block 1792. Dripps 1867.

Approximate Scale: ¾ inch = 100 feet

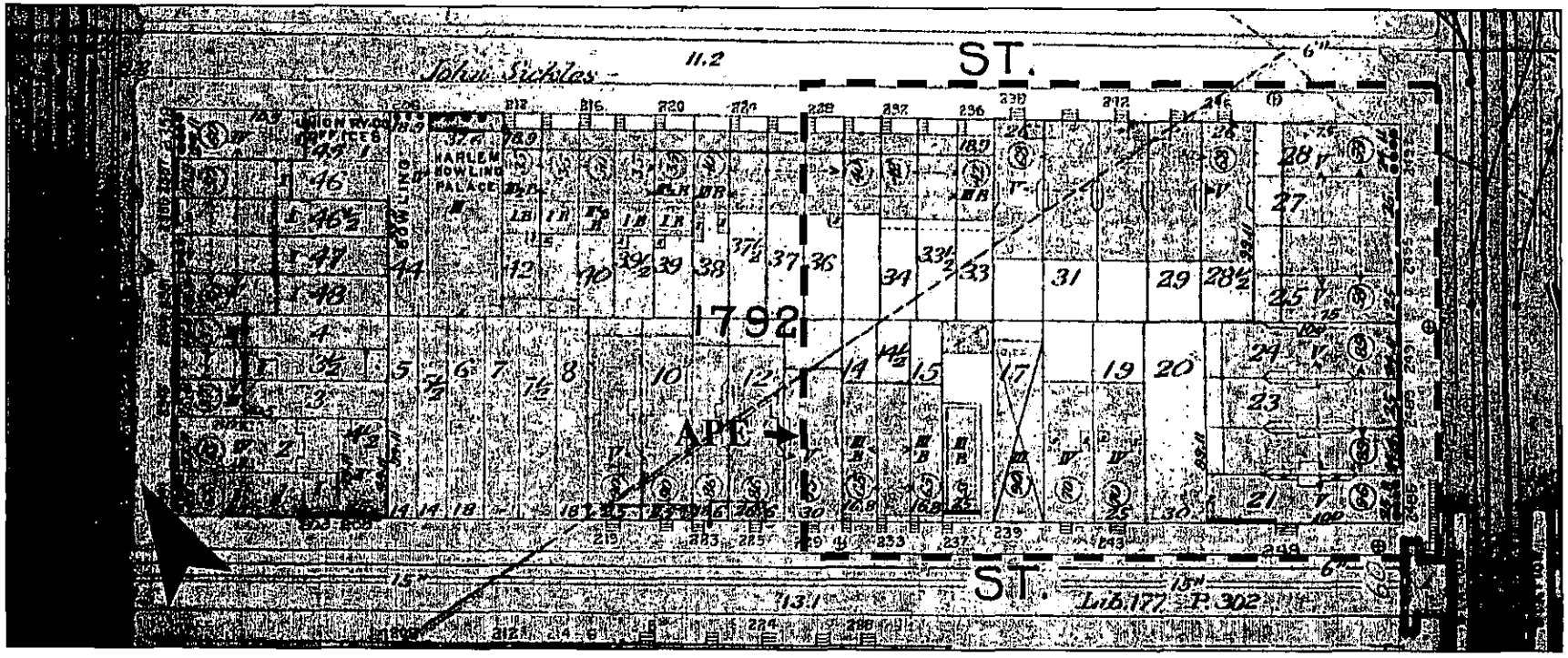


FIGURE 7.5-6

Atlas of the Borough of Manhattan. Block 1792. Hyde 1913.

Approximate Scale: ½ inch = 45 feet

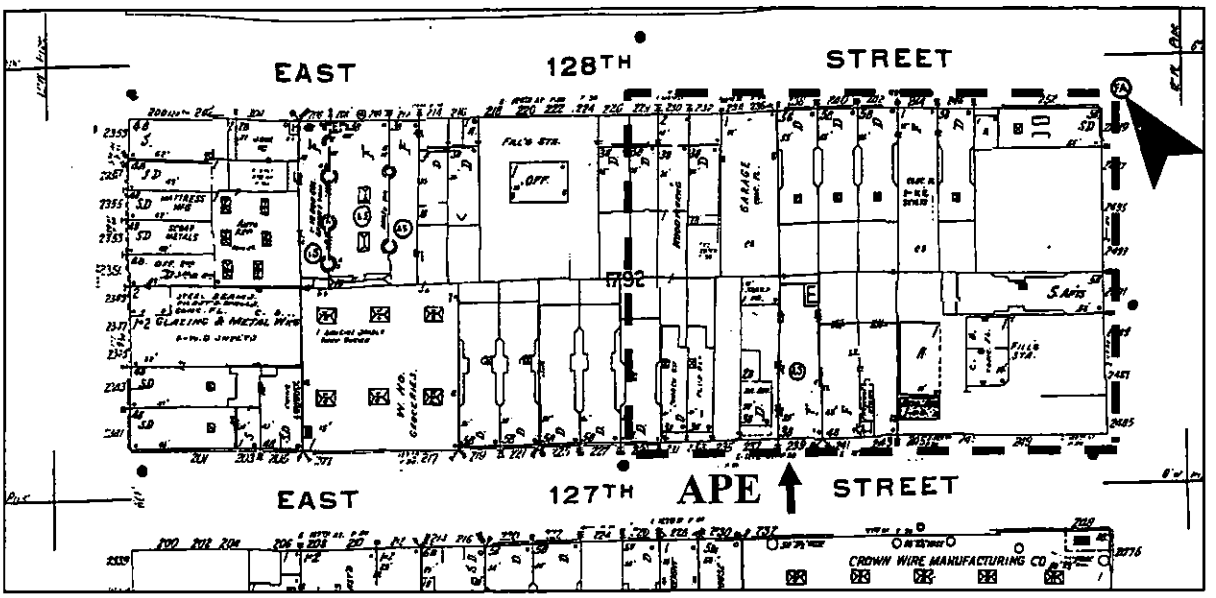


FIGURE 7.5-7

Insurance Maps.
Block 1792. Sanborn 1951.

Approximate Scale: ¾ inch = 100 feet

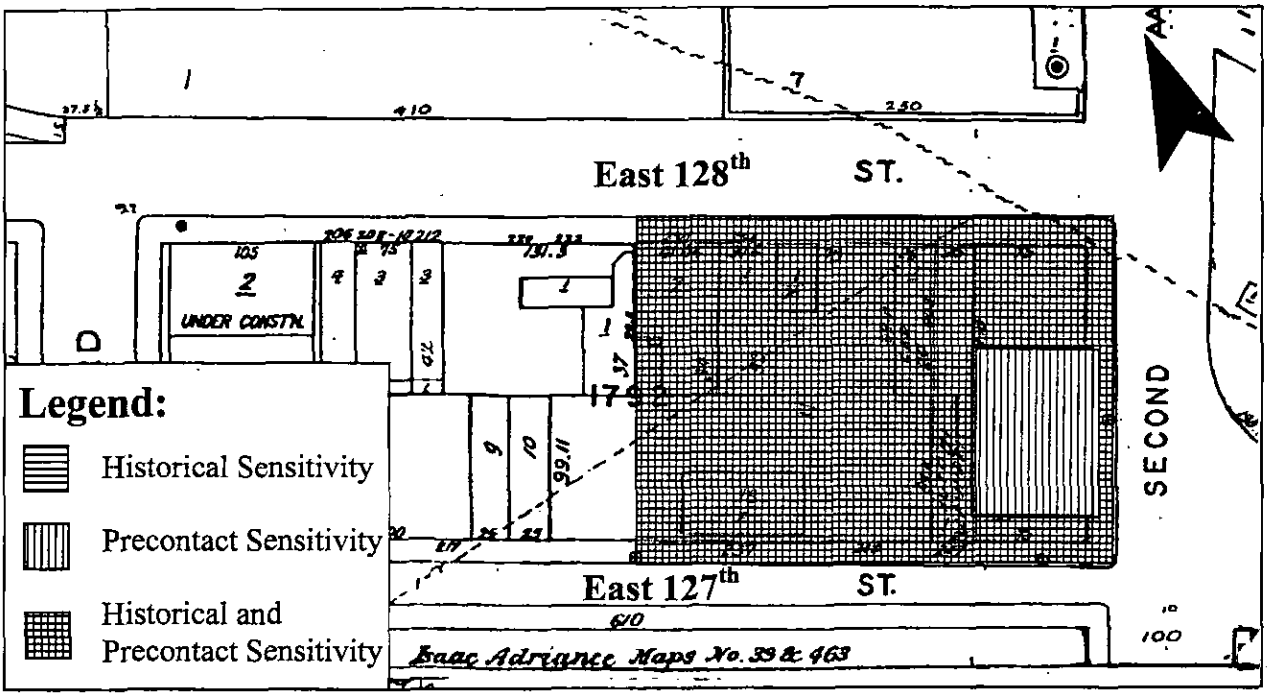


FIGURE 7.5-8

Area of Potential Archaeological Sensitivity.
Block 1792. Lots 22 through 25 lack historic archaeological sensitivity.
Sanborn 2001.

Approximate Scale: ¾ inch = 100 feet



Photograph 7.5-1: On the north side of East 127th Street between Third and Second Avenues looking northeast at Shaft Site.



Photograph 7.5-2: Looking west on the corner of East 127th Street and Second Avenue towards Shaft Site.



Photograph 7.5-3: Looking west on the corner of East 128th Street and Second Avenue.



Photograph 7.5-4: Looking southeast from the south side of East 128th Street on the corner of Third Avenue and Second Avenue.



Photograph7.5-5: Looking east from a vacant lot on Second Avenue towards the western border of Shaft Site.

7.5.7 Appendices

7.5.7.1 Documentary Assessment of APE

Block 1792 Shaft Site

Block 1792 is bounded by East 128th Street on the north, East 127th Street on the south, Third Avenue to the west, and Second Avenue to the east. A shaft site is proposed for this block, covering the eastern half of the block, which includes Lots 13 through 36.

Cartographic History

British Headquarters 1782: The APE is located along the shoreline.

Commissioners' 1811: The block is shown as open land, with the northeast corner of the block bordering the Harlem River shoreline. The closest names of farm owners are Ingraham to the west at Third Avenue, and Phoenix east of Second Avenue (Figure 7.5-2).

Sackersdorf 1815: The southeast portion of this block is shown as part of a large tract (38.0 acres) of open land belonging to the heirs of John Sickels. The northwest portion of the block is part of the property of Isaac Adriance, with a farmhouse shown on the western end of this block, outside the APE. The APE falls mostly into the Sickels' land, with the northwest portion falling into the Adriance property. The Harlem River shoreline touches the northeast corner of the block.

Randel 1820: The block is similar to its configuration on Sackersdorf 1815.

Farm Map #40A 1823/1869: This map was drawn to show the land division between the heirs of John Sickels. All of Block 1792 has been subdivided into smaller lots. The eastern half is part of the Sickels' property, and the western half is labeled Isaac Adriance. No structures are shown on this map.

Burr 1832: The block is shown as open land, with the northeast corner (within the APE) as shoreline.

Colton 1836: All but the eastern one-third of the block is part of an estate that runs from Third Avenue to the east, extending from East 129th Street to East 127th Street (Figure 7.5-4).

Dripps 1851: There are only two structures within the APE which are adjacent to each other in the southeastern section of the block. Second Avenue does not appear to be open north of East 127th Street. Outside the APE, in the western half of the block, are two structures. One is labeled "Carriage Factory."

Dripps 1863: No details are noted on this map, except for trolley lines running on Second and Third Avenues.

Viele 1865: The block is depicted as meadowland, with the northeastern-most corner of the block located at the Harlem River shoreline. There is

a ridge that runs from the southwest corner of the block, and another that runs along East 128th Street and into the northeast corner of the block. The block is, therefore, at a higher elevation than the surrounding blocks.

Dripps 1867: The block is much more developed than in Dripps 1851. There is a row of 15 structures in the middle of the block fronting East 128th Street (Figure 7.5-5). Both the buildings and the lots are of uniform size, suggesting it is a row of apartment or tenement buildings. They are labeled "Dunscomb Pl." Approximately the five easternmost buildings in this row fall into the APE. In the northeast corner of the block within the APE is a single building on a large lot, labeled "E. Ketcham." On East 127th Street most of the land has been divided into lots, with about six buildings falling into the APE. The southeast corner of the block is empty. No lot numbers or street addresses are provided. Old property lines are noted; the entire block belonged to the "Heirs of J. Sickels."

Viele 1874: The APE is similar to Viele 1865, but the northern ridge is shown farther north, above East 128th Street. Additionally, the shoreline is shown farther north, above East 129th Street, rather than East 128th Street.

Bromley 1879: The block is numbered 331 and has been completely divided into lots (Figure 7.5-3).

There is a row of about 15 structures fronting East 128th Street in the middle of the block; some of the easternmost buildings are within the APE (as in Dripps 1867). Also within the APE is a large building in the northeast corner of the block, probably the Ketcham dwelling, covering three lots. In the southeast corner of the block is a stone yard with a stable; this appears to cover about three lots. On East 127th Street with the APE are five buildings and some empty lots. There are also rows of structures fronting Third Avenue outside the APE, and fronting the western half of East 127th Street also outside the APE; all appear to be residential. The lots within the APE are: 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 22½, 23, 24, 25, 26, 28, 29, 30, 31, 32, 33, 33½, 34, 35, and 36. Lots 14½ and 28½ are not shown until Robinson 1885.

Lots 13-15 These are three undeveloped lots on East 127th Street within the APE.

Lots 16-20 Each of these lots contains a structure, set back from the road bed, with a large back yard. All but the building on Lot 17 are frame.

Lots 21-24 The southeast corner of the block is undeveloped, although Lot 22 has the label "Stone Yd."

Lots 25-28 The northeast corner of the block contains a large dwelling, falling into Lots 25-27. This is probably the same house seen in Dripps 1867 belonging to E. Ketcham.

Lots 29-31 These are three undeveloped lots on East 128th Street.

Lot 32 This lot contains a stable at the rear of the lot.
Lots 33-36 These lots contain small masonry structures, part of the row described in Dripps 1867 as Dunscomb Place. All are set back from the road and have large back yards.
There is a hydrant located midway on the block on East 127th Street and midway on Second Avenue. Trolley and elevated railroad lines are present on Second Avenue.

Robinson 1885: The block is more intensively developed than it was on the Bromley 1879. Lots 14½ and 28½ are now present. Lot 28½ has been created out of the ends of Lots 25-28.
Lots 13-15 These lots have now been developed. Lot 14½ has been created between Lots 14 and 15. Lot 13 contains a large brick structure, presumably an apartment building, which extends from the front property line to near the rear of the lot. There is only a small rear yard. Lots 14, 14½, and 15 contain similar brick buildings slightly set back from the front property line, with medium sized back yards.
Lots 16-20 Each of these lots contains a structure, set back from the road, with a large back yard. Lots 16, 17, and 20 may contain the same buildings as in Bromley 1879. Lots 18 and 19 contain new structures. On Lot 16 there is a small frame building, set back from the front property line and with a large rear yard. On Lot 17 there is a small brick building on the front of the lot and a somewhat larger frame building in the rear of the yard. This frame building appears to abut the stable in the rear of Lot 32. Lots 18 and 19 contain similar large brick buildings, extending from the front property line to approximately two-thirds of the way to the rear property line. Lot 20 contains a small frame building, with open areas extending all around the house and a large rear yard.
Lots 21-24 Three of these lots are now developed; two are still empty. Lot 21, at the southeast corner of the block, contains a brick building which covers most of the lot. Lots 22 and 22½ each contain a small frame building which abuts the front property line and has a very large back yard. Lots 23 and 24 are undeveloped.
Lots 25-28 The Ketcham house which stood on these lots has been demolished, and each of the four lots now contains a similar brick building with a very small rear yard.
Lots 28½-31 These lots are still undeveloped. Lot 28½ has been created out of the rears of Lots 25-28.
Lot 32 This lot still contains a frame stable at the rear of the lot. There is no other structure within the lot.
Lots 33-36 These five lots are part of a row of 15 similar dwellings. All are brownstone, are set back from the road, and have large back yards. The dwellings on Lots 33, 33½, and 34 appear to have been extended slightly at the rear.
Trolley and elevated railroad lines are present on Second Avenue and there is an elevated station at the intersection of Second

Avenue and East 127th Street, but the actual demarcation of the station is not shown. There is an additional hydrant present on East 128th Street near Second Avenue.

Perris 1893: This atlas is similar to Robinson 1885.

Lots 13-15 These appear identical to those in Robinson 1885. The building on Lot 13 is a five-story brick building, and on Lots 14, 14½, and 15 there are three-story brick buildings.

Lots 16-20 These appear to be the same buildings as in Robinson 1885, although there is more information provided in this atlas. Lot 16 contains a three-story frame building, and now has a three-story frame addition at its back. Also new is a one-story frame building in the rear of the lot, coded green for a special hazard building of the lowest class. Lot 17 contains a two-story brick building, also coded green for a special hazard building of the second class (two dots). The frame building in the rear of the lot is no longer present. Lots 18 and 19 each contain a four-story brick building. Lot 20 contains a two-story frame building.

Lots 21-24 All of these lots are now developed and the two frame buildings on Lots 22 and 22½ are no longer present. Lot 22½ is no longer extant, and there are now just four lots (21, 22, 23, and 24). The building on Lot 21, which in 1885 (Robinson) was shown as a brick building occupying the entire lot, has now been subdivided into seven structures or businesses, all fronting onto East 127th Street. These represent the street addresses *247-259 East 127th Street*. All are one-story and brick. Two of these are shown as having stores; five are coded green for special hazards. Four of the special hazards are at the lowest level (one dot), and one is at the third level (three dots). The remaining three lots, 22, 23, and 24, all have similar five-story brick buildings which occupy nearly the entire lot. These all front onto Second Avenue and contain stores on the ground level.

Lots 25-28 Each of the four lots contains a five-story brick building with a very small rear yard. Each contains a store on the ground level.

Lots 28½-32 These five lots are now developed. They each contain a similar five-story building with a medium rear yard. The stable at the rear of Lot 32 has been removed.

Lots 33-36 These five lots are part of a row of 15 similar houses, labeled "Dunscomb Place," constructed sometime between 1851 and 1867 (Dripps). Although they are shown having street numbers for East 128th Street (*228-236 East 128th Street*), they also have numbers as part of Dunscomb Place (12, 13, 14, 15, and 16). All are three-story brownstones set back from the road and have large back yards. The houses on Lots 33, 33½, and 34 have frame extensions or porches at the rear.

The elevated railway station is shown here at the intersection of Second Avenue and East 127th Street. The two platforms are

labeled "M.R.R. Up Station" and "M.R.R. Down Station." The northernmost portion of the downtown station (probably the stairs) is very close to the southeast corner of Block 1792. There are six-inch sewer lines on East 127th and East 128th Streets.

Sanborn 1896: The APE is unchanged from Perris 1893 with the following exceptions.

Lot 17 The small two-story brick building has been replaced by a large three-story brick building occupying nearly the entire lot. It is classified as a special hazard building C with two dots, indicating a second class warehouse with level two hazard.

Lot 20 The frame structure remains, but a small one-story building or shed has been added in the rear of the lot.

Lot 21 This remains the same, except that of the five special hazard businesses, two are now classed as level three hazards and three are level two hazards.

Bromley 1897: This atlas is similar to Perris 1893, but basements are indicated on this map. All buildings appear to be the same as on Perris 1893. Buildings that have basements are on Lots 14, 14½, 15, 16, 20, 33, 33½, 34, 35, and 36. There is a discrepancy with Lot 17: there are two small buildings shown, one in the rear and one in the front of the lot, similar to what is shown in Robinson 1885. In Perris 1893 the rear building is not present. In Sanborn 1896 the front building is no longer present and there is a large three-story warehouse-type building filling nearly the entire lot, which is also what is shown in Bromley 1911. It is possible that what is depicted in this atlas is in error.

Sewer pipes are shown on East 127th Street, East 128th Street, and Second Avenue.

Bromley 1911: The majority of the buildings within the APE remain unchanged, except as noted.

Lot 17 This lot contains a three-story brick stable covering almost the entire lot. As described in the entry for Bromley 1897, there is a discrepancy as to when this building was constructed.

Lot 20 This lot is now vacant, as the building that previously existed here has been demolished.

Lot 21 The one-story building that was here has been demolished and a five-story brick building has been constructed; it has a store on the ground floor. The structure covers the entire lot.

Sanborn 1911: The APE is similar to that of Bromley 1911. This atlas indicates that basements are present in nearly all the structures within the APE, although previous and subsequent maps show that this is not the case (which may be due to underreporting on other maps and atlases or an error on this map). There is additional and slightly different information than Bromley 1911, which is detailed below.

Lot 16 The ground floor contains a store. There is a one-story structure in the rear of the lot labeled store house, but there is still a substantial amount of open yard area in the middle of the lot.

Lot 17 This lot contains a three-story brick stable covering nearly the entire lot. The building is labeled "Stable, Store House Sash and Window Glass." There is an elevator in the rear of the building.
Lot 20 This lot, which is shown as vacant in Bromley 1911, contains a one-story structure labeled "shed."
Lot 33 This lot has a small one-story structure in the rear of the lot, in addition to the house at the front.

Hyde 1913: The APE is similar to Bromley 1911. Front stairs are shown for all buildings fronting on East 127th Street within the APE except for the one on Lot 17, and for all those fronting onto East 128th Street (Figure 7.5-6).
Lot 20 This lot is shown as vacant.
Lots 21 and 28 The buildings on each of these lots are indicated by four filled circles, indicating a saloon.
Lot 33 This lot is not shown as having a rear structure as it is on the Sanborn 1911.
Lot 36 There is a small one-story frame addition at the rear of the building on this lot.
Sewer lines are labeled as a six-inch and 15" pipes on East 127th Street, and there is a six-inch pipe on East 128th Street. There is an additional hydrant on East 127th Street near Second Avenue. Stairs to the elevated station are shown on the sidewalk of Second Avenue near East 127th Street, and part of the elevated station is shown extending into East 127th Street from Second Avenue.

Bromley 1916: The APE is very similar to Hyde 1913, except for Lot 20.
Lot 20 This lot, previously shown as vacant, now has a one story frame building, with an open yard area on the eastern half and at the rear of the lot.

Bromley 1925: The APE is unchanged from Bromley 1916, except for the building on Lot 35.
Lot 35 There is a one-story brick addition to the front of the building on this lot. It fills the entire front yard and is commercially occupied.
The elevated station is no longer present on Second Avenue.

Bromley 1930: The APE is unchanged from Bromley 1925, except for Lot 28 and Lot 35.
Lot 28 There is a small one-story brick structure at the rear of this lot.
Lot 35 The one-story brick addition at the front of the building now has two stories, and no longer appears to be commercial.

Bromley 1934: The APE is unchanged from Bromley 1925, except for Lot 20.
Lot 20 The one-story structure present on this lot in 1930 (Bromley) has been demolished and replaced by a much smaller one-story commercial building.

Sanborn 1939: The APE is somewhat changed from Bromley 1934, and this atlas also provides additional information on some of the structures.

Lots 14, 14½, 15, 16 have additional information regarding what is contained in the basement of each structure. Lot 14 contains a church in the basement, and Lots 14½ and 15 each have a club. Lot 16 is noted as having "BR BAS." which may mean there is a bedroom in the basement, but this is unclear. The small structure at the rear of Lot 15 is labeled "Store House."
Lot 17 This structure is labeled "F" for factory and has an elevator in the rear of the building.
Lot 20 There is no labeling on this lot, so the building may have been demolished sometime since 1934.
Lots 22-27 All of these lots, except for Lot 24, are labeled "Vac. and Open" although the building demarcations are still present.
Lot 29 This lot is labeled "Vac. and Open" although the building demarcation is still present.
Lots 33-35 Lots 33, 33½, and 34 are shown to have one-story additions at the rear of the structures, and 33½ and 34 are indicated as having basements in these additions. Lot 33 is also shown to have a one-story structure at the rear of the lot. The house on Lot 35 is labeled as having a "Wet Wash Laundry" on the first floor.

Sanborn 1951: Major changes have occurred within the APE (Figure 7.5-7).
Lot 15 The structure on this lot has been demolished and the lot is now vacant.
Lots 18-19 These buildings were dwellings in 1939 (Sanborn) but have now been joined and are a factory (the actual structures appear to be the same as in 1939).
Lots 20-27 All the structures within these lots, with the exception of the building on Lot 24, have been demolished. Within Lots 20-23, which appear to have been consolidated, there is a filling station. The station appears to be in the rear of former Lots 22-23. There are two other structures on what was Lot 20, one of which has a label of "Auto...(illegible)." All three structures are one-story commercial buildings. Lots 25-27 are vacant.
Lot 29 This lot contains a new building, which covers the entire lot. It is a one-story factory with a concrete floor.
Lots 33, 33½ The dwellings on these two lots have been torn down and replaced with a single building, which is a one-story garage with a concrete floor. It covers both lots entirely.
Lot 35 The building on this lot is now labeled "Woodworking."

Bromley 1955: This atlas is similar to Sanborn 1951 with a few differences. Also, Lot 14½ is now Lot 114, Lot 28½ is now 128, and Lots 33 and 33½ have been consolidated into one lot, now Lot 33.
Lot 20 The two smaller buildings formerly on this lot have been replaced by a larger one story building.
Lots 21, 24 There is now an Auto Laundry (car wash) and a garage directly adjacent to it where the filling station was in 1951 (Sanborn). The building on Lot 24 has been demolished, and the lot is now vacant. Much of the easternmost end of the block is

now vacant, and is all consolidated within Lot 21. The only property still fronting onto Second Avenue is a building on Lot 28. Both the car wash and garage are one-story brick buildings.
Lot 29 This building is now labeled "Garage."

Bromley 1967: A number of buildings have been demolished since 1955. Lots 16, 20, and 128 are now vacant, and Lot 15 remains vacant.
Lot 21/121 The garage present on Lot 21 has been removed, but the Auto Laundry is still present. It has been renumbered as Lot 121. On Lot 21, which now covers the entire eastern end of Block 1792 (formerly Lots 21-28), a gas station has been built in the center, set at the western edge of the lot. This is a one-story brick building and covers approximately the rear portion of former Lots 24-25.

Bromley 1974: The APE is unchanged from Bromley 1967. Lots 15 and 16, both vacant, have been consolidated into one lot, now numbered 16.

Sanborn 1984-85: Many of the structures within the APE have been demolished. The only ones still present from 1974 (Bromley) are those on Lots 121 (Auto Laundry), 21 (gas station), 29 (garage), 33 and 36. The buildings on Lots 13, 14, 17, 18, 30-32, and 34-35 have been removed. One new structure has been erected, a one story building on Lot 11. Lot 11 covers what were previously Lots 11-20 and 30-32. The street address of this building is 237 East 127th Street.

Sanborn 1990-91: The APE is unchanged from Sanborn 1984-85.

Sanborn 2001: The APE is similar to that of Sanborn 1984-85, with the following differences:
Lot 11 A small one-story masonry building has been erected on this lot, fronting onto East 128th Street. The other building on this lot, shown first on Sanborn 1984-85, is still present.
Lot 34-36 The dwelling on Lot 36 has been demolished. This was the last remaining structure from the original Dunscomb Place row. A two-story building has been erected on Lots 34-36 (now numbered Lot 34). The back yard that was present on Lot 36 still appears to be open space. It is possible that a small frame shed in the rear of the old house is still present.

Roadbed elevations:

Block 1792	Third Ave. x E. 128th Street	Third Ave x E. 127th Street	Second Ave. x E. 128th Street	Second Ave. x E. 127th Street
1885 Robinson	9.8	11.5	7.11	10.11
1897 Bromley	9.74	11.49	7.92	10.08
1934 Bromley	9.7	11.5	7.9	10
1967 Bromley	9.7	11.5	-	10
2001 Sanborn	9.7	11.5	-	10

Tax and Directory Table:

LOCATION **BLOCK 1792** (old block 331)	LOT	1844	1858	1869	house, no. of stories	1876	house, no. of stories
229 E. 127th Street	13	D.P. Ingraham	Nathl. Dewey	Nancy Dewey		Nancy Dewey	
231 E. 127th Street	14	D.P. Ingraham	Nathl. Dewey	Nancy Dewey		Nancy Dewey	
233 E. 127th Street	14½	lot not in existence	lot not in existence	lot not in existence		lot not in existence	
235 E. 127th Street	15	D.P. Ingraham	Nathl. Dewey	Nancy Dewey		Nancy Dewey	
237 E. 127th Street	16	D.P. Ingraham	Nathl. Dewey	Nancy Dewey	2	Nancy Dewey	2
239 E. 127th Street	17	D.P. Ingraham	Robert Crawford	R. Crawford	rear	R. Crawford	2
241 E. 127th Street	18	D.P. Ingraham	Joseph O. Brown	J.O. Brown	2, rear	James A. Brown	2
243 E. 127th Street	19	D.P. Ingraham	Edgar Ketcham	E. Ketcham	2	Edgar Ketcham	2
245 E. 127th Street	20	D.P. Ingraham	Maria S. Kenyon	M.S. Kenyon	2	Maria S. Kenyon	2
2485 Second Avenue	21	D.P. Ingraham	Nathl. Dewey	N. Dewey		Nancy Dewey	small hse
2487 Second Avenue	22	D.P. Ingraham	Nathl. Dewey	N. Dewey		Nancy Dewey	
2489 Second Avenue	23	D.P. Ingraham	Nathl. Dewey	N. Dewey		Nancy Dewey	
2491 Second Avenue	24	D.P. Ingraham	Nathl. Dewey	N. Dewey		Nancy Dewey	
2493 Second Avenue	25	D.P. Ingraham	Edgar Ketcham	E. Ketcham		Edgar Ketcham	
2495 Second Avenue	26	D.P. Ingraham	Edgar Ketcham	E. Ketcham	2½	Edgar Ketcham	2½ ex
2497 Second Avenue	27	D.P. Ingraham	Edgar Ketcham	E. Ketcham	w/26	Edgar Ketcham	w/26
2499 Second Avenue	28	D.P. Ingraham	Edgar Ketcham	E. Ketcham		Edgar Ketcham	
246 E. 128th Street	28½	lot not in existence	lot not in existence	lot not in existence		lot not in existence	
244 E. 128th Street	29	Isaack Adriance	Edgar Ketcham	E. Ketcham		Edgar Ketcham	
242 E. 128th Street	30	Isaack Adriance	Edgar Ketcham	E. Ketcham		Edgar Ketcham	
240 E. 128th Street	31	Isaack Adriance	Joseph O. Brown	E. Ketcham		Edgar Ketcham	
238 E. 128th Street	32	Isaack Adriance	Isaac Adriance	E. Ketcham	stable	Edgar Ketcham	stable
236 E. 128th Street	33	Isaack Adriance	Isaac Adriance	John Vanderpool	3	John Vanderpool	3
234 E. 128th Street	33½	lot not in existence	lot not in existence	Daniel Eddy	3	Emilia Schwarzchild	3
232 E. 128th Street	34	Isaack Adriance	Isaac Adriance	Jno. S. Pierce	3	Durand + Dean	3
230 E. 128th Street	35	Isaack Adriance	Isaac Adriance	Jno. S. Pierce	3	Shol. (?) B. Post	3
228 E. 128th Street	36	Isaack Adriance	Isaac Adriance	Saml. Eddy	3	John Marston	3

Precontact Sensitivity

Block 1792 was historically situated directly along the Harlem River shoreline on predevelopment topographic maps (British Headquarters 1782; Viele 1865, 1874). In the late precontact period, it is likely that some of the area within the APE, in the northeast portion of the block, may have been marsh, so that it is unlikely to have been a habitation area. The section of the APE furthest from the shoreline was depicted as meadow, which would have been in close proximity to rich supplies of faunal and floral resources, and may have been attractive for settlement. In the early precontact period, lower water tables may have meant that the entire APE was further inland from the shoreline and well drained, which may have made it more suitable for settlement. Additionally, the area could have been a seasonal or foraging site throughout the precontact period.

There are no soil borings available for this block. Nearby soil borings taken from Second Avenue show evidence of peat between 25 and 34' below grade approximately 100-200' away from the APE, closer to the Harlem River (WPA IV:4:61, 1940, WPA IV:5:92-96, 1940), implying potential habitation areas or an earlier estuarial environment (see discussion in Chapter 4.1). The closest borings that show fill depths were taken at least 100' from the APE; these show fill depths of 14-16' below surface in Block 1791 (Warren George, Inc. B-7, B-8, B-9, 1997). In a boring taken from the east side of Second Avenue in former Block 1804, there was no fill reported, just sand and gravel overlain by yellow and blue clay (WPA IV:5:53, 1936). Borings taken near Block 1803 at Second Avenue and East 127th Street show that there was cinder fill from the surface down to 3.5' below grade, overlying sand and gravel that extended 15.3' below grade (WPA IV:5:52, 1936). In former Block 1805, on East 128th Street east of Second Avenue, a boring showed earth and cinder fill from the surface to 4.1' below, and cinder, sand, and gravel to 16.4' below surface (WPA IV:5:93, 1940). Precontact living surfaces would expected to be below the historic fill, and are unlikely to have been disturbed by any historic building episodes within the APE. Therefore the APE should be considered sensitive for precontact resources which may extend from below the fill to the lowest depth of reported peat, which lies about 33' below grade. However, since no soil borings were available for this APE, the lowest depth of fill is unknown.

Historical Sensitivity

The earliest structures in the APE noted on the historical maps and atlases are two unlabeled buildings within the southeastern section of the block depicted in 1851 (Dripps). A row of tenements or apartment buildings was built by 1867 (Dripps) on East 128th Street. The easternmost five of the structures, part of Dunscomb Place, fell within the APE (Lots 33, 33½, 34, 35, 36). One of these dwellings stood through the 1990's, and its back yard always remained undeveloped. All of these structures had small front yards and large back yards, although some had small additions at the rear. This group of dwellings stood through at least the mid-20th century. The buildings on Lots 33 and 33½ were torn down in the early 1950's, and those on Lots 34 and 35 were razed in the late 1970's or early 1980's. The newer structures that replaced these do not have basements. Therefore, it is quite possible that shaft features such as wells or privies that might have

existed in the 19th century may still be present even if truncated. A large house was present on the northeast corner of the APE (Lots 25-28) in the latter half of the 19th century. The dwelling was first present on maps in 1867 (Dripps) and it belonged to Edgar Ketcham, who owned Lots 25-30 from at least 1858 to 1876 based on tax records (see Tax and Directory Table above). Ketcham also owned Lots 31-32, which housed a stable, from approximately 1869 to 1876. His large house is not present on an 1885 atlas (Robinson), although the stable was, but this too was gone by 1893 (Perris) and was later replaced by apartment buildings. This house may also have associated wells or privies which once serviced it prior to the availability of municipal sewer and water. Since the subsequent apartment buildings did not have basements, and there were no later building episodes on most of the land, it is likely that potential shaft features would be predominantly undisturbed, even if slightly truncated.

Of the remaining areas within the APE, Lots 21-24 are unlikely to possess any historical resources, since in 1867 (Bromley) these lots were empty and in 1879 (Bromley) they contained a stone yard, although tax records indicate that in 1876 Lot 21 contained a small house. In 1885 (Robinson) two small frame buildings occupied Lots 22 and 22½, with a larger brick building on Lot 21. From 1893 (Perris) through the mid-20th century (Sanborn 1951), the lots have contained apartment buildings, which almost entirely covered the lots. Subsequently, a filling station occupied part of this area in the 1950's, which may have caused subsurface disturbance by the installation of underground gasoline tanks. Another filling station later occupied part of Lots 24-25 (Bromley 1967).

Lots 16-20 might still possess historical resources such as shaft features where back yards once existed. The approximate locations of Lots 16-18 had two structures as of 1851 (Dripps), and Lots 16-20 each had structures in 1867 (Dripps). Lot 20 in particular had a large open yard throughout much of its history, and although it at one point had a frame house with a basement, this only occupied a portion of the front of the lot (Bromley 1897). Lots 13-15 may have had structures on them in the mid-19th century (Dripps 1851, 1867), but by 1879 the lots were empty until apartment buildings were constructed on them in the 1880's (Bromley 1879, Robinson 1885).

It is not clear whether or not the mid-19th century buildings had outdoor wells or privies in their yards. As late as 1884, only 30% of the tenements in Manhattan had water closets, and few had water provisions above the first floor (Plunz 1990:33). If they did have these features, portions of them may still be present, as the buildings on Lots 13, 14, and 14½ (114) were not demolished until sometime between the mid-1970's and the mid-1980's (Bromley 1974, Sanborn 1984-85), and the one on Lot 15 by 1951 (Sanborn). There was only one subsequent building episode over sections of these lots (114, 15, 16), when a building with no basement was constructed (Sanborn 1985-85). Wells or privies from residences predating the mid-19th century apartment buildings may still be partially undisturbed if they were located near the rear of the lots, although the apartment buildings on Lots 14-15 had basements.

There is also a remote chance that there could be outbuildings from an early 19th century farm belong to Isaac Adriance. The Adriance farmhouse is shown on Sackersdorf 1815 along the eastern edge of what would become Third Avenue, and in 1836 (Colton), a

large estate is shown occupying two-thirds of the block, as well as much of the block to the north, with a house in the same location. Although this building would have been outside the APE, it is quite possible that farm outbuildings or shaft structures could fall within the APE. According to tax records, Isaac Adriance owned Lots 29-36, all within the APE, in 1844.

Given that a number of residential buildings were constructed in the mid and late 19th century, with back yards that by and large remained clear of construction, there is a high potential for finding shaft structures such as wells and privies on Block 1792 related to these residential episodes (Figure 7.5-8). Specifically, within the APE, Lots 33-36 had substantial open back yards and no subsequent construction or construction of small buildings without basements. Lots 28½-32 had small back yards, with late 19th century buildings that may not have caused disturbance to the potential earlier mid-19th century domestic features (the Ketcham residence), as the former did not have basements. Lots 25-28 had smaller back yards, but again the buildings had no basements, so may not have disturbed the Ketcham lots. Lots 21-24 have very small rear yards, and although the late 19th century buildings had no basements, subsequent construction episodes in the 20th century may have disturbed any earlier 19th century resources. Of Lots 13-20, only 14-16 had buildings with basements. Since structures were known to have been present here in 1851 (Dripps), shaft features might be expected. Open yard space was minimal in the later 19th century buildings, except for Lots 16 and 20, which at various times had large areas of open space. With no soil borings or water table depths for the APE, fill depth cannot be gauged, and thus feature depth cannot be assessed. The closest borings that show fill depths are at least 100' away; these show fill depths of 14-16' below surface in Block 1791 and no water table depths (Warren George, Inc. B-7, B-8, B-9, 1997).

7.5.7.2 Site File Search Results

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	
4051X	*Missing	A061.01.0491 —	#30 = British Line
4060X		A061.01.01282X	#31
4061X		A061.01.01272X D014	
4[illegible]X		A061.01.01284X	(Note: #30 + #31 —
4[illegible]3X		A061.01.01283X	the only info from SHPO
4[illegible]4X		1 - A061.01.1271X	was that NYAC did a
7378X		~~2 - A061.01.0044 D03~~	survey in the 1970's
		3 - A061.01.0623X D023	and found historic Remains.
		4 - A061.01.06763X	no other info was found.)
		~~5 - A061.01.0001~~	
	209 Water St. South Street Seaport HD 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	
		A061.01.01286X	
		A061.01.0541X	
		A061.01.00542X	
		A061.01.09531X	

*According to Cynthia Blakemore @ SHPO

ATIONAL REGISTER E. GIBLE and LISTED ___ Eligible ___ Listed ___ Building Inventory

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

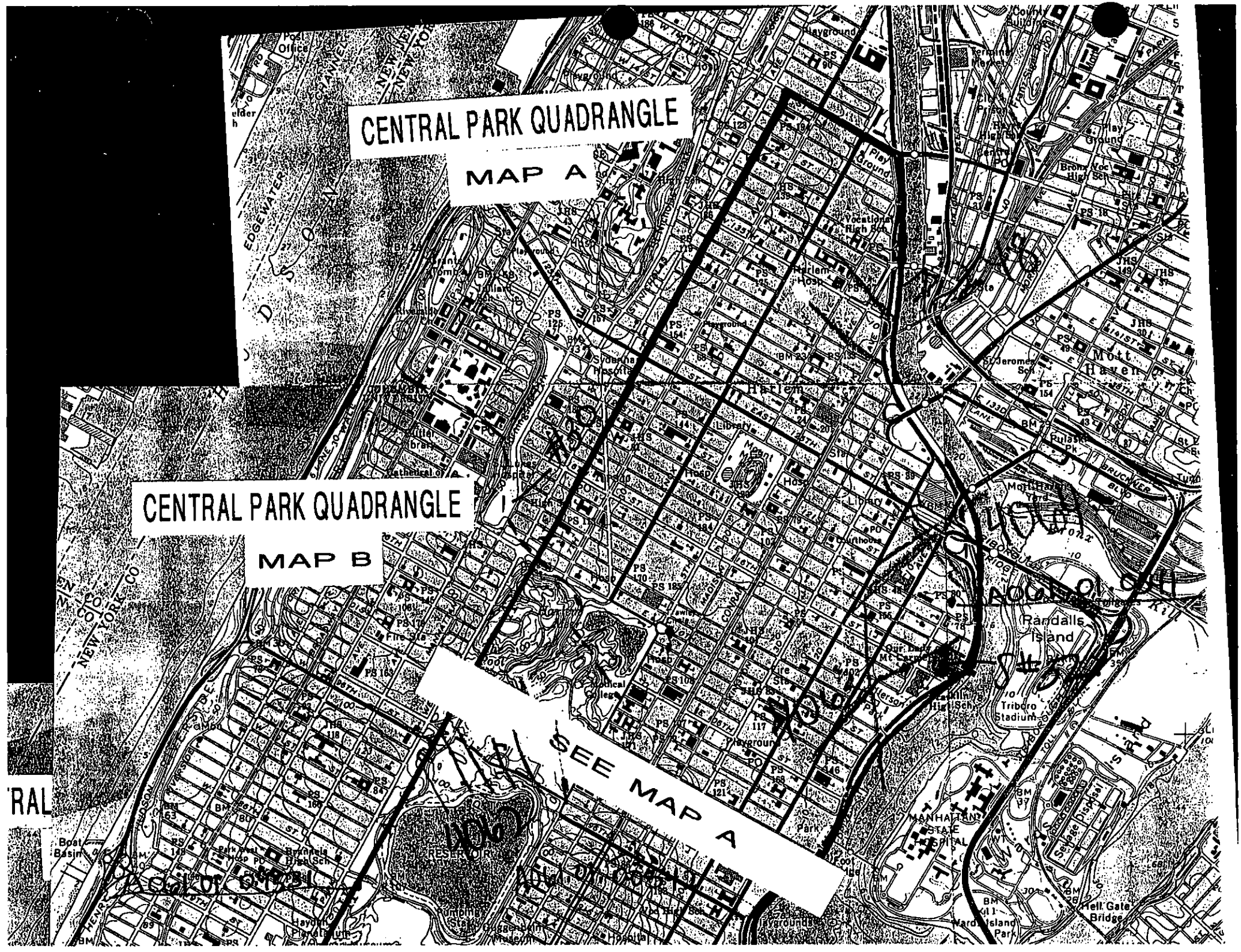
EVIOUS SURVEYS

<17 previous surveys w/in Radius>

8 Westside Highway Program – 1983
William D. Hersey – 1963 Castle Clinton at the Battery
Broad Street Financial Center Greenhouse January 1985
X
64th Pearl Street (17th Landfill) Arnold Pickman & Nan Rothschild May 1981
Stone Street Historic District 9/17, 8/17 NYC Landmarks Pres. Comm. Tracker
9 Barclays Bank Site – 100 Water St. Berger – 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block Kardon & Larrabee Aug 1971

5 209 Water St. – Schuyler – ? Date
East River Road – New York Harbor Collection Kardon & Larrabee October 1977
10 Sheridan Square – 1983 – Rutgers University
Lower Eastside Service Center – Louis Berger Jan '98
27 750 Sixth Ave. HPI – February 1998
Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1981 / December 1989
32 East River Plaza HPI Sept. 1998
Stone Street Historic District NYC Landmark Pres. Comm. February 1998

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


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A


SEE MAP C
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S#25
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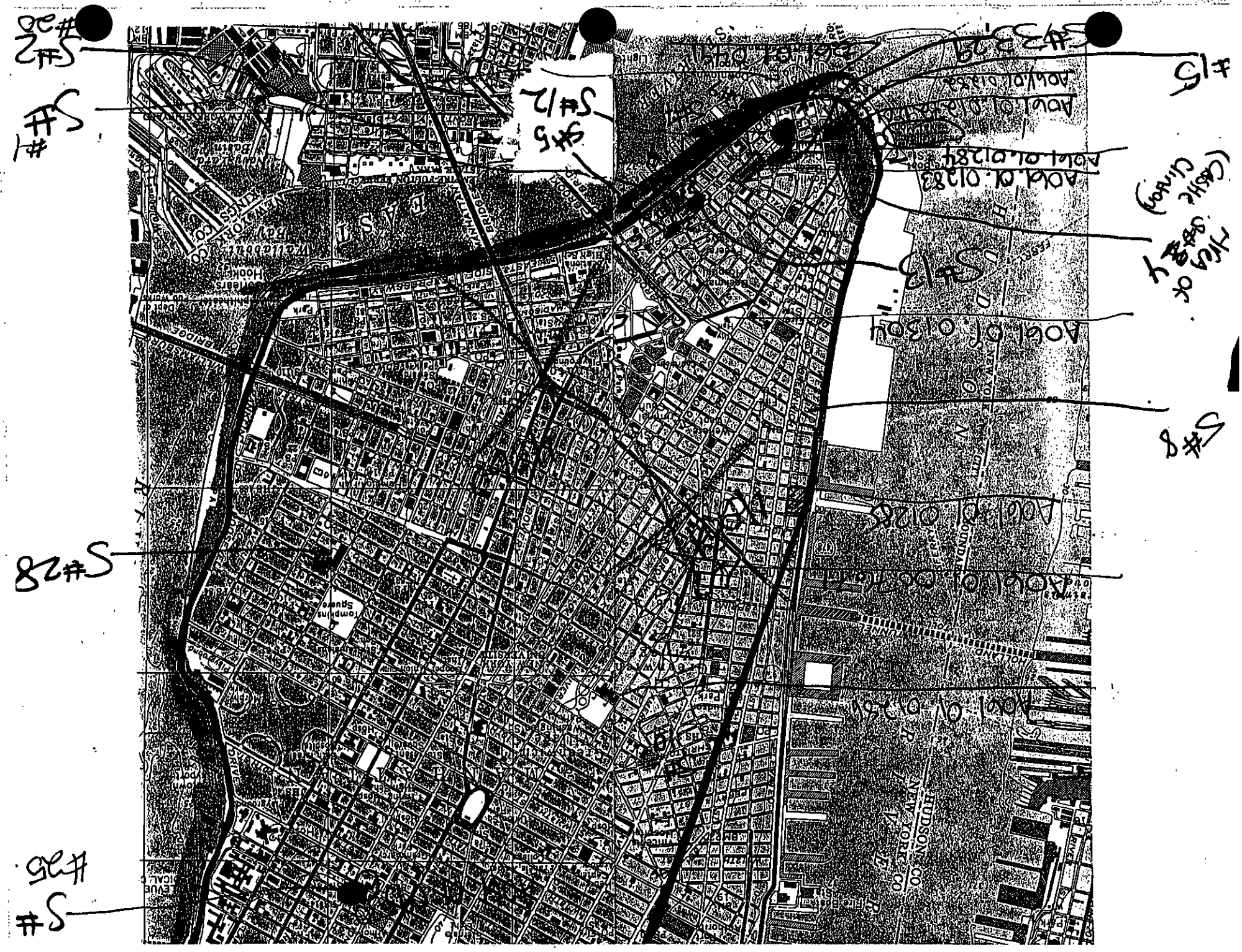
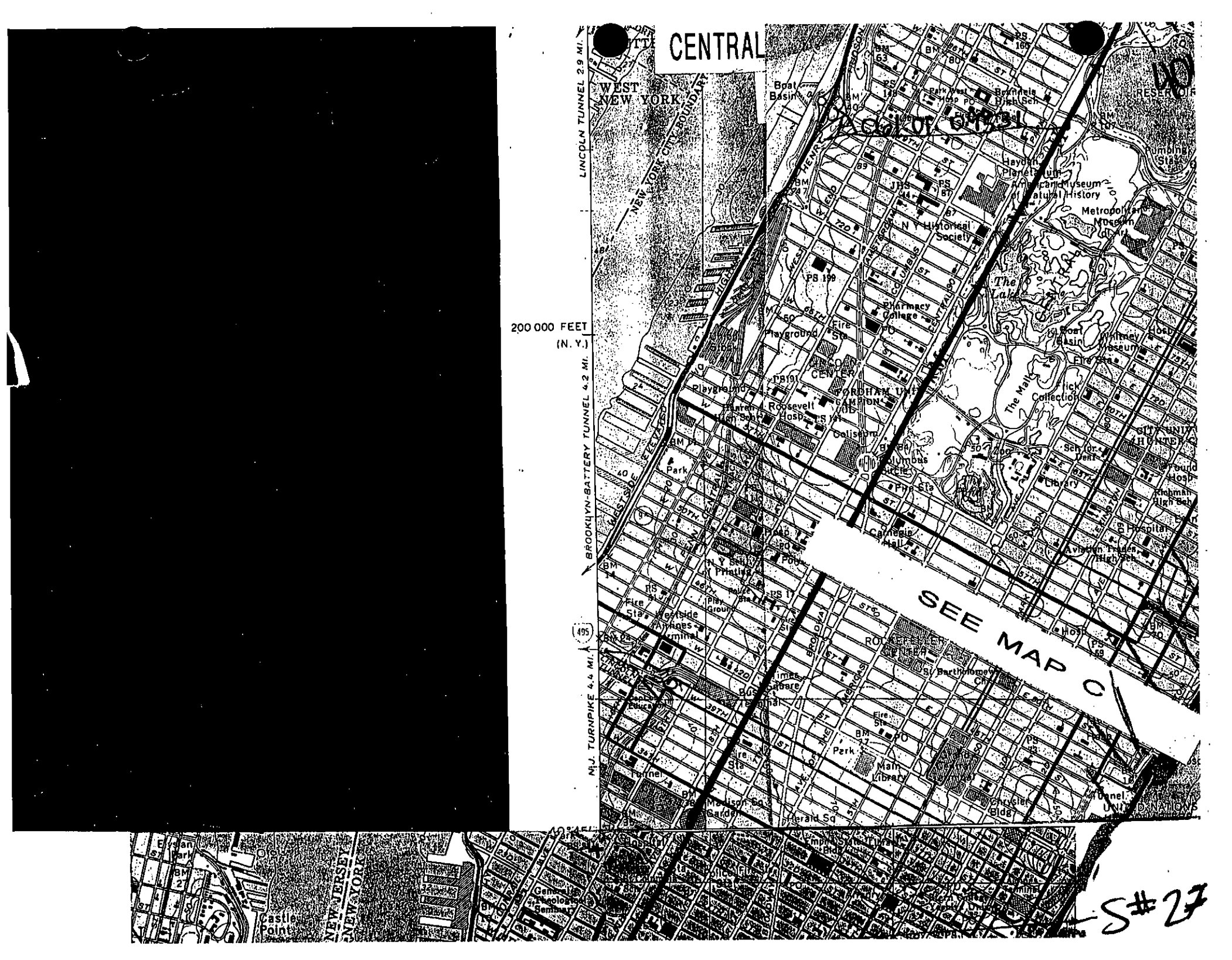


#15
S#8
S#13
S#12
S#5
S#28
#25
S#1
S#2
S#3
S#4
Area of S#4 (Castle Clinton)
A061.01.01304
A061.01.01283
A061.01.01284
A061.01.01285
A061.01.00767
A061.01.01281
HUDSON CO
NEW YORK CO


CENTRAL
WEST NEW YORK
NEW YORK CITY BOUNDARY
LINCOLN TUNNEL 2.9 MI.
BROOKLYN-BATTERY TUNNEL 4.2 MI.
N.J. TURNPIKE 4.4 MI.
200 000 FEET (N. Y.)
SEE MAP C
Boat Basin
Playground
Fire Sta
Roosevelt Hospital
Coliseum
Columbus Circle
Park
Westside Airlines Terminal
Bus Terminal
Times Tower
Cabaret
Fire Sta
Play Ground
Tunnel
Herald Sq
Main Library
Chrysler Bldg
Empire State Bldg
Madison Sq Garden
Pharmacy College
Lincoln Center
Fordham Univ
Lincoln Tunnel
Hayden Planetarium
American Museum of Natural History
Metropolitan Museum of Art
N.Y. Historical Society
The Lake
Boat Basin
Whitney Museum
The Mall
Sch for Dent
Library
Carnegie Hall
Avalon Theatre
Hospital
Rockefeller Center
St Bartholomew
Castle Point
NEW JERSEY
NEW YORK
Elysian Park
General Theological Seminary
Penn Station
Empire State Bldg
Chrysler Bldg
Herald Sq
Main Library
Madison Sq Garden
Tunnel
Fire Sta
Park
Playground
Roosevelt Hospital
Coliseum
Columbus Circle
Westside Airlines Terminal
Bus Terminal
Times Tower
Cabaret
Play Ground
Rockefeller Center
St Bartholomew
Carnegie Hall
Avalon Theatre
Hospital
Sch for Dent
Library
The Mall
The Lake
Boat Basin
Whitney Museum
Hayden Planetarium
American Museum of Natural History
Metropolitan Museum of Art
N.Y. Historical Society
Pharmacy College
Lincoln Center
Fordham Univ
Lincoln Tunnel
Playground
Fire Sta
Boat Basin
Brookdale
Columbus
Amsterdam
Broadway
West End
West Side Fwy
Riverside Dr
Central Park West
Fifth Ave
Madison Ave
Park Ave
Lexington Ave
Third Ave
Second Ave
First Ave
East River
Hudson River
59TH
60TH
66TH
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7.5.7.3 Soil Boring Logs

Raymond International 2-113, 1970
West side Second Avenue between 125th and 126th Street
Elev. 111.62

concrete	0.0' to –0.5'
stone and cinder fill	-0.5' to –2.6'
medium coarse brown sand, gravel, some silt	-2.6' to –18.0'
medium brown sand, traces of silt	-18.0' to –42.0'
varved clay, silt, traces of sand	-42.0' to –51.6'

Water at –11.0'

Raymond International 2-114, 1970
East side Second Avenue between 125th and 126th Street
Elev. 113.20

concrete	0.0' to –0.4'
cinders, concrete, brick, wood fill	-0.4' to –12.0'
loose fine to medium brown sand	-12.0' to –23.0'
fine brown sand, trace of silt, thin layers of clay	-23.0' to –38.0'
fine gray and brown silty sand, varved clay	-38.0'to -61.6'

Water at –12.2'

Warren George, Inc. B-7, 1997
126th Street Bus Depot
East of Third Avenue between East 127th and East 126th Streets; middle of Block 1791.
Elev. +112.06

misc. fill (gray-black to yellow medium to fine silty sand, gravel, brick, rock and concrete fragments, asphalt)	+0.0' to –14.0'
brown coarse to fine sand, medium to fine gravel	-14.0' to –16.0'

No water level recorded.

Warren George, Inc. B-8, 1997
126th Street Bus Depot
Between Third and Second Avenues and between East 127th and East 126th Streets; center of Block 1791.
Elev. +113.25

no samples taken	+0.0' to –12.0'
misc. fill (brown coarse to fine silty sand, gravel, brick, rock and concrete fragments)	-12.0' to –16.0'

brown coarse to fine sand, medium to fine gravel	-16.0' to –18.0'

No water level recorded.

Warren George, Inc. B-9, 1997
126th Street Bus Depot
West of Second Avenue between East 127th and East 126th Streets; middle of Block 1791.
Elev. +114.12

misc. fill (gray-black to yellow medium to fine silty sand, gravel, brick, rock and concrete fragments, asphalt)	+0.0' to –14.0'

No water level recorded.

Warren George, Inc. MW-2, 1994
126th Street Bus Depot
Middle of north side of East 126th Street between Third and Second Avenues.
Elev. +114.61

concrete sidewalk	+0'0" to –0'4"
brown medium to fine sandy silt, trace gravel	-0'4" to –6'0"
brown fine sandy silt, trace gravel	-6'0" to –12'0"
reddish-brown coarse to medium sand, some gravel	-12'0" to –21'0"

Water at –12'5"

Warren George, Inc. MW-3, 1994
126th Street Bus Depot
North side of East 126th Street at Second Avenue.
Elev. +113.66

concrete sidewalk	+0'0" to –0'4"
brown medium to fine sandy silt, trace gravel	-0'4" to –6'6"
brown fine sandy silt, trace gravel	-6'6" to –12'6"
reddish-brown coarse to medium sand, some gravel	-12'6" to –20'6"

Water at –12'6"

WPA IV:4:58
P.J. Healey, Inc., Harlem River Drive, 1940
Southeast corner East 129th Street and Second Avenue.

misc. fill	+5.5' to –4.5'
mud and fill	-4.5' to –14.5'
river mud	-14.5' to –25.'5
some gravel, fine sand and clay	-25.5' to –34.3'
some clay and fine sand	-34.3' to –40.5'

coarse sand	-40.5' to –58.1'
boulders, sand, and disintegrated rock	-58.1' to –66.5'
brown clay	-66.5' to –75.6'
sand and gravel	-75.6' to –86.5'
disintegrated rock	-86.5' to –86.8'
limestone	-86.8' to –94.8'

No water level recorded.

WPA IV:4:59
P.J. Healey, Inc., Harlem River Drive, 1940
Just south of East 129th Street, east of Second Avenue.

misc. fill	+6.7' to –7.3'
sand, clay, gravel fill	-7.3' to –10.3'
gray silt	-10.3' to –18.8'
sand, gravel, clay	-18.8' to –26.3'
medium brown sand	-26.3' to –40.8'
fine brown sand and traces of clay	-40.8' to –60.3'
brown sandy clay	-60.3' to –97.9'
limestone	-97.9' to -105.9'

No water level recorded.

WPA IV:4:60
P.J. Healey, Inc., Harlem River Drive, 1940
East 129th Street near Second Avenue.

earth fill (6" granite block on surface)	+5.2' to –12.3'
gray clay	-12.3' to –24.4'
gray sand, gravel and some clay	-24.4' to –30.3'
brown sand and some gravel	-30.3' to –42.3'
medium brown sand	-42.3' to –52.8'
brown sandy clay	-52.8' to –63.3'
fine brown sand	-63.3' to –72.3'
brown sandy clay	-72.3' to –96.3'
fine gray sand	-96.3' to –98.1'
limestone	-98.1' to –106.1'

No water level recorded.

WPA IV:4:61
P.J. Healey, Inc., Harlem River Drive, 1940
East 129th Street between Second and Third Avenues.

wood	+7.3' to +6.8'
sand, clay, and ash fill	+6.8' to –6.2'
sand and mud	-6.2' to –11.9'
gray clay	-11.9' to –17.2'

peat	-17.2' to –17.7'
brown sandy clay	-17.7' to –23.7'
brown sandy clay	-23.7' to –34.7'
brown clay	-34.7' to –46.2'
brown sand, gravel and clay	-46.2' to –53.6'
boulders	-53.6'to –59.7'
fine brown sand	-59.7' to –73.7'
red and gray clay	-73.7' to –84.7'
sandy gray and red clay	-84.7' to 94.2'
boulders	-94.2' to –102.2'
boulders	-102.2' to –109.2'
limestone	-109.2' to –112.2'

No water level recorded.

WPA IV:4:62
P.J. Healey, Inc., Harlem River Drive, 1940
East 129th Street near Second Avenue.

misc. fill, brick, concrete gravel, cinders	+6.6' to –4.4'
gray clay	–4.4' to –24.9'
medium brown sand and gravel	-24.9' to –42.4'
fine brown sand	-43.4' to –54.6'
medium and coarse brown sand	-54.6'to –72.4'
coarse brown sand	-72.4' to –75.6'
medium brown sand	-75.6' to –82.4'
brown sandy clay	-82.4' to –99.7'
firm sand and boulders	-99.7' to –101.3
limestone	-101.3' to 109.3'

No water level recorded.

WPA IV:4:63
P.J. Healey, Inc., Harlem River Drive, 1940
East 129th Street between Second and Third Avenues.

earth and cinder fill (bluestone flag on surface)	+7.90' to –12.4'
gray sand	–12.4' to –19.7'
gray clay and sand	-19.7' to –30.1'
gray clay	-30.1' to –51.6'
gray clay and sand	-51.6' to –58.6'
fine brown sand	-58.6' to –76.1'
red brown clay and sand	-76.1' to –88.3'
limestone boulder	-88.3' to –91.8'
mica schist limestone	-91.8' to –94.3'
pegmatite	-94.3' to –96.8'
limestone	-96.8' to –98.8'

No water level recorded.

WPA IV:5:23
Triborough Bridge, 1935
Southeast corner of Second Avenue and East 126th Street.

fill	+11.8' to +8.8'
loam	+8.8' to +4.8'
brown sand, gravel and boulders	+4.8' to –2.2'
gray sand, gravel and boulders	-2.2' to –14.2'
fine mica sand	-14.2' to –20.6'

No water level recorded.

WPA IV:5:24
Triborough Bridge, 1935
East side of Second Avenue between East 125th and East 126th Streets.

fill and loam	+11.2' to +8.2'
sand and gravel	+8.2' to -5.8'
gray sand and gravel	-5.8' to –10.8'
fine gray mica sand	-10.8' to –21.0'

No water level recorded.

WPA IV:5:52
Wards Is. Intercept Sewer, 1936
Southeast corner of Second Avenue and East 127th Street.

cinder fill	+11.5' to +8.0'
sand and gravel	+8.0' to –3.8'
red sand	-3.8' to –22.0'

No water level recorded.

WPA IV:5:53
Ward Is. Intercept Sewer, 1936
Southeast corner of Second Avenue and East 128th Street.

yellow clay	+9.2' to –4.8'
blue clay	-4.8' to –9.8'
sand and gravel	-9.8' to –18.8'
red clay and sand	-18.8' to –21.8'

No water level recorded.

WPA IV:5:92
P.J. Healey, Inc., Harlem River Drive, 1940
East of Second Avenue, north of East 128th Street.

ash, earth, wood and rock fill	+5.9' to –0.1'
fine sand, clay, and cinder fill	-0.1' to –9.1'
clay, cinder and ***shells***	-9.1' to –17.1'
clay and ***peat***	-17.1' to –19.1'
coarse sand and clay	-19.1' to –27.1'

brown clay	-27.1' to –34.1'
fine brown sand and clay	-34.1' to –51.7'
boulder	-51.7' to –55.2'
medium white sand	-55.2' to –67.1'
white sand and gravel	-67.1' to –74.4'
boulders	-74.4' to –90.8'
limestone	-90.8' to –96.8'
limestone	-96.8' to –102.8'

No water level recorded.

WPA IV:5:93
P.J. Healey, Inc., Harlem River Drive, 1940
North side of East 128th Street, east of Second Avenue.

earth and cinder fill	+6.9' to –2.8'
cinder, sand and gravel	–2.8' to –9.5'
med. gray sand	–9.5' to –11.4'
gray clay	–11.4' to –16.6'
peat	–16.6' to –18.1'
fine brown sand and clay	–18.1' to –37.1'
fine gray sand	-37.1' to –46.1'
brown sandy clay	-46.1' to –56.9'
gray coarse sand, gravel and clay	-56.9' to –58.4'
boulders and layers of fine gray sand	-58.4' to –70.6'
fine white sand and boulder chips	-70.6' to –75.1'
boulder	-75.1' to –76.6'
fine gray sand	-76.6' to –82.0'
limestone	-82.0' to –90.0'
disintegrated	-90.0' to –93.0'
disintegrated	-93.0' to –95.2'
limestone	-95.2' to –98.0'

No water level recorded.

WPA IV:5:94
P.J. Healey, Inc., Harlem River Drive, 1940
East side of Second Avenue near East 129th Street.

cinder and earth fill	+6.3' to –3.2'
wood and some clay	-3.2' to –8.4'
clay and gravel	-8.4' to –20.7'
peat	-20.7' to –23.0'
clay and ***peat***	-23.0' to –26.7'
medium brown sand	-26.7' to –32.2'
medium sand and clay	-32.2' to –36.7'
fine sand and clay	-36.7' to –49.7'
clay and fine sand	-49.7' to -55.2'

fine gray sand	-55.2' to –56.4'
boulder	-56.4' to –57.7'
fine gray sand	-57.7' to –58.6'
boulder	-58.6' to –59.2'
limestone	-59.2' to –78.2'

No water level recorded.

WPA IV:5:95
P.J. Healey, Inc., Harlem River Drive, 1940
East side of Second Avenue, north of East 128th Street.

sand, gravel and ash fill	+7.3' to –2.7'
sand	-2.7' to –6.7'
silt	-6.7' to –13.7'
peat, sand, gravel, clay	-13.7' to –17.2'
gray sand, gravel, some clay	-17.2' to –25.7'
brown sand and gravel	-25.7' to –36.2'
fine brown sand and stiff clay	-36.2' to –55.7'
med. white sand	-55.7' to –56.8'
disintegrated limestone	-56.8' to –62.7'
limestone	-62.7' to –70.7'

No water level recorded.

WPA IV:5:96
P.J. Healey, Inc., Harlem River Drive, 1940
Second Avenue near East 129th Street

granite block	+5.5' to +5.0'
concrete	+5.0' to +4.3'
sand, gravel and ash fill	+4.3' to –12.5'
gray silt	–12.5' to –21.5'
peat	–21.5' to –26.0'
gray sand and gravel, some clay	–26.0' to –35.5'
medium brown sand and gravel	-35.5' to –46.7'
boulder	-46.7' to –46.9'
medium gray sand and gravel	-46.9' to –56.0'
boulder	-56.0' to –56.5'
brown clay and sand	-56.5' to –69.5'
fine gray sand, some boulders	-69.5' to –78.5'
limestone	-78.5' to –86.5'

No water level recorded.

WPA IV:5:97
P.J. Healey, Inc., Harlem River Drive, 1940
West side Second Avenue between East 129th and 128th Streets.

sand, gravel and fill	+6.6' to +1.3'
cinder and gravel fill	+1.3' to –3.0'

sand, clay, mud, gravel, some silt	-3.0' to –14.3'
clay and river mud	-14.3' to –18.3'
coarse brown sand	-18.3' to –28.3'
clay, gravel	-28.3' to –34.7'
brown sand	-34.7' to –44.8'
fine brown sand, white sand, some clay	-44.8' to –50.1'
coarse gravel, med. white sand	-50.1' to –53.0'
sand and clay	-53.0' to –66.0'
med. white sand	-66.0' to –70.0'
disintegrated rock	-70.0' to –72.7'
limestone	-72.7' to –86.2'

No water level recorded.

WPA IV:5:142
Sprague and Henwood, 1945
Harlem River, just outside shoreline east of Second Avenue, north of East 129th Street.

decking	+5.0' to +4.5'
space	+4.5' to +0.0'
river	+0.0' to –10.0'
black organic silt and wood	–10.0' to –28.5'
gray medium sand	–28.5' to –38.0'
red and gray silt and sand	–38.0' to –66.0'
red silt, trace of clay	–66.0' to –70.8'
boulder	-70.8' to –72.3'
fine to coarse gray sand and gravel	–72.3' to –81.0'
red silt, trace of clay	-81.0' to –91.0'
gray fine to coarse sand and gravel	-91.0' to –112.0'
white crystalline limestone	-112.0' to –120.0'

No water level recorded.

WPA IV:5:143
Sprague and Henwood, 1945
Harlem River, just outside shoreline of Second Avenue, north of East 129th Street.

river	+0.0' to –20.0'
soft black river silt	–20.0' to –55.0'
gray uniform medium sand	–55.0' to –67.0'
reddish fine to medium sand and gravel	–67.0' to –79.0'
red silt	–79.0' to –81.0'
fine, dark gray sand (micaceous) and red silt	–81.0' to –87.0'
boulders	-87.0' to –91.0'
red fine to medium sand	-91.0' to –96.0
coarsely crystalline white limestone	-96.0' to –104.0'

No water level recorded.

WPA IV:5:144
Sprague and Henwood, 1945
Harlem River, just outside shoreline west of Second Avenue, north of East 129th Street.

concrete platform	+5.0' to +4.0'
space	+4.0' to +0.0'
river	+0.0' to –17.0'
v. soft black sandy organic silt	–17.0' to –26.0'
brown fine silty sand	–26.0' to –33.5'
brown fine micaceous sand	–33.5' to –63.0'
brown and gray medium to coarse sand and rock fragments	–63.0' to –73.0'
gray and brown fine sand and silt	–73.0' to –80.0'
reddish silt	–80.0' to –83.0'
very fine gray sand	–83.0' to –91.0'
reddish very fine sand	–91.0' to –94.5'
gray fine micaceous sand and silt trace	–94.5' to –112.5
heavy silicated limestone over limestone	–112.5' to –120.5'

No water level recorded.

7.6 OLD SLIP SPUR TUNNEL

7.6.1 Study Area Description

A shaft site may be located on Old Slip between Water Street and South Street. A spur tunnel may also be constructed on Old Slip, leading from Water Street to a spoils removal shaft at the South Street Right-of-Way (Photographs 7.6-1 through 7.6-3). Since the horizontal and vertical limits of effects are unknown, the APE includes the entire width of Old Slip, including adjacent sidewalks but excluding the footprint of the extant Police Museum. Construction of the shaft site and spur tunnel would be by the cut-and-cover method.

7.6.2 Existing Conditions

7.6.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

According to Grumet the very southern tip of Manhattan was called Kapsee in the 17th century (Grumet 1981:68). This was described as a ledge of rocks at the southernmost point of Manhattan Island, probably in the vicinity of what is now Battery Park (Ibid.:17). To the north, the landform termed Ashibic was probably a narrow ridge or ancient cliff north of Beekman Street in Lower Manhattan, that was bounded by marsh to the south (Ibid.:3). In addition, "Catiemuts" was the term probably used to describe a "fort or hill located near Pearl Street and Park Row," also several blocks west of the project site (Ibid.:8).

No precontact sites were identified within the project site. However, NYSM Site #4060 was reported northeast of the project site somewhere on the east side of Manhattan near the Manhattan Bridge. It was simply described as an unnumbered village on Arthur C. Parker's map, with no detail of age, location, or size (see Appendix 7.6.7.1).

The preservation of precontact sites in an urban environment is rare, because precontact deposits tend to be shallowly buried in non-alluvial environments and are vulnerable to disturbance from historical land use and development. This is particularly true in Lower Manhattan, where intensive development of the urban center has been occurring for more than three hundred years. Despite this, some precontact material has been recovered in recent years from archaeological excavations in Lower Manhattan. For example, in 1980 during the excavation of Stone Street, as part of the Staadt Huys block, aboriginal pottery and lithics were found in the lowest levels of the excavation (Baugher-Perlin et al. 1982:12). In the later Broad Street field investigation led by Joel Grossman, an *in situ* contact period feature was found in direct association with the Dutch West India storehouse (Karen Rubinson, personal communication to Cece Saunders, June 27, 1989). These artifacts are evidence of Native American occupation, but they do not represent habitation or midden sites with significant research potential.

When assessing site potential for Native American resources, archaeologists rely on several indicators: past environmental features of the site landscape, ethnographic accounts published archaeological reports, and predictive models based on precontact settlement pattern data. Ethnographic accounts and archaeological material do document the presence of Native Americans in Lower Manhattan. As reported by Bolton, Skinner and Parker, the southern tip of Manhattan, at the confluence of two major water systems, was probably exploited by pre-Colonial inhabitants for shellfish harvesting and perhaps even habitation (Bolton 1972; Skinner 1919; Parker 1920). West of the site near Pearl Street, where the c.1600 shoreline ran, early chroniclers reported abundant shellfish remains and speculated that the area functioned as a canoe landing (Geismar 1986:7).

Archaeological Potential

This section of the APE was beneath the East River at the time of the earliest historical development (Viele 1874). Cartographic and documentary research suggests that there is no precontact potential within this APE (Appendix 7.6.7.1). The lack of any indicators of a precontact living surface in the soil borings taken on or near Old Slip (either peat or soils indicative of a habitable environment) suggests that this section of the APE lacks precontact potential. Furthermore, because Old Slip was kept open for passage for shipping for a period of at least 100 years (ca.1690s-1790s), it would have been periodically dredged to remove encumbrances. Therefore, much of the river bottom within the slip would have been extensively disturbed prior to it being filled in the late 18th century. The lack of potential sensitivity coupled with the historic disturbance suggests that the Old Slip APE has no precontact potential.

7.6.2.2 Historical Archaeological Potential

Known Sites in the Vicinity

See Section 7.1.2.2 (Known Sites in the Vicinity for the Vietnam Veteran's Plaza APE) for a detailed description of previously inventoried historical sites in proximity to this APE.

Of particular pertinence to this APE are two archaeological projects undertaken on the blocks on either side of Old Slip. The first was an archaeological salvage excavation which was completed within adjacent Block 32 at 55 Water Street when a new building was constructed in 1969 (Huey 1984:17). In addition to the extensive number of artifacts found in the remaining landfill within the block (most of the block had been affected by foundation excavations and little remained by the time archaeologists were permitted to proceed), the original log crib footing under the northeast end of Cruger's Wharf, dating to 1740, was visible (Ibid.:18). Cribbing extended 175' southeast from Water Street, along the original line of Old Slip. Artifacts within the landfill were able to address research issues pertaining to colonial trade patterns and waterfront development (Ibid.:23).

The second archaeological investigation in proximity to Old Slip was undertaken at the Assay site on Block 35 directly to the northeast of the APE on the block bounded by Old

Slip, Front Street, South Street and Gouverneur Lane (Greenhouse Consultants Inc., 1983; Louis Berger and Associates 19990). Here, documentary and cartographic research was initially completed to determine the archaeological potential of Block 35. Research concluded that the block was potentially sensitive for historical period resources including landfill, landfill retaining devices, and 18th and 19th century domestic, maritime, and commercial features (Ibid.:27).

Subsequent field investigations found several of the lots to possess potentially significant resources and the site was designated as SHPO Site A061.01.1284. Louis Berger & Associates, Inc. (1990), as part of the *Final Report: Archaeological and Historical Investigations at the Assay Site, Block 35, New York, New York,* utilized the data from the Assay Site to critically examined the types of research questions that might be productively addressed when conducting investigations at landfill sites in Manhattan. More specifically, research at the Assay site addressed the process of landfill in the late 18th and early 19th centuries.

To do this evaluation, Berger first presented a brief synopsis of past projects undertaken along the eastern seaboard and in the city. Landfill and waterfront development have been a primary research focus for archaeological projects undertaken in Manhattan during the past twenty years and have included Cruger's Wharf, discussed above, the Telco Block, 175 Water Street, the Barclays Bank Site, Baches Wharf Site, the Assay Site, and the Washington Street Urban Renewal Area. The Berger analysis suggests that the general methods employed in waterfront construction have varied little over the last two hundred years. However, joinery techniques, which are one of the major engineering components of landfill device installation, appear to have been more temporally sensitive. Furthermore, these techniques also vary depending on available materials, expertise, geological conditions, composition of the proposed fill, the demands of tides and currents, any many other factors (Berger 1990:V-25).

Archaeological Potential

The cartographic and documentary research indicates that this section of the APE is potentially sensitive for historic period resources (Appendix 7.6.7.1; Figures 7.6-1 through 7.6-7). Because Old Slip was once part of the East River, was then fashioned into a slip, and was subsequently filled, it may be sensitive for fill, including potential sunken ships, cribbing, and fill retaining devices, as well as discard from the historic markets that once stood on or near the APE. Old Slip is sensitive for these historic resource types from the surface down to the top of the IRT Subway tunnels which lie between 18 and 25' below grade. Potential sensitivity may extend deeper outside of the tunnel locations and where utility lines and ventilation shafts did not cause disturbance. The southwest side of Old Slip is also potentially sensitive for remnants of the early 18th century Cruger's Wharf which was partially exposed in the 1960s during the construction of 55 Water Street, while the northeast side is potentially sensitive for remnants of the late 18th century Low's Wharf (Figure 7.6-8). However, where prior excavations were undertaken to install utilities and a ventilation shaft in Old Slip, archaeological potential has been negated due to the extensive disturbance.

Outside of the location of the existing Clark Street Tunnels, a ventilation shaft, and utility lines, the depth of historic resources at Old Slip are anticipated to extend at least 28' below grade - the maximum depth of reported fill between Water and South Streets - and possibly as deep as the bedrock which lies about 32' below grade. In addition, where the tunnels lie, this APE is potentially sensitive above them to a depth of between 18 to 25' below grade where their highest points lay.

7.6.3 Summary of Archaeological Potential

Old Slip is considered potentially sensitive for early historic material, dating from the mid 17th through 18th centuries except for the location of a subway ventilation shaft, existing subway tunnels, and buried subsurface utilities (Figure 7.6-8). Any subsurface disturbance to this block is likely to affect potential archaeological resources unless it is below the anticipated depth of resources. For most of Old Slip, potential historic resources would probably be found within the first 28' below grade. However, resources may also extend as deep as the bedrock, which lies about 32' below grade. Where the Clark Street Subway Tunnels lie, potential historic resources may be located above them to a depth of approximately 18 to 25' below grade.

7.6.4 Proposed Project Effects

At Old Slip potential mid-17th to 18th century waterfront resources may exist from the surface down to between 25 and 32 feet below grade. Proposed construction plans call for the creation of a shaft to allow for the insertion of boring machines or for spoils removal. The shaft would measure about 30 feet by 50 feet and a staging area between 40,000 and 80,000 square feet would be needed. In addition, cut and cover construction of an underground conveyor system is proposed to allow spoils to be transported from Water Street to Pier 6. Since Old Slip is potentially sensitive for early to mid-17th to 18th century waterfront resources, proposed shaft excavations would probably affect these potential resources. Any surface work necessary to create the staging area would probably be shallow and would most likely also affect potential historic resources.

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.

7.6.5 Recommendations

Because potential historical resources relating to the 17th and 18th centuries may be present beneath Old Slip, further investigations of potential archaeological resources will be necessary. 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 sites 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 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 the potentially sensitive areas. The goal of the subsurface testing plan would be to establish the presence or absence of cultural resources, their horizontal and vertical extent, site integrity, and, their 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 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.

7.6.6 Figures and Photographs

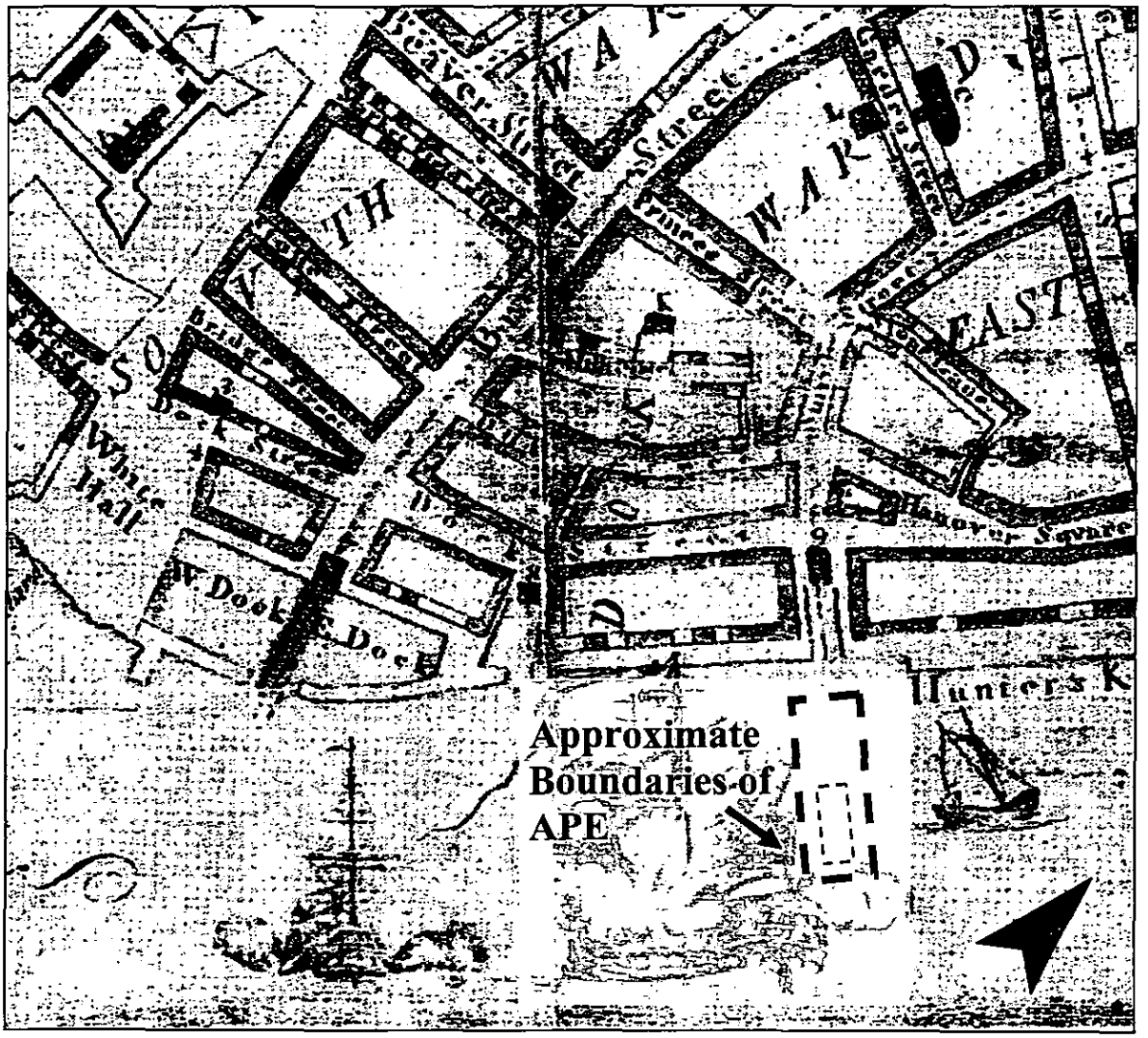


FIGURE 7.6-1

A Plan of the City of New York From an Actual Survey. Lyne 1730.
No scale

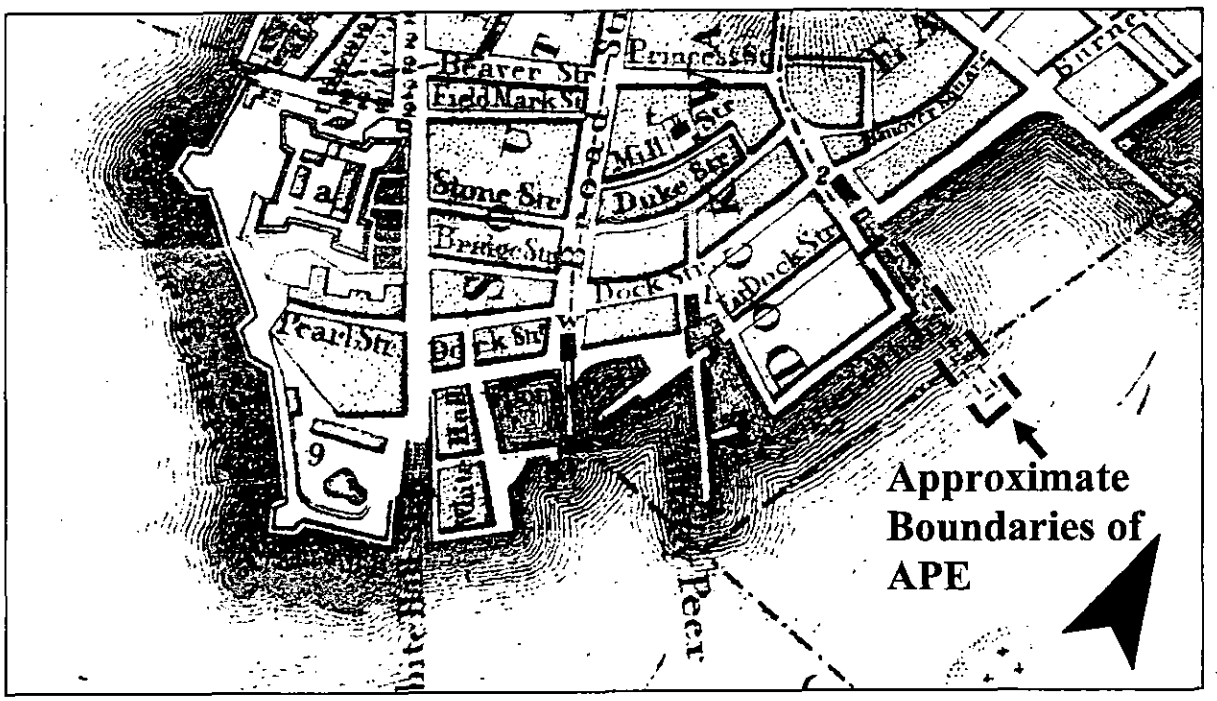


FIGURE 7.6-2

Plan of the City of New York. Old Slip. Ratzer 1766/67.
No scale

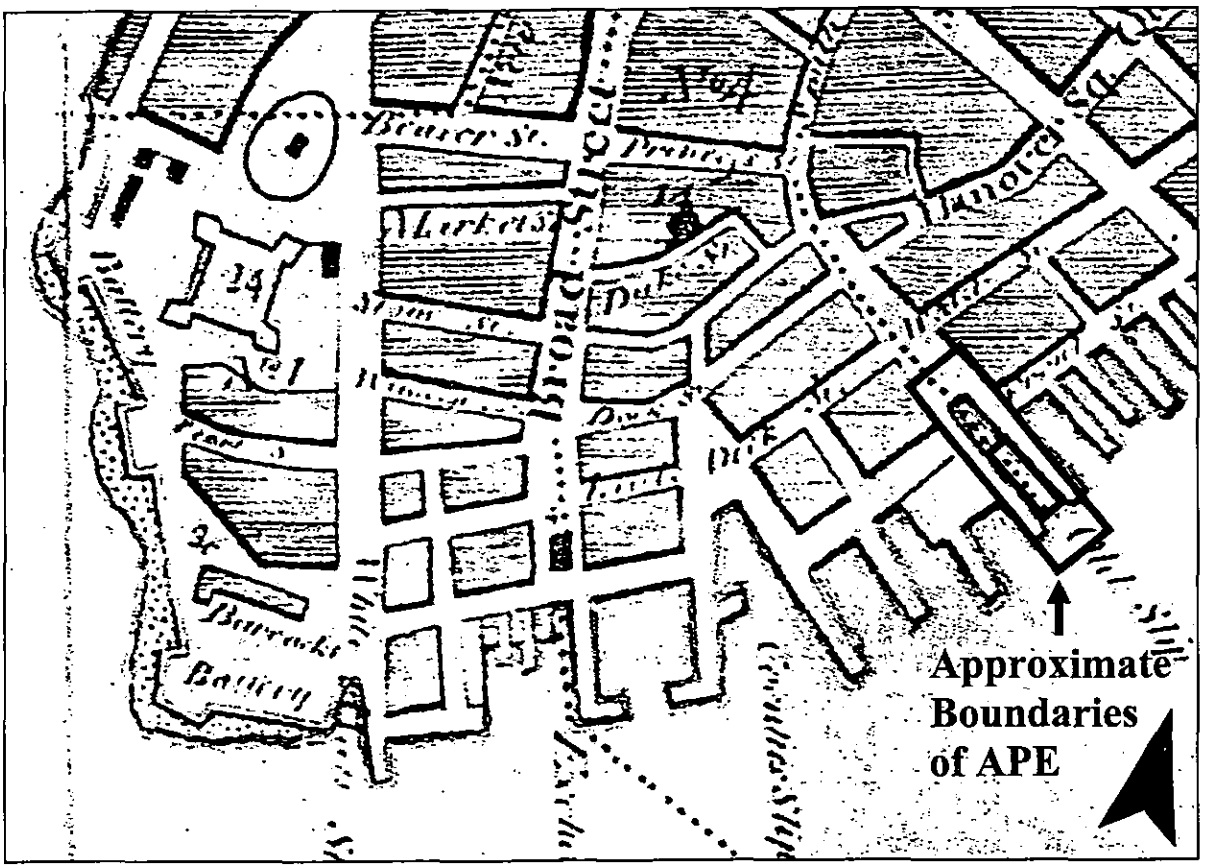


FIGURE 7.6-3

The New-York Directory and register for the Year 1789. McComb 1789.
No scale

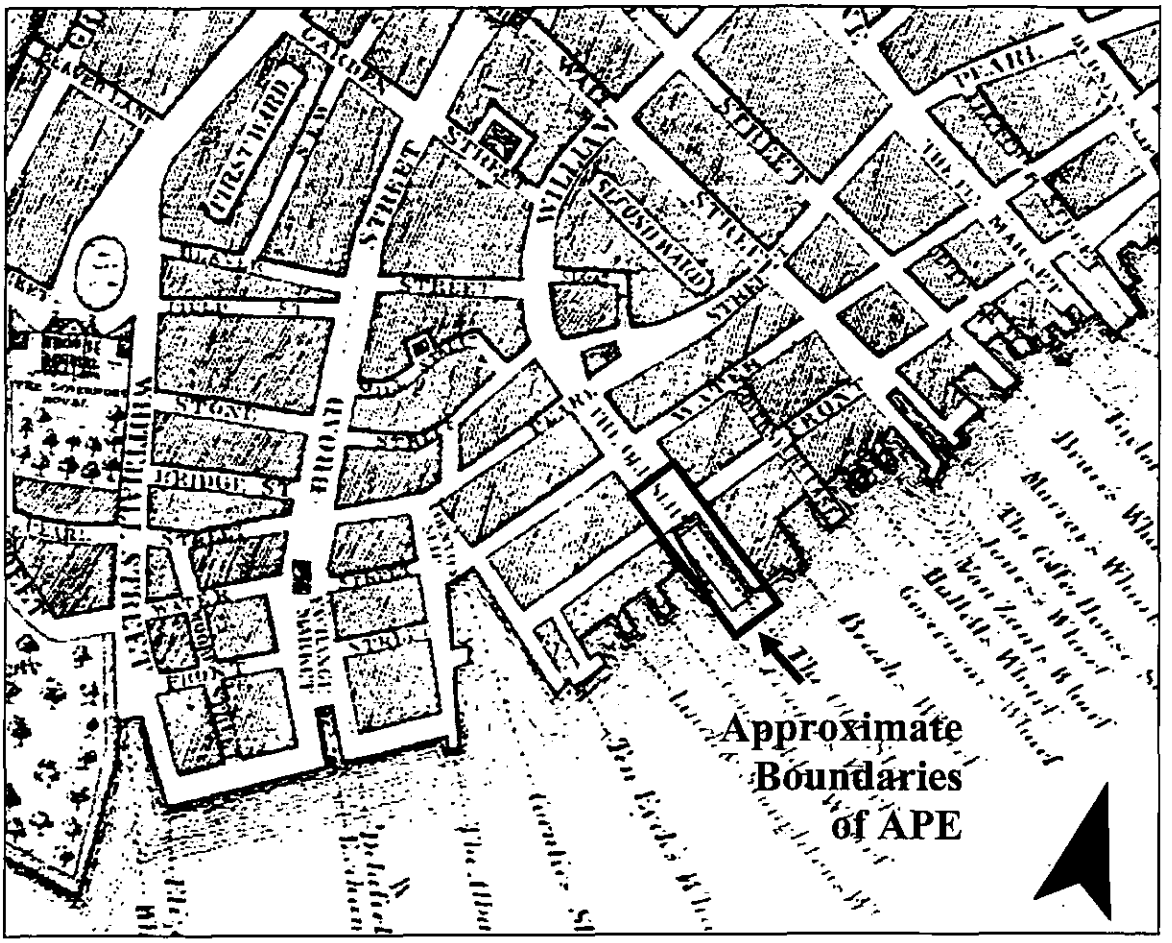


FIGURE 7.6-4

A New and Accurate Plan of the City of New York in the State of New York in North America.
Old Slip. Taylor Roberts 1797.
No scale

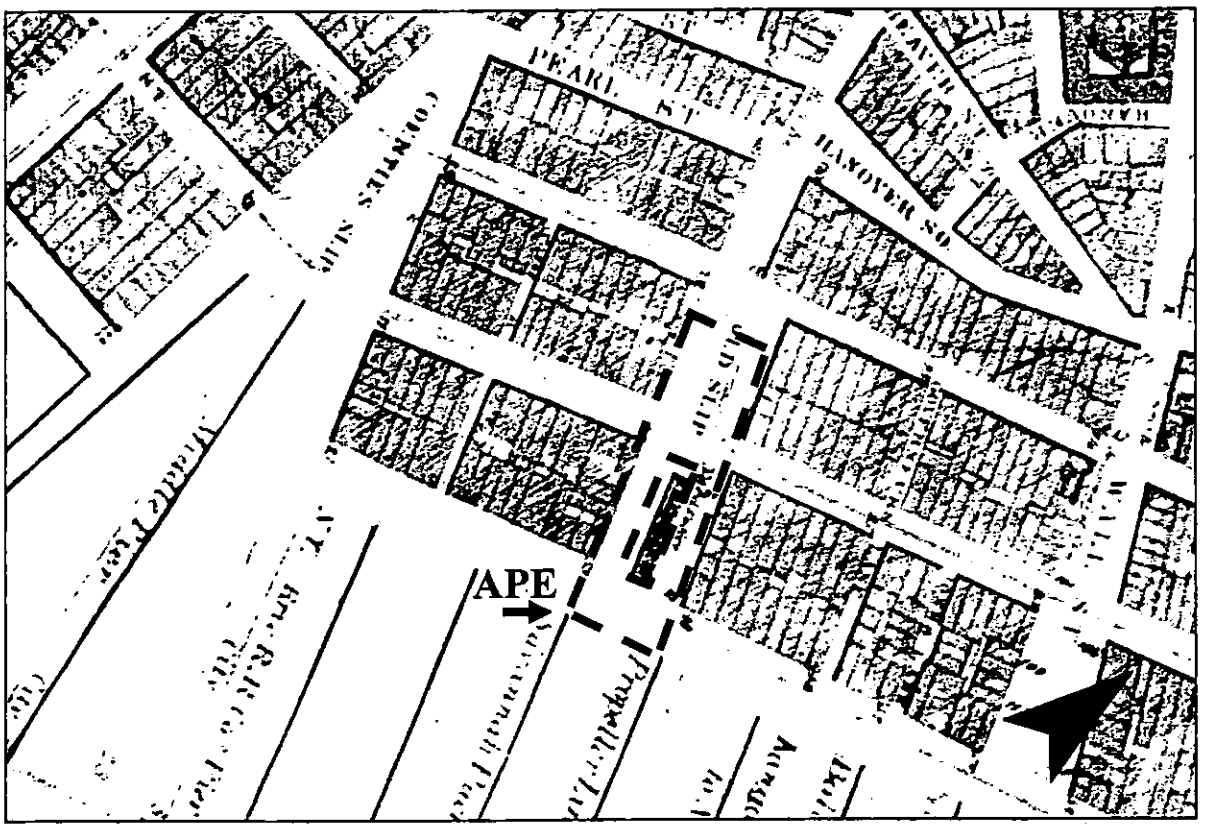


FIGURE 7.6-5

New York City, County, and Vicinity. Old Slip. Dripps 1867.
No scale

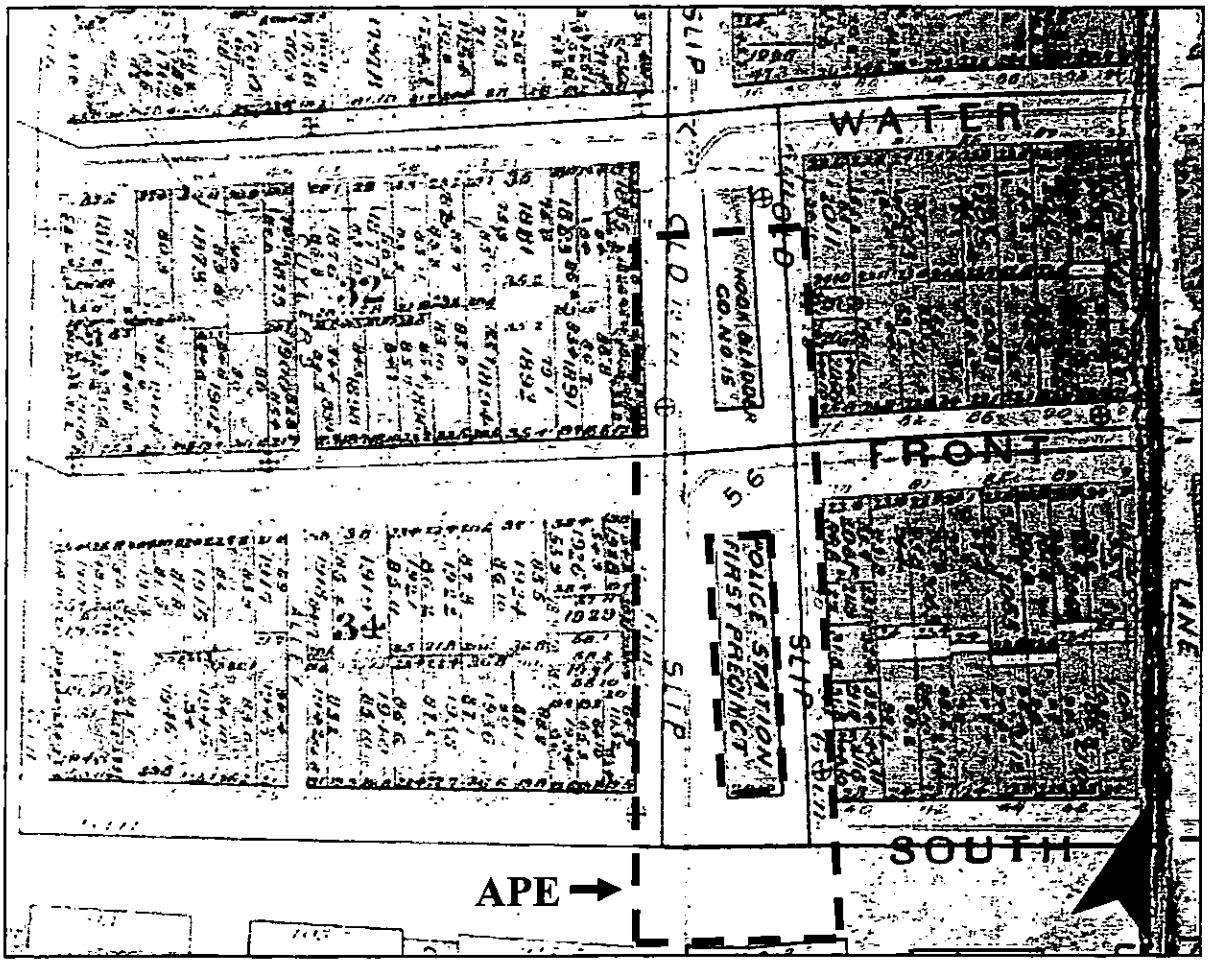


FIGURE 7.6-6

Atlas of the City of New York. Old Slip. Robinson 1893.
No scale

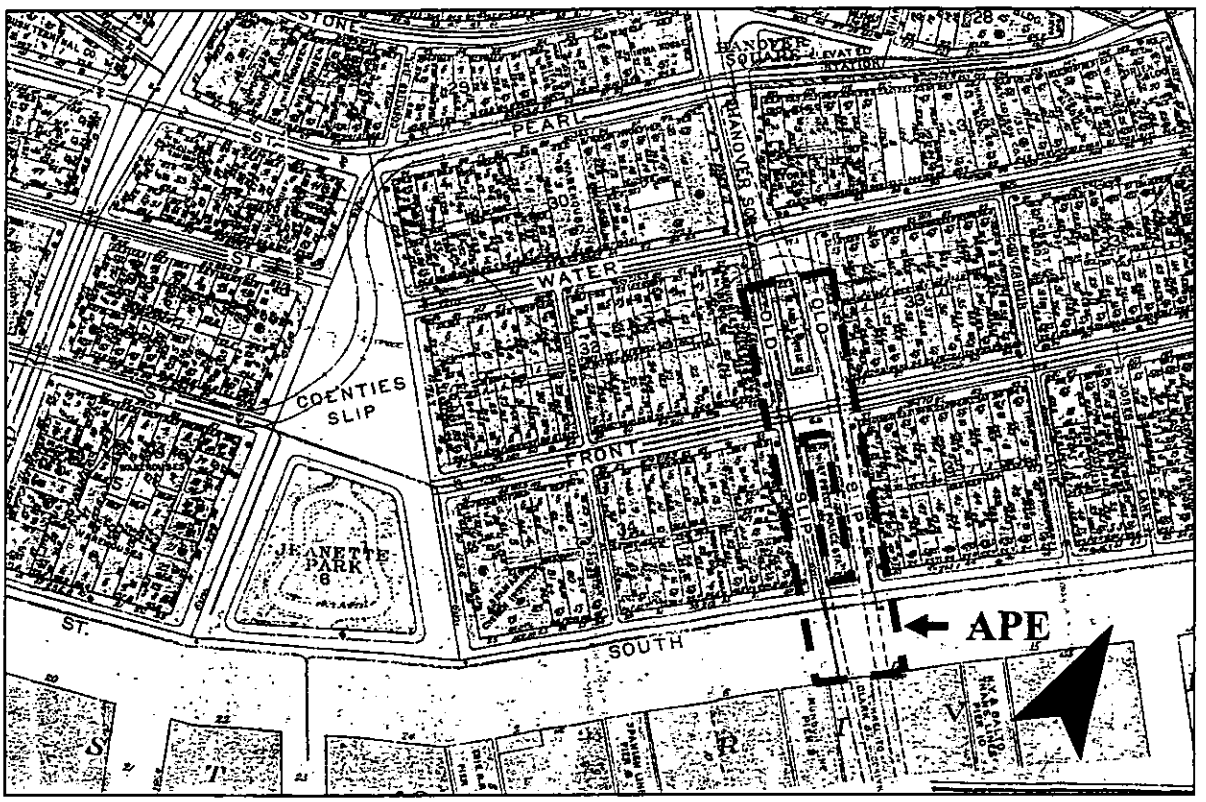


FIGURE 7.6-7

Atlas of the Borough of Manhattan. Old Slip. Bromley 1916.
No scale

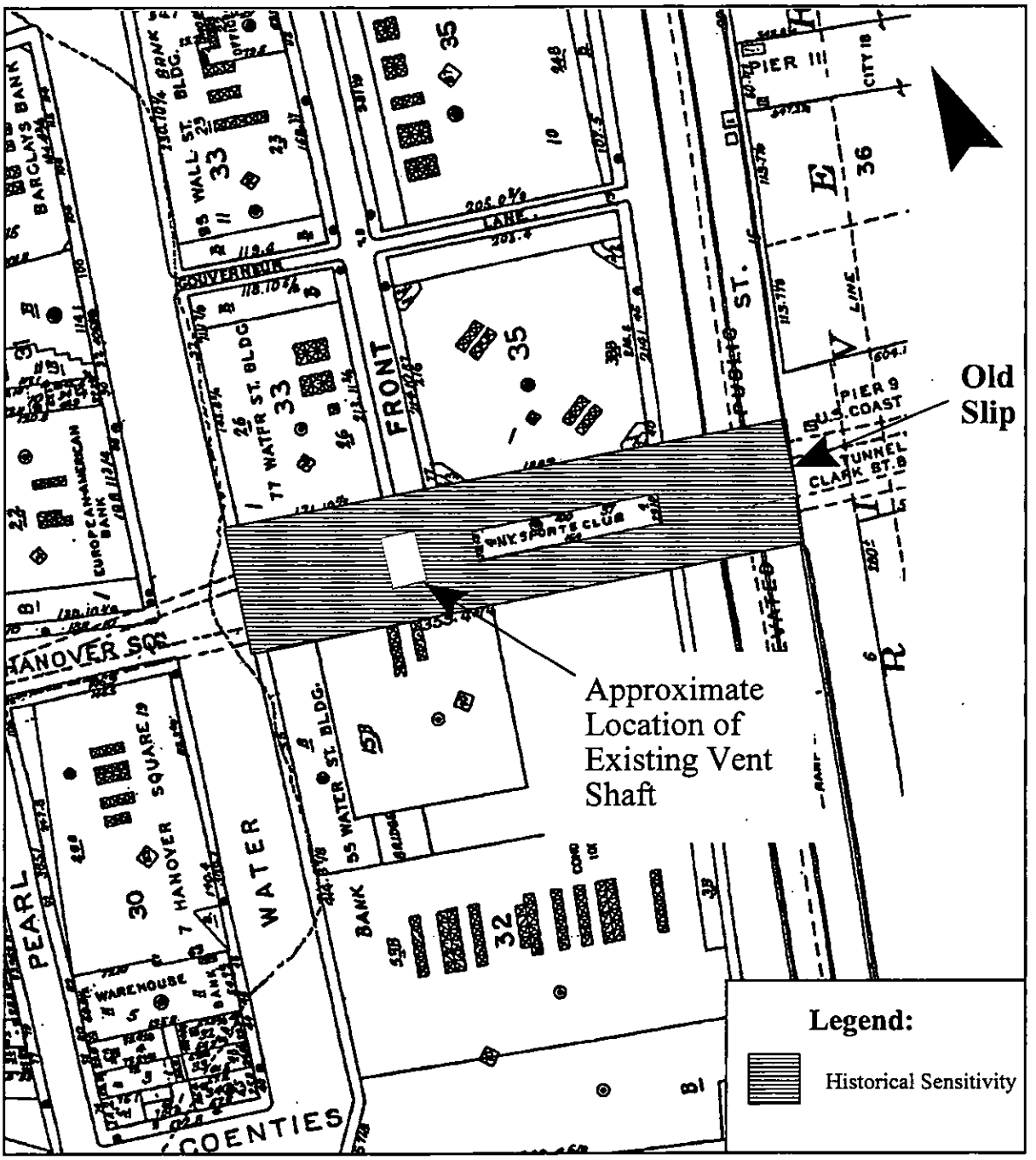
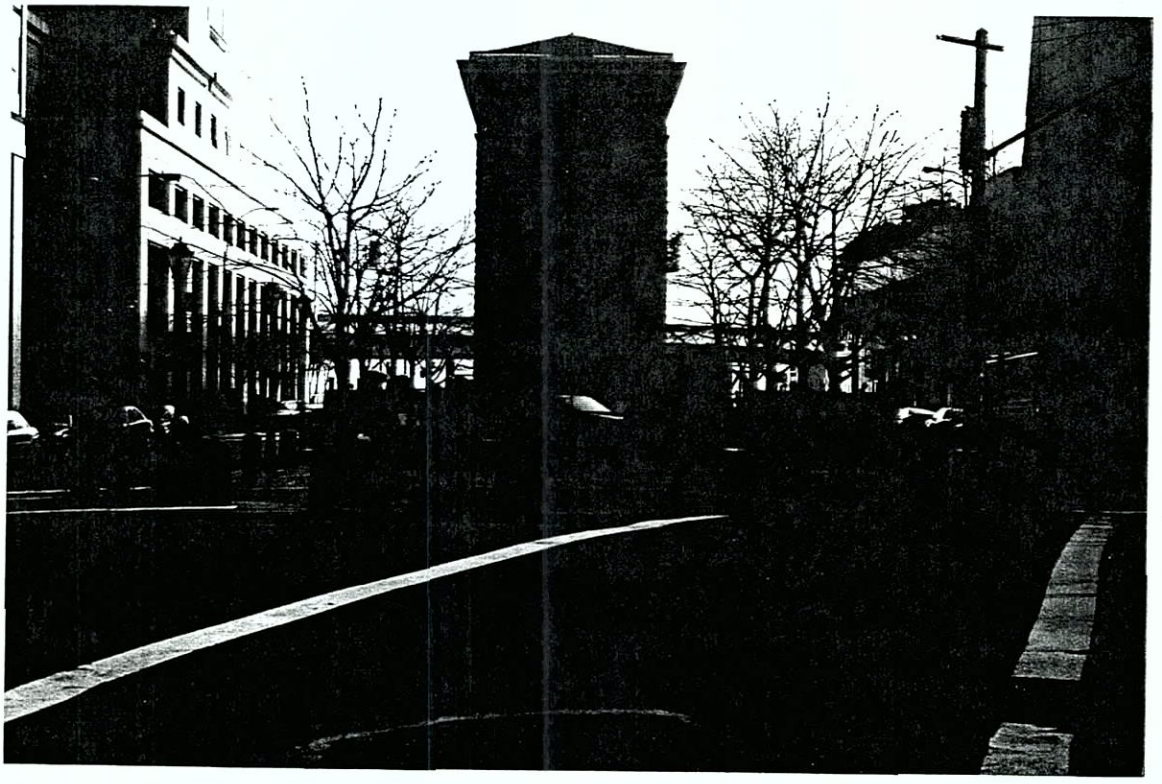


FIGURE 7.6-8

Area of Potential Archaeological Sensitivity.
Old Slip. Sanborn 2001.

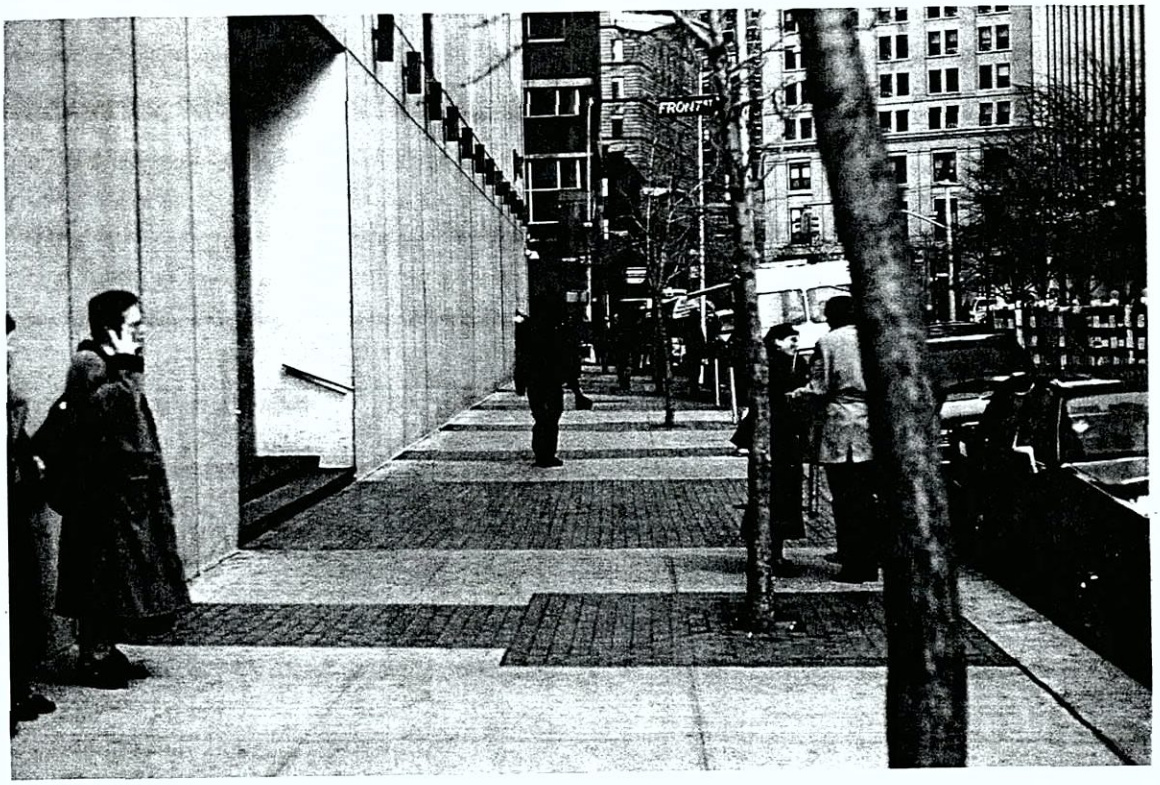
Approximate Scale: ½ inch = 70 feet



Photograph 7.6-1: Looking east down Old Slip from Water Street.



Photograph 7.6-2: Metal Grates on Water Street on the west side of the old Police Precinct building. Note potential Shaft Site at Old Slip.



Photograph 7.6-3: On the corner of South Street and Old Slip looking west towards Water Street.

7.6.7 Appendices

7.6.7.1 Documentary Assessment of APE

Cartographic History

Castello 1660: The APE is depicted as land under water.

Miller 1696: The APE is unchanged from the Castello 1660.

Lyne 1730: At this time, Water Street is depicted as directly along the shoreline, but the blocks east of Water Street which now bound Old Slip had not yet been created. Old Slip crosses Water Street to Pearl Street.

Buchnerd 1735: The Buchnerd map fails to show any development east of Water Street, but it does show Old Slip crossing Water Street. The remainder of what will eventually become Old Slip lies within the East River.

Carwitham 1740: The APE is unchanged from the Buchnerd 1735.

Grim 1744/1813: A wharf was created bordering the southeastern side of Old Slip and structures are shown on its southern side. The wharf extended east and then south, to form an upside down U. Directly along Old Slip there appeared to be a narrow undeveloped strip where ships could dock. No development is shown on the northwest side of Old Slip.

Maerschalck 1755: Old Slip was still open to ship passage as far west as Pearl Street, where the Old Street Market stood, and the block south of Old Slip and east of Water Street had been fully developed. No filling had taken place north of Old Slip.

Montresor 1766: By this time Old Slip had been filled at Water Street, but to the east of Water Street it was still clear for ship passage. No filling had been undertaken north of the slip.

Ratzer 1766/67: Despite the fact that Montresor 1766 indicated that Old Slip was filled at Water Street, on this map it appears open at Water Street. There is still no filling or development on the north side of the slip.

Holland 1776: Sometime between 1766 and 1776 Old Slip was filled as far east as the east side of Front Street, and Cruger's Wharf was built along the Front Street shoreline at Old Slip. Filled blocks bordered either side of Old Slip between Water and Front Streets.

McComb 1789: Contradicting the 1776 Holland map, McComb indicates that Old Slip is only filled between Water Street and the west side of Front Street. Additional filling had allowed for the creation of a block south of Old Slip between Front and South Streets, and a wharf or pier was built extending out from Front Street, creating the northern boundary of Old Slip. This left Old Slip passable from South Street west to the west side of Front Street.

Taylor Roberts 1797: "The Old Slip" is filled between Water and Front Streets, allowing both these roadways to pass over it. Southeast of Front Street, Old

Slip remained open for passage. Cruger's Wharf borders its southern side, while an unnamed wharf borders its northern side. The block north of the slip and southeast of Front Street has been almost entirely filled.

Bridges 1803: Old Slip is depicted as filled between Water and Front Streets, but it is still shown as an open slip southeast of Front Street. Wharves border either side, and development is shown on each block bordering these wharves. Although South Street is shown along the shoreline as complete in many areas, Old Slip still bisects it.

Hill 1804: The APE is unchanged from the Taylor Roberts 1797, but the wharf on the north side of Old Slip is labeled "Lew's Wf."

Commissioners' 1811: The APE is unchanged from the Hill 1804 map.

Hooker 1824: The APE is unchanged from the Hill 1804 map.

Colton 1836: Old Slip has been filled as far southeast as South Street, indicating that fill between Front and South Streets probably dates between 1824 and 1836. A narrow rectangular structure has been built on Old Slip between Front and Water Streets, closer to Water Street.

Tanner 1836: In contrast to the Colton 1836 map, Tanner depicts Old Slip as open for passage from the southeast side of Front Street through to the river. It does, however, show the structure on Old Slip between Water and Front Streets, and indicates it is the Franklin Market.

Endicott 1842: Water lines are shown running on Old Slip as far southeast as South Street indicating it had been filled as far south as South Street by this time.

Perris 1849/50: The Franklin Market building between Water Street and Front Street is not present, but there is a long rectangular structure on Old Slip between Front and South Street.

Dripps 1852: The building between Front and South Streets is now labeled as the Franklin Market. Adjacent to the structure is the label "4th Ward Precinct."

Perris 1852: The APE is unchanged from the Dripps 1852, but the Franklin Market is shown as a brick structure.

Perris 1857: The APE is unchanged from the Perris 1852 map.

Dripps 1867: The APE is unchanged from the Perris 1852 map.

Viele 1874: This map indicates that Old Slip east of Water Street was land under water prior to the Contact period.

Robinson 1881: The APE is unchanged from the Perris 1852 map.

Robinson 1885: A building labeled "Fire Truck No. 15" has been constructed in the center of Old Slip between Water and Front Streets. Presumably, it is a fire station. At this time, the former Franklin Market building had been occupied by the First Precinct Police Station.

Robinson 1893: The Fire Station in the middle of Old Slip is now labeled the "Hook and Ladder Company No. 15," and the First Precinct Police Station is still present. There are water and sewer pipes shown

running through the APE on the south side of Old Slip, and on Water and Front Streets. Both buildings on Old Slip are brick.

Hyde 1913: The Hook and Ladder building appeared virtually unchanged from the Robinson 1893 map, however the First Precinct Police Station is no longer shown as brick, but instead appears as a four-story stone building in a slightly different configuration. In addition, at-grade rail lines are shown on Old Slip on the north side of Old Slip and on Water and Front Streets.

Bromley 1916: By this time a subway line had been constructed beneath Old Slip via deep tunnel boring. The south section of the "Tunnel to Clark St. Brooklyn" appears to pass under the entire length of the south side of Old Slip. The northern section passes under the northwestern end of the Fire Station, and then veers beneath the north side of Old Slip.

Bromley 1925: The APE is unchanged from the Bromley 1916.

Bromley 1955: The APE is unchanged from the Bromley 1916.

Bromley 1974: By this time Water Street had been widened by about 48' on its eastern side, causing the northwestern end of the Engine House to be truncated from its former length of 126.4' to 104.9'. The police precinct remained unchanged from 1913.

Sanborn 2001: Currently there are two structures standing on Old Slip, and the Tunnel to Clark Street is still depicted.

Street Elevations of the APE are as follows:

Data Source	Old Slip at Water Street	Old Slip at Front Street
1885 Robinson	7'	5.6
1913	7.1'	n/a
1955 Bromley	7.1'	5.8

Precontact Sensitivity

This section of the APE was beneath the East River at the time of the earliest historical development (Viele 1874). Filling gradually pushed the shoreline east and the original shoreline here was buried (Lyne 1730, Figure 7.6-1). Soil borings logs suggest that closer to Water Street, fill ranges from five to 12' in depth, with bedrock found at about 33' below grade (Borings 236 and 123: WPA 1937). Near Front Street borings taken from the northeast side of the APE reported no fill, but fine sand with gravel was found directly below grade (Borings 241, 242, and 116: WPA 1937). In contrast, borings taken near Front Street on the southwest side of the APE revealed fill to about 11' below grade, underlain by multiple levels of sand and silt, with bedrock encountered at about 30 to 32' below grade (Borings 243, 244, 245, and 246: WPA 1937).

Soil borings taken from Old Slip between Front and South Streets show fill extending between zero and 28' below grade. Some of the boring logs report encountering timber within the fill. Beneath the fill are levels which contain either clay, sand, or sand and

gravel. Bedrock was encountered between 29 and 31.6' below grade. (Borings 172, 173, 174, 237, and 238: WPA 1937). The only boring to lack fill was taken from the sidewalk on the southwest side of Old Slip at South Street. It is possible that either the recordation was in error, or that this section of the APE was disturbed, or that it was filled with culturally sterile material.

The lack of any indicators of a precontact living surface, either peat or silt indicative of a habitable environment, suggests that this section of the APE lacks precontact sensitivity. Furthermore, the periodic dredging that would have been required to keep Old Slip navigable would have disturbed the river bottom. Therefore, this APE lacks any precontact potential.

Historical Sensitivity

Old Slip between Water Street and South Street was predominantly submerged in the early 17th century. In 1691 a market was established at Pearl Street near the waterfront harbor, which eventually became Old Slip (DeVoe 1862:67; Lyne 1730, Figure 7.6-1). Initially this small meat and produce market was only a collection of temporary sheds and tents located under the trees by the slip. However, in 1736 these ramshackle structures were replaced by an enlarged wooden building which stood one block northwest of the APE (Ibid.:67).

Adjacent to the APE, Water Street - excluding Old Slip - was filled sometime between 1695 and 1716 (Stokes 1922:366). After filling extended east to create Front Street, Cruger's Wharf was constructed along Old Slip's southwestern side (Lyne 1730; Ratzer 1766/67; McComb 1789; Taylor Roberts 1797: Figures 7.6-1 through 7.6-4). According to a previously completed archaeological study of the 55 Water Street block:

> *In 1739 Henry Cruger, Henry Cuyler, and their partners hired an Albany builder named Adam van Alen to construct a huge wharf of 30-foot timbers along the waterfront beginning 170 feet from Clock's corner at Old Slip* [near Pearl Street] *and extending southwestward parallel to Water Street. Every 20 feet a cedar post was set into the wharf for tying up ships...Cruger's Wharf was finished in 1740...and it enclosed an area that was subsequently filled between it and the shore at Water Street. In 1754 Cruger widened the Wharf about four feet.* (Huey 1984:15)

While maps dating to both 1735 and 1740 shows no sign of the construction of Cruger's Wharf (Buchnerd 1735; Carwitham 1740), by 1744 it was depicted in the APE (Grim 1744). Also by that time, many structures had been built along the southern border of Old Slip out to what would eventually become Front Street (Grim 1744). These structures appeared to have been built outside of the APE. By 1758 a theater was constructed on the block south of Water Street between Old Slip and Cuylers Alley (Stokes 1918:986). This would have stood almost directly within the project site near what is now the corner of Old Slip and Water Street. It was built by a man named Douglass, and presented its first production, an early opera titled *Jane Shore,* in 1758.

In 1744, the Common Council declared that Old Slip was a public nuisance, and that all "nuisances should be removed at the city's expense" (Stokes 1922:578). In 1774 a petition was granted to remove the old market from the foot of Old Slip at Pearl Street, and to allow for its filling (Stokes 1922:671). Although some historic maps contradict each other, by 1776 filling of Old Slip was complete as far southeast as Water Street (Holland 1757; Ratzer 1766-67; Holland 1776; Figure 7.6-2). Again, maps contradict each other as to when Old Slip was filled between Water and Front Streets (Holland 1776; McComb 1789; Figure 7.6-3), but by 1797 it appears that it was filled through the southeast side of Front Street (Taylor-Roberts 1797; Figure 7.6-4). Also by this time, Cruger's Wharf is labeled on the south side of the slip, and a then-unnamed wharf had been built on the north side of the slip. In 1804 the northern wharf was identified as "Lew's Wf." Stokes (1918:990) correctly identifies this as "Low's wharf."

According to historian Stokes, in 1764 Cornelius P. Low petitioned the Common Council for a water lot fronting his home lot on the southwest corner of Burnet's Key (Front Street north of Old Slip).

> *It is described as about 35 feet wide 'in Front on said Key' and about 30 feet wide 'on the Southwest Side of the said Lott Fronting the Street on the Easterly Side of the Slip in Rotten Row' (Hunters Key...)* [Hunters Key was located where Water Street currently lies directly southwest of Old Slip. The Slip he referred to in Rotten Row was undoubtedly Old Slip]. *He proposes building 'a Pier Fronting the said Street and a part of the said Slip,' where 'vessels Laying on the West Side of the said Pier will be Entirely Secure from Receiving any Damage from the ice in Winter Season,' and for which purpose the pier will have to be 'built In the most Substantial manner in order To Withstand The Great Quantities of Ice Which in Winter Seasons With the Tide of Ebb Takes its Course Along this Shore.'*
>
> (Stokes 1922:742)

In 1765 the Common Council granted Low's request, advising him to leave a vacant 40 foot space between an existing dock and the new pier to prevent the filling up of the docks on each side and to allow adequate water flow between the two. Between the dock and the pier Low was asked to build a strong bridge for carriages. It was also requested that he leave a space of 41 feet at the end of the pier and the lot for a street to eventually be opened (Ibid.:743). He was granted the water lot in the East River contiguous to his house and ground fronting "the present Coffee House" (Ibid.). Low apparently felt that the terms of his grant increased the expense of the pier and were inadequate to protect it from damage by ice "whilst building" and asked for the right to build a wharfage of one vessel on the southwest side of the proposed pier "as Long as the Soil on that Side shall Remain ungranted with such further Time for Compleating the same pier as this Board shall think Reasonable." (Ibid.). Henceforth, in 1766 Low constructed the pier and wharf along the northeast side of what is now Old Slip.

By 1790 the lot and wharf adjacent to the northeast side of Old Slip had become the property of Isaac Roosevelt (Greenhouse Consultants Inc., 1983:8). In 1797 the condition of Old Slip was considered unacceptable. In a report by the Health Commissioner, the east side of Old Slip - presumably along Roosevelt's wharf - was reportedly filling up and needed paving (Ibid.:11).

In 1821 after Old Slip was filled to Front Street, the Franklin Market was erected on it (Hooker 1824). Between 1824 and 1836 it appears that Old Slip was filled as far southwest as South Street, its current terminus. In 1835 the original Franklin Market building burned to the ground (during the "Great Fire" which destroyed many structures on surrounding blocks), but it was rebuilt of brick in 1837 (DeVoe 1862:520). Although early maps place the building between Water and Front Streets (Hooker 1829; Colton 1836; Tanner 1836; Mitchell 1846), later maps place it between Front and South Streets suggesting it was rebuilt in its new location after 1846 (Dripps 1852; Perris 1857-60, 1859; Dripps 1867, Figure 7.6-5). By 1867 the building on Old Slip between Front and South Streets was still labeled as "Franklin Mkt." but there was a second label indicating it was part of the "First Ward Police" (Dripps 1867, Figure 7.6-5).

In 1884 and 1893 the Franklin Market structure was occupied by the First Precinct Police Station and was shown as a brick building (Bromley 1879; Robinson 1884, 1893, Figure 7.6-6). Between 1909-1911 the police precinct was replaced by the extant limestone structure, designed by Hunt and Hunt, which is now occupied by the Police Museum (and recently vacated by the New York City Landmarks Preservation Commission) (Dolkart 1994:17, Bromley 1916, Figure 7.6-7). The building that currently stands in this location is excluded from the APE (Sanborn 2001, Figure 7.6-7).

Sometime between 1881 and 1884 the Hook and Ladder Company No. 15 erected a framed structure on Old Slip between Water and Front Streets within the APE (Robinson 1881, 1884). Between 1884 and 1893 it was replaced by a slightly larger brick structure (Robinson 1893; Figure 7.6-6), and when Water Street was widened in the 1960s, it was truncated in length (Sanborn 1974). The structure has since been removed.

While water lines were installed in both Water Street and Old Slip by 1842 (Endicott 1842), sewers were not installed until 1859 (Board of Alderman 1859:57). In addition to trolley lines, sewer and 12" water lines had been laid on Old Slip to the south and north of the fire department and police station buildings (Robinson 1881). At that time the elevation at the intersection of Water Street and Old Slip was seven feet above sea level, and at Front Street it was five and a half feet above sea level (Ibid.). Elevations along Old Slip at its intersections with Water and Front Streets remained unaltered from 1884, and the site appeared unchanged for many years (Bromley 1897, 1902, 1911; Robinson 1893, Figure 7.6-6; Bromley 1916, Figure 7.6-7).

Archaeological salvage excavations were completed within adjacent Block 32 when construction of a new building began in 1969 (Huey 1984:17). In addition to the extensive collection of artifacts found in the remaining landfill within the block (most of the block had been affected by foundation excavations and little remained by the time

archaeologists were permitted to proceed), the original ca.1740 log crib footing under the northeast end of Cruger's Wharf was visible (Ibid.:18). Cribbing extended 175' southeast from Water Street along the original line of Old Slip toward Front Street. Artifacts within the landfill were able to address issues regarding colonial trade patterns and waterfront development (Ibid.:23). Paul Huey of the New York State Office of Parks, Recreation, and Historic Preservation, who undertook salvage excavations at the site, indicated that it appeared that significant strata may have continued westward under Water Street (personal communication December, 2000). Conceivably, they would also continue under Old Slip.

When Huey excavated the 55 Water Street block, he found that subsurface stratigraphy from the surface down contained roughly the following deposition (depths were not provided):

1) a thick level of brown sand and fill
2) a small pocket of blue clay
3) a thick layer of dense black clay
4) a thin layer of white sand
5) a moderately thick level of dense grey clay
6) wood
7) a moderately thick level of grey sand
8) red sand
9) red clay

According to Huey:

> *Most noticeable in the soil profile was the reddish sand that represents the original river bottom. The same natural reddish sand deposit was visible to the northwest in the construction cut along Water Street, closer to the original shore and where the upper surface of the red sand had sloped up to 9 feet 6 inches above the datum level measured from the base of the log cribbing...The gray sand dates to probably ca.1650-ca.1700 and represents deposition on the harbor bottom while the shore line was expanding from Dock Street to Water Street. Above this, the dense gray clay dates probably ca. 1700-ca. 1740, or until Cruger's Wharf was constructed if not slightly later. The wood chips deposited on the surface of this layer probably date from this construction...The next deposit is dense black clay and in part represents the gradual filling of the block inland from Cruger's Wharf, ca. 1740-ca. 1765 or later. These two layers, the dense gray clay dating from about 1700 to 1740 and the dense black clay dating from about 1740 to 1765, yielded a useful sequence of artifacts.* (Huey 1984:18-19)

Within the deeper levels, which predated filling, numerous bottle, ceramic vessels, pieces of ships' rigging, leather shoes, and other objects were found. These were presumably lost or discarded overboard as part of the typical waterfront activities (Huey 1984:23).

The upper levels just below grade contained brown sand and fill. According to Huey, this level contained artifactual material dating from about ca. 1775 to 1800, based on the artifacts (personal communication, December 2000). Artifacts included:

- Chinese porcelain
- Jackfield-type redware
- coarse salt-glazed stoneware (none with post-1800 Albany slip glaze)
- some burned or partially melted clay pipes of a style from the 1780s
- plain creamware (one sherd with a feather edge pattern)
- iron concretions
- delft tiles
- mottled brown glazed English buff-bodied ware (ca. 1720s)
- white salt-glazed stoneware
- and hand-blown wine bottle bases (body diameters of 3 ½ and 4 3/8 inches).

Conceivably, since the brown sand and fill level within Block 32 yielded abundant artifacts dating to the ca.1775 to 1800 period, if this level exists within the project site, it may also yield additional important materials.

In addition to the archaeological work completed at 55 Water Street, the Assay Site on the opposite side of Old Slip was also archaeologically investigated. Documentary research on Block 35, bounded by Front Street, South Street, Gouverneur Lane and Old Slip, found that the site was potentially sensitive for historic period domestic, commercial, and maritime resources (Greenhouse Consultants Inc. 1983:29).

The goals of fieldwork on Block 35 were to identify sunken ships, study the landfill process in New York City from the late 17th to early 18th century, and to examine the material culture content of the landfill, "viewed in terms of changing consumption patterns that may have occurred during the late Colonial and Federal Periods" (Louis Berger and Associates 1990:IV-14). Fieldwork confirmed that the block contained potentially significant resources related to domestic and commercial occupation, as well as earlier landfill and waterfront structures such as Bache's Wharf (Ibid.:I-4). Structural elements found pertaining to the land filling process included pilings, wharves, and bulkheads. The technology and craftsmanship from these structures were compared to other similar structures found in New York and other cities (Ibid.:II-6). A wharf was found to consist of a series of small cobb-wharf blocks which were set at intervals and connected by heavy timber spans or bridges that were placed above the water line (Ibid.:II-7). It is possible that similar resources within the Old Slip APE could further elucidate the research issues addressed at the Assay Site.

Prior effects to this section of the APE were confined to subsurface utilities, and the IRT Seventh Avenue subway line that runs beneath Old Slip. The subway's construction was fairly deep and may have left intact archaeological resources undisturbed above it. According to Robert A. Olmsted, former Transit Authority Engineer and Chair of History and Heritage of the Metropolitan Section of the American Society of Civil Engineers, the

Clark Street tunnel was built between 1914 and 1919 under guidelines set forth by the War Department (personal communication, December, 2000).

Since the War Department required the top of the Clark Street tunnel to lie at least 45' below mean low water at the pierhead line (east of the APE), construction of the subway beneath Old Slip entailed shield tunnel boring rather than the cut-and-cover method (Olmsted 1995:8). The shield method causes disturbance to a discrete area limited to the face of a movable cylinder slightly larger than the finished tunnel. The land approach sections of the tunnel were also built by the shield method, with access on the Manhattan side allowed through a steel-lined construction shaft at Front Street (Olmsted 1995:8). The access point is now a ventilation shaft and emergency exit, and is visible directly in front of the former NYCLPC building, formerly a police precinct and now a police museum, in the center of Old Slip. Shield tunneling continued west of Water Street to Pearl Street, where cut-and-cover construction was then implemented.

In order to avoid potential effects to the precinct building on Old Slip, the east and west bound tunnels were built on either side of the structure's foundation. The tunnels, each 17.6' in diameter, lie deeply buried beneath Old Slip (Olmsted 1995: Profile Old Slip-Clark Street Tunnel). At the intersection of Front Street and Old Slip, the track level inside the tubes is 40 to 42' below grade, with the top of the tunnel at about 25' below grade. The track level at Water Street is about 35' below grade, with the top of the tunnel at about 18' below grade (Ibid.). Therefore, outside of the two tunnels construction would have left about 18 to 25' of strata above them relatively undisturbed.

An undated, untitled plan of the project site showing the location of existing sewer and water lines was reviewed (provided by Lowell and Belcher in 2001). This showed a four-foot circular sewer running through the center of Old Slip. At about 75 feet east of the corner of Old Slip and Water Street, the line veered southeast to extend under the sidewalk for about 75 feet. At this point, about 150 feet east of Water Street, it angled to the northeast and extended back out from under the sidewalk into Old Slip. The top of the sewer was shown at five feet below grade, and the invert - or bottom - was about nine feet below grade. Its installation caused effects to this discrete location extending at least nine feet below grade.

No other utilities were shown beneath the sidewalk, but, as noted, the plan only plotted sewer and water lines (Ibid.). However, along the sidewalk several fire hydrants and light poles were observed. Effects from each of these probably extend at least five feet below grade (Office of Lower Manhattan Development 1976:85).

Nine soil boring logs were available for review for the section of the APE between Water and Front Streets. The following table summarizes subsurface conditions reported in the logs, heading from northwest to southeast on Old Slip:

# 236	# 123	#241	# 242	# 116	# 243	# 244	# 245	# 246
0-12' Fill	0-5' Fill	0-21' sand and gravel	0-11.5' sand and gravel	0-20' fine sand and gravel	0-7.6' sand, fill and gravel	0-11' sand, fill and gravel	0-9' sand, fill and gravel	0-10' sand, fill and gravel
12-15' coarse sand	5-20' fine gravel & sand	21-24' river mud	11.5-21' river mud	20-27' river mud	7.6-20' sand, gravel & river mud	11-16' sand	9-24' sand, gravel & river mud	10-25' sand, gravel & river mud
15-32' clay	20-33.5' fine sand	24'-26' fine sand clay	21'-25' sand gravel, river mud	27-31' sand, clay and gravel	20-23' river mud	16-17' sand, gravel, river mud	24-28' fine sand and clay	25-28' fine sand and clay
					23-26' fine sand & clay	17-25' fine sand	28-29' boulder	28-29' clay
					26-32' sand clay & gravel	25-31' sand clay & gravel	29-32' sand clay & gravel	29-30' sand clay & gravel
32' rock	33.5' rock	26' rock	25' rock	31' rock	32' rock	31' rock	32' rock	30' rock

The borings logs suggest that closer to Water Street, fill ranges from five to 12' in depth, and rock lies at about 33' below grade (Borings 236 and 123: WPA 1937). Near Front Street borings taken from the northeast side of the APE reported no fill, but fine sand with gravel was found directly below grade (Borings 241, 242, and 116: WPA 1937). In contrast, borings taken near Front Street on the southwest side of the APE revealed fill to about 11' below grade, underlain by multiple levels of sand and silt, with bedrock encountered at about 30 to 32' below grade (Borings 243, 244, 245, and 246: WPA 1937).

Five boring logs were reviewed for the APE between Front and South Slips. The following table summarizes the subsurface conditions reported in this section of the APE, from northeast to southwest:

# 174	#173	#172	#237	#238
0-17' fill	0-8' fill	0-13' brick, fill, loam	0-27' fill	0-10' sand and gravel
	8-18' timber, brick, fill	13-14' timber		
		14-28' fill, timber, brick		
17-25' clay	18-29' gray clay	28-29.5' coarse sand	27-31.6' sand	10-18' fine sand and gravel
25-27' sand, gravel				18-27' silt
27-30' sand and clay				27-31' coarse sand and gravel
30' rock	29' rock	29.5' rock	31.6' rock	31' rock

Soil borings taken from Old Slip between Front and South Streets show fill extending between zero and 28' below grade. Some of the boring logs report encountering timber within the fill, which may be from one of the wharves constructed along Old Slip. Beneath the fill are levels which contain either clay, sand, or sand and gravel. Bedrock was encountered between 29 and 31.6' below grade. (Borings 172, 173, 174, 237, and 238: WPA 1937). The only boring to lack fill was taken from the sidewalk on the southwest side of Old Slip at South Street. It is possible that either the recordation was in error, that this section of the APE was disturbed, or that it was filled with culturally sterile material.

The documentary research and boring logs indicate that this section of the APE is potentially sensitive for historic period resources (Figure 7.6-8). The Old Slip APE is sensitive for fill, including potential sunken ships, cribbing, and fill retaining devices as well as discard from the historic markets that once stood on or near the APE. Old Slip is sensitive for these historic resource types from the surface down to the top of the IRT Subway tunnels, and possibly deeper outside of their footprints. The southwest side of Old Slip is potentially sensitive for additional remnants of Cruger's Wharf, while the northeast side is potentially sensitive for remnants of Low's Wharf.

Where the Clark Street Tunnels lie beneath Old Slip, the APE is potentially sensitive above them to a depth of about 15' to 22' below grade. Except for the effect zone of the existing Clark Street Tunnels, the subway ventilation shaft, and the utility lines, the depth of historic resources at Old Slip are anticipated to extend at least 28' below grade - the maximum depth of reported fill - and possibly as deep bedrock, which lies at about 32' below grade.

7.6.7.2 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

4059 X
4060 X
4061 X
4062 X
4063 X
4064 X
7718 X

*Missing

209 Water St. South Street Seaport HD

*Missing * 576 Broom St. Historic Site

* According to Cynthia Blakemore @ SHPO

SHPO # Sites 24 19

A061.01.0491 —
A061.01.01282 X
A061.01.01272 X 0014
A061.01.01284 X
A061.01.01283 X
1 - A061.01.1271 X
~~2 - A061.01.0011~~ 003 —
3 - A061.01.0623 X 0023
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
A061.01.0541 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 and found historic Remains. NO other info was found.)

NYAC = New York Archeological Council.

ATIONAL REGISTER E. GIBLE and LISTED ___X___ Eligible ___ ___1___ Listed ___ ___X___ Building Inventory

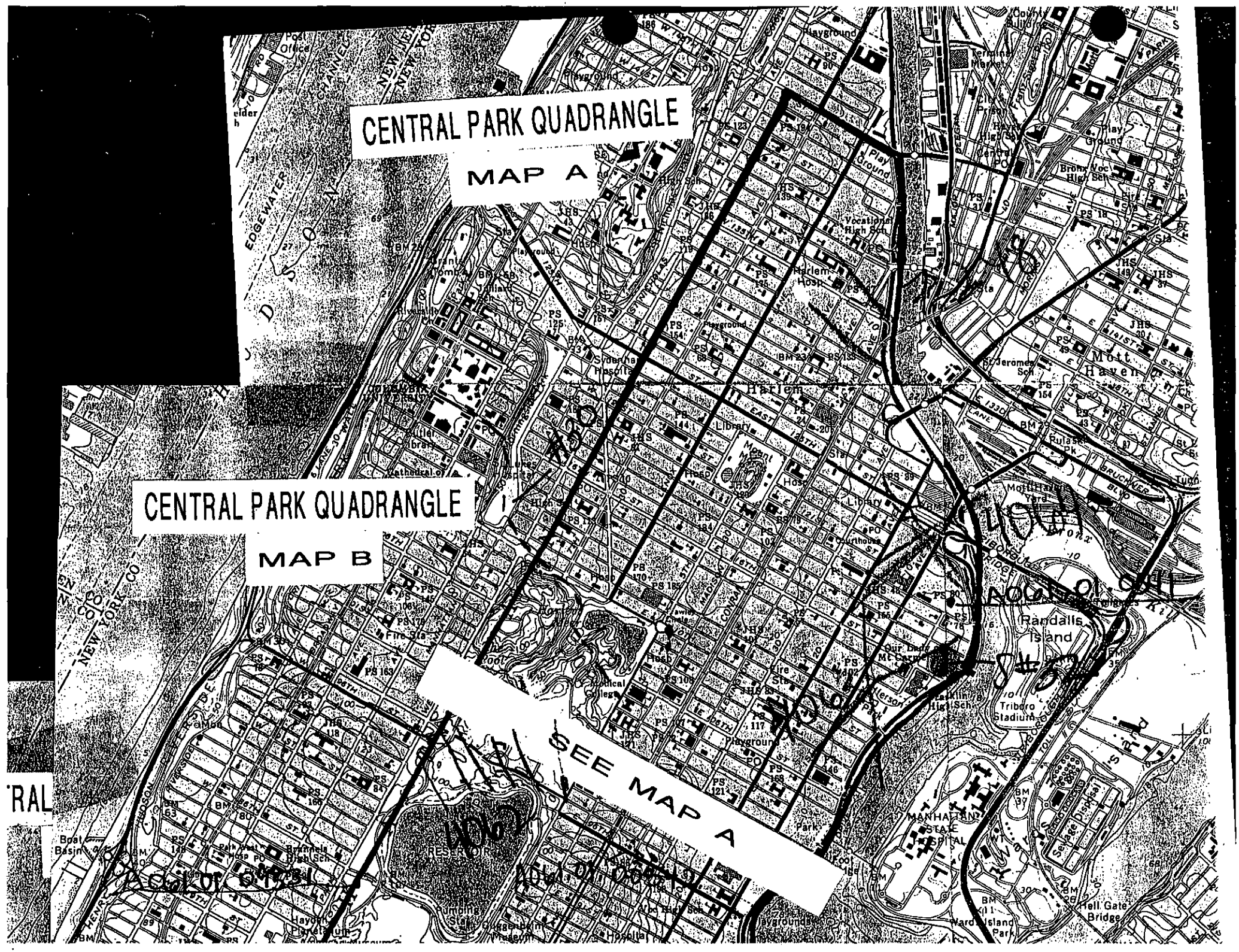
ilding Inventory #	NR Status	Form Copied	Property Description	Roads Checked
06101.000604	NRL	✓	South Street Seaport Historic District 209 Water Street	

EVIOUS SURVEYS

<17 previous surveys w/in Radius>

8 Westside Highway Program – 1983
William O. Hersey – 1963 Castle Clinton at the Battery
Broad Street Financial Center Greenhouse January 1985
X
64th Pearl Street 17th Landfill Arnold Pickman & Nan Rothschild May 1981
Stone Street Historic District 1977, 8/1 NYC Landmarks Pres. Comm. Tracker
9 Barclays Bank Site – 100 Water St. Berger – 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block. Kardon & Larrabee July 1991
7 Telco Block – S. St. Seaport Historic District – 1983

5 209 Water St. – Schuyler – ? Date
East River Roads. New York Harbor Collection Kardon & Larrabee October 1977
10 Sheridan Square – 1983 – Rutgers University
Lower Eastside Service Center – Louis Berger Jan '98
27 750 Sixth Ave. HPI – February 1998
Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1989 / December 1989
32 East River Plaza HPI Sept. 1988
Stone Street Historic District NYC Landmark Pres. Comm. February 1998


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A
Harlem
Randalls Island
Triboro Stadium
Hell Gate Bridge
Ward Island Park
Boat Basin
Hayden Planetarium
Guggenheim Museum
Mott Haven
Harlem Hosp
Vocational High Sch
Bronx Voc High Sch
Playground
Library
Fire Sta
Post Office
EDGEWATER
NEW YORK CO
RESERVOIR
Pumping Sta
Hospital
Medical College
Cathedral of
Columbia University
Riverside Dr
Sewage Disposal
MANHATTAN STATE HOSPITAL
Our Lady of Mt Carmel
Courthouse
Park
Brunnels High Sch
Park West Hosp
Boat Basin
Riverside Dr
Henry Hudson Pkwy
Hudson River
Harlem River
Bronx Kill
Tolls
Bruckner Blvd
Pulaski Pk
St Jerome's Sch
Mott Haven Yard
Franklin High Sch
Lexington Ave
Madison Ave
Park Ave
Fifth Ave
Lenox Ave
Seventh Ave
Eighth Ave
Ninth Ave
Tenth Ave
Eleventh Ave
Twelfth Ave
Amsterdam Ave
Broadway
Columbus Ave
Central Park West
Riverside Dr
Henry Hudson Pkwy
Hudson River
Harlem River
Bronx Kill
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Bruckner Blvd
Pulaski Pk
St Jerome's Sch
Mott Haven Yard
Franklin High Sch
Lexington Ave
Madison Ave
Park Ave
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Eleventh Ave
Twelfth Ave
Amsterdam Ave
Broadway
Columbus Ave
Central Park West


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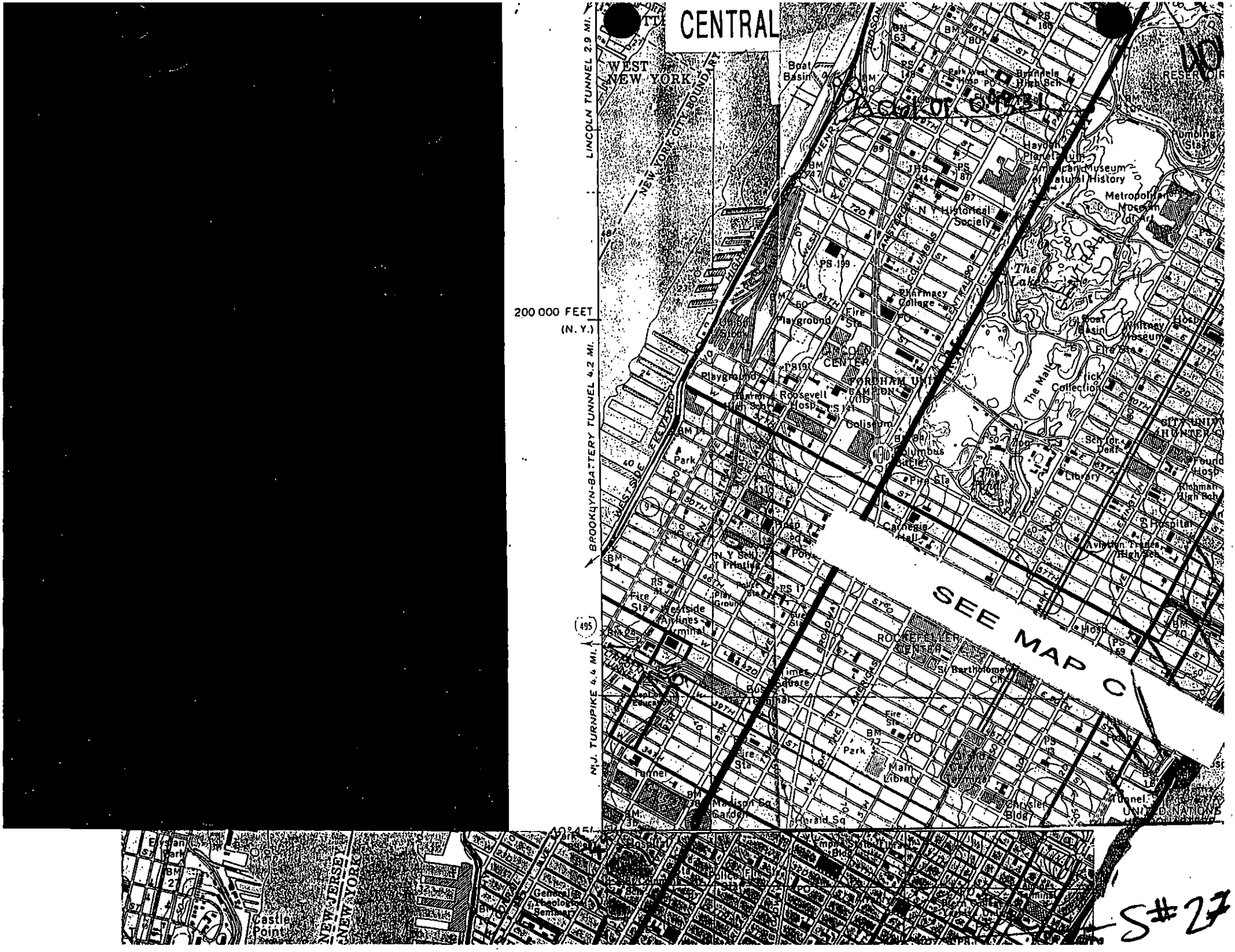
CENTRAL
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NEW YORK CITY BOUNDARY
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BROOKLYN-BATTERY TUNNEL 4.2 MI.
N.J. TURNPIKE 4.4 MI.
200 000 FEET
(N. Y.)
Boat Basin
Brunnels High Sch
Hayden Planetarium
American Museum of Natural History
Metropolitan Museum of Art
N Y Historical Society
The Lake
Pharmacy College
Playground
Fire Sta
LINCOLN CENTER
FORDHAM UNIV CAMPION
Roosevelt Hosp
Coliseum
Columbus Circle
Pire Sta
Carnegie Hall
Whitney Museum
Frick Collection
The Mall
Library
Hospital
Aviation Trades High Sch
Park
Westside Airlines Terminal
Play Ground
Police Sta
SEE MAP C
ROCKEFELLER CENTER
St Bartholomew Ch
Times Square
Bus Terminal
Main Library
Chrysler Bldg
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Madison Sq Garden
Herald Sq
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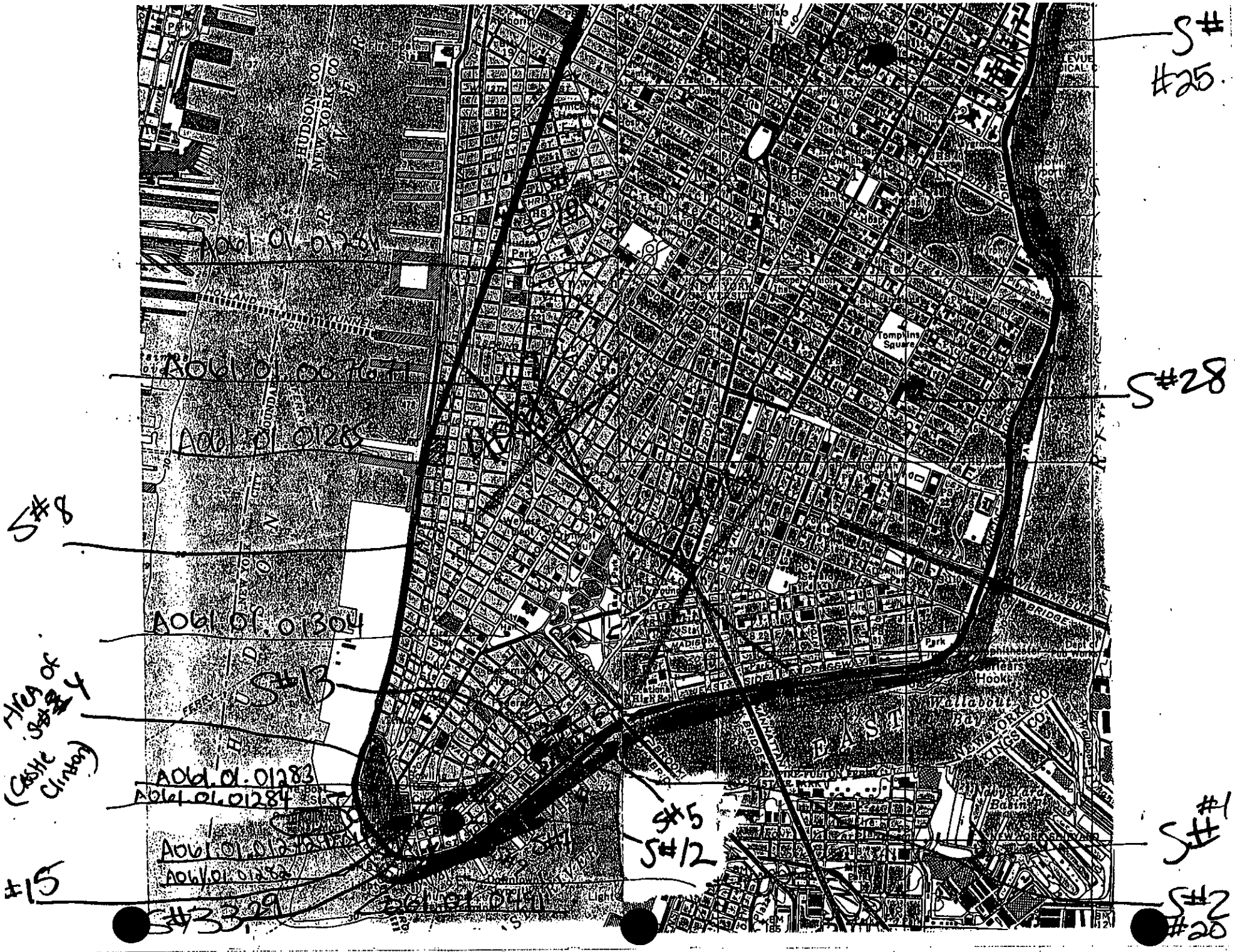
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A061.01.01285
S#28
S#8
A061.01.01304
S#13
Area of S#4
(Castle Clinton)
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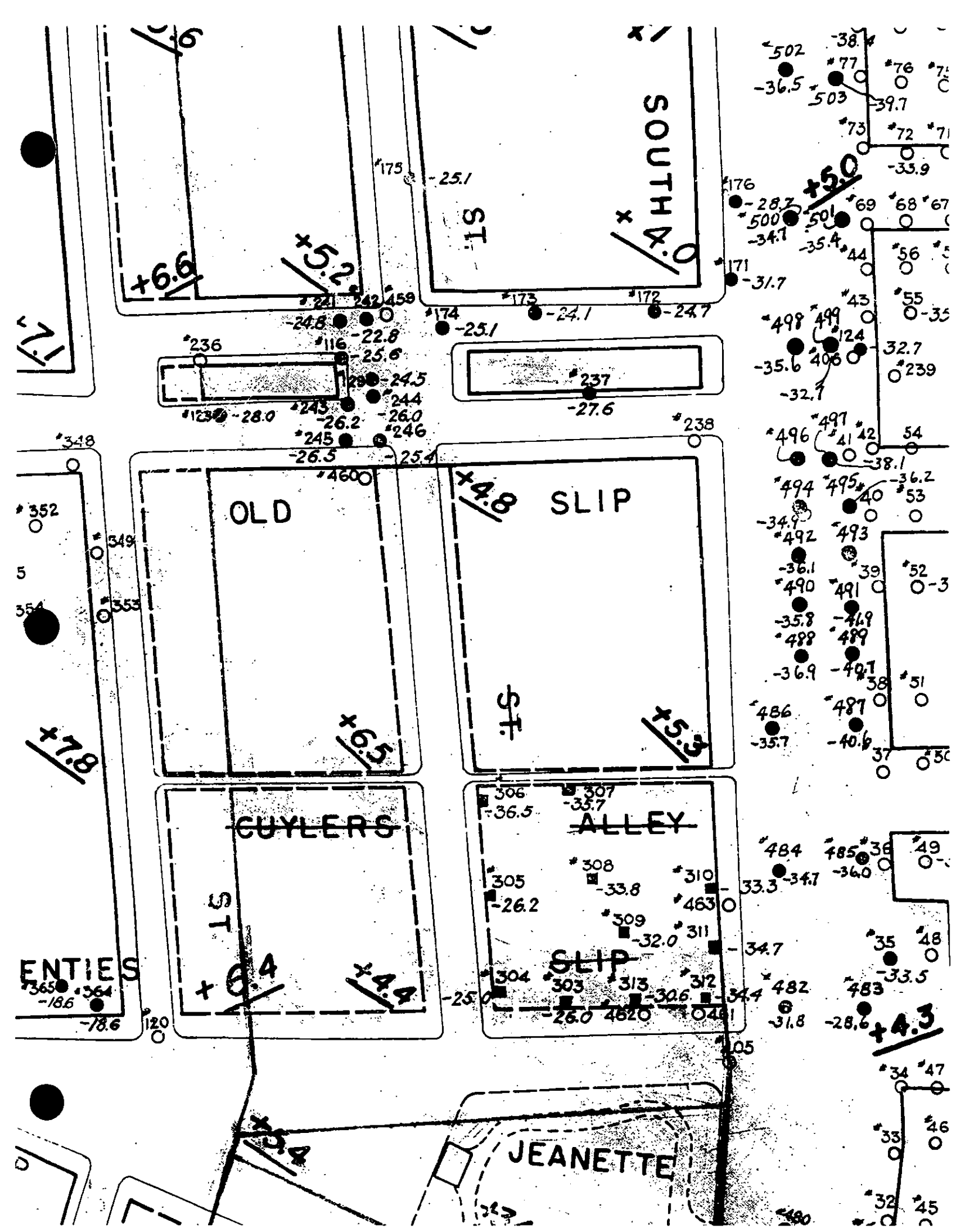
A061.01.01284
A061.01.01282
A061.01.01282
S#5
S#12
S#1
#15
S#33
S#2
#20
Tompkins Square
Wallabout Bay
Navy Yard Basin
HUDSON CO
NEW YORK CO
HOLLAND TUNNEL
WILLIAMSBURG BRIDGE
EAST
NEW YORK CO
KINGS CO

7.6.7.3 Soil Boring Logs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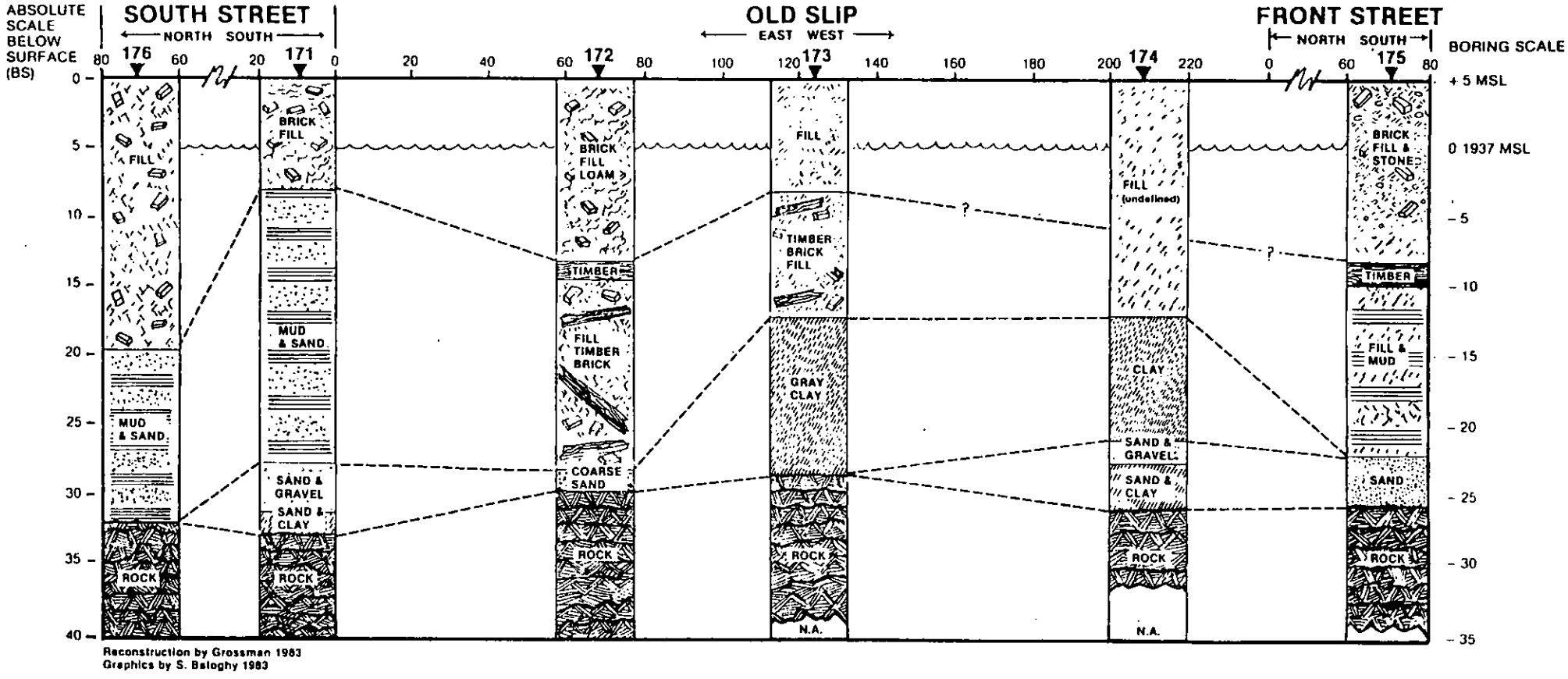
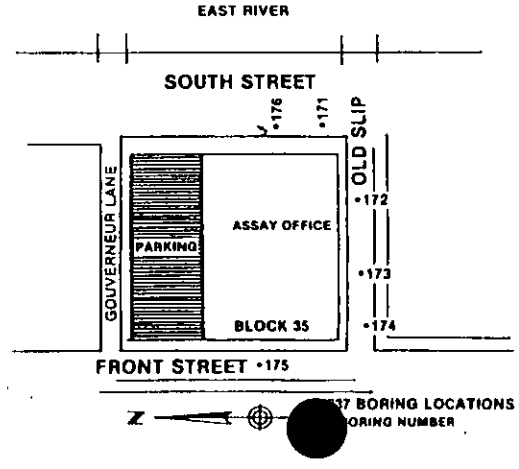


SUB-SURFACE STRATIGRAPHY

Block 35 - U.S. Assay Office

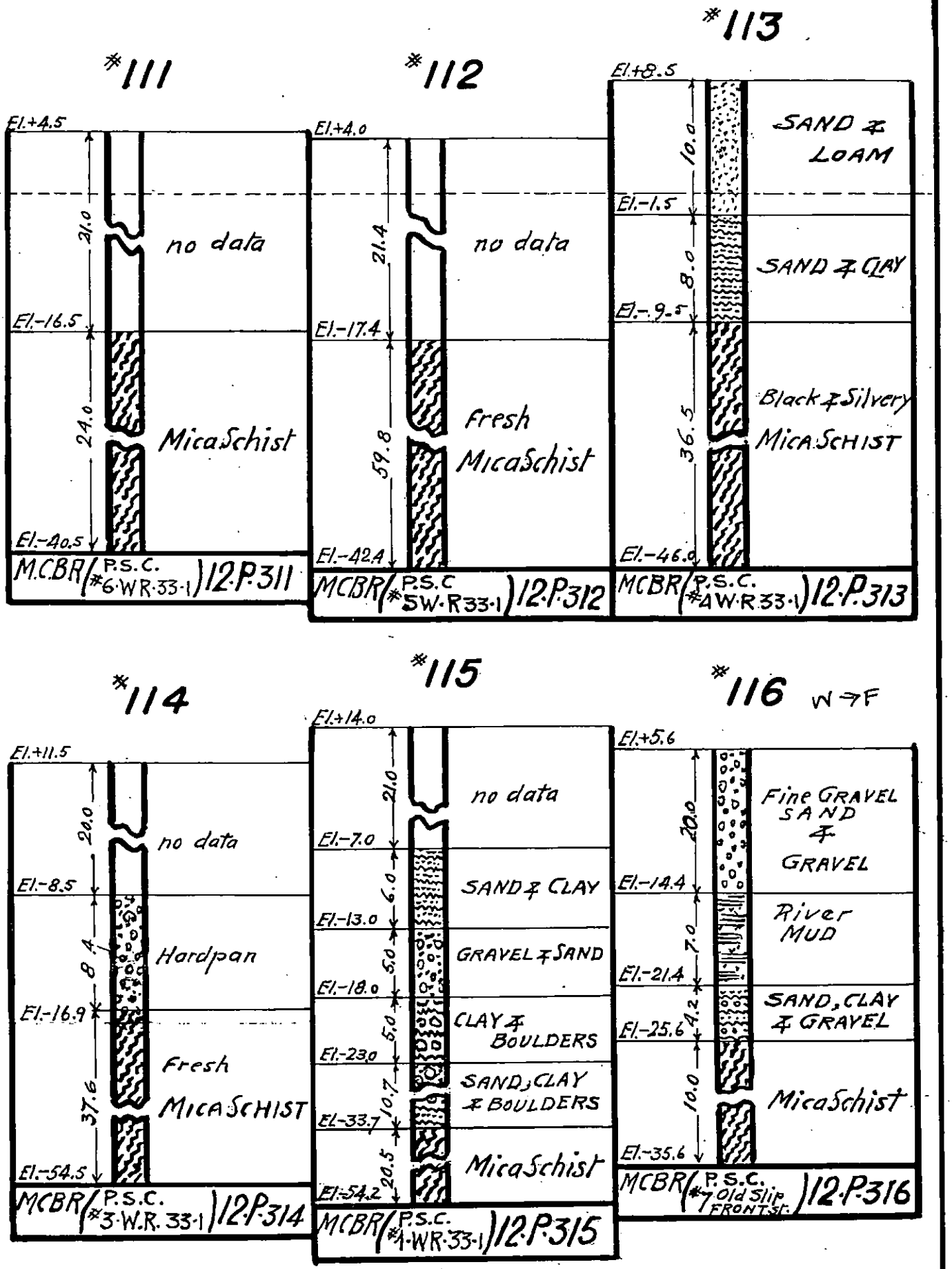
Derived from 1937 Rock Data

Map - Volume 1, Sheet 1

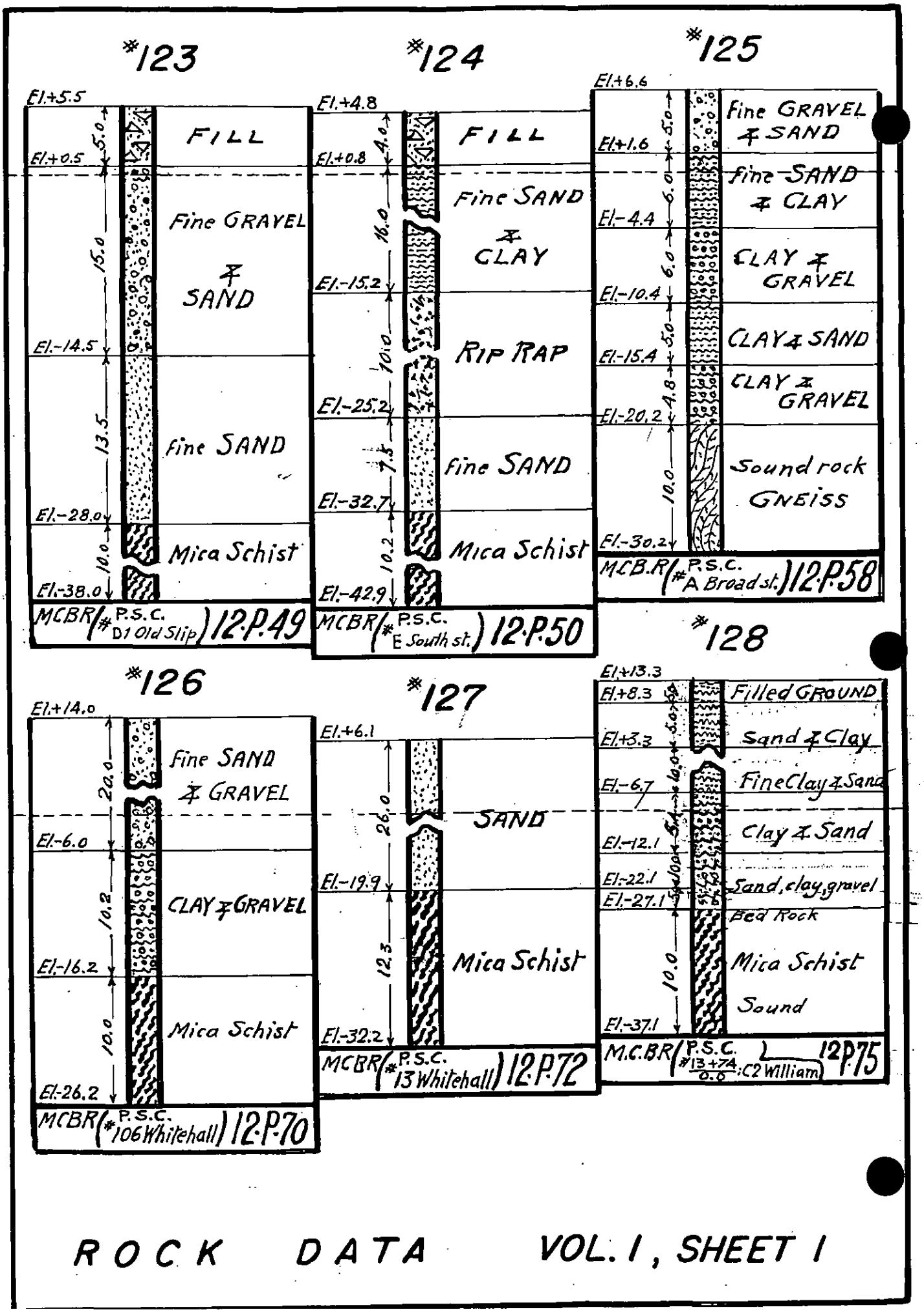


Assay Office Site Historic Report

Project No. 32-83-0003



ROCK DATA VOL. I, SHEET I



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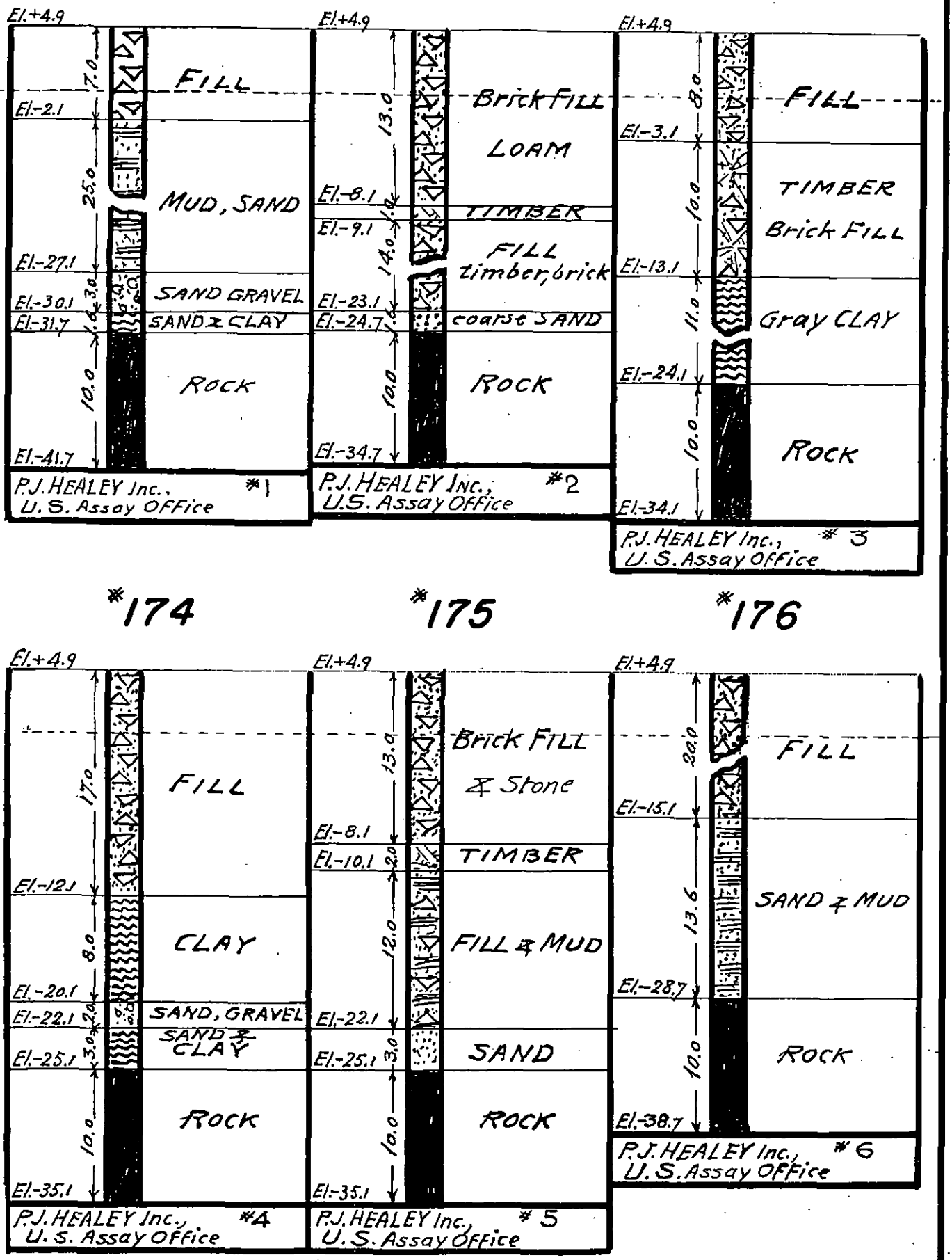

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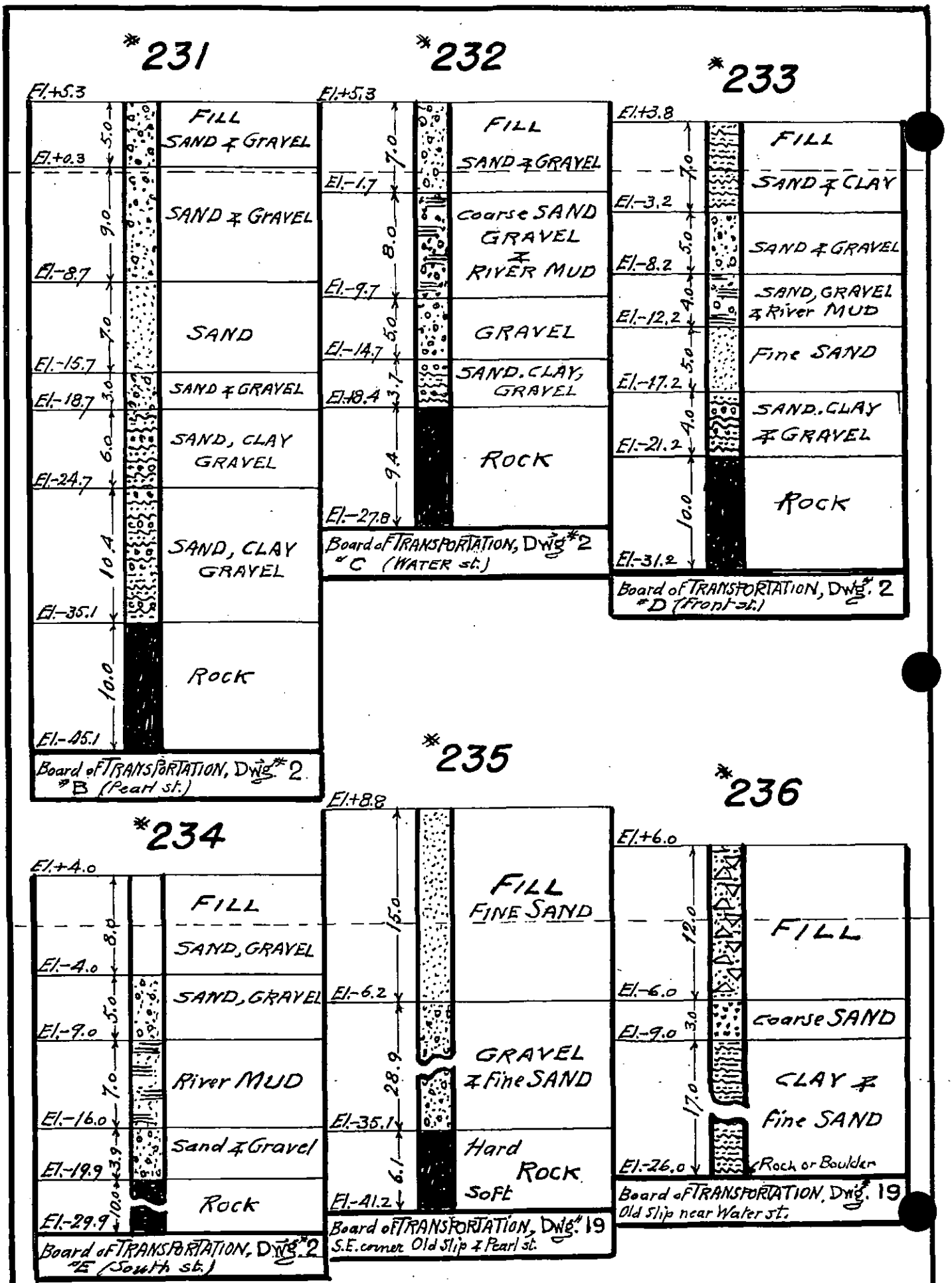

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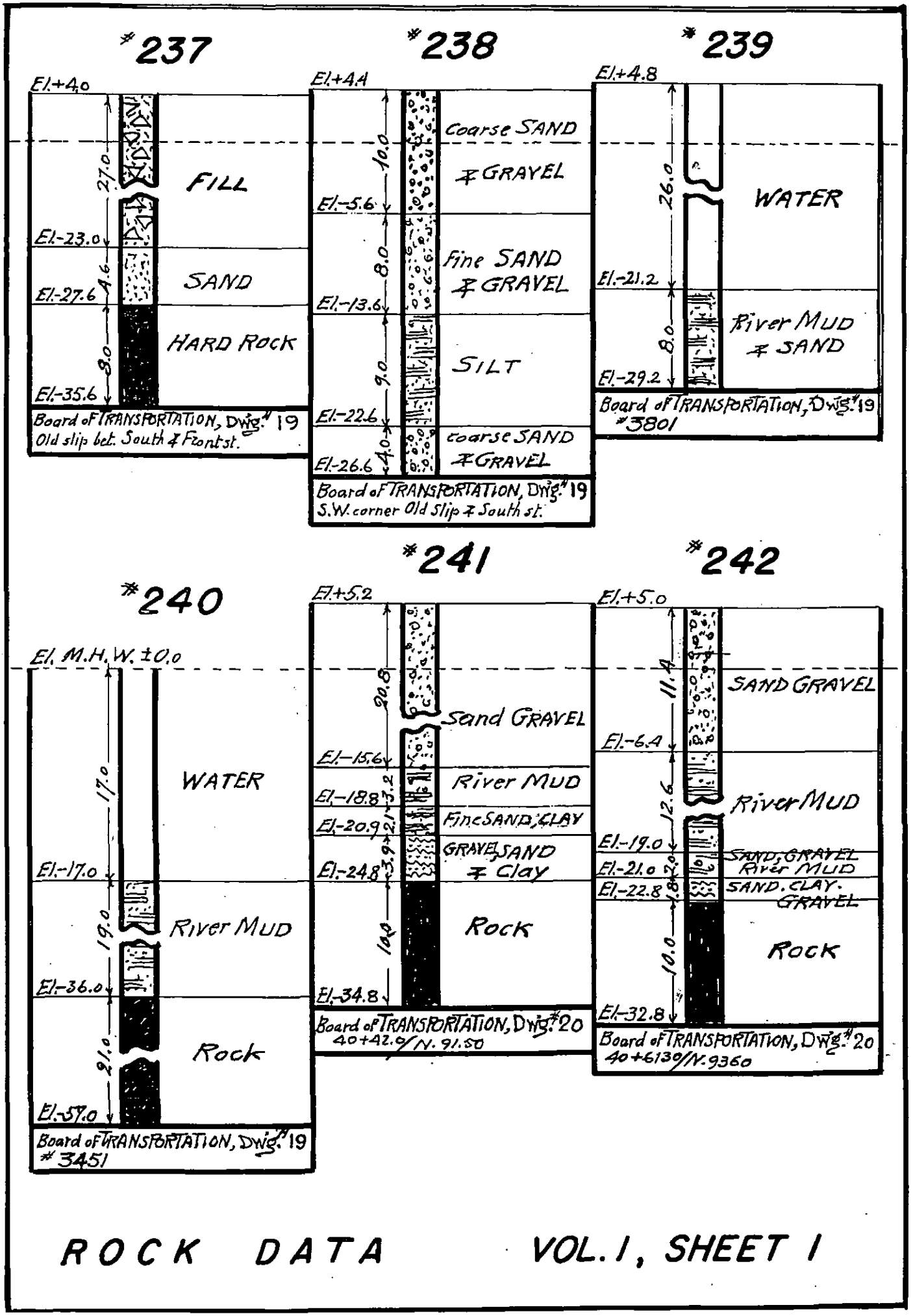

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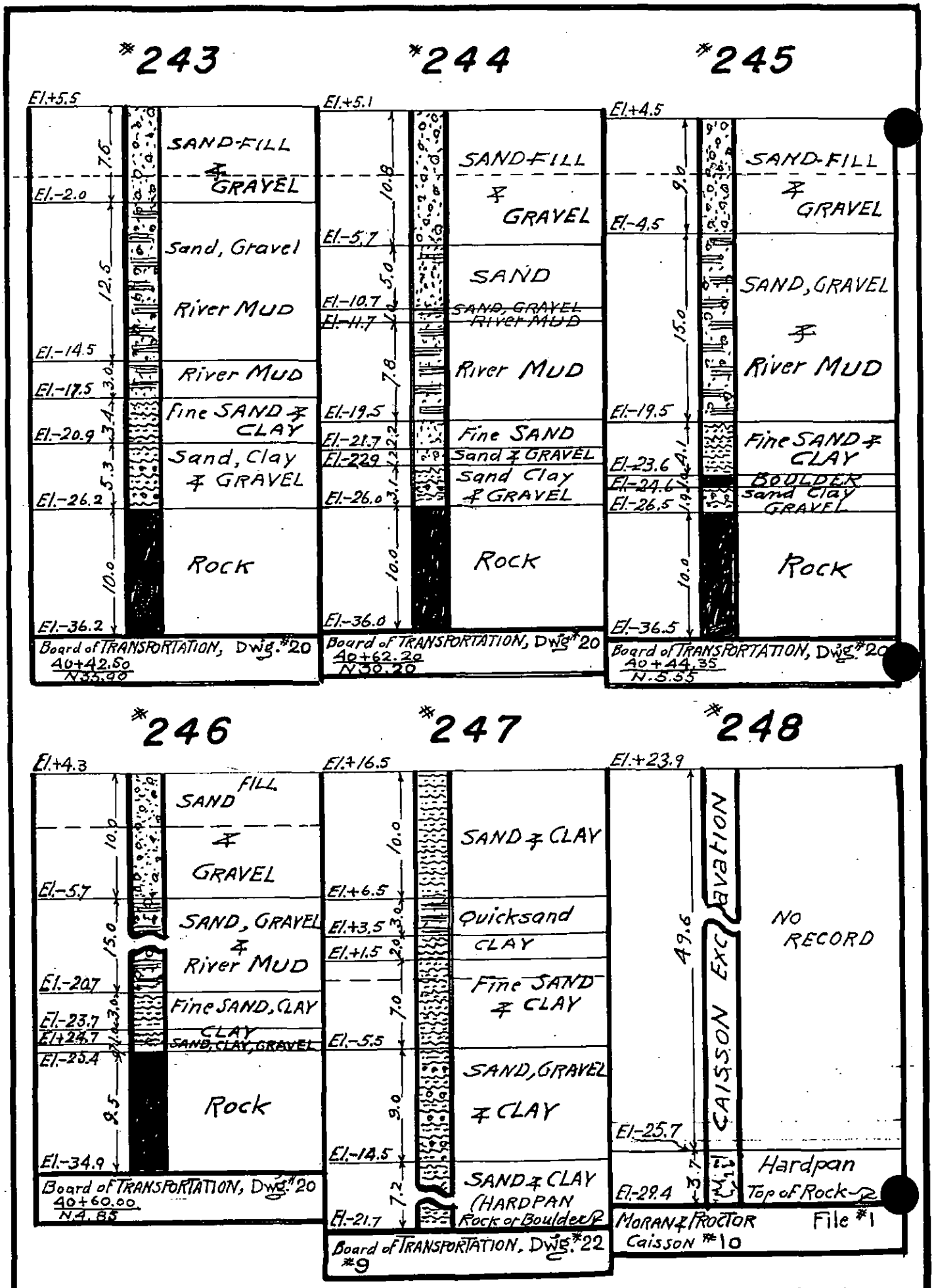


ROCK DATA VOL. I, SHEET I

7.7. TRAIN STORAGE SITE, SECOND AVENUE AND ADJACENT BLOCKS, EAST 125TH STREET TO HARLEM RIVER

7.7.1 Study Area Description

In northern Manhattan there is the potential for a subsurface train storage yard to be constructed under Second Avenue which may extend outward beneath adjacent city blocks. The APE for this project element is Second Avenue, including sidewalks, from Harlem River Drive south to the southern boundary of East 125th Street. Within this span, the APE continues conservatively outward 80 feet from Second Avenue to include portions of Blocks 1790, 1791, 1792, and 1793 on the west side of Second Avenue, and Blocks 1802 and 1803 on the east side of Second Avenue (Figure 7.7-1).

Several shaft sites in Blocks 1803 (including former Block 1805), 1793 (including former Block 1794), 1792, and 1791 are under consideration, and so some of the areas in this APE have already been addressed in Chapters 4.1, 4.2, and 7.5. The extension of the Second Avenue APE 80 feet to the west falls within these shaft sites (Figure 7.7-2). The shaft sites on Blocks 1793/1794 and 1803/1805 (Shaft Site A), 1793 (Shaft Site B), and 1791 (Shaft Sites C and E), as well as Second Avenue from the Harlem River to East 125th Street are addressed in Chapter 4.1. The portion of East 125th Street west of Second Avenue is covered in Chapter 4.2. The shaft site on Block 1792 is covered in Chapter 7.5. This section will cover the remaining areas of historic Blocks 1803, 1802, and 1790, as well as the road beds of East 128th, 127th, 126th, and 125th Streets east of Second Avenue out to 80 feet, and west of Second Avenue out to 80 feet.

To facility the following discussion, the historic period block numbering system employed before the construction of the Harlem River Drive will be used in this chapter (Figure 7.7-2). When the Drive was built in the 1950's, three blocks east of Second Avenue were numerically consolidated into one block; Blocks 1805 and 1804 became part of 1803. Two blocks west of Second Avenue were also consolidated; Blocks 1794 was merged with 1793 (Figures 7.7-1, 7.7-2). Block 1794 does not fall within this current Second Avenue APE, as the Drive was partially constructed over it, although it is part of another shaft site discussed in Chapter 4.1. A small portion of old Block 1805 falls within the current APE. Historic Blocks 1804 and 1803 are part of the current discussion.

7.7.2 Existing Conditions

7.7.2.1 Precontact Archaeological Potential

Known Sites in the Vicinity

The project corridor in this area, south of the historic shoreline at about East 127th Street, was formerly flatlands called Muscoota by Native Americans. This region, which lies between the Harlem River and Morningside Heights, northwest of what was once Harlem Creek, was surrounded by swamps (Rubinson 1989:3). "Rechgawanes" is reported by Grumet as the name of a point of land along the western shore near the confluence of the

East and Harlem Rivers, and along an obliterated stream that roughly corresponded to the route of East 125th Street (1981:46). This tract could have extended into the current project corridor.

Near the APE, the Wickquasgeck trail ran several blocks to the west through what is now Central Park. An Indian Path veered off this trail at East 110th Street near Fifth Avenue, and headed northeast towards a habitation site on the Harlem River near East 124th Street. This Amerindian Trail was incorporated into the first road system of the village of Harlem. Passing through the meadows of Muscoota to the area called Conykeekst, it crossed First Avenue at East 124th Street and Second Avenue at East 121st Street within the project corridor (Bolton 1922:72, 74-76). Arrowheads and flakes were found in East Harlem in 1855 during the excavation of a cellar on Avenue A between East 120th and 121st Streets (Riker 1904:123). Bolton concluded that this was either a fishing place or an intermittently used place of landing or trading (Bolton 1922:72).

NYSM Site #4063 was reported within a mile south of this section of the APE. Identified by Arthur C. Parker, this village/camp site was described as "...one of larger camps or fishing places of the Reckgawawancks...." (Parker 1920:26). He further characterized it as a "...camp or fishing place ....at Montagne's Point... on shore at Hellgate, just off 110th Street" (Ibid.). The site's boundaries and location are unknown, but it may have extended west into the vicinity of Second Avenue near East 110th Street.

Archaeological Potential

Within this APE only the southern half of Second Avenue, just below East 128th Street to East 125th Street, was depicted as dry-land on topographic maps depicting conditions prior to development. However, water levels have fluctuated over the past few thousand years, and it is quite possible that what was under water 500 years ago was dry land much earlier. South of East 128th Street, the APE was portrayed as drained land on historical maps and atlases, with a marshy area along the shoreline that was farther inland than it is today. As such, sections of the APE may have been conducive to precontact living, providing a habitat of rich faunal and floral resources. As undulating meadow area, in close proximity to a knoll near East 125th Street between Second and Third Avenues, it would have been suitable for prehistoric settlement. Some historic maps portray a pond at Second Avenue and East 125th Street (Commissioners 1811, Figure 7.7-3) that may have been a source of fresh water. Therefore, this feature would have also made the area attractive to settlement.

The northern portion of the APE (from East 128th Street to what is now the Harlem River shoreline) would have been completely under water in the late precontact period. It is unlikely that the shoreline itself would have been a living area, as it most likely would have been marshy to a certain extent. However, it would have been a rich source of floral and faunal resources.

For these reasons, precontact archaeological resources have a high potential of being present within this Second Avenue APE. It is possible that any precontact resources would have been buried beneath historic landfill, which may have served to preserve and

protect them. Soil borings from Second Avenue report peat between 21 and 33' below the surface, an indicator of a precontact estuarial environment (Soil Borings WPA IV.4.61, 1940; WPA IV.5.92-96, 1940). This indicator of precontact use suggests that habitation sites may be found in close proximity to the former marshland. Because the depth of fill varies within the APE, potential precontact resources may exist between approximately 2.6' and 33' below grade, the lost depth of peat reported in soil borings.

7.7.2.2 Historical Archaeological Potential

Historic archaeological resources can take many forms, but those most likely to be preserved included shaft features such as privies, wells, and cisterns, as well as building foundations. Shaft features often survive through later disturbances, because they are cut deep into the ground. They are particularly informative because during or after use, they were frequently used as depositories for rubbish, including bone, ceramic, glass, and metal. If conditions in the shaft are appropriate, normally perishable materials such as leather, cloth and wood may be preserved. Fill from these shaft features can also provide ecological and dietary information from items such as pollen or seeds.

Documentary research concluded that areas in this section of the APE were found to be potentially sensitive for the resource category of *Residential* and *Parks and Recreation* (Chapter 3; Appendix 7.7.7.1).

Parts of this APE may be sensitive for 18th and 19th century resources, and because this area was historically in proximity to Harlem Village, it could also be sensitive for 17th century historical farm buildings. Resources from the 17th century could include potential outbuildings and features from several residential properties: Tourneur on Blocks 1803, 1802, 1790, and Second Avenue; Terveslen on Block 1802 and East 125th Street at Second Avenue; and, LeBey on Block 1802 (Romer and Hartman 1670, Figure 7.7-4).

Resources from the 18th century may be associated with a structure cartographically depicted within the Second Avenue APE approximately between East 126th and East 127th Streets in 1782 (British Headquarters 1782, Figure 7.7-5), which was likely a farmhouse. This farmland belonged to Daniel Phoenix in 1811 (Commissioners' 1811, Figure 7.7-3), where a structure is shown in approximately the same location. By 1815 the land belonged to N.G. Ingraham (Sackersdorf 1815). Although the main house of the Ingraham estate would have been outside the APE, a barn with an addition is depicted within the Second Avenue APE at East 127th Street in 1820 and 1851 (Randel 1820, Dripps 1851, Figures 7.7-6, 7.7-7). This area was farmland from at least 1670 (Romer and Hartman 1981:9), and could potentially be sensitive for the barn and associated shaft features from the late 17th through 19th centuries. A soil boring taken at the southeast corner of East 127th Street and Second Avenue, near the barn's former location, reported cinder-fill down to about 3.5' below grade. No water table depth was provided (WPA IV.5.52, 1936). If the water table was at approximately 12' below grade, then a well shaft would be expected to extend at least 15' below grade. Historical resources such as late 17th through early 19th century farm outbuilding foundations and related shaft features might be found just below the historic surface, which would be expected to lie

below fill, the depth of which is variable within the APE. Other borings performed close to Second Avenue in the northern section show fill depths ranging from 9.6' to 20' below grade (WPA IV.5. 94, 95, 97, 1940; WPA IV.4.58, 1940). In the southern section the fill appears shallower, ranging from 2.6'to14' below grade (Raymond International 2-113, 2-114, 1970; Warren George, Inc. B-9, 1997; WPA IV.5.23, 1935). There were no water table depths reported north of East 126th Street from Second Avenue; those taken south of East 126th Street indicate a water table depth of 11 to 12.5' below grade (Raymond International 2-113, 2-114, 1970; Warren George, Inc. MW-2, MW-3, 1994).

Other historical resources that may be present within the APE include a number of residential buildings from the mid-19th century that might be expected to have associated wells and/or privies in what were formerly their back yards. The APEs within Blocks 1804, 1793, 1792, and 1790 have a moderate to high probability of having intact resources from this period, while Block 1802 has a low to moderate sensitivity. Blocks 1803 and 1791 have no probability of residential resources from this period, but Block 1803 has the above mentioned earlier resource potential, and also has potential for a 19th century park and recreation area. This latter area was originally an offshoot from the Ingraham estate dwelling, and by 1879 was called "Harlem Park" (Bromley), but by 1885 (Robinson) it had been converted into an amusement park. In 1893 (Perris) the Harlem River Park was shown with a dance hall, shooting gallery, arcades, and possibly a carousel, with the dance hall and the main entrance to the park falling within the APE. By 1896 (Sanborn), a casino is part of this recreational area, which in 1911 (Bromley) is known as Sulzer's Harlem Casino and Garden. A new casino building was constructed by 1911, also within the APE. Early in 1917, the anarchist Emma Goldman famously gave a speech here discouraging men from enlisting for the war. For this she was tried, found guilty, and eventually had her citizenship revoked and was deported to Russia. By 1925 (Bromley), the amusement park was gone and had been replaced by a movie studio, the "International Film Co. Moving Picture Studio." The casino was bought in 1917 by William Randolph Hearst for his mistress, Marion Davies, with the intent of turning it into a movie studio to showcase this young starlet. The movie studio used the original casino building, and added a number of buildings so that the entire APE is covered. The studio remained, becoming an MGM studio, until sometime between 1934 and 1939 when it was razed (Bromley, Sanborn). The potential of elucidating the nature of such an early recreational area renders this block sensitive for this resource type.

7.7.3 Summary of Archaeological Potential

Block 1805 (Now part of Block 1803)

Soil borings within this APE indicate the presence of peat at depths of 21 to 33' below grade and shell at 15 to 23' below grade, suggesting that early precontact resources may lie between 15' to 33' below grade (Figure 7.7-11). Late precontact resources are not anticipated since the block was under water prior to historical development. Research has concluded that the block lacks historic archaeological potential.

Block 1804 (Now part of Block 1803)

Research has determined that this block is potentially sensitive for both precontact and historic archaeological resources within the APE (Figure 7.7-11). Soil borings nearby indicate the presence of shell and peat between 15 to 23' below grade, and peat alone between 21 and 33' below grade, suggesting that early precontact resources may lie between about 15 and 33' below grade. Late precontact resources may also be present, except on Lots 47-52 which would have been under water during this period. While one soil boring from this corner indicates that there is no historic fill below grade, across East 128th Street another boring reports ten feet of fill. Lots 1-4 and 49-52 contained mid to late 19th century buildings which could potentially have had shaft features in the rear yards, which on Lots 49-52 would likely have remained undisturbed. Construction of a ramp to the Harlem River Drive may have disturbed Lots 1-4, and Lots 1-3 are currently underneath the ramp. Lots 4½-6 may have foundations and shaft features associated with two mid-19th century houses. However, most of these lots are also under a ramp for the Harlem River Drive. Lots 47, 48, and 48½ are unlikely to have historical resources, as they were industrial through most of the second half of the 19th century and well into the 20th century. These lots were the site of a kindling wood factory, and only served to store wood outdoors. Therefore, they lack archaeological research potential. The entire APE has a moderate to minimal potential for unmapped outbuildings related to the early to mid-19th century Phoenix/Ingraham estate. Shaft features, such as wells and privies from mid to late 19th century, would be expected to extend from the surface down to at least the depth of the water table, which is unknown or this block, but ranges from 11 to 12.6' below grade along Second Avenue between East 126th and 125th Streets.

Block 1803

The APE within this block is potentially sensitive for precontact resources (Figure 7.7-11). Soil borings taken about 200' from the APE show peat ranging between 21' and 33' below grade. Potential precontact resources may lie below historic fill, and a soil boring from this block indicates 3.5' of cinder fill on top of 11.8' of sand and gravel. These precontact resources may extend from about 3.5' to about 33' below grade, the maximum depth of peat reported on nearby borings.

The APE within this block also has potential for both residential resources from as early as the late 17th through 19th centuries, and resources related to parks and recreation from the mid to late 19th century (Figure 7.7-11). The entire APE has the potential for features related to the outbuildings associated with the early to mid-19th century Phoenix/Ingraham estate, but particularly the northwest corner, now Lots 49-51, is sensitive for these resources where a barn was known to stand. There are also the potential for resources relating to a park that evolved out of the Ingraham estate, and which later became an amusement park in the 1880's and a casino in the 1890's. Lots 46-52 would have had buildings housing a dance hall on them, and Lots 1-6 would have been mostly open, with small structures such as the entrance gate to the park on them. The park and casino were bought by William Randolph Hearst in 1917 and was converted into a movie studio. The early date of the park, dating to sometime between 1867 and 1879 (Dripps, Bromley), would make it an early example of a recreational area

in New York City. Most of the APE was probably not affected to extensive depths when Second Avenue was widened and the westernmost 75' of the block was paved over. The rest of the block houses a bus depot which has no basement and the depth of effects from this is estimated to be about three to five feet below grade for foundations and footings. Shaft features such as wells and privies from mid to late 19th century would be expected to extend from the surface down to at least the depth of the water table, which is unknown for this block, but ranges from 11 to 12.6' below grade along Second Avenue between East 126th and 125th Streets.

Block 1802

The APE within this block is potentially sensitive for precontact resources (Figure 7.7-11). Soil borings taken about 400' away from the APE show peat ranging between 21 and 33' below grade. Potential precontact resources would lie below historic fill, and soil borings from the APE indicate three feet of fill over four feet of loam in one, and three feet of fill and loam over 14 feet of sand and gravel. Potential precontact resources may extend from about three to 33' below grade, the maximum depth of peat reported on nearby borings.

The APE has a low to moderate potential for late 19th century historic resources relating to residential structures built between 1879 and 1885 on Lots 49-52 (Figure 7.7-11). Construction of buildings on other lots post-dates utility installation and, therefore, lacks the potential for shaft structures such as wells and privies associated. However, the earlier structures may have archaeological potential for shaft features associated with them where their former back yards once lay. If shaft features are present, they are likely to have been left predominantly undisturbed, as they were incorporated into Second Avenue and paved over when the street was widened in the 1930's. Potential historic resources could extend from the surface down to the water table, which was reported at about 12.2' below grade here. However, shaft features could potentially be deeper if deep wells were needed to access potable water.

Block 1793

The APE within this block is potentially sensitive for early precontact resources, but not for late precontact resources, as this section of the APE was underwater prior to historic development (Figure 7.7-11). Soil borings near the APE show peat ranging between 21 and 33' below grade. Potential early precontact resources would lie below historic fill, and soil borings from the APE report ten feet of fill below grade. These precontact resources may extend from about ten feet to about 33' below grade, the maximum depth of peat reported on nearby borings.

This APE is also potentially sensitive for historic period shaft features, such as privies and wells, associated with mid 19th century residential structures on Lots 21-24 (Figure 7.7-11). Their potential depths could extend from the surface down to the water table, the depth of which is currently unknown.

Block 1792

This APE is potentially sensitive for both precontact and historical resources (Figure 7.7-11). Soil borings from Second Avenue, taken between 100 and 200' from the APE, show peat ranging between 23 to 33' below grade. However, no soil borings were available from within this block, so it can only be estimated that potential precontact resources would lie below historic fill, and may extend to about 33' below grade, the maximum depth of peat reported on nearby borings. These possible resources could range from long term habitation sites to seasonal camps.

Shaft features such as wells and privies from mid to late 19th century would be expected to extend from the surface down to at least the depth of the water table, which is unknown for this block. Areas within the APE of this block without subsurface disturbances include yards that were open through the 19th and 20th centuries, and areas which possessed structures that did not have basements. The only areas within the APE that had significant 20th century subsurface disturbance are former Lots 22-25, with the construction of two gas filling stations. Therefore, these lots lack sensitivity for potential historical resources, while the remaining lots (Lots 21½ (121), 26-28½ (128)) are potentially sensitive for early to mid-19th century domestic resources, including potential shaft features. Shaft features such as wells and privies from mid to late 19th century would be expected to extend from the surface down to at least the depth of the water table, which is unknown for this block, but ranges from 11 to 12.6' below grade along Second Avenue between East 126th and 125th Streets.

Block 1791

The APE within this block is potentially sensitive for precontact resources (Figure 7.7-11). Soil borings taken about 200' from the APE show peat ranging between 21' to 33' below grade. Potential precontact resources would lie below historic fill, and a soil boring from this block indicates 16' of fill. Thus precontact resources may extend from about 16 to about 33' below grade, the maximum depth of peat reported on nearby borings.

This APE is not sensitive for potential historical resources. Lot 25, which falls within Shaft Site C (previously discussed in Chapter 4.1), is considered unlikely to possess historical resources. Lots 21-24 (now part of Lot 1) are part of Shaft Site E. This site was found likely to possess historical resources such as privies and wells associated with mid 19th century residential structures. However, Lots 21-24 were undeveloped until the turn of the 20th century, and so the area of the shaft site that falls within this current APE has no historic potential.

Block 1790

The APE within this block is potentially sensitive for precontact resources (Figure 7.7-11). Soil borings taken about 400' from the APE show peat ranging between 21' to 33' below grade. Potential precontact resources would lie below historic fill, and a soil boring from this block indicates 2.6' of fill over 15.4' of sand, gravel, and silt. These

precontact resources may extend from about 2.6 to about 33' below grade, the maximum depth of peat reported on nearby borings. These possible resources could range from long term habitation sites to seasonal camps.

The APE has potential for mid-19th century residential resources such as wells and privies (Figure 7.7-11). The greatest possibilities are with Lots 29 and 27 with houses constructed between 1851 and 1867, and there is some possibility with Lots 28 and 26. Lot 28 may be associated with the building on Lot 29, and Lot 28 had a small building built in the early 1880's. There was also a church that dates from between 1851 and 1867 on Lots 22-26. Later apartment buildings here are unlikely to provide any resources. These areas were mostly undisturbed in later years, either retaining open space or having buildings without basements on them. Only Lots 23-23½ (123) have experienced disturbance with the installation for underground gasoline tanks for a service station, which is still present. Therefore, excluding Lots 23-23½ (123), the APE is potentially sensitive for historic resources from the surface down to the depth of the water table, which lies about 11' below grade, and possibly deeper.

Second Avenue

The Second Avenue road bed from East 125th Street northwards to the Harlem River is potentially sensitive for precontact resources and early historical resources described in the preceding section (Figure 7.7-11). Precontact resources, if they are present, are estimated to exist between about 2.6 to 33' below surface or deeper. Possible historic resources include the potential remains of outbuildings (such as foundations) and associated shaft features (wells, privies, cisterns) from an early to mid 19th century historical farm between East 126th and 127th Streets. The outbuilding remains would probably be shallow deposits, but it is not clear from map research whether these would be within the Second Avenue footprint or just outside it, and therefore whether they would have been subject to utility construction disturbances in the road bed. Privies or wells, if they were in the region of the outbuildings, would be substantially deeper, at least 15' below grade.

East 128th Street

Potential precontact resources may lie buried beneath East 128th Street within the APE (Figure 7.7-11). Soil borings for this area show that fill extends to between ten and 15' below grade, and that peat extends from about 21 to 33' below grade. Therefore, a conservative estimate would suggest that precontact potential could lie between about ten and 33' below grade. West of Second Avenue the road bed is not considered sensitive for historical resources. Most of the road bed that is within the APE was marsh in the early historical period and there is no evidence for development between the time that it was filled in and when it was opened as a street. East of Second Avenue, the land does not appear to exist until after 1863 (Dripps), and there is no development on it as of 1867 (Dripps).

East 127th Street

Potential precontact resources may lie buried beneath fill which varies in depth (Figure 7.7-11). For this section of the APE, fill extends to about 16' below grade, with peat extending to about 33' below grade. Therefore, potential precontact resources could lie between about 16 and 33' below grade at East 127th Street. West of Second Avenue the road bed is probably not sensitive for any historical features. There is no indication of any development on this area as depicted on historical maps. East of Second Avenue the road bed should be considered moderately sensitive for a barn and associated outbuildings from the Phoenix/Ingraham estate from the early to mid-19th century, and well features that might have served the barn (Randel 1820, Dripps 1851) (Figure 7.7-11). This portion of the street was not open until after 1879 (Bromley).

East 126th Street

Potential precontact resources may lie below East 126th Street (Figure 7.7-11). Since soil borings show between three and ten feet of fill in Second Avenue in proximity to East 126th Street, with peat located to a depth of about 33' below grade, potential precontact resources could extend from beneath the fill, at three feet below grade, to an approximate depth of 33' below grade. West of Second Avenue the road bed is probably not sensitive for any historical features. There is no indication of any development on this area as depicted on historical maps. East of Second Avenue the road bed has a moderate to minimal sensitivity for late 17th century resources from a farm in the area (Romer and Hartman 1670) (Figure 7.7-11).

East 125th Street

East 125th Street is potentially sensitive for precontact resources, which could lie beneath historic fill (Figure 7.7-11). Boring logs indicate that fill is relatively shallow in this APE, extending to about 2.6' below grade. In this scenario, utility installation in Second Avenue and East 125th Street would have affected potential resources where trenches were excavated for their installation. However, since peat was reported to a depth of about 33' below grade, there is the possibility that deeper resources, and areas outside of existing utilities, within the APE are still potentially sensitivity for this resource type. Therefore, the APE is potentially sensitive for precontact resources from below the fill, about three feet below grade, to an approximate depth of 33' below grade.

West of Second Avenue the road bed is not sensitive for historical resources. However, at Second Avenue and east of Second Avenue there is a slight to moderate possibility of late 17th century farm related buildings (Romer and Hartman 1670).

7.7.4 Proposed Project Effects

Proposed construction plans call for cut-and-cover construction from grade to 50' below, in order to create a subsurface train storage yard under Second Avenue which may extend outward beneath adjacent city blocks, approximately 30 feet east and west of the building

line on Second Avenue, between the Harlem River and East 125th Street. Since this APE is potentially sensitive for precontact resources, residential resources from as early as the late 17th century through the 19th century, and for parks and recreation features from the mid to late 19th century, and that these resources could range from just below surface to 33' below grade, proposed excavations would probably affect these potential resources.

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.

7.7.5 Recommendations

While the probability of finding intact, significant precontact period resources eligible for inclusion on the National Register of Historic Places is remote, the scant possibility should be corroborated, if possible, by evidence from additional soil borings and/or subsurface testing. The possibility that *in situ* precontact and contact period resources may exist in this part of Manhattan dictates further investigation of subsurface conditions. There is also a moderate to probable expectation of encountering intact, significant historical-period remains within the APE where historical structures were noted.

Soil borings, as an indicator of both potential precontact or historic sensitivity, would be a primary choice of ascertaining the likelihood of intact, significant precontact or contact period resources. 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, especially since water table depths were not recorded on borings taken north of East 126th Street, but cannot always substitute for field verification.[1] Following the review of soil borings, some sites 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

[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.

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 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, their horizontal and vertical extent, site integrity, and, their 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 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.

7.7.6 Figures and Photographs

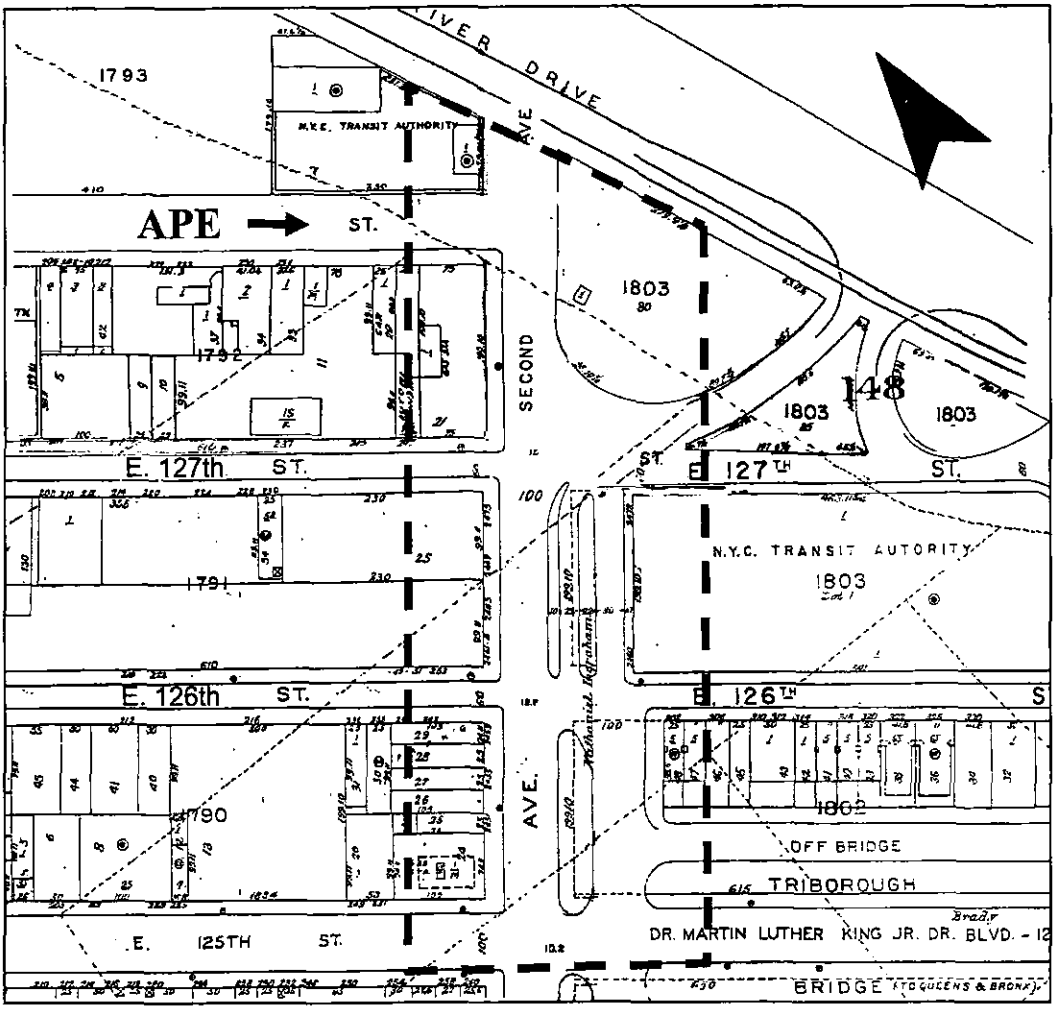


FIGURE 7.7-1

Insurance Maps. Second Avenue Train Yard. Sanborn 2001.

Approximate Scale: ½ inch = 100 feet

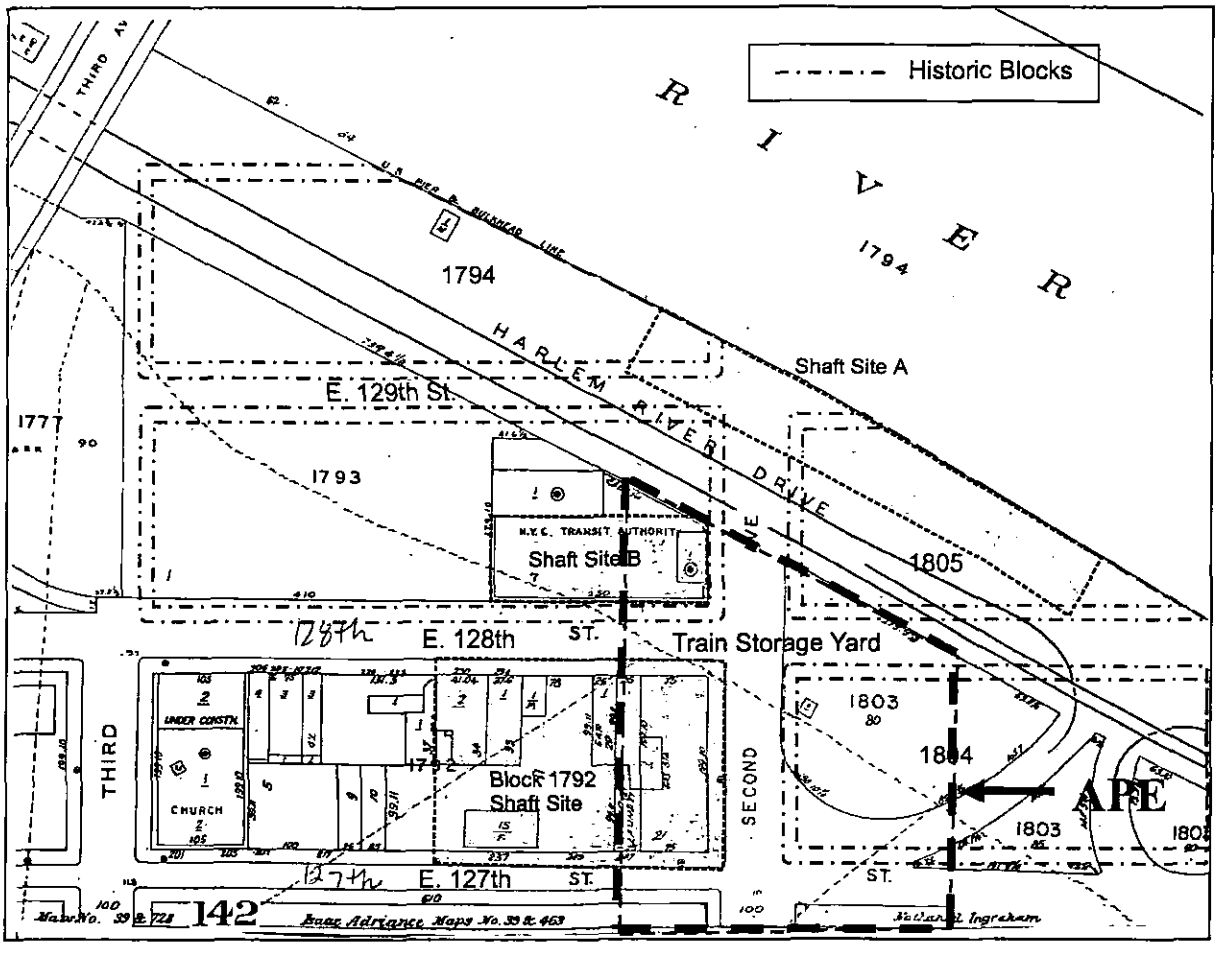


FIGURE 7.7-2

Diagram of Historic Block Numbering.
Second Avenue from the Harlem River to East 127th Street. Sanborn 2001.

Approximate Scale: ½ inch = 100 feet

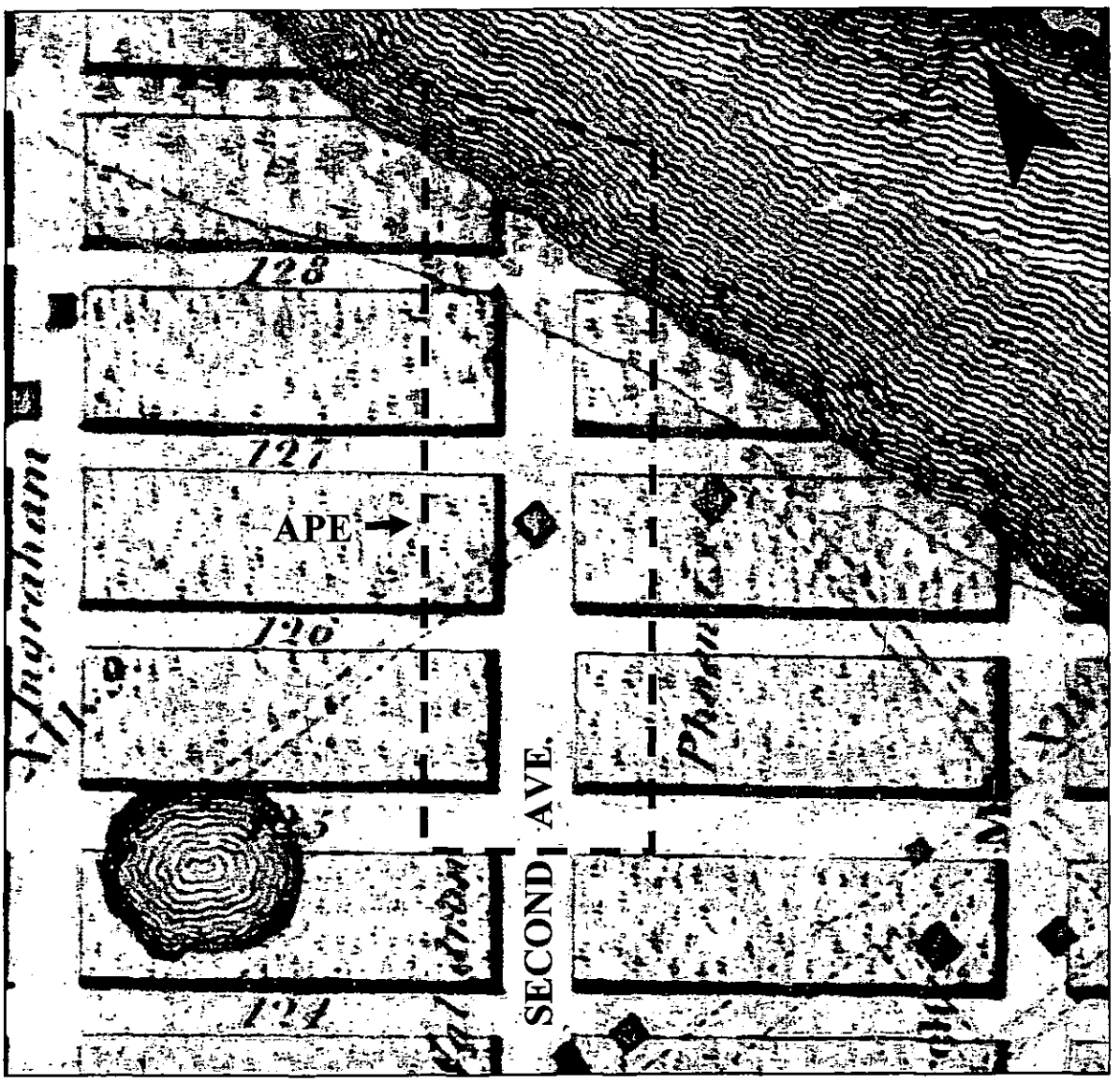


FIGURE 7.7-3

Map of the City of New York and Island of Manhattan as laid out by the Commissioners. Second Avenue from the Harlem River to East 125th Street. Bridges 1807-1811.

Approximate Scale: ½ inch = 100 feet

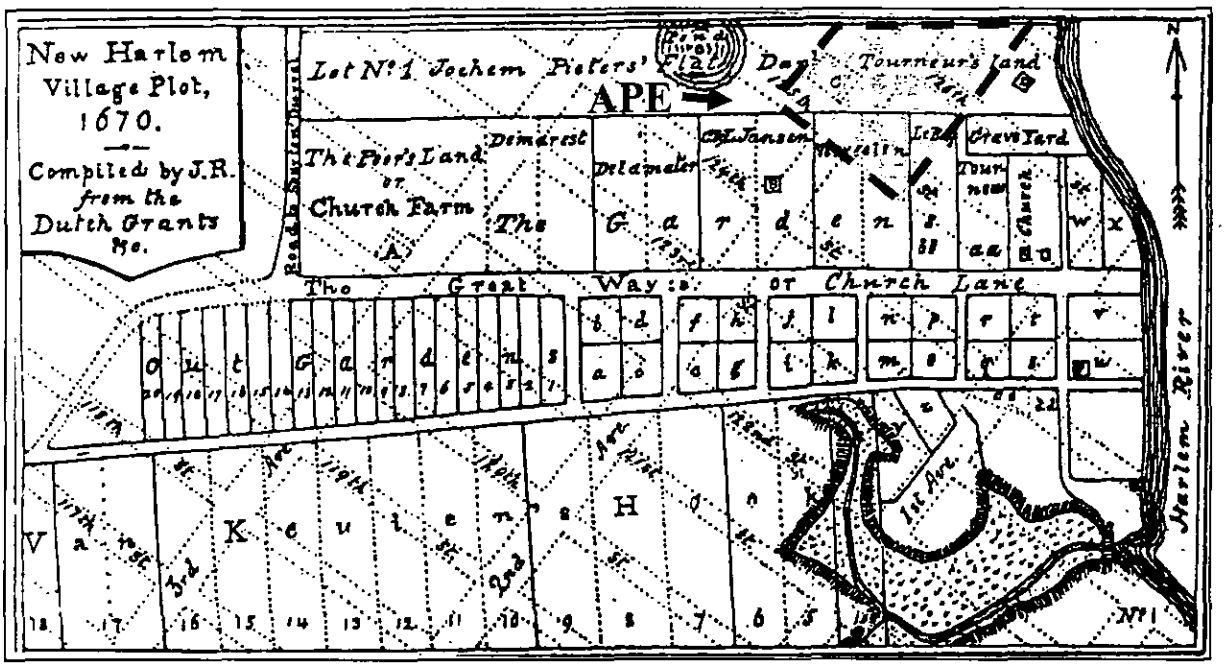


FIGURE 7.7-4

New Harlem Village Plot, 1670.
Second Avenue, East 127th to East 125th Streets.
Romer and Hartman 1981.

Approximate Scale: 3/16 inch= 100 feet

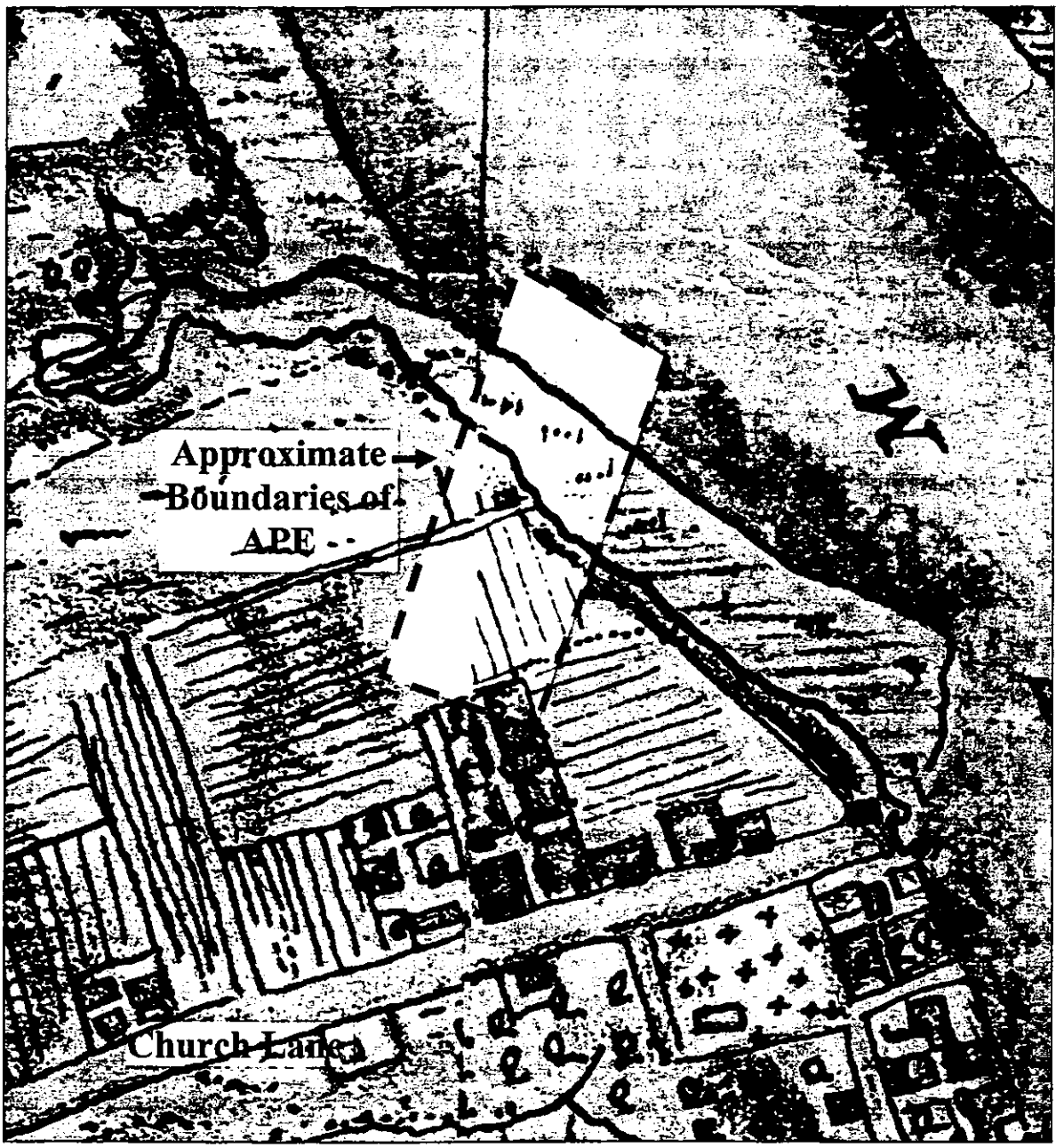


FIGURE 7.7-5

British Headquarters Map.
Second Avenue from the Harlem River to East 125th Street. 1782.

Approximate Scale: 3/8 inch = 100 feet

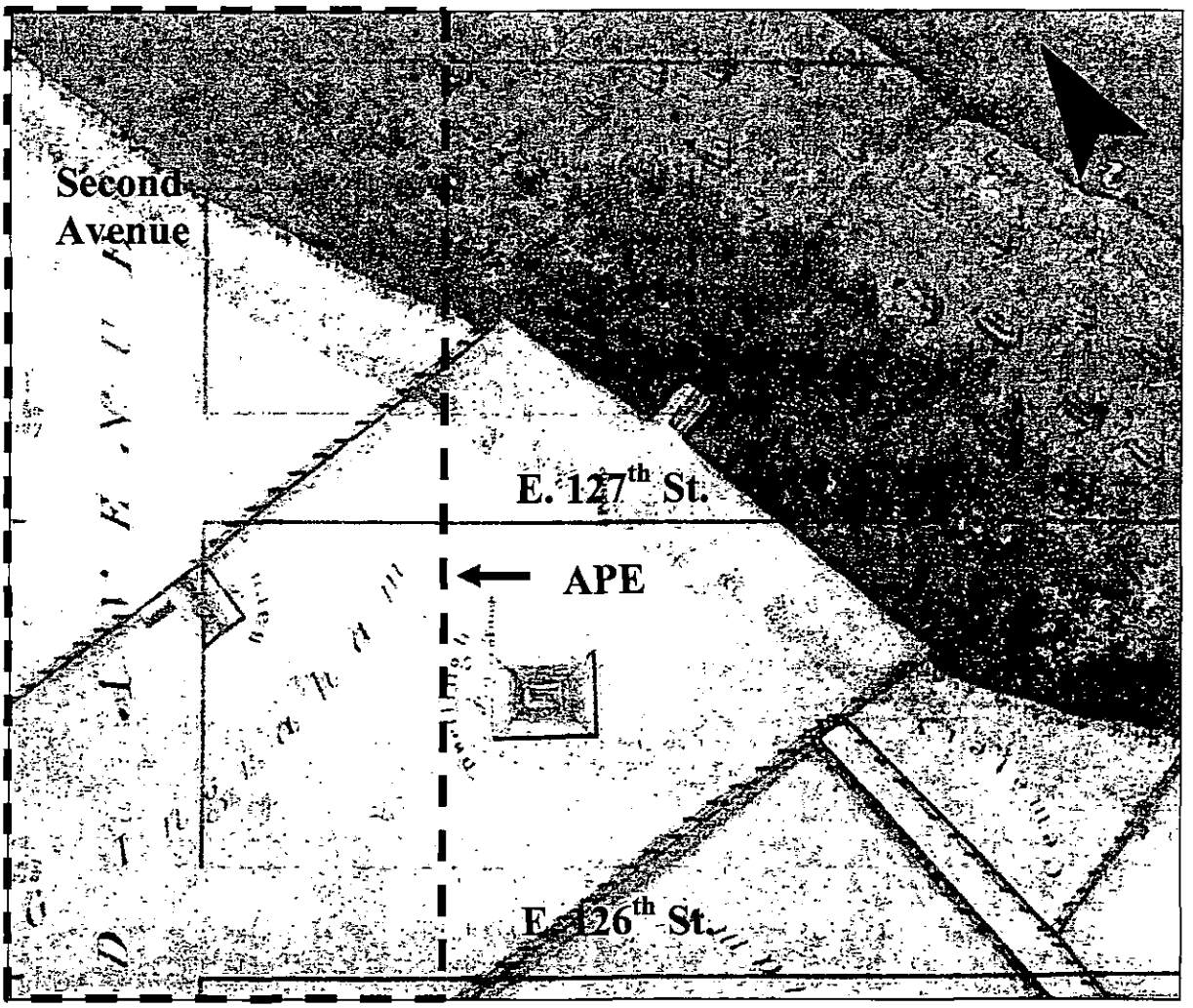


FIGURE 7.7-6

Farm Maps. Ingraham estate. Second Avenue between East 127th and East 126th Streets. Randel 1820.

Approximate Scale: 1 inch = 100 feet

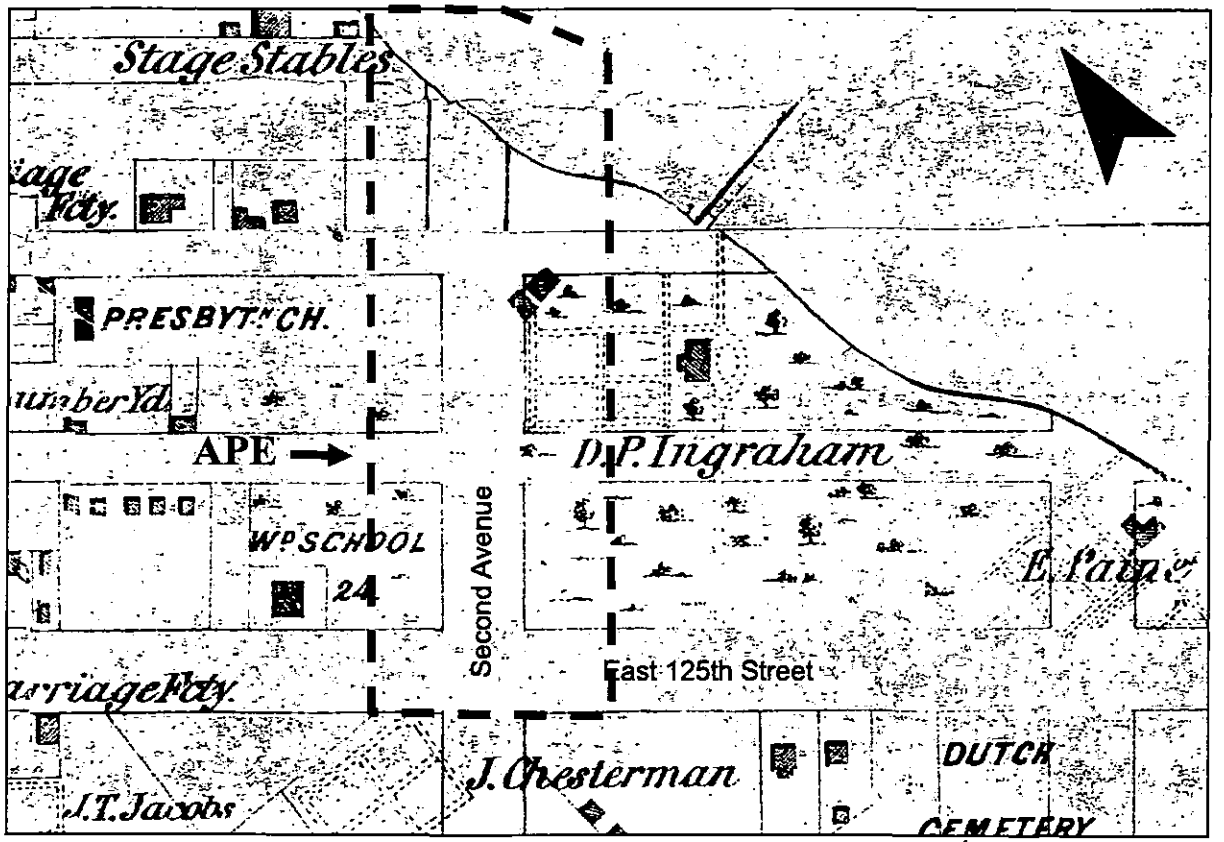


FIGURE 7.7-7

Map of the City of New York Extending Northward to 50th Street.
Second Avenue between East 128th and East 125th Streets. Dripps 1851.

Approximate Scale: ½ inch = 100 feet

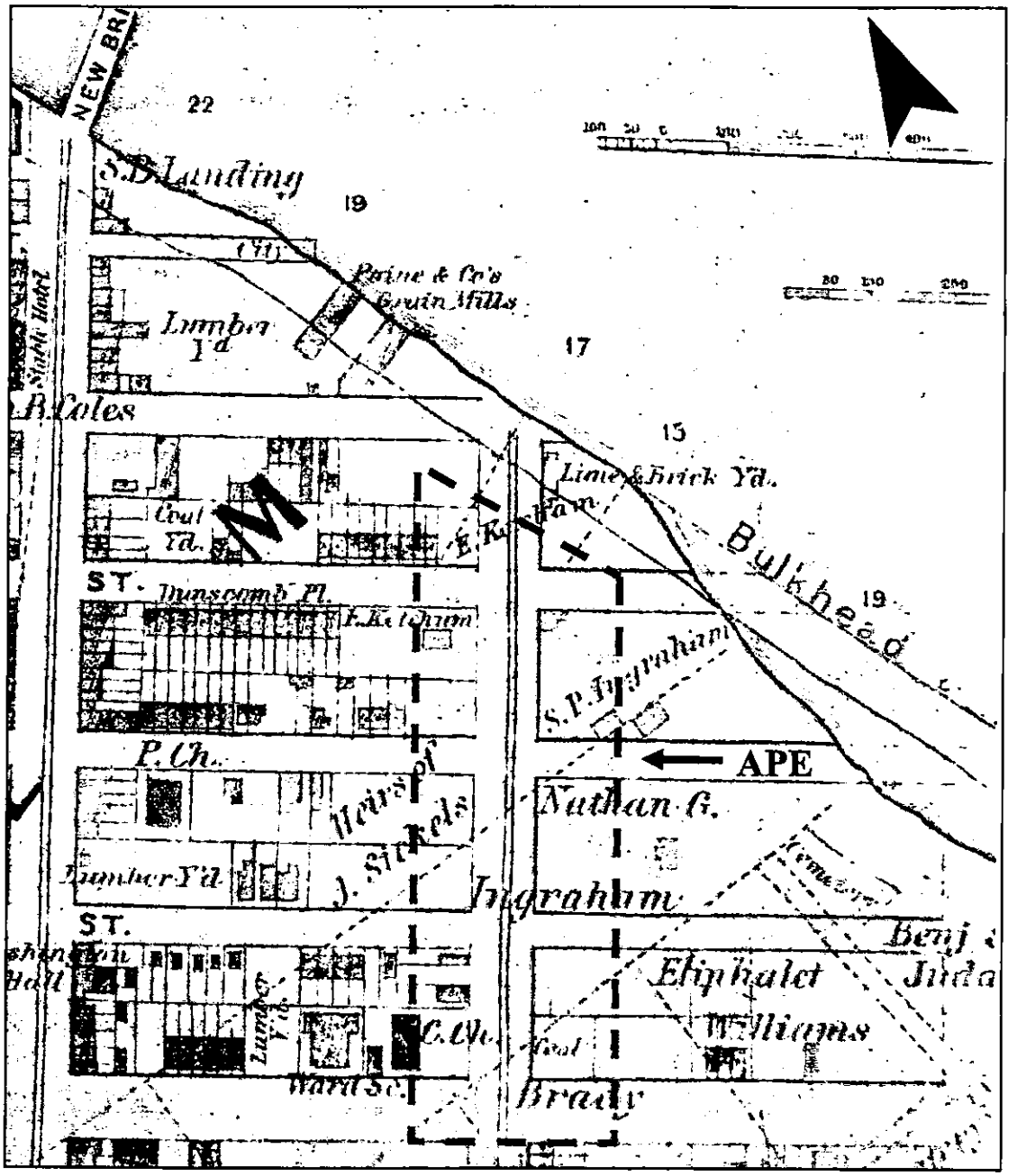


FIGURE 7.7-8

New York City, County, and Vicinity.
Second Avenue Train Yard APE. Dripps 1867.

Approximate Scale: ½ inch = 100 feet

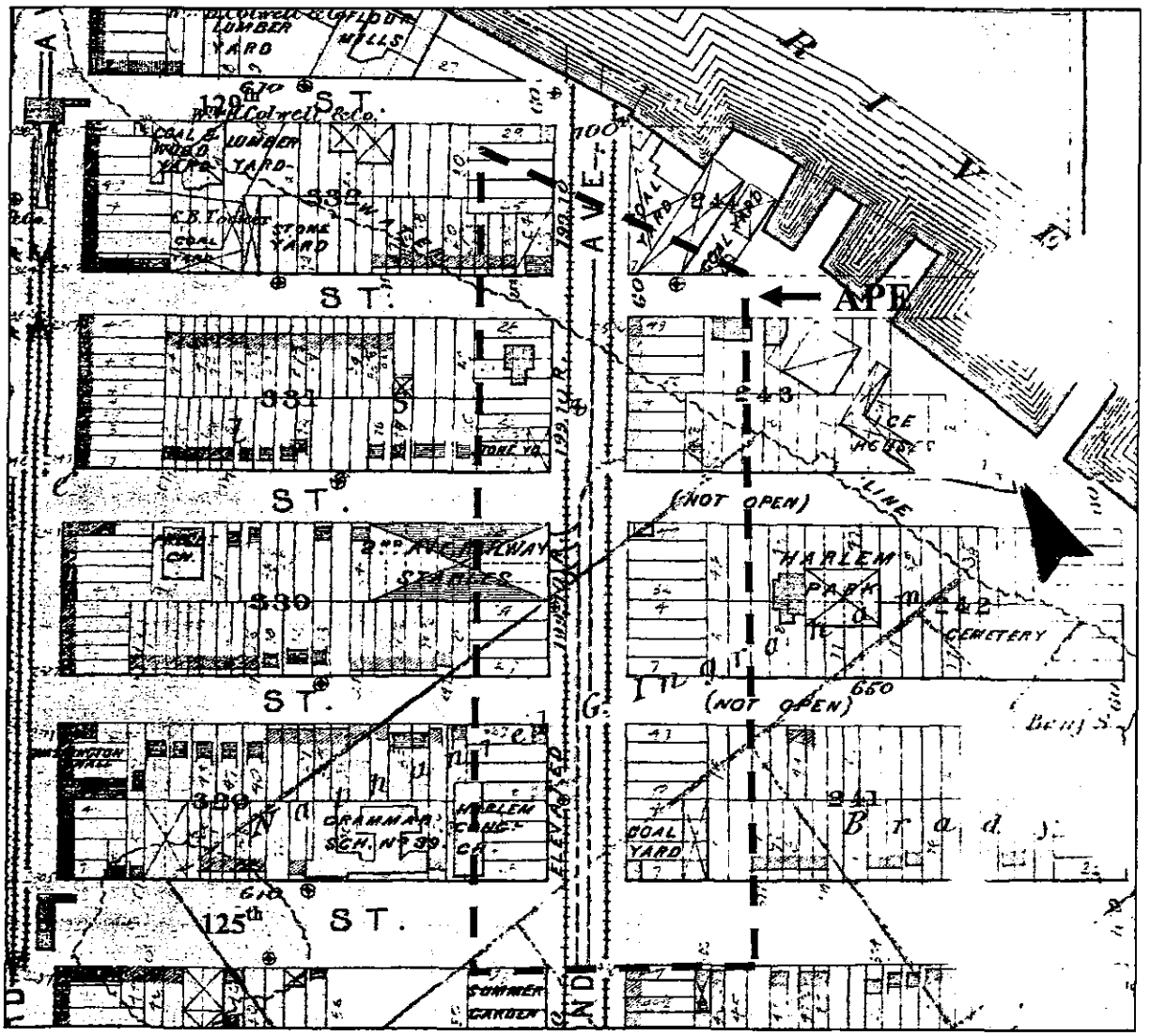


FIGURE 7.7-9

Atlas of the Entire City of New York.
Second Avenue Train Yard,
East 129th Street to East 125th Street. Bromley 1879.

Approximate Scale: ½ inch = 100 feet

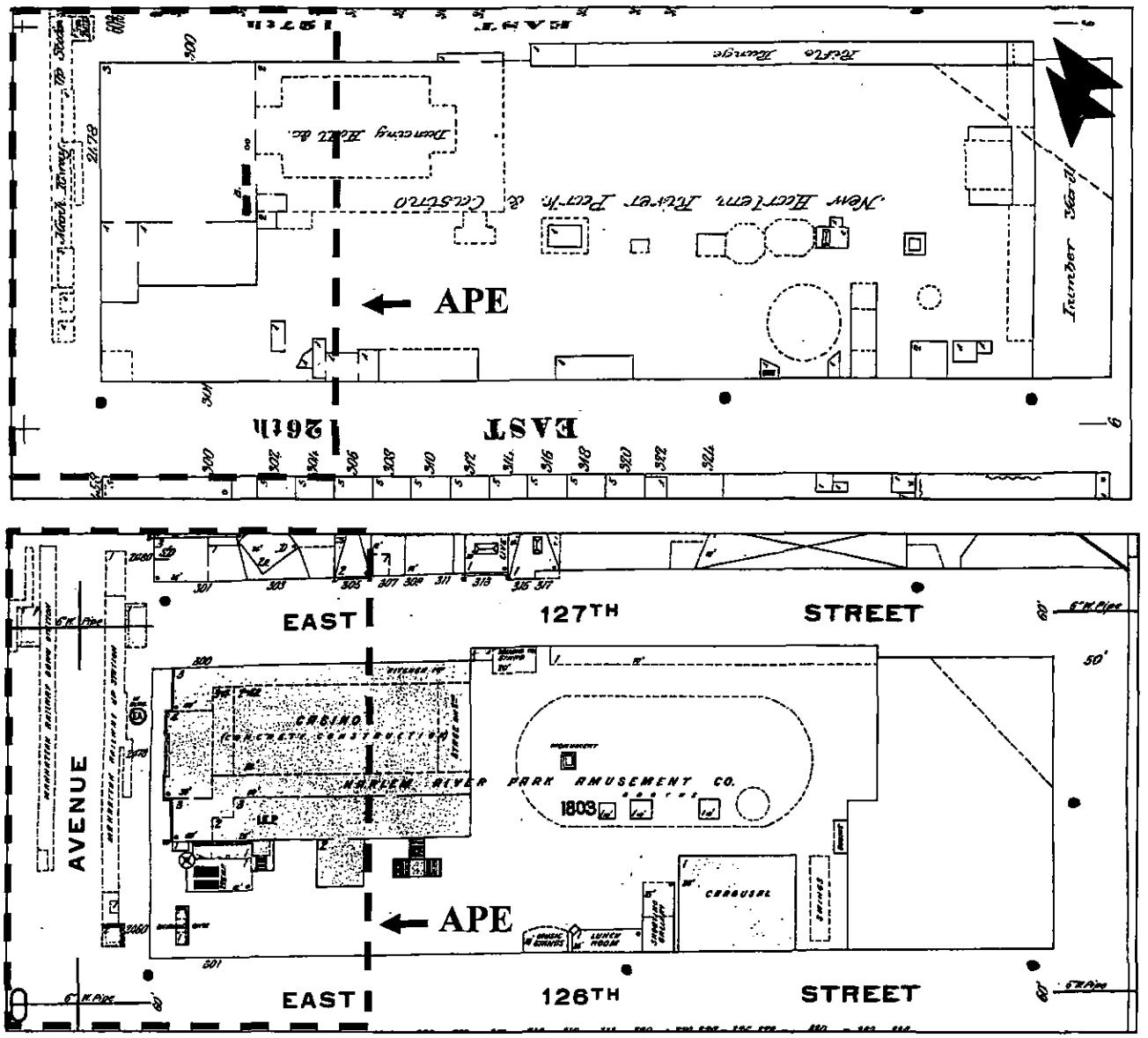


FIGURE 7.7-10

Insurance Maps.
Block 1803. Sanborn 1896 (top), Sanborn 1911 (bottom).

Approximate Scale: one inch = 100 feet

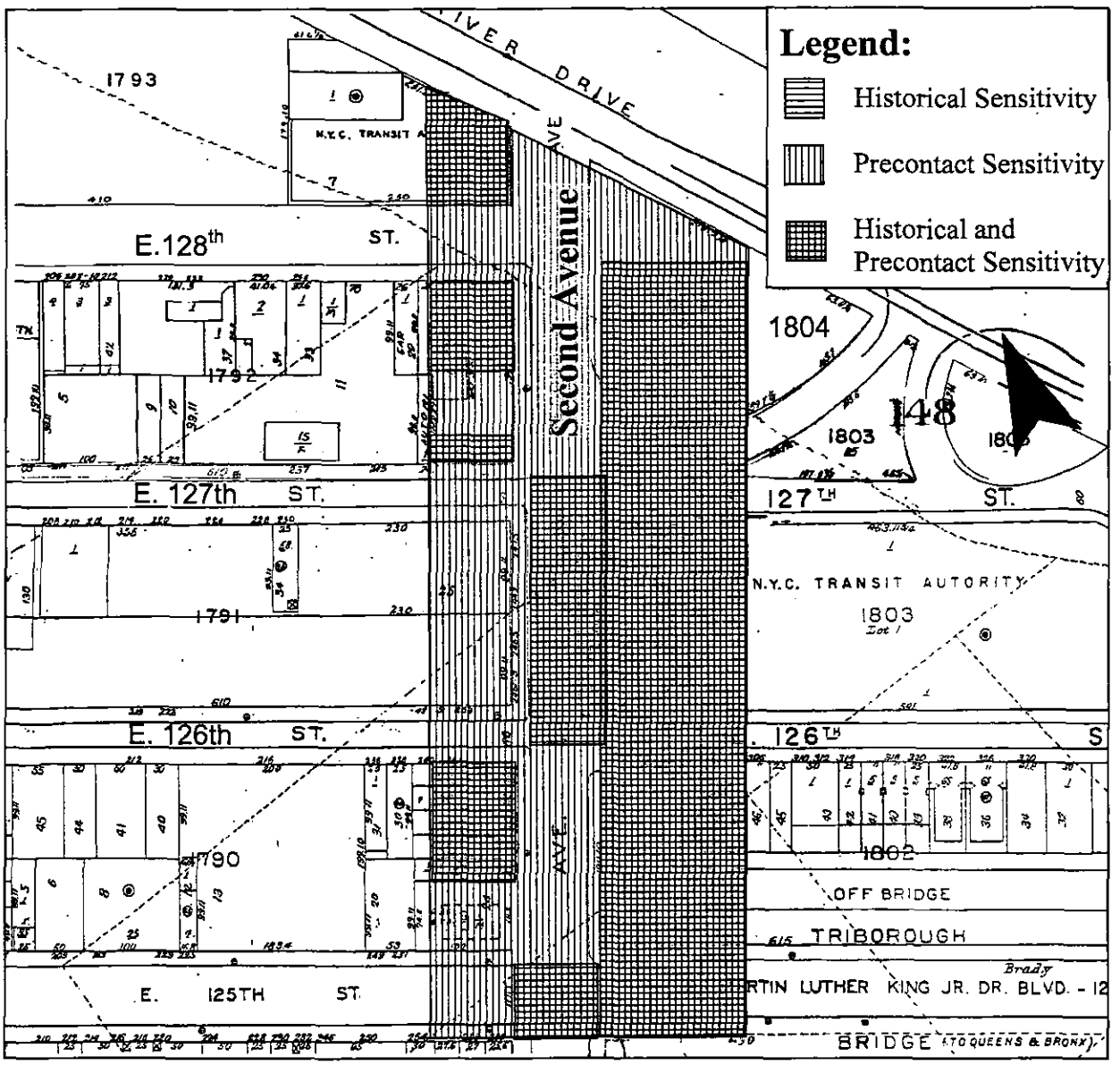


FIGURE 7.7-11

Area of Potential Archaeological Sensitivity.
Second Avenue, Harlem River Drive to East 125th Street.

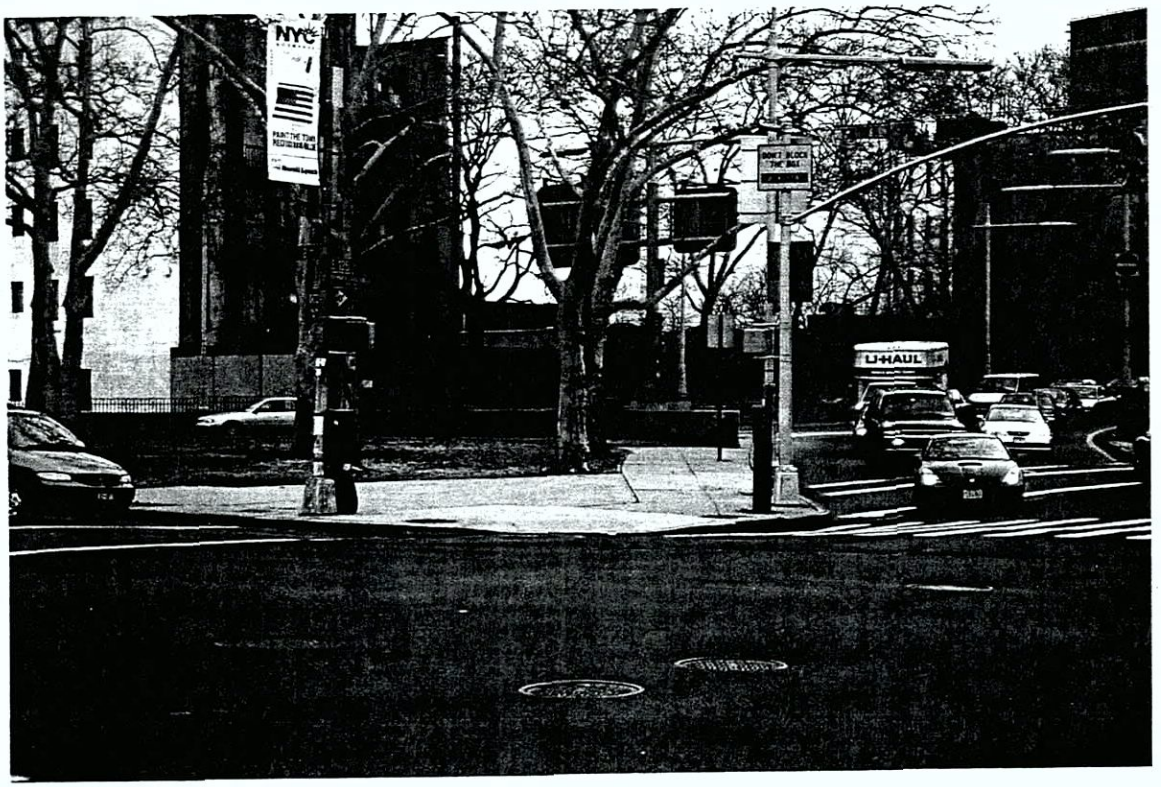
Approximate Scale: ½ inch = 100 feet



Photograph 7.7-1: On the east side of 127th Street at Second Avenue looking north in front of the bus depot.



Photograph 7.7-2: On the corner of East 126th Street and Second Avenue looking north on Second Avenue.



Photograph 7.7-3: Looking northeast on East 125th Street at Second Avenue towards entrance to Triboro Bridge.



Photograph 7.7-4: Looking north on Second Avenue at East 125th Street.



Photograph 7.7-5: On the corner of East 127th Street and Second Avenue looking southeast towards the Bus Depot. Note potential widening of Second Avenue.



Photograph 7.7-6: Looking west on the corner of 128th Street and Second Avenue.

7.7.7 Appendices

7.7.7.1 Documentary Assessment of APE

A cartographic history is provided for the four blocks that have not been addressed in other sections of this report (see Chapters 4.1, 4.2, and 7.5). The lots within these four blocks are:

Block 1804: Lots 1-6, 47-52
Block 1803: Lots 1-6, 47-52
Block 1802: Lots 1-6, 47-52
Block 1790: Lots 22-29

The previously addressed areas are:

Block 1805: Lots 1-2
Block 1793: Lots 21-25 (Currently Lot 1)
Block 1792: Lots 21½ (121)-28½ (128)
Block 1791: Lots 21-25 (Lots 21-24 are currently consolidated with Lot 1)

Cartographic History

Romer and Hartman 1670: This is a map of the "New Harlem Village Plots" (Figure 7.7-4). The road ("The Great Way or Church Lane") shown here veers east from the main route from Lower Manhattan at East 120th Street just west of Third Avenue. The road passes just south of the APE, but the map shows some of the property areas that fall within the APE. There is a row of lots that are labeled "The Gardens." Of these, a portion of one labeled "LeBey" falls within the APE in Block 1802, east of Second Avenue and north of East 125th Street (Figure 4.2-2). Another portion of one falls into the intersection of Second Avenue and East 125th Street, and part of Block 1802. It is labeled "Terveslen"; it encompasses part of the East 125th Street road bed just east and west of Second Avenue within the APE, as well as part of Second Avenue itself. To the north of these lots is the label "Dan'l Tourneur's Land." It is not known how far north this property would have extended; the map ends at the top of Block 1803, but the APE within Block 1803, Block 1790, and the northwest corner of Block 1802 falls within his property. There is a square marked with a dotted line in the southeast corner of Block 1790 (Second Avenue and East 125th Street), with the letter "C." There is also a small square in the middle of Block 1803 with the letter D. The latter is probably a dwelling, and is outside the APE, while the former is possibly a church, and inside the APE. It is not known when this map was made; it is labeled as "Compiled by J.R.

from the Dutch Grants." It was clearly made after 1811 since the street grid is imposed upon it.

British Headquarters 1782: The earliest map to show the Harlem area is this map (Figure 7.7-5). The village of "Haerlem," an early Dutch settlement, was present. A main road of the village (Church Lane) ran approximately from Third Avenue and East 120th Street to east of First Avenue and East 126th Street. Second Avenue, although not formally laid out at this time, would have only run north from the future East 125th Street, as far as East 127th Street. To the north of this point the land was under water. The land in the vicinity of the APE at that time was marsh, open land, and farm fields. Block 1804 would probably have been marsh or partially underwater, while 1803 would have been partially land and partially marsh. Block 1802 would have been entirely dry land. A structure was present in the vicinity of Second Avenue around East 127th Street. It is most likely a farmhouse for the large property that existed in this area. Although it is not named here, it later became the Phoenix (Commissioners' 1811) and then the Ingraham property (Sackersdorf 1815). A lane extends west from the structure, and then south, to connect with Church Lane. This structure is just outside the boundaries of the previously discussed map, so that the two cannot be directly compared.

Commissioners' 1811: This map, showing the street grid for the first time, shows that the proposed Second Avenue route extends almost to East 128th Street, although there is still marshland along the shoreline (Figure 7.7-3). There was an unlabeled structure in the footprint of Second Avenue, within the Second Avenue APE, presumably associated with the Phoenix farm, which covered what is now Block 1803 between East 126th and East 127th Streets east of Second Avenue. The Phoenix farmhouse itself is just east of the APE in Block 1803. The unlabeled structure could certainly be a farmhouse in its own right, however. There is a roadway that leads from the structure to a pond in the footprint of East 125th Street between Third and Second Avenues. This could be the same lane as seen in the British Headquarters 1782 map, and it is possible that this is the same structure as on that map. The rest of the APE is shown as open undeveloped land.

Sackersdorf 1815: The APE within Blocks 1804, 1792, and much of 1791 is shown as part of a large tract (38.0 acres) of open land belonging to the heirs of John Sickels. The East 127th Street road bed also falls within this property, as does a very small portion of the northwest corner of Block 1803. The rest of the APE of Block 1803, along with the northwest part of Block 1802 and the entire Block 1790 APE are part of the property of N.G. Ingraham, with a farmhouse shown on the corner of Second Avenue and East 126th Street, on the southwest corner of Block 1803. The Ingraham farmhouse is

within the APE. However, on Randel 1820 the Ingraham farmhouse is shown in the middle of Block 1803. The southwest corner of Block 1802 and the East 125th Street road bed east of Second Avenue falls into a property owned by William Brady. The Harlem River shoreline touches the northeast corner of the block. The footprint of Second Avenue runs through the property of the "Heirs of John Sickels," N.G. Ingraham, and William Brady (further discussed in Chapter 4.1). The portion of the APE on East 125th Street west of Second Avenue falls in to property owned by N.G. Ingraham and John P. Waldron, which is discussed in more detail in Chapters 4.2 and 4.3. These property lines are still visible on Sanborn 2001.

Randel 1820: This map shows the same property demarcations as Sackersdorf 1815, but the Ingraham farmhouse is shown more clearly (Figure 7.7-6). It is not in exactly the same location as on Sackersdorf however, and it is not clear if it the same structure. The Randel map is probably more accurate in regards to building locations, as it is a contemporaneous map, whereas the Sackersdorf map was compiled some decades often the time it depicts. The main dwelling for the farm of Nathaniel G. Ingraham is shown in the middle of Block 1803, just outside the APE. However, a barn associated with this farm is shown on the border of Second Avenue and the northwest corner of Block 1803, between East 127th and East 126th Streets. This outbuilding consists of a large main building with a second smaller structure connected to it, and is labeled "Barn." Two water pumps are shown on the property, both outside the APE. One is next to the dwelling, and the other is north, located nearer the shoreline. No other structures are shown within the APE.

Farm Map #40A 1823/1869: This map was drawn to shown the land division among the heirs of John Sickels. All of the Sickels land has been subdivided into smaller lots. This includes three lots within the APE of Block 1803 (the rest of the block is still underwater), and lots on Blocks 1792 and 1791. The land that was previously labeled as belonging to Ingraham is now labeled as belonging to the "Devisees of Dan. Phoenix," but has not yet been divided into building lots. This unapportioned land is located on Blocks 1803, part of 1802, and the eastern half of 1790. No structures are shown on this map.

Colton 1836: A farm (presumably the Ingraham estate) is shown directly bordering Second Avenue on the east, between East 126th and 128th Streets (Blocks 1803 and 1804) and also covering the future East 126th and 127th Street road beds east of Second Avenue, which is not yet open. It is a very large estate with a formal layout. A house is shown in the same location as in Randel 1820, so it is just outside the APE. Outbuildings are not shown, but see Dripps

1851. Interestingly, more land is shown on the north of this property then it does in 1851.

Dripps 1851: Second Avenue does not appear to be regulated and open north of East 127th Street. Only a small portion of the southwestern corner of Block 1804 is fast land; the rest of the block is underwater. The only buildings within the APE are buildings associated with the Ingraham farm/estate (Figure 7.7-7), which are shown directly bordering the east side of Second Avenue between East 127th and 126th Streets (Block 1803). This is the same estate as shown in Randel 1820 and Colton 1836. It is labeled D.P. Ingraham. There are two associated outbuildings at the northwest corner of Block 1803, at Second Avenue and East 127th Street, falling within the Second Avenue footprint and the APE. These may be the same outbuildings as seen in Randel 1820.

Dripps 1863: No details are noted on this map, except for trolley lines running on Second and Third Avenues.

Viele 1865: Second Avenue prior to development is depicted as open meadow almost as far north as East 128th Street. From this point north, the APE is land under water. There is a small ridge running northwest to southeast running across Second Avenue near East 127th and East 128th Streets, with the down slope facing towards the river. No water pipes are shown running on Second Avenue.

Dripps 1867: Second Avenue is open and shown connecting with East 129th Street, which runs west of this point (Figure 7.7-8). A railway line (possibly elevated) is shown on Second Avenue. Old property lines are noted, and Second Avenue passes through property that belonged (and in some cases still belongs) to several owners. From the north, John B. Coles, E. Ketcham, the heirs of J. Sickels, S.P. Ingraham, and Brady.

Block 1804

Two structures are shown within the APE, and another one is just bordering the APE and may be partially within it. There are two structures along the old property line dividing the Sickels and the Ingraham properties. One, labeled S.P. Ingraham, is on the Sickels side, the other is on the N.G. Ingraham side. The former is seen again in later maps (Bromley 1879). According to tax records from 1869, S.P. Ingraham and D.P. Ingraham each had a house on Block 1804 (east of Second Avenue between East 127th and East 128th Streets). The block is not divided into lots at this time; however, future maps show that the first building was on Lots 4½-5, while the second was approximately on Lots 5-6. There is another structure in the northwest corner of the block.

Block 1803

The property and house belonging to Nathan G. Ingraham are still shown on Block 1803, although the outbuildings on Second

Avenue do not appear to be present. Therefore there are no structures within the APE at this time.

Block 1802
There is a coal yard in the southwest corner of the block within the APE, but no structures are indicated.

Block 1790
There is a large building labeled "C. Ch." which is presumably a church, and two other buildings in the northeast corner of the block within the APE.

Viele 1874: This is similar to Viele 1865, although Second Avenue is only shown extending northwards to just below East 128th Street. There is a knoll shown on the eastern half of Block 1790 bordering the pond.

Bromley 1879: Tracks for both the elevated railway and a trolley line are shown on Second Avenue (Figure 7.7-9). There are connecting tracks from the trolley line to the railway stables on Block 1791. East 127th Street and East 126th Street east of Second Avenue are not open. There are hydrants located East 129th Street east of Second Avenue, and on Second Avenue next to Block 1792, 1791, and 1790.

Block 1804 (243)
There are ten structures within the APE; eight of these are small buildings fronting Second Avenue on Lots 1-4 and 49-52. Of the other two, one is on Lots 4½-5 and is probably the same building shown in Dripps 1867 (Ingraham) and the other is on Lots 47-48.

Block 1803 (242)
There is one structure within the APE on Lot 49. The Ingraham house, outside the APE, is still present, and the area around it is undeveloped. It is now labeled "Harlem Park," however, and is presumably no longer a working estate. This is the last appearance of this structure on a map. East of Harlem Park, also outside the APE by several hundred feet, is a cemetery.

Block 1802 (241)
There are two structures within the APE, both associated with a coal yard that occupies Lots 1-4. There is a small structure on Lot 1, and a stable that takes up the rear of Lots 1-4.

Block 1790 (329)
There are three structures within the APE. One is the Harlem Congregational Church, which just borders the western end of the APE. This is a large brick building which covers part of five lots,

Lots 22-26. There are also two other smaller structures, one on Lot 26 and one on Lot 29.

Robinson 1885: The blocks within the APE are more developed than in they were in 1879. Trolley and elevated railroad lines are present on Second Avenue. There is an elevated station at the intersection of Second Avenue and East 127th Street, but the actual demarcation of the station is not shown. There is an additional hydrant present on Second Avenue near East 127th Street.

Block 1804

Lots 1-4 An additional lot has been created out of these four lots, Lot 3½. Lot 1 contains a frame building, and Lots 2-4 contain brick buildings. Each has an open rear yard.

Lots 4½-6 Lots 4½-5 contain presumably the same building as seen in 1879 (Bromley), as this building is set at an angle to the street. It is a frame building straddling both lots, with a large open space in the rear. Lot 6 is vacant.

Lots 47-48 Each lot contains a small frame building with a large amount of open yard in the rear.

Lots 49-52 An additional lot has been created out of these four lots, Lot 51½. Each of the five lots contains a brick building with an open rear yard. Lots 49-50 also each contain a small frame building in the back of the lot (see Perris 1893 and Bromley 1897 which shows these two buildings on a new lot, designated Lot 48½).

Block 1803

Lots 1-6 These lots are still undeveloped.

Lots 47-48 A large frame building has been constructed that covers Lots 40-48. There is only a very small amount of open space in the rear of these lots.

Lots 49-52 These lots contain a brick building which spans all four lots. There is no open space on any of the lots.

Block 1802

Lots 1-4 These lots still contain the coal yard present in 1879 (Bromley). Three frame buildings, including two stables, surround an open courtyard.

Lots 5-6 These lots are still undeveloped.

Lots 47-48 These lots are still undeveloped.

Lots 49-52 These lots each contain a large stone building, with a small open space in the rear yard.

Block 1790

Lots 22-25 The church is no longer present on these lots. Each of the five lots (there is a Lot 23½) contains a stone building. All the buildings except the one on Lot 25 front onto East 125th Street.

Lots 26-29 Lot 26 contains a small brick building in the rear of the lot; the rest of the lot is open. Lot 27 contains a medium brick building with an open yard in the rear. Lot 28 is undeveloped. Lot 29 has a frame building with a large rear yard.

Perris 1893: The elevated railway station is shown here at the intersection of Second Avenue and East 127th Street. The two platforms are labeled "M.R.R. Up Station" and "M.R.R. Down Station." The northernmost portion of the downtown station (probably the stairs) is very close to the southeast corner of Block 1792. The uptown station is adjacent to Block 1803. There are six-inch sewer lines on all of the side streets, and a 20-inch and six-inch pipe on East 125th Street.

Block 1804

Lots 1-4 These appear identical to those in Robinson 1885. The building on Lot 1 is a three-story frame building and Lot 2 is a three-story brick building; both have stores underneath. Lots 3, 3½, and 4 all contain four-story brick buildings. All of these lots have open back yards.

Lots 4½-6 Lots 4½-5 contains the same building shown in Robinson 1885, and it is now depicted as a three-story frame building. There are also two small buildings in the rear of these lots, one of which is classified as a level one hazard. On Lot 6 is a brick stable, possibly associated with a coal and wood yard on the neighboring lots, outside of the APE. The stable covers nearly the entire lot.

Lots 47-48½ Although lot numbers are not given on this map, a new lot has been created out of the rear of Lots 49-52, now numbered Lot 48½. The two frame buildings at the rear of Lots 49-50 are now located within this lot. They are connected, the front being two stories and the rear one story. It is a commercial establishment. Lots 47-48 are part of a larger frame building, a kindling wood factory. There is a large amount of open space in the back of both of these buildings.

Lots 49-52 Each of the five lots contains a four-story brick building with rear yard. Each contains a store on the ground level except for the buildings on Lots 50 and 52.

Block 1803

The entire block is the Harlem River Park. As lots are not demarcated here, lots are approximate.

Lots 1-6 Lot 1 contains a small frame building. Lots 2 and 3 are open. Lot 4 contains a frame building and a brick building that also spans Lot 52. Lots 5 and 6 are open.
Lots 47-48 A large two-story frame building which spans a number of lots extending out of the APE takes up much of Lots 47 and 48. It is labeled "Dancing Hall &c." There is also a small frame building in the rear of these lots.
Lots 49-52 These lots contain a three-story brick building which spans all four lots. There is no open space on any of the lots. Lot 52 may also contain part of the buildings described for Lot 4. These buildings are contiguous to each other.

Block 1802
Apartment buildings have been constructed on the western half of the block.
Lots 1-6 The coal yard on Lots 1-4 is no longer present. There are five-story brick apartment buildings on each of the lots, and all front onto East 125th Street and have stores on the ground floor. All have open rear yards except for that on Lot 1, which has only a very small amount of open space, and the lots now run north-south lengthwise.
Lots 47-48 There is a five-story brick apartment building on each lot. The building on Lot 48 has a store underneath. Both lots contain an open rear yard.
Lots 49-52 Same as Robinson 1885. Each of the four lots contains a five-story stone-fronted apartment building. All have stores underneath, and all have small rear yards.

Block 1790
Lots 22-25 Same as Robinson 1885. Each of the five lots has five story buildings with stores underneath.
Lots 26-29 Same as Robinson 1885. The brick building on the rear of Lot 26 is two stories. The building on Lot 27 has three stories in the front, two in the rear, and has a store on the ground floor. The frame building on Lot 29 has three stories and has a store underneath. Lot 28 is still vacant.

Bromley 1897: This atlas is very similar to Perris 1893, but basements are indicated on this map.

Block 1804
None of the buildings within the APE are indicated as having basements.
Lots 1-6 There is an additional one-story frame building on Lot 1. The building on the diagonal previously noted as being on Lots 4½-5 now appears to be on 4½ and the rear of Lots 1 and 2. Lot 5 is shown as vacant.

Block 1803
The entire block is still the Harlem River Park and is additionally labeled as a casino. None of the buildings within the APE are indicated as having basements.
Lots 1-6 There is no structure indicated on Lot 1 as there was in Perris 1893.

Block 1802
None of the buildings within the APE are indicated as having basements.

Block 1790
None of the buildings within the APE are indicated as having basements.

Bromley 1911: The majority of the buildings within the APE remain unchanged from Bromley 1896, except as noted.

Block 1804
Lots 1-6 There is a small frame stable on Lot 5.
Lots 47-48½ The frame building on Lot 48½ has been enlarged.
Lots 49-52 There is a frame extension in the rear of the building on Lot 49. The entire lot is now covered.

Block 1803
The entire block is Sulzer's Harlem Casino and Garden. As lots are not demarcated here, lots are approximate.
Lots 1-6 All but Lot 4 appear to be empty.
Lots 47-52 A large two and three-story brick building covers all of these lots, and additionally Lot 4, plus several lots outside of the APE. This is the main building of the casino.

Block 1802
The APE is unchanged from Bromley 1896.

Block 1790
Lots 22-25 The APE is unchanged from Bromley 1896.
Lots 26-29 Lot 26 no longer contains the small brick building at the rear of the lot, but now contains a six-story brick building that covers much of the lot, with a small open yard in the rear. Lot 27 contains a frame building in the rear of the lot in addition to the brick building in the front. Lot 28 contains a five-story brick building that covers much of the lot. Lot 29 has a brick building in the rear of the lot in addition to the frame structure at the front.

Sanborn 1911: The APE is similar to that of Bromley 1911. This atlas indicates that basements are present in many of the structures within the APE, although previous and subsequent maps show that this is not

the case. There is additional and slightly different information than Bromley 1911, which is indicated below.

Block 1804
Lots 1-4 The building on Lot 2 has a cornice maker on the first floor, and the building on Lot 4 has offices in addition to it being a dwelling.
Lots 47-48½ This is still a kindling wood factory; there are some shed-type structures in the rear of the buildings.
Lots 49-52 There is a one-story structure behind the buildings on Lots 49-50 which is labeled "Marble Works."

Block 1803
The entire block is labeled Harlem River Park Amusement Co. The casino is still a large building in the northwest corner of the block, although it is shown here slightly set back from Second Avenue. There is a separate entrance gate in the southwest corner of the block, and a boiler house between the entrance gate and the casino.

Block 1802
The APE is the same as that of Bromley 1911.

Block 1790
Lots 26-29 The one-story frame building on the rear of Lot 27 is labeled a shed, and the building on Lot 29 is labeled as a club.

Hyde 1913: The APE is unchanged from Bromley 1911. Sewer lines are labeled as six-inch pipes on East 128th, 127th, 126th, and 125th Streets. There is additionally a 15" pipe on East 128th Street west of Second Avenue, 4' x 2'8" brick pipe on East 126th Street west of Second Avenue, and 3'6" x 2' brick east of Second Avenue. On East 125th Street there is also a 4' x 2'8" pipe. On Second Avenue there are 12" and 15" pipes. There is an additional hydrant on East 127th Street near Second Avenue. Stairs to the elevated station are shown on the sidewalk of Second Avenue near East 127th Street, and part of the elevated station is shown extending into East 127th Street from Second Avenue.

Bromley 1916: The APE is unchanged from Bromley 1911, except for the following.

Block 1804
Lots 49-52 The structures in the rear of Lots 49-50 are no longer present, although the apartment buildings in the front are still present.

Bromley 1925: The APE of Blocks 1802 and 1790 are unchanged from Bromley 1916, but there are major changes on Blocks 1804 and 1803.

Block 1804

Lots 1-4, 49-52 All structures on these lots have been demolished.

Lots 4½-6 The building on the diagonal on Lot 4½ is not present; however, it appears on subsequent maps, so this is either an error or it was razed and then replaced. The small frame stable on Lot 5 and the large brick stable on Lot 6 are still present.

Lots 47-48 The kindling yard and associated structures are still present.

Block 1803

The Harlem River Park and Casino is no longer present and has been replaced by the "International Film Co. Moving Picture Studio." Much of the block is occupied by a group of contiguous buildings. It appears that the three-story building in the northwest corner of the block is the same one that previously housed the casino. All lots within the APE are covered by buildings. There is a tank in the southwest corner of the block.

Bromley 1930: The APE is very similar to Bromley 1925, except for the following.

Block 1804

Lots 1-6 The building on the diagonal on Lot 4½ reappears. This building partially extends into Lot 1.

Block 1803

The movie studio is now labeled "Metro-Goldwyn-Mayer Corp. Moving Picture Studio." The buildings remain the same.

Bromley 1934: The APE is unchanged for Blocks 1804, 1803, and 1790 from Bromley 1925. Block 1802 has undergone major changes.

Block 1802

Construction of the entrance ramp to the Triborough Bridge has resulted in the demolition of much of Block 1802. Of the lots within the APE, only the buildings within Lots 47-48 remain. The demolished areas are now covered by road bed.

Sanborn 1939: The APE is somewhat changed from Bromley 1934, and this atlas also provides additional information on some of the structures.

Block 1804

Lots 1-4, 49-52 (now all Lot 1) The empty lots on the western end of the block are labeled as holding "Piles of Cord Wood" from the kindling wood factory.

Block 1803

The movie studio is now the "George Wittgold Inc. M'f'g Exhibits." The buildings within the APE remain the same. The main building, formerly the casino, is noted as having been built in 1908 and remodeled in 1924.

Block 1802
The APE remains unchanged from Bromley 1934.

Block 1790
Lots 22-25 The building on Lot 22 is no longer present.
Lots 26-29 The building on Lot 27 is no longer present. The building on Lot 29 is labeled "Junk."

Sanborn 1951: Major changes have occurred within the APE.

Block 1804
Lots 4½-6 All buildings on these three lots are no longer present.
Lots 47-48 The kindling wood factory on Lots 47-48 is no longer present, although much of the western end of the block is still labeled as holding cord wood.

Block 1803
The previous buildings that took up much of the block are no longer present, and have been replaced by a bus depot. This is a one-story brick building, built in 1947. It takes up the entire block. It is labeled "Third Avenue Transit Corp. 2nd Ave. Bus Garage." This building is set well back from Second Avenue, approximately 75', making it somewhat parallel to Block 1802, which was truncated when the Triborough Bridge construction was done.

Block 1802
The APE remains unchanged from Bromley 1934.

Block 1790
Lots 22-25 A building has been constructed on previously vacant Lot 22; it is a one-story commercial building that covers the entire lot. The buildings on Lots 23-23½ are partially vacant and boarded up.
Lots 26-29 The building on Lot 29 has been replaced with a one-story commercial building that covers the entire lot. Lot 27 is still vacant.

Bromley 1955: This atlas is similar to Sanborn 1951 with a few differences.

Block 1804
This block is now completely empty to make way for an extension to the Harlem River Drive. The block is now labeled "Former Block 1804, Lot 1."

Block 1803
The APE remains unchanged from Sanborn 1951.

Block 1802
The APE remains unchanged from Bromley 1934.

Block 1790

Lots 22-25 The building on Lot 22 is labeled as a garage. The buildings on Lots 23, 23½, and 24 have been demolished; the lots are now empty. Lot 23½ has been renumbered 123.

Lots 26-29 A garage has been built on Lot 27. It appears to cover the entire lot.

Bromley 1967: There are some changes from Bromley 1955.

Block 1804

This block is now covered by ramps to the Harlem River Drive. It has been numerically consolidated with Blocks 1805 and 1803, and is now known as Block 1803, although the block to the south is still separate and labeled Block 1803.

Block 1803

The APE remains unchanged from Sanborn 1951, although the building is now labeled "N.Y.C. Transit Authority."

Block 1802

The APE remains unchanged from Bromley 1934.

Block 1790

Lots 22-25 Lots 23, 23½ (123), and 24 have been consolidated numerically into Lot 24. It is still vacant.

Lots 26-29 The garage on Lot 27 is a one-story brick building covering the entire lot.

Bromley 1974: The APE is unchanged from Bromley 1967 in Blocks 1804, 1803 and 1802.

Block 1790

Lots 22-25 The building on Lot 22 has been demolished, and the lot consolidated numerically with Lot 24. There is a one-story brick building on this lot, labeled gas station. Much of this now much larger lot is open. The building is in the northwest corner of the lot, on approximately the rear of former Lots 22-23.

Lots 26-29 The building on Lot 28 has been demolished, and the lot is vacant.

Sanborn 1984-85: The APE is unchanged from Bromley 1967 in Blocks 1803 and 1802.

Block 1804

There is a small one-story building between the ramps leading to the Harlem River Drive. Although there is no labeling, a park now exists here, and this building is probably associated with the park. The building is approximately in the location of former Lot 50 or 51.

Block 1790
Lots 24-25 The gas station on Lot 24 appears to have been extended to behind Lot 25, which now appears to be vacant.
Lots 26-29 The buildings on Lots 26 and 29 have been demolished. Lot 26 is vacant, and Lots 28-29 are labeled "Parking."

Sanborn 1990-91: The APE is unchanged from Sanborn 1984-85 except for Block 1790.

Block 1790
Lots 24-25 The gas station on Lot 24 is now squarely on the middle of the lot. This is approximately the location of former Lots 23-23½. There is still a one-story building behind Lot 25, which is still vacant.

Sanborn 2001: The APE is unchanged from Sanborn 1984-85 except for Block 1790.

Block 1790
Lots 26-29 The building on Lot 27 has been demolished.

Street Elevation Table:

Data Source:	Second Ave. x E. 128th St.	Second Ave. x E. 127th St.	Second Ave. x E. 126th St.	Second Ave. x E. 125th St.
1885 Robinson	7.11	10.11	12.3	10.3
1897 Bromley	7.92	10.08	12.25	10.25
1934 Bromley	7.9	10.0	12.2	10.2
1967 Bromley	-	10.0	12.2	10.2
2001 Sanborn	-	10.0	12.2	10.2

Tax and Directory Table:

Blocks 1805, 1804, 1803, 1802 (East of Second Avenue)
Blocks 1793, 1792, 1791, 1790 (West of Second Avenue)

LOCATION **BLOCK 1804** (old block 243)	LOT	1844	1858	1869	house, no. of stories	1876	house, no. of stories
	1	no information	D.P. Ingraham	D.P. Ingraham	2½	D.P. Ingraham	
	2		Sydney Ingraham	S.P. Ingraham	2	S.P. Ingraham	2
	3		(only lots 1 and 2 are listed)	(only lots 1 and 2 are listed)		S.P. Ingraham	
	3½					lot not listed	
	4					S.P. Ingraham	
	4½					lot not listed	

	5					D.P. Ingraham	
	6					D.P. Ingraham	
	47					S.P. Ingraham	
	48					S.P. Ingraham	
	49					S.P. Ingraham	
	50					S.P. Ingraham	
	51					S.P. Ingraham	
	51½					S.P. Ingraham	
	52					S.P. Ingraham	
BLOCK 1803 (old block 242)							
	1	D.P. Ingraham	Daniel P. Ingraham	D.P. Ingraham	2½	D.P. Ingraham	2½
	2	D.P. Ingraham	? (rest of lots not listed)	(Lot 1 is 199' x 422'= most of block)	sheds &c	D.P. Ingraham	sheds
	3	D.P. Ingraham				D.P. Ingraham	
	4	D.P. Ingraham				D.P. Ingraham	
	5	D.P. Ingraham				D.P. Ingraham	
	6	D.P. Ingraham				D.P. Ingraham	
	47	D.P. Ingraham				D.P. Ingraham	
	48	D.P. Ingraham				D.P. Ingraham	
	49	D.P. Ingraham				D.P. Ingraham	
	50	D.P. Ingraham				D.P. Ingraham	
	51	D.P. Ingraham				D.P. Ingraham	
	52	D.P. Ingraham				D.P. Ingraham	
BLOCK 1802 (old block 241)						D.P. Ingraham	
	1	James Chesterman	Est. James Chesterman	coal yard/J.O.J. Woods		J.J. Wood	shed
	2	James Chesterman	Est. James Chesterman	coal yard/J.O.J. Woods		J.J. Wood	
	3	James Chesterman	Est. James Chesterman	coal yard/J.O.J. Woods		J.J. Wood	
	4	James Chesterman	Est. James Chesterman	coal yard/J.O.J. Woods		J.J. Wood	
	5	James Chesterman	Est. James Chesterman	M. Stoddard/ J.O.J. Woods		J.J. Wood	
	6	James Chesterman	Est. James Chesterman	M. Stoddard/ J.O.J. Woods		J.J. Wood	

	47	William Ingraham?	Daniel P. Ingraham (stable)	D.P. Ingraham		D.P. Ingraham	
	48	William Ingraham?	Daniel P. Ingraham (stable)	D.P. Ingraham		D.P. Ingraham	
	49	William Ingraham?	Daniel P. Ingraham (stable)	D.P. Ingraham		D.P. Ingraham	
	50	William Ingraham?	Daniel P. Ingraham (stable)	D.P. Ingraham		D.P. Ingraham	
	51	William Ingraham?	Daniel P. Ingraham (stable)	D.P. Ingraham		D.P. Ingraham	
	52	William Ingraham?	Daniel P. Ingraham (stable)	D.P. Ingraham		D.P. Ingraham	
BLOCK 1790 (old block 329)							
	22	Elizabeth Ingraham	William S. Ingraham	missing information		missing information	
	23	Elizabeth Ingraham	William S. Ingraham	missing information		missing information	
	23½	Elizabeth Ingraham	William S. Ingraham	missing information		missing information	
	24	Elizabeth Ingraham	William S. Ingraham	missing information		missing information	
	25	Elizabeth Ingraham	William S. Ingraham	missing information		missing information	
	26	Elizabeth Ingraham	William S. Ingraham	missing information		Edgar Ketchum	
	27	Elizabeth Ingraham	William S. Ingraham	missing information		Thomas Owens	3
	28	Elizabeth Ingraham	William S. Ingraham	missing information		J.O. Brown	
	29	Elizabeth Ingraham	William S. Ingraham	missing information		John Mickels	2

Precontact Sensitivity

The northern end of Second Avenue, north of approximately East 127th to 128th Streets, was land under water until the 1860's, but earlier precontact water levels were probably lower than they are today. Therefore, while south of East 127th Street the APE was quite close to shoreline in the late precontact period, it is quite possible that the area was further inland in the early precontact period. The sections of Second Avenue that were depicted as land on the historical maps and atlases were meadowland in the late precontact period, with a marshy area along the shoreline to the north. As such, it may have been conducive to precontact living, providing a rich habitat of faunal and floral resources. As undulating meadow area in close proximity to a knoll near East 125th Street between Second and Third Avenues (Figure 7.7-3), it would have been suitable for prehistoric settlement, with a potential fresh water source on East 125th Street between Second and Third Avenues.

It is unlikely that the shoreline itself would have been a living area, as it most likely would have been estuarial, as much of the New York Harbor was. However, it would have been a rich source of floral and faunal resources. Finding evidence for intermittent use areas is difficult, although features such as shell middens can be indicative of such use. There is evidence for shell in one of the soil borings just off Second Avenue on

Block 1805 (Soil Boring WPA IV:5:92, 1940); however, as discussed below, this could also imply an estuarial environment. Nevertheless, the presence of shell, which could have been an abundant ecological resource, suggests precontact potential nearby.

Soil Boring WPA IV.5.96 (1940), in the middle of Second Avenue just below East 129th Street, indicates fill to 17.5' below grade, silt to 27' below grade, and then a layer of peat from 27'-31.5' below grade. Peat is also indicated in five other borings in this area. Four borings in Block 1805 (east of Second Avenue) show peat depths ranging from 21 to 33' below grade, and one boring in Block 1793 (west of Second Avenue) shows a peat depth of 24.5 to 25' below grade (Soil Borings WPA IV:5:92-95, 1940; Soil Boring WPA IV.4.61, 1940). Precontact resources could potentially be protected beneath the initial layer of fill or buried beneath silting episodes in the second, presumably natural layer.

Borings along Second Avenue within this APE indicate greatly varying amounts of fills; one boring in the sidewalk of Block 1804 at East 128th Street and Second Avenue has 14' of yellow clay over 5' of blue clay, which overlies 9' of sand and gravel (Soil Boring WPA IV:5:53, 1936). The lack of fill may indicate that grading episodes occurred on the block. One block south, on Block 1803, there was 3.5' of cinder fill on top of 11.8' of sand and gravel (Soil Boring WPA IV.5.52, 1936). Three sets of borings from and near Block 1802, one more block to the south, have varying levels of fill, even though they are quite close to each other. Two borings were taken from the sidewalks surrounding Block 1802. One, at the corner of Second Avenue and East 126th Street shows that there was three feet of fill over four feet of loam, over seven feet of sand and gravel (Soil Boring WPA IV.5.23, 1935). The second, from the sidewalk on Second Avenue between East 126th and 125th Streets, indicates three feet of fill and loam over 14' of sand and gravel (Soil Boring WPA IV.5.24, 1935). The third, in the Second Avenue road bed between East 126th and 125th Streets, indicates 11.6' feet of fill over 11' of sand (Raymond International 2-114, 1970). A boring from Block 1790, from the Second Avenue sidewalk between East 126th and East 125th Streets shows stone and cinder fill for 2.1' below surface, then 15.4' of medium coarse brown sand, gravel, and some silt (Raymond International 2-113, 1970).

Previous sections of this report have concluded areas within this APE are potentially sensitive for precontact resources (Chapter 4.1, 4.2, 4.3) suggesting that this APE is potentially sensitive as well (Figure 7.7-11). More borings might help to refine the areas of sensitivity, since any deep grading may have disturbed these resources. Although this entire area is potentially sensitive for early precontact resources, the very northern end of the APE is not sensitive for late precontact resources, since it was under water. This would comprise approximately Lots 47-52 of Block 1804. All of the road beds should be considered sensitive for early precontact resources. Based on soil boring depths, any potential resources should be below the relatively shallow utilities in this area. Late precontact resources might be found in those areas that were land during this period, which includes all the road beds except East 128th Street. Precontact resources, if they are present, are estimated to exist between about 20 and 25' below the surface or deeper.

Historical Sensitivity

Sections of the APE may be sensitive for 18th and 19th century resources, and because this area was historically in proximity to Harlem Village, it could also be sensitive for 17th century historical farm building foundations and related features (Figure 7.7-11). Resources from the 17th century may be related to outbuildings from several properties: Tourneur, in Blocks 1803, 1802, 1790, and Second Avenue, Terveslen, in Block 1802, and East 125th Street at Second Avenue, and LeBey, in Block 1802 (Romer and Hartman 1670). A church may have existed within the APE of Block 1790, on Lots 22-25, and a house once stood on what is now the middle of Block 1803.

Resources from the 18th century may be related to a structure present on Second Avenue approximately between East 126th and East 127th Streets in 1782 (British Headquarters 1782, Figure 7.7-5), which was likely a farmhouse. This farmland belonged to Daniel Phoenix in 1811 (Commissioners' 1811), where a structure is shown in approximately the same location. By 1815 (Sackersdorf 1815) the land belonged to N.G. Ingraham. Although the main house of the Ingraham estate would have been outside the APE, there are outbuildings indicated that fall within the Second Avenue APE at East 127th Street, and are shown on an 1820 and an 1851 map (Randel 1820, Dripps 1851, Figures 7.7-6, 7.7-7). This area was farmland from at least 1670 (Romer and Hartman 1981:9, Figure 7.7-4), and so could potentially be sensitive for these types of buildings, as well as wells and privies, since that time. A soil boring taken at the southeast corner of East 127th Street and Second Avenue, near where the outbuildings are thought to have stood, shows a cinder fill going down only to 3.5' below grade, but unfortunately the water level is not provided (WPA IV.5.2, 1936). If the water table was at approximately 12' below grade, then a well shaft would be expected to extend at least this deep, and possibly deeper to reach potable water. Other borings taken close to Second Avenue in the northern section of the APE show fill depths ranging from 9.6 to 20' below grade (WPA IV.5.94, 95, 97, 1940; WPA IV.4.58, 1940). In the southern section the fill appears shallower, ranging from 2.6 to 14' below grade (Raymond International 2-113, 2-114, 1970; Warren George, Inc. B-9, 1997; WPA IV.5.23, 1935). There are no water table depths for the northern half of Second Avenue; those in the southern half indicate a depth of between about 11 and 12.5' below grade (Raymond International 2-113, 2-114, 1970; Warren George, Inc. MW-2, MW-3, 1994).

Block 1804

The earliest known structures here are two houses belonging to the Ingraham family built sometime between 1851 and 1867 on Lots 4½-6 (Dripps, Figure 7.7-7, 7.7-8). Tax records from 1869 show that a two-story house belonged to S.P. Ingraham, and a 2½-story house belonged D.P. Ingraham. By 1876 the latter house is not listed on the tax records (see Tax Table above), although the lot is still owned by D.P. Ingraham, and it does not show up on an 1879 map (Bromley, Figure 7.7-9). The house belonging to S.P. Ingraham was present until sometime between 1939 and 1951 (Sanborn). There are likely to have been shaft features associated with these two buildings; however, much of these lots are currently underneath a ramp to the Harlem River Drive. The rear of these lots is still open, but it is questionable whether any resources would have survived the

ramp construction. Another structure was present in 1867, but tax records provide no information on this, although it appears that all lots in the APE were owned by the Ingrahams through 1876. By 1879, apartment buildings had been built on the lots fronting Second Avenue (Lots 1-4, 49-52, Figure 7.7-9); these had open rear yards. A kindling wood factory was present on the northern portion of the block (Lots 47, 48, and 48½) by 1893 (Perris), but may have been present earlier. Lots 47, 48, and 48½ are unlikely to have historical resources, as they were related to the kindling factory, which has little research value, through most of the second half of the 19th century and well into the 20th century. Lots 1-4 and 49-52 could potentially have had privies in the rear yards, which for Lots 49-52 would likely be undisturbed. It is not clear whether or not these 19th century buildings would have had outdoor wells or privies in their yards. As late as 1884, only 30% of the tenements in Manhattan had water closets, and few had water provisions above the first floor (Plunz 1990:33). After these apartments were demolished sometime between 1916 and 1925 (Bromley), there was only storage of kindling wood until ramps to the Harlem River Drive were built. Construction of the ramp may have disturbed Lots 1-4, however, and Lots 1-3 are currently underneath the ramp.

Block 1803

The Ingraham estate discussed above was centered on this block. Although the main house was outside the APE, early 19th century shaft features and outbuilding foundations associated with the estate may be present. In 1879 (Bromley, Figure 7.7-9), the main house and associated ground had become "Harlem Park," an early New York City recreational facility. In 1885 (Robinson) there is a large brick building and a larger frame building, with the brick building falling entirely within the APE (Lots 49-52) and part of the frame building is as well (Lot 47-48). These are not labeled, but in 1893 (Perris), are part of an amusement park (the Harlem River Park), with a dance hall, shooting gallery, arcades, and possibly a carousel. Part of the frame building and all of the brick building fell within the APE, as well as a number of small structures, including an entrance gate. It is not clear exactly what the function of the brick building was; it was connected to the frame building, which was labeled as a "Dancing Hall &c." and it may have been part of the dance hall. By 1896 (Sanborn), a casino was part of this recreational area, which in 1911 (Bromley, Sanborn, Figure 7.7-10) was known as Sulzer's Harlem Casino and Garden. A new casino building had been constructed by 1911, also within the APE.

Early in 1917, the anarchist Emma Goldman famously gave a speech here discouraging men from enlisting for the war. For this she was tried, found guilty, and eventually had her citizenship revoked and was deported to Russia. By 1925 (Bromley), the amusement park is gone, replaced by a movie studio, the "International Film Co. Moving Picture Studio." Interestingly, the casino was bought in 1917 by William Randolph Hearst for his mistress, Marion Davies. He wanted to turn it into a movie studio to make films to showcase this young starlet. The movie studio uses the original casino building, and adds a number of buildings so that the entire APE is covered. The studio remains, becoming an MGM studio, until sometime between 1934 and 1939 (Bromley, Sanborn). It then briefly housed manufacturing exhibits (Sanborn 1939) in the same buildings used for the movie studio, and was then replaced by a bus depot by 1951 (Sanborn), which is still present. This is one-story without a basement, and takes up the entire block, although with the construction of the entrance ramps to the Triborough Bridge, Second Avenue was

widened, and thus the front of this building is actually about 75' back from the original boundaries of this block. Therefore some of the APE is underneath Second Avenue and some under the bus depot. This is a potential historical resource, since the early date of the park, sometime between 1867 and 1879 (Dripps, Bromley), would make it an early example of a recreational area in New York City. Its continuing use as an amusement park, dance hall, and casino is of further interest.

Block 1802

A coal yard is present on Lots 1-4 on this block within the APE in 1867 (Dripps), which is the only construction until 1885 (Robinson) when apartment buildings are built on Lots 49-52. Tax records from 1876 and an 1879 map (Dripps) show that these buildings were constructed after 1879. By 1893 (Perris), there are apartment buildings on all the lots within the APE. New construction this late in the 19th century would have likely had indoor water closets and at least cold water provisions, making it unlikely that wells or privies were present. It is possible that the buildings built in the early 1880's (Lots 49-52) might not have had indoor plumbing. However, they may not have had privies, as another form of outdoor toiletry, the "school sink," was commonly used, where the runoff connected to the city sewer system, and was often manually flushed into these pipes. In the 1930's all but two of the buildings within the APE (Lots 47-48) were demolished for construction of an entrance ramp to the Triborough Bridge. These two buildings are still present; the rest of the APE is either under Second Avenue or East 125th Street.

Block 1790

The earliest structures here within the APE are a church and two other buildings in 1867 (Dripps, Figure 7.7-8). The church is shown in 1879 (Bromley, Figure 7.7-9) covering parts of Lots 22-26, and the other two buildings (presumably the same ones) are on Lots 26 and 29. By 1885 (Robinson) the church is gone, and five-story brick apartment buildings have been constructed on Lots 22-25. It is unlikely, although not impossible, that these apartments had privies, as discussed above for Block 1802. The rear yard areas were quite small, particularly as the building on Lot 25 was perpendicular to the rear of the other buildings. Four of the buildings (Lots 22, 23, 23½, and 24) were torn down in the late 1930's and 40's, and the one on Lot 25 sometime in the late 1970's or early 80's (Sanborn, Bromley). Lot 25 has remained vacant. Lot 22 subsequently had a one-story building with no basement in the 1950-60's, and the other three were vacant, until a gas station is shown in 1974 (Bromley). This gas station is located in the rear of Lots 22-23, but in 1990-91 there is an additional structure in the center of the lot which is presently the service island of the gas station. Therefore, underground gasoline tanks are most likely to be in the middle of Lots 23-23½ (123).

On Lot 29, the frame structure that appears possibly as early as 1867 (Dripps) is still present until sometime between 1939 and 1951 (Sanborn). A one-story brick structure is added in the rear of the lot sometime between 1897 and 1911 (Bromley), and in 1939 (Bromley) this addition is labeled "Junk." This addition had no basement, nor did the one-story building that replaced the two older buildings by 1951; this later building covered the entire lot. This later building was demolished by 1974 (Bromley) and the area is now a parking lot. Given the probable early date of a residential building on Lot 29 of between 1851 and 1867 (Dripps), this area has a high potential of wells and/or

privies in the rear of the lot. Subsequent construction would have probably only affected the upper levels of potential shaft features.

Lot 28 was vacant until sometime between 1897 and 1911 (Bromley), when a five-story apartment building was built. While there are unlikely to be any resources associated with this building, the lot is shown together with Lot 29 in 1893 (Perris), indicating that they may have been considered one property at the time. Therefore it is possible that resources associated with the mid-19th century building on Lot 29 could be located on Lot 28 also. The building on Lot 28 did not have a basement, and was torn down sometime between 1967 and 1974 (Bromley) and is currently vacant. Thus any shaft features from the 19th century are unlikely to have been disturbed.

Another early structure is shown on Dripps 1867, on either Lot 26 or 27. In 1879 (Bromley), there is a building on Lot 26 but not on 27. However, tax records from 1876 indicated a three-story brick building on Lot 27, but nothing on Lot 26 (see Tax Table above). In 1885 Robinson shows Lot 27 with a brick building, indicated as having three stories in 1893 (Perris). Lot 26 is shown as having a small brick building in the rear in 1885 (Robinson), but the 1893 map (Perris) shows that there are only two stories. So it is likely the 1879 Bromley is incorrect in depicting a building on Lot 26 but not on 27. Thus it is possible that the three-story brick building was constructed between 1851 and 1867 (Dripps), and therefore has a likelihood of associated wells and/or privies in the rear of the lot, which is large. A two-story frame structure without a basement is built on the rear of the lot between 1897 and 1911 (Bromley); this is labeled a shed on Sanborn 1911 and covers nearly all of the rear lot. The buildings are demolished between 1934 and 1939 (Bromley, Sanborn) and replaced by a one-story garage without a basement in the 1950's which covers the entire lot. The garage is torn down sometime between 1990-91 and 2001 (Sanborn). This lot therefore has a high probability of having intact resources in the rear half of the lot.

Although there is a question of when building first occurred on Lot 26 (see above), there is a small brick structure on the rear of the lot in 1885 (Robinson). This was a two-story structure which appears to have been residential. The rest of the lot was empty. This building was demolished sometime between 1897 and 1911, when it was replaced by a six-story apartment building, without a basement, which had a small rear yard. This building remained until sometime between 1974 and 1984-85 (Bromley, Sanborn), and the lot has remained vacant since then. Given that the original building was small, it was probably a single-family house. It is possible that there were privies and/or wells on the property, although these would have had to be located in the front of the property. However, if they did exist, they would be likely to be mainly intact, since there does not appear to have been later development on the lot.

Road beds

The Second Avenue road bed is addressed in Chapter 4.1.

East 128th Street

West of Second Avenue the road bed is not considered sensitive for historical resources. Most of the road bed that is within the APE was marsh in the early historical period and

there is no evidence for development between the time that it was filled in and when it was opened as a street. East of Second Avenue, the land does not appear to exist until after 1863 (Dripps), and there is no development on it as of 1867 (Dripps).

East 127th Street

West of Second Avenue the road bed is probably not sensitive for any historical features. There is no indication of any development on this area as depicted on historical maps. East of Second Avenue the road bed should be considered moderately sensitive for a barn and associated outbuildings from the Ingraham estate from the early to mid-19th century, and well features that might have served the barn (Randel 1820, Dripps 1851). This portion of the street was not open until after 1879 (Bromley).

East 126th Street

West of Second Avenue the road bed is probably not sensitive for any historical features. There is no indication of any development on this area as depicted on historical maps. East of Second Avenue the road bed may have a slight sensitivity for late 17th century resources from a farm in the area (Romer and Hartman 1670).

East 125th Street

West of Second Avenue the road bed is not sensitive for historical resources. At Second Avenue and East of Second Avenue there is a slight possibility of late 17th century farming buildings (Romer and Hartman 1670).

7.7.7.2 Site File Search Results

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 ~~21~~ 19

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 SAPO
4064 X		1- A061.01.1271 X	was that NYAC did a
7248 X		~~2- A061.01.0014 D03~~	survey in the 1970's
		3- A061.01.0623 X D023	2nd found historic Remains.
		4- A061.01.06763 X	no other info was found.)
		~~5- A061.01.0001~~	
	209 Water St. South Street NR Seaport HP	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 @ SHPO		A061.01.01286 X	
		A061.01.0541 X	
		A061.01.00542 X	
		A061.01.09531 X	

ATIONAL REGISTER E. GIBLE and LISTED ___X___ Eligible ___ ___1___ Listed ___ ___X___ Building Inventory

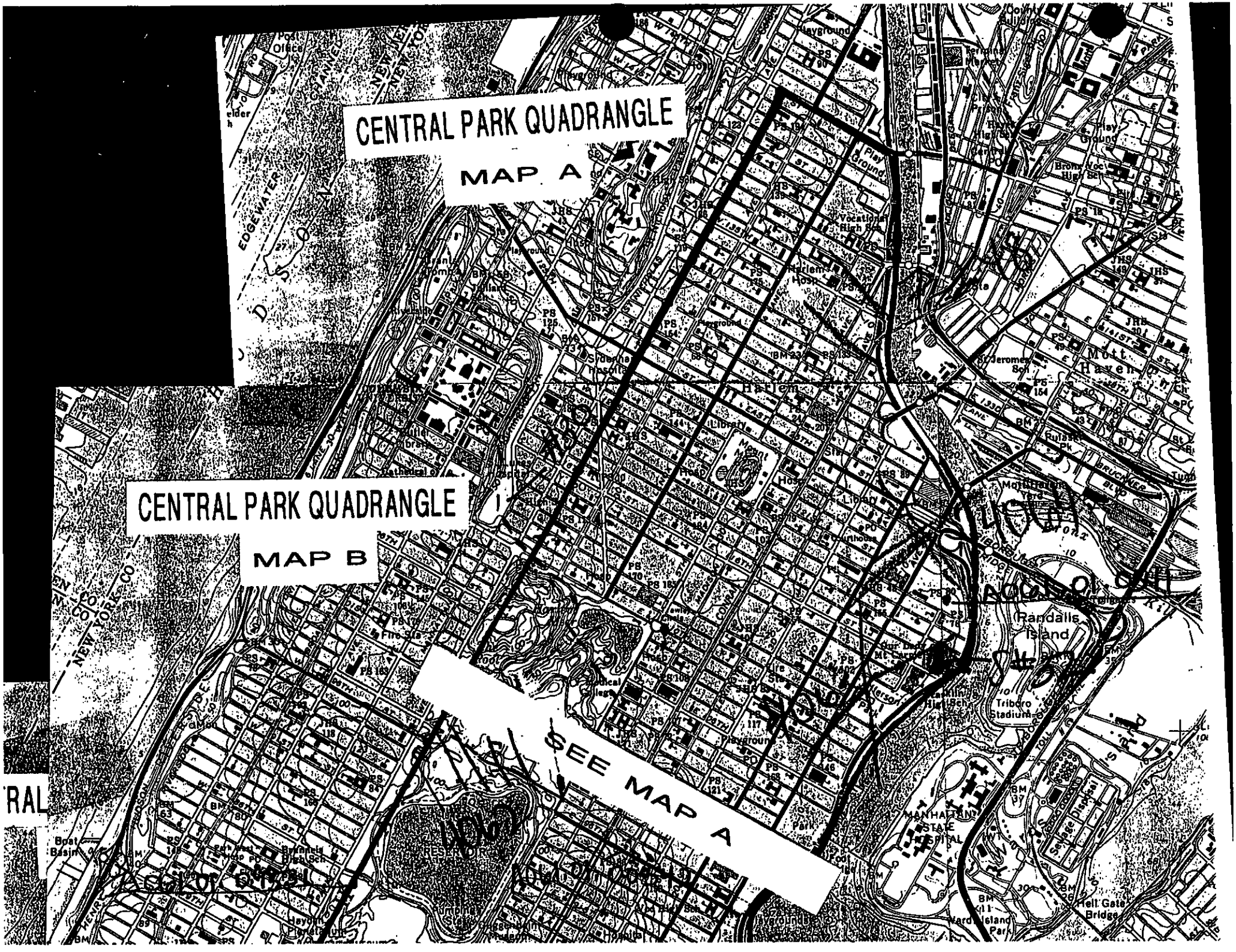
ilding Inventory #	NR Status	Form Copied	Property Description	Reads Checked
06101.000604	NRL	✓	South Street Seaport Historic District 209 Water Street	

EVIOUS SURVEYS <17 previous surveys w/in Radius>

8 Westside Highway Program – 1983
William D. Hersey – 1963 Castle Clinton at the Battery
Broad Street Financial Center Greenhouse January 1985
X
64th Pearl Street (17th Landfill) Arnold Pickman & Nan Rothschild May 1981
Stone Street Historic District 9/17, 8/17 Nye Landmarks Pres. Comm. Tracker
9 Barclays Bank Site – 100 Water St. Berger – 1983
175 Water Street Block Geismar July 1983
Schermerhorn Row Block Kardas & Larrabee – Aug 1991

5 209 Water St. – Schuyler – ? Date
East River Roach – New York Harbor Collection Kardas & Larrabee October 1977
10 Sheridan Square – 1983 – Rutgers University
Lower Eastside Service Center – Louis Berger – Jan '98
27 750 Sixth Ave. HPI – February 1998
Baruch College Campus – Historic Conservation & Interpretation Inc. – Jan. 1989 / December 1989
32 East River Plaza HPI Sept. 1998
Stone Street Historic District NYC Landmark Pres. Comm. February 1998

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


CENTRAL PARK QUADRANGLE
MAP A
CENTRAL PARK QUADRANGLE
MAP B
SEE MAP A
Harlem
Randalls Island
Triboro Stadium
Mott Haven
Hell Gate Bridge
Ward Island Park
Boat Basin
Hayden Planetarium
Sewage Disposal
Playground
Post Office
Vocational High Sch
Harlem Hosp
Sydenham Hospital
Mount Morris
Cathedral of
Fire Sta
Medical College
Manhattan State Hospital
Bronx Voc High Sch
St Jerome's Sch
Our Lady Mt Carmel
Courthouse
Library
Riverside Ch
Grant Tomb
Riverside Dr
Edgewater
Hudson
Bronx
Harlem River
East River
Bruckner Blvd
Mott Haven Yard
Rufus King Pk
Lane
Lenox Ave
Madison Ave
Park Ave
Fifth Ave
Seventh Ave
Eighth Ave
Ninth Ave
Tenth Ave
Eleventh Ave
Twelfth Ave
Amsterdam Ave
Broadway
Riverside Dr
Henry Hudson Pkwy
Harlem River Drive
Triborough Bridge
Toll Bridge
Reservoir
Jackson Pl
Fire Sta
Hosp
Library
Courthouse
Park
Playground
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PS 125
PS 164
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PS 163
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PS 148
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PS 49
PS 30
PS 76
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PS 103
PS 108
PS 46
PS 85
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JHS 118
JHS 149
JHS 20
JHS 43
JHS 61
JHS 63
JHS 80
JHS 117
JHS 40
JHS 45
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Fire Sta
Hosp
Library
Courthouse
Park
Playground
Post Office
Vocational High Sch
Harlem Hosp
Sydenham Hospital
Mount Morris
Cathedral of
Fire Sta
Medical College
Manhattan State Hospital
Bronx Voc High Sch
St Jerome's Sch
Our Lady Mt Carmel
Courthouse
Library
Riverside Ch
Grant Tomb
Riverside Dr
Edgewater
Hudson
Bronx
Harlem River
East River
Bruckner Blvd
Mott Haven Yard
Rufus King Pk
Lane
Lenox Ave
Madison Ave
Park Ave
Fifth Ave
Seventh Ave
Eighth Ave
Ninth Ave
Tenth Ave
Eleventh Ave
Twelfth Ave
Amsterdam Ave
Broadway
Riverside Dr
Henry Hudson Pkwy
Harlem River Drive
Triborough Bridge
Toll Bridge
Reservoir
Jackson Pl
Fire Sta
Hosp
Library
Courthouse
Park
Playground
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PS 148
PS 154
PS 49
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PS 89
PS 103
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PS 46
PS 85
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SEE MAP C
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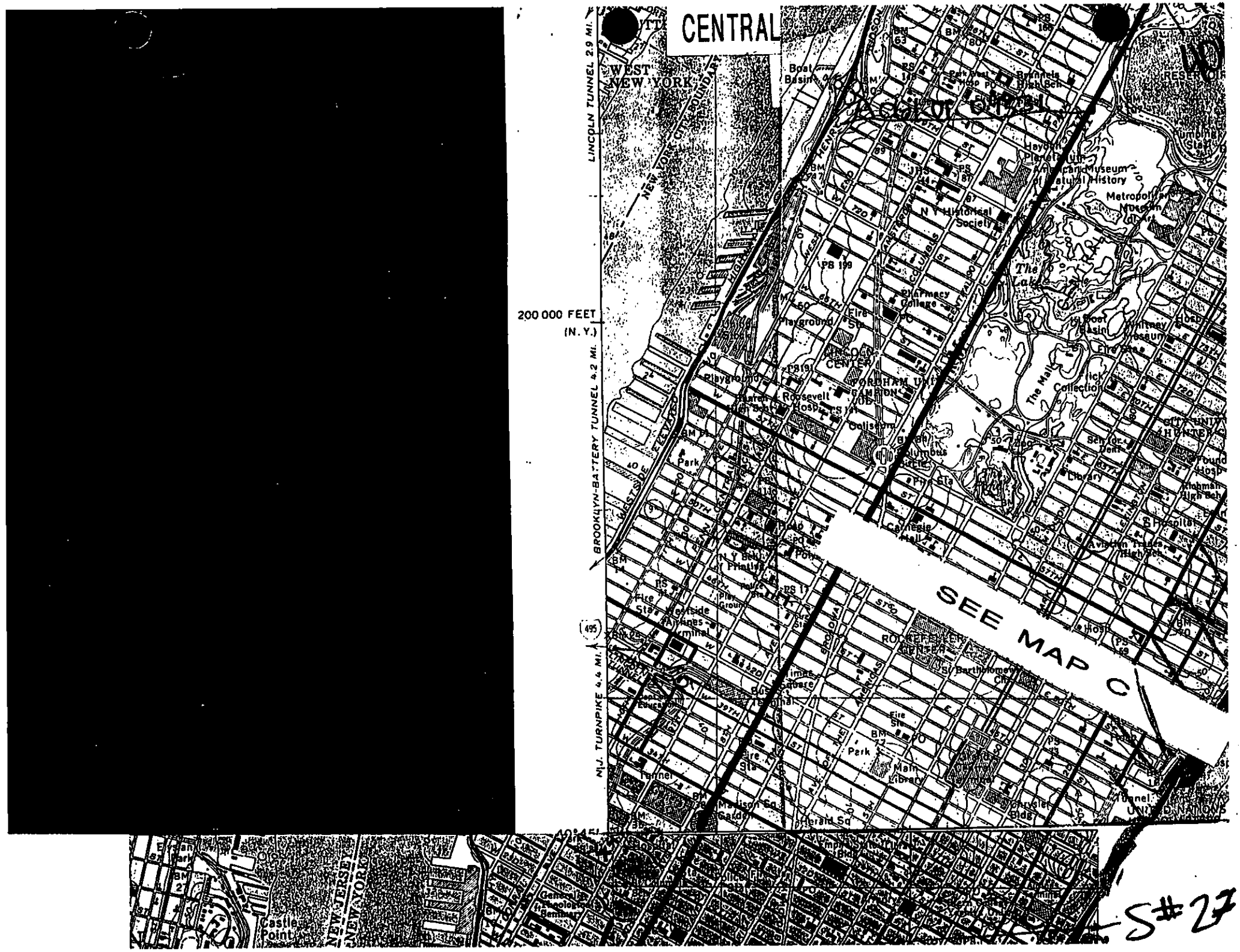
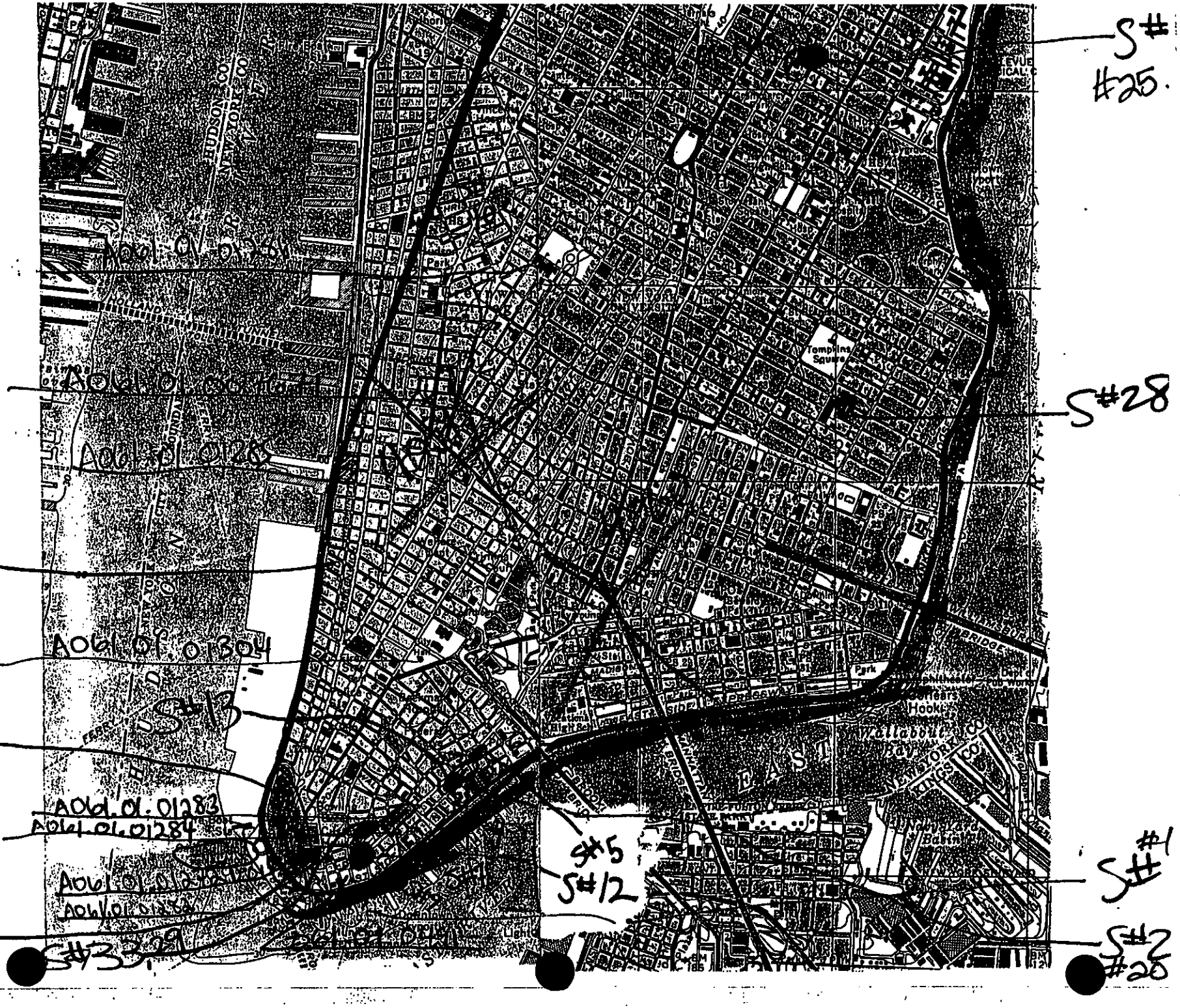
SHORELINE SHO
4 FEET
THIS MAP CO
FOR SALE BY
OLDER DESCRIBING


CENTRAL
WEST NEW YORK
LINCOLN TUNNEL 2.9 MI.
200 000 FEET
(N. Y.)
BROOKLYN-BATTERY TUNNEL 4.2 MI.
N.J. TURNPIKE 4.4 MI.
495
Boat Basin
Brannels High Sch
Hayden Planetarium
American Museum of Natural History
Metropolitan Museum of Art
N Y Historical Society
PS 199
Pharmacy College
Playground
Fire Sta
LINCOLN CENTER
FORDHAM UNIV CAMPION
Roosevelt Hosp
Coliseum
Columbus Circle
Park
Carnegie Hall
The Lake
Whitney Museum
The Mall
Frick Collection
Library
CITY UNIV HUNTER
Richman High Sch
Hospital
Aviation Trades High Sch
SEE MAP C
ROCKEFELLER CENTER
St Bartholomew Ch
Times Square
Bus Terminal
Main Library
Chrysler Bldg
Tunnel
Madison Sq Garden
Herald Sq
UNITED NATIONS
Castle Point
NEW JERSEY
NEW YORK
S#27


S# #25.
S#28
S#8
A061.01.01304
S#13
Area of S#4 (Castle Clinton)
A061.01.01283
A061.01.01284
#15
S#5
S#12
S#1
S#2
#20
Tompkins Square
Park
Wallabout Bay
Hooks
Navy Yard Basin
HUDSON CO
NEW YORK CO
KINGS CO
HOLLAND TUNNEL
BRIDGE
EAST

7.7.7.3 Soil Boring Logs

Raymond International 2-113, 1970
West side Second Avenue between 125th and 126th Street
Elev. 111.62

concrete	0.0' to –0.5'
stone and cinder fill	-0.5' to –2.6'
medium coarse brown sand, gravel, some silt	-2.6' to –18.0'
medium brown sand, traces of silt	-18.0' to –42.0'
varved clay, silt, traces of sand	-42.0' to –51.6'

Water at –11.0'

Raymond International 2-114, 1970
East side Second Avenue between 125th and 126th Street
Elev. 113.20

concrete	0.0' to –0.4'
cinders, concrete, brick, wood fill	-0.4' to –12.0'
loose fine to medium brown sand	-12.0' to –23.0'
fine brown sand, trace of silt, thin layers of clay	-23.0' to –38.0'
fine gray and brown silty sand, varved clay	-38.0'to -61.6'

Water at –12.2'

Warren George, Inc. B-7, 1997
126th Street Bus Depot
East of Third Avenue between East 127th and East 126th Streets; middle of Block 1791.
Elev. +112.06

misc. fill (gray-black to yellow medium to fine silty sand, gravel, brick, rock and concrete fragments, asphalt)	+0.0' to –14.0'
brown coarse to fine sand, medium to fine gravel	-14.0' to –16.0'

No water level recorded.

Warren George, Inc. B-8, 1997
126th Street Bus Depot
Between Third and Second Avenues and between East 127th and East 126th Streets; center of Block 1791.
Elev. +113.25

no samples taken	+0.0' to –12.0'
misc. fill (brown coarse to fine silty sand, gravel, brick, rock and concrete fragments)	-12.0' to –16.0'

brown coarse to fine sand, medium to fine gravel	-16.0' to –18.0'

No water level recorded.

Warren George, Inc. B-9, 1997
126th Street Bus Depot
West of Second Avenue between East 127th and East 126th Streets; middle of Block 1791.
Elev. +114.12

misc. fill (gray-black to yellow medium to fine silty sand, gravel, brick, rock and concrete fragments, asphalt)	+0.0' to –14.0'

No water level recorded.

Warren George, Inc. MW-2, 1994
126th Street Bus Depot
Middle of north side of East 126th Street between Third and Second Avenues.
Elev. +114.61

concrete sidewalk	+0'0" to –0'4"
brown medium to fine sandy silt, trace gravel	-0'4" to –6'0"
brown fine sandy silt, trace gravel	-6'0" to –12'0"
reddish-brown coarse to medium sand, some gravel	-12'0" to –21'0"

Water at –12'5"

Warren George, Inc. MW-3, 1994
126th Street Bus Depot
North side of East 126th Street at Second Avenue.
Elev. +113.66

concrete sidewalk	+0'0" to –0'4"
brown medium to fine sandy silt, trace gravel	-0'4" to –6'6"
brown fine sandy silt, trace gravel	-6'6" to –12'6"
reddish-brown coarse to medium sand, some gravel	-12'6" to –20'6"

Water at –12'6"

WPA IV:4:58
P.J. Healey, Inc., Harlem River Drive, 1940
Southeast corner East 129th Street and Second Avenue.

misc. fill	+5.5' to –4.5'
mud and fill	-4.5' to –14.5'
river mud	-14.5' to –25.'5
some gravel, fine sand and clay	-25.5' to –34.3'
some clay and fine sand	-34.3' to –40.5'

coarse sand	-40.5' to –58.1'
boulders, sand, and disintegrated rock	-58.1' to –66.5'
brown clay	-66.5' to –75.6'
sand and gravel	-75.6' to –86.5'
disintegrated rock	-86.5' to –86.8'
limestone	-86.8' to –94.8'

No water level recorded.

WPA IV:4:59
P.J. Healey, Inc., Harlem River Drive, 1940
Just south of East 129th Street, east of Second Avenue.

misc. fill	+6.7' to –7.3'
sand, clay, gravel fill	-7.3' to –10.3'
gray silt	-10.3' to –18.8'
sand, gravel, clay	-18.8' to –26.3'
medium brown sand	-26.3' to –40.8'
fine brown sand and traces of clay	-40.8' to –60.3'
brown sandy clay	-60.3' to –97.9'
limestone	-97.9' to -105.9'

No water level recorded.

WPA IV:4:60
P.J. Healey, Inc., Harlem River Drive, 1940
East 129th Street near Second Avenue.

earth fill (6" granite block on surface)	+5.2' to –12.3'
gray clay	-12.3' to –24.4'
gray sand, gravel and some clay	-24.4' to –30.3'
brown sand and some gravel	-30.3' to –42.3'
medium brown sand	-42.3' to –52.8'
brown sandy clay	-52.8' to –63.3'
fine brown sand	-63.3' to –72.3'
brown sandy clay	-72.3' to –96.3'
fine gray sand	-96.3' to –98.1'
limestone	-98.1' to –106.1'

No water level recorded.

WPA IV:4:61
P.J. Healey, Inc., Harlem River Drive, 1940
East 129th Street between Second and Third Avenues.

wood	+7.3' to +6.8'
sand, clay, and ash fill	+6.8' to –6.2'
sand and mud	-6.2' to –11.9'
gray clay	-11.9' to –17.2'

peat	-17.2' to –17.7'
brown sandy clay	-17.7' to –23.7'
brown sandy clay	-23.7' to –34.7'
brown clay	-34.7' to –46.2'
brown sand, gravel and clay	-46.2' to –53.6'
boulders	-53.6'to –59.7'
fine brown sand	-59.7' to –73.7'
red and gray clay	-73.7' to –84.7'
sandy gray and red clay	-84.7' to 94.2'
boulders	-94.2' to –102.2'
boulders	-102.2' to –109.2'
limestone	-109.2' to –112.2'

No water level recorded.

WPA IV:4:62
P.J. Healey, Inc., Harlem River Drive, 1940
East 129th Street near Second Avenue.

misc. fill, brick, concrete gravel, cinders	+6.6' to –4.4'
gray clay	–4.4' to –24.9'
medium brown sand and gravel	-24.9' to –42.4'
fine brown sand	-43.4' to –54.6'
medium and coarse brown sand	-54.6'to –72.4'
coarse brown sand	-72.4' to –75.6'
medium brown sand	-75.6' to –82.4'
brown sandy clay	-82.4' to –99.7'
firm sand and boulders	-99.7' to –101.3
limestone	-101.3' to 109.3'

No water level recorded.

WPA IV:4:63
P.J. Healey, Inc., Harlem River Drive, 1940
East 129th Street between Second and Third Avenues.

earth and cinder fill (bluestone flag on surface)	+7.90' to –12.4'
gray sand	–12.4' to –19.7'
gray clay and sand	-19.7' to –30.1'
gray clay	-30.1' to –51.6'
gray clay and sand	-51.6' to –58.6'
fine brown sand	-58.6' to –76.1'
red brown clay and sand	-76.1' to –88.3'
limestone boulder	-88.3' to –91.8'
mica schist limestone	-91.8' to –94.3'
pegmatite	-94.3' to –96.8'
limestone	-96.8' to –98.8'

No water level recorded.

WPA IV:5:23
Triborough Bridge, 1935
Southeast corner of Second Avenue and East 126th Street.

fill	+11.8' to +8.8'
loam	+8.8' to +4.8'
brown sand, gravel and boulders	+4.8' to –2.2'
gray sand, gravel and boulders	-2.2' to –14.2'
fine mica sand	-14.2' to –20.6'

No water level recorded.

WPA IV:5:24
Triborough Bridge, 1935
East side of Second Avenue between East 125th and East 126th Streets.

fill and loam	+11.2' to +8.2'
sand and gravel	+8.2' to -5.8'
gray sand and gravel	-5.8' to –10.8'
fine gray mica sand	-10.8' to –21.0'

No water level recorded.

WPA IV:5:52
Wards Is. Intercept Sewer, 1936
Southeast corner of Second Avenue and East 127th Street.

cinder fill	+11.5' to +8.0'
sand and gravel	+8.0' to –3.8'
red sand	-3.8' to –22.0'

No water level recorded.

WPA IV:5:53
Ward Is. Intercept Sewer, 1936
Southeast corner of Second Avenue and East 128th Street.

yellow clay	+9.2' to –4.8'
blue clay	-4.8' to –9.8'
sand and gravel	-9.8' to –18.8'
red clay and sand	-18.8' to –21.8'

No water level recorded.

WPA IV:5:92
P.J. Healey, Inc., Harlem River Drive, 1940
East of Second Avenue, north of East 128th Street.

ash, earth, wood and rock fill	+5.9' to –0.1'
fine sand, clay, and cinder fill	-0.1' to –9.1'
clay, cinder and ***shells***	-9.1' to –17.1'
clay and ***peat***	-17.1' to –19.1'

coarse sand and clay	-19.1' to –27.1'
brown clay	-27.1' to –34.1'
fine brown sand and clay	-34.1' to –51.7'
boulder	-51.7' to –55.2'
medium white sand	-55.2' to –67.1'
white sand and gravel	-67.1' to –74.4'
boulders	-74.4' to –90.8'
limestone	-90.8' to –96.8'
limestone	-96.8' to –102.8'

No water level recorded.

WPA IV:5:93
P.J. Healey, Inc., Harlem River Drive, 1940
North side of East 128th Street, east of Second Avenue.

earth and cinder fill	+6.9' to –2.8'
cinder, sand and gravel	–2.8' to –9.5'
med. gray sand	–9.5' to –11.4'
gray clay	–11.4' to –16.6'
peat	–16.6' to –18.1'
fine brown sand and clay	–18.1' to –37.1'
fine gray sand	-37.1' to –46.1'
brown sandy clay	-46.1' to –56.9'
gray coarse sand, gravel and clay	-56.9' to –58.4'
boulders and layers of fine gray sand	-58.4' to –70.6'
fine white sand and boulder chips	-70.6' to –75.1'
boulder	-75.1' to –76.6'
fine gray sand	-76.6' to –82.0'
limestone	-82.0' to –90.0'
disintegrated	-90.0' to –93.0'
disintegrated	-93.0' to –95.2'
limestone	-95.2' to –98.0'

No water level recorded.

WPA IV:5:94
P.J. Healey, Inc., Harlem River Drive, 1940
East side of Second Avenue near East 129th Street.

cinder and earth fill	+6.3' to –3.2'
wood and some clay	-3.2' to –8.4'
clay and gravel	-8.4' to –20.7'
peat	-20.7' to –23.0'
clay and ***peat***	-23.0' to –26.7'
medium brown sand	-26.7' to –32.2'
medium sand and clay	-32.2' to –36.7'
fine sand and clay	-36.7' to –49.7'

clay and fine sand	-49.7' to -55.2'
fine gray sand	-55.2' to –56.4'
boulder	-56.4' to –57.7'
fine gray sand	-57.7' to –58.6'
boulder	-58.6' to –59.2'
limestone	-59.2' to –78.2'

No water level recorded.

WPA IV:5:95
P.J. Healey, Inc., Harlem River Drive, 1940
East side of Second Avenue, north of East 128th Street.

sand, gravel and ash fill	+7.3' to –2.7'
sand	-2.7' to –6.7'
silt	-6.7' to –13.7'
peat, sand, gravel, clay	-13.7' to –17.2'
gray sand, gravel, some clay	-17.2' to –25.7'
brown sand and gravel	-25.7' to –36.2'
fine brown sand and stiff clay	-36.2' to –55.7'
med. white sand	-55.7' to –56.8'
disintegrated limestone	-56.8' to –62.7'
limestone	-62.7' to –70.7'

No water level recorded.

WPA IV:5:96
P.J. Healey, Inc., Harlem River Drive, 1940
Second Avenue near East 129th Street

granite block	+5.5' to +5.0'
concrete	+5.0' to +4.3'
sand, gravel and ash fill	+4.3' to –12.5'
gray silt	–12.5' to –21.5'
peat	–21.5' to –26.0'
gray sand and gravel, some clay	–26.0' to –35.5'
medium brown sand and gravel	-35.5' to –46.7'
boulder	-46.7' to –46.9'
medium gray sand and gravel	-46.9' to –56.0'
boulder	-56.0' to –56.5'
brown clay and sand	-56.5' to –69.5'
fine gray sand, some boulders	-69.5' to –78.5'
limestone	-78.5' to –86.5'

No water level recorded.

WPA IV:5:97
P.J. Healey, Inc., Harlem River Drive, 1940
West side Second Avenue between East 129th and 128th Streets.

sand, gravel and fill	+6.6' to +1.3'

cinder and gravel fill	+1.3' to –3.0'
sand, clay, mud, gravel, some silt	-3.0' to –14.3'
clay and river mud	-14.3' to –18.3'
coarse brown sand	-18.3' to –28.3'
clay, gravel	-28.3' to –34.7'
brown sand	-34.7' to –44.8'
fine brown sand, white sand, some clay	-44.8' to –50.1'
coarse gravel, med. white sand	-50.1' to –53.0'
sand and clay	-53.0' to –66.0'
med. white sand	-66.0' to –70.0'
disintegrated rock	-70.0' to –72.7'
limestone	-72.7' to –86.2'

No water level recorded.

WPA IV:5:142
Sprague and Henwood, 1945
Harlem River, just outside shoreline east of Second Avenue, north of East 129th Street.

decking	+5.0' to +4.5'
space	+4.5' to +0.0'
river	+0.0' to –10.0'
black organic silt and wood	–10.0' to –28.5'
gray medium sand	–28.5' to –38.0'
red and gray silt and sand	–38.0' to –66.0'
red silt, trace of clay	–66.0' to –70.8'
boulder	-70.8' to –72.3'
fine to coarse gray sand and gravel	–72.3' to –81.0'
red silt, trace of clay	-81.0' to –91.0'
gray fine to coarse sand and gravel	-91.0' to –112.0'
white crystalline limestone	-112.0' to –120.0'

No water level recorded.

WPA IV:5:143
Sprague and Henwood, 1945
Harlem River, just outside shoreline of Second Avenue, north of East 129th Street.

river	+0.0' to –20.0'
soft black river silt	–20.0' to –55.0'
gray uniform medium sand	–55.0' to –67.0'
reddish fine to medium sand and gravel	–67.0' to –79.0'
red silt	–79.0' to –81.0'
fine, dark gray sand (micaceous) and red silt	–81.0' to –87.0'
boulders	-87.0' to –91.0'
red fine to medium sand	-91.0' to –96.0

coarsely crystalline white limestone	-96.0' to –104.0'

No water level recorded.

WPA IV:5:144
Sprague and Henwood, 1945
Harlem River, just outside shoreline west of Second Avenue, north of East 129th Street.

concrete platform	+5.0' to +4.0'
space	+4.0' to +0.0'
river	+0.0' to –17.0'
v. soft black sandy organic silt	–17.0' to –26.0'
brown fine silty sand	–26.0' to –33.5'
brown fine micaceous sand	–33.5' to –63.0'
brown and gray medium to coarse sand and rock fragments	–63.0' to –73.0'
gray and brown fine sand and silt	–73.0' to –80.0'
reddish silt	–80.0' to –83.0'
very fine gray sand	–83.0' to –91.0'
reddish very fine sand	–91.0' to –94.5'
gray fine micaceous sand and silt trace	–94.5' to –112.5
heavy silicated limestone over limestone	–112.5' to –120.5'

No water level recorded.

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