Archaeological Documentary Study (Phase 1A)

419 Broadway

PREPARED FOR

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PREPARED BY



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August 2018

Project Summary

SHPO Project Review Number: N/A

Involved Local, State and Federal Agencies: New York City Landmarks Preservation Commission (LPC), New York City Department of City Planning

Phase of Survey: Phase 1A Documentary Study

Survey Area (English & Metric)

Number of Acres Surveyed: 0.14 acre (0.06 hectare)

- > Number of Square Meters and Feet Excavated: None
- > Percentage of Site Excavated: N/A

USGS 7.5 Minute Quadrangle Maps: Jersey City, New Jersey, 1981

Results of Archaeological Assessment

Number & Name of Archaeological Sites identified: None

Number & Name of Historic Sites identified: None

Number & Name of Sites Recommended for Phase II/Avoidance: None

Recommendations: Due to more than a century of disturbance at the site, no further archaeological investigations are recommended

Report Author(s): Allison McGovern, PhD (RPA 16468)

Date of Report: August 10, 2018

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Introduction

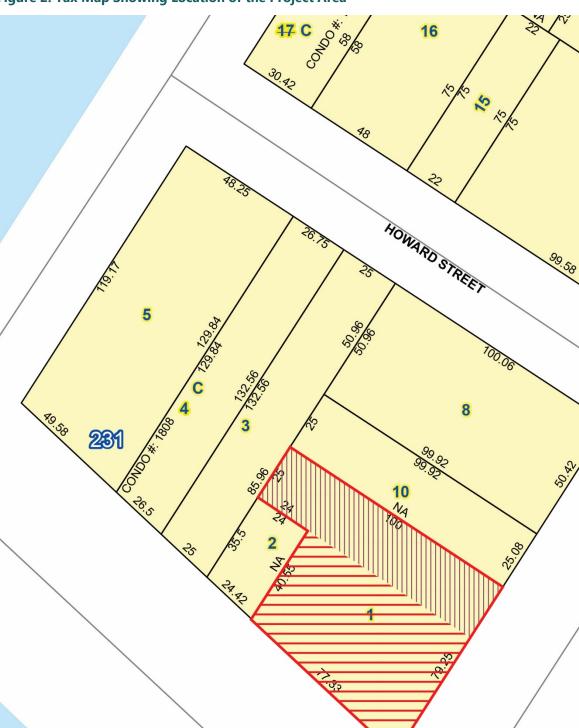
VHB Engineering, Surveying, Landscape Architecture, and Geology P.C. (VHB), New York, New York, has prepared this Phase IA Archaeological Documentary Study report in accordance with the City Environmental Quality Review (CEQR) process for applications to the Department of City Planning ("DCP") on behalf of the City Planning Commission by UAL, ("the Applicant") for the property at 419 Broadway (Block 231, Lot 1), Manhattan, New York.

The Project Area is located at the northwest corner of Broadway and Canal Street in the SoHo neighborhood of Manhattan, Community District 2 (Figures 1 and 2). Three buildings are located within the 0.14-acre parcel: 301 Canal Street, 419-421 Broadway, and 423 Broadway. The Project Area is within the National Register ("NR") listed (90NR00770) and Landmarks Preservation Commission ("LPC") Designated (LPC-00768) SOHO Cast Iron Historic District and contains one building that is listed as contributing to the NR-listed district (USN 06101.003371). The Project Area is opposite Broadway from the LPC-designated SoHo Cast Iron Historic District Extension and is opposite Canal Street from the LPC-designated TriBeCa East Historic District. The proposed project would demolish two non-contributing buildings in the Project Area (on former tax lots 1 and 12, "the Development Site") and develop a new commercial building ("the Proposed Building") with convenience openings to the contributing building at 423 Broadway (the "Historic Building").



Figure 1: 1981 USGS Topographic Map, Jersey City, New Jersey (1:24,000)

7.5-minute USGS series showing the location of the Project Area in blue.



Regular Underwater

Tax Lot Polygon Condo Number

Tax Block Polygon



Feet 0 510 20 30 40

14

Streets

1

1

Miscellaneous Text

Lot Face Possesion Hooks

Possesion Hooks

Boundary Lines

Project Area

Proposed Building Site

|||||| Historic Building Site

According to the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) Cultural Resources Information System (CRIS), the development site is within an Archaeological Sensitive Area. Consistent with the *CEQR Technical Manual*, VHB prepared a Request for Environmental Review to the NYC Landmarks Preservation Commission (LPC) on May 3, 2018 for the proposed project. In a response letter dated May 16, 2018, LPC noted that based on their review of archaeological sensitivity models, reports, and historic maps, there is potential for the recovery of remains from 18th & 19th occupation on the Project Area. LPC recommended "that an archaeological documentary study (Phase 1A) be performed for this site to clarify these initial findings and provide the threshold for the next level of review, if such review is necessary."

The goals of this study are to research the archaeological sensitivity of the development site, and to determine the extent of historic-period and modern-era disturbances within the Project Area. The study was performed in accordance with the *CEQR Technical Manual* (2014), the LPC Guidelines for Archaeological Work in New York City (2002), the guidelines outlined in the Standards for Cultural Resource Investigations and the Curation of Archaeological Collections issued by the New York Archaeological Council (1995) and the Phase I Archaeological Report Format Requirements issued by the New York State Office of Parks, Recreation, and Historic Preservation (2005).

Project Description

The Project Area is comprised of Block 231, Lot 1 (formerly Lots 1, 11, and 12, which were merged in November 2017) at the northwest corner of the intersection between Broadway and Canal Street in the SoHo neighborhood of Manhattan. As previously mentioned, the Project Area is within the National Register listed (90NR00770) and LPC Designated (LPC-00768) SoHo Cast Iron Historic District.

The Project Area includes three buildings, one of which (423 Broadway) is listed with the OPRHP and LPC as contributing to the National/State Register ("N/SR") and LPC listed SoHo Cast Iron Historic District. The restoration of this building is incorporated in the proposed project.

The applicant is proposing to demolish the buildings on former lots 1 and 12 ("the development site") to allow for construction of an 8-story building with ground floor retail and office lobby use and office space above. The proposed project would require a CPC Special Permit pursuant to ZR 74-711 to modify the initial setback and maximum permitted height requirements. The Historic Building (on former lot 11) was constructed in 1823 as a residential home with ground floor retail and is in the Federal style, will be preserved and restored pursuant to the mechanism established by the 74-711 special permit. Photographs representative of current conditions at the Project Area are shown in Figure 3 and Photo 1 through Photo 6.

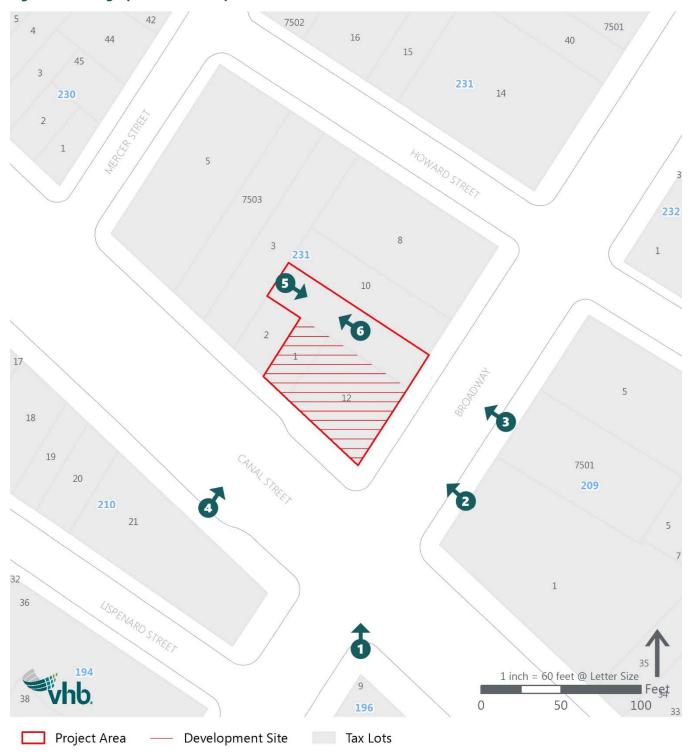


Figure 3: Photograph Location Map

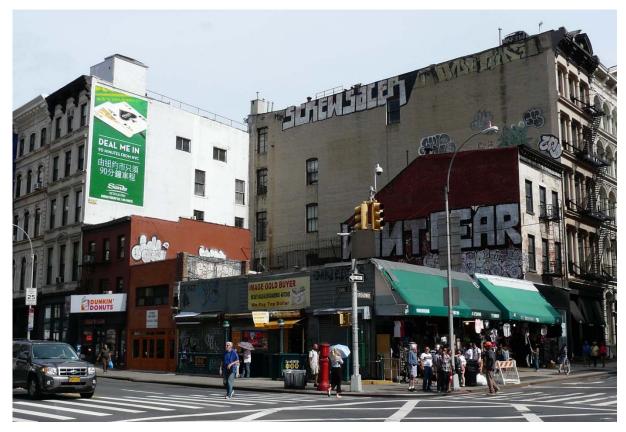


Photo 1 Looking North from the Southeast Corner of Broadway and Canal Street Towards the Project Area

Photo 2 Looking West at Extant Buildings at 419-421 Broadway

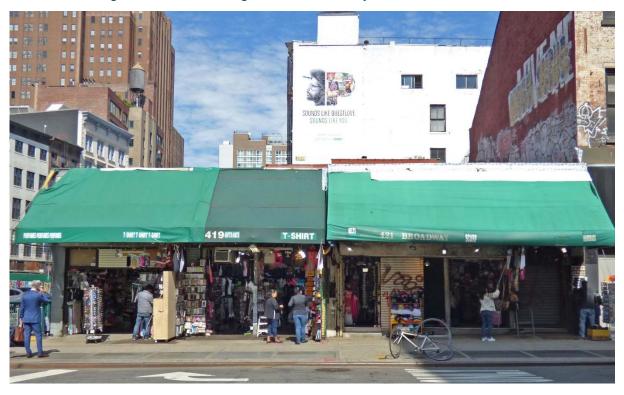


Photo 3 View of Historic Building at 423 Broadway

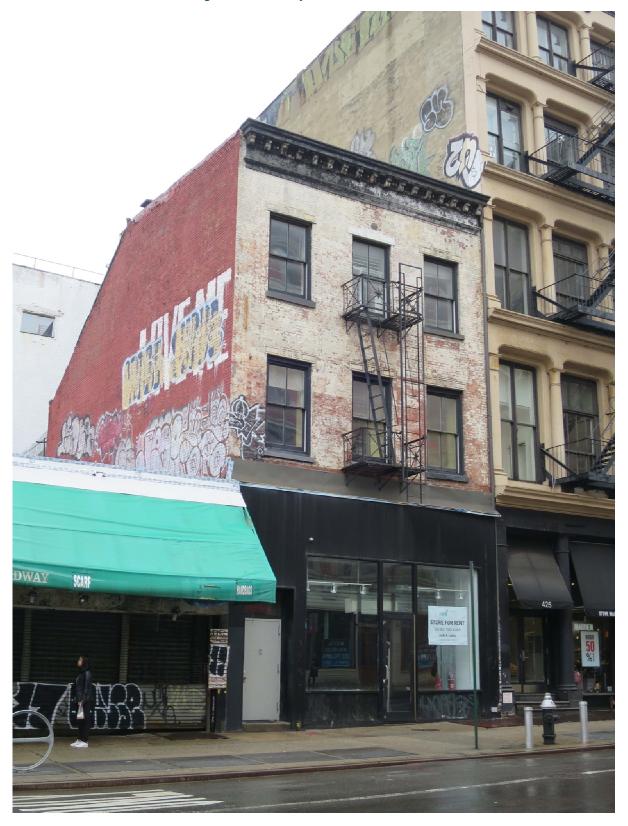




Photo 4 Northeast view of 301 Canal Street

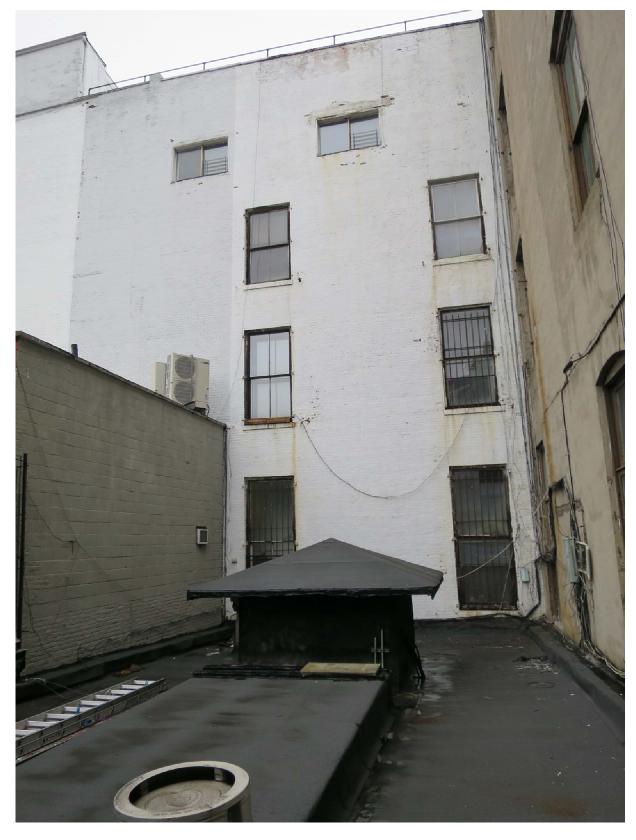


Photo 5 Southwest View of the Rooftop at 423 Broadway



Photo 6 Looking Southeast at the Roof of 423 Broadway

As currently designed, the proposed building would rise to a height of 111'2" without setback and contain approximately 30,359 zoning square feet ("zsf") including floor area in the Restored Building. Ground floors and cellars in both the proposed building and the restored building are proposed to be occupied by UG 6 retail and accessory office uses. Upper floors will be occupied by UG 6 office use as-of-right. Internal access would be provided between the Proposed Building and the Historic Building at all four levels, including the cellar. The project would result in a total of 38,705 gsf and have a maximum height, including bulkhead, of 125'2".

On December 12, 2017 at the Public Meeting, the LPC voted to approve a proposal to modify the interior structure, construct a dormer at the rear sloped roof, excavate the cellar floor, and alter the fire escapes at the subject premises, as put forward in an application completed on November 15, 2017 (Appendix A). A Certificate of Appropriateness for the proposed project was subsequently issued on February 20, 2018 (Appendix B).

Currently, the basement of 423 Broadway extends to roughly 8 feet below ground surface ("bgs"). As proposed, the project would involve ground disturbance to approximately 16 feet bgs for the proposed new building on former lots 1 and 12, as well as 8 feet below the basement of the existing building that is to be restored on former Lot 11 at 423 Broadway, as shown in Figure 4.

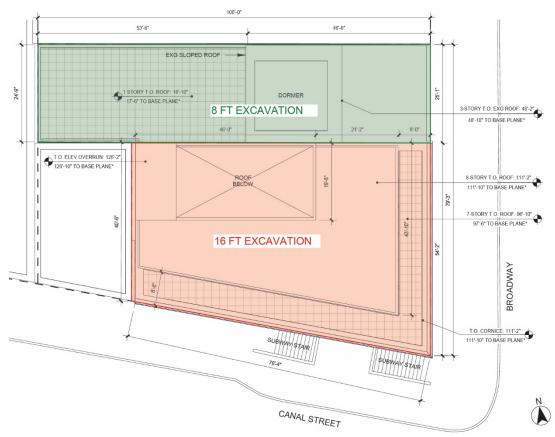


Figure 4: Concept Excavation Diagram Showing Proposed Depths of Disturbance

Source: Morris Adjmi Architects

Research Design

A Phase I archaeological survey typically involves archival research (reconnaissance, or Phase IA) and archaeological testing (intensive, or Phase IB). Initial consultation with LPC resulted in a review letter issued by LPC on May 16, 2018 noting that the Project Area is potentially sensitive for the remains of 18th and 19th century sites and that a Phase IA Documentary Study is warranted.

According to LPC guidelines, the Phase 1A documentary study must:

- > Document the site's use and occupation
- Assess whether the site has been so disturbed in the past that it no longer has potential for intact archaeological remains to be present
- Assess the probability that potential archeological resources will be disturbed by the proposed project
- > Explain why further archaeological work should or should not be required

In order to accomplish this, this documentary study includes a review of data from a variety of digital and archival repositories for relevant information, including archaeological site forms and archaeological surveys conducted near the Project Area; archival research to determine the range of potential archaeological sites that may exist within the Project Area; a summary of the specific land use history for the Project Area that focuses on the physical integrity of potential archaeological resources and the impact of previous disturbance to the archaeological record; a brief sketch of the area history and how the specific history of the Project Area fits within that general historical context; and evidence of historic and existing ground disturbance.

A variety of published and unpublished materials was reviewed for this study, including historic maps and photographs, local histories, building records, and secondary historical accounts. In addition to historic/archival research, VHB consulted resources on soils, geology, hazardous materials, and soil borings to describe evidence of historic and recent-period disturbance at the site (e.g., CBRE 2017). VHB conducted research at the repositories noted in Table 1.

Table 1: Archival Research and Repositories

	s and Actions, Lots 1, 11, and 12, 1905-Present,
Building Information System and Records mic Department	crofilm records and approved drawings
Environmental Protection, Manhattan 197	ter Tap Cards for years 1937, 1938, 1961, 1966, 1972, 78, 1986, 2000, and 2002 ver connection records not available for the project
	cels
New York City Department of Finance, City Pro Register	perty Conveyance Books Property Deed, 1767-1956
New York City Department of Records, Pro Municipal Archives	perty Cards, Lots 1, 11 and 12
New York City Landmarks Preservation Arch Commission	haeological reports, historic photographs
New York County Office of the Register, Cor Deeds and Conveyances	nveyance records, 1, 11 and 12
New York State Office of Parks, Recreation Arch and Historic Preservation, Cultural Resource Information System	haeological report and archaeological form records
New York Public Library, Pincus and Hist Princess Fayal Map Division	toric maps, 1776-1921
	/ Directories, 1893-1898
Section Rev	verse Phone Directories, 1929, 1935, and 1940
New York Historical Society Hist	toric photographs
Museum of the City of New York Hist	toric photographs
Metropolitan Museum of Art Hist	toric photographs
NYCityMap 192	26 and 1951 aerial photographs
U.S. Library of Congress Hist	toric maps, 1800-1896
Historic Map Works Hist	toric maps, 1890
USGS Map Locator Top	pographic maps
Web Soil Survey Soil	l map

Environmental Setting

The Project Area, comprised of three lots measuring roughly 0.14 acres, lies in lower Manhattan, a densely-settled urban landscape comprising, residential, retail, and commercial office properties. Topography of the area is gently sloping, but the Project Area surface is relatively level with an average elevation of 18 feet (5.4 meters) above mean sea level (Figure 1). There are no surface forms of fresh water within or adjacent to the Project Area. The nearest source of water is the Hudson River, located 0.55 mile (885 meters) to the northwest.

There is generally some disagreement as to the age and classification of Manhattan geology (see Gratacap 1909; Kieran 1982; Schuberth 1968). According to the United States Geological Survey ("USGS"), Manhattan island is situated geologically within the bedrock region known as the Manhattan Prong of the Highlands Province, a portion of the Appalachian Piedmont (US DOI 2017). Manhattan is underlaid by metamorphic and sedimentary rock of Late Precambrian and Early Paleozoic age. The most recent geological strata, the Manhattan Schist, serves as an anchor for Manhattan architecture in most sections of the city (Kieran 1982; Taterka 1987). During the Wisconsin period (the last glacial period) of the Pleistocene, a mantling of glacial drift was deposited over the older bedrock. This left gravel and boulders deposited around 15,000 years ago, along with deposits of both unsorted till (a clay matrix with boulder to pebble-sized rocks intermixed), and sorted and stratified sand and gravel (the result of glacial outwash). Glacial till fills the valley between Washington Street and Chambers Street, where bedrock is so far below the surface that it cannot support the foundation of modern skyscrapers. In fact, according to Kieran:

This is also the explanation of the famous Canal Street that bisects the area. All through the colonial period this was a region of tidal flats, marshes and river inlets. There were times when the tides ran so high that the waters of the Hudson and the East River reached through these marshes to meet and mingle and make two islands out of Manhattan instead of one. It was to remedy this nuisance that a canal across the island was opened in 1809 with tree-lined roadways on each side and numerous bridges for north and south traffic. However, the canal became Canal Street a few years later when the waterway was bricked over and its function changed to that of a sewer" (1982:23).

Soils in the Project Area consist of Urban land, tidal marsh substratum (UmA), 0-3% slopes. Urban land, which is commonly found in dense, urban areas, is characterized by soils that have been heavily disturbed by anthropogenic activities. In the case of the Project Area, the Urban land soils likely represent filling of the marshy, low-lying areas in the 18th century, and subsequent development in the 19th and 20th centuries. The representative profiles for Urban land, which correspond with data from soil borings taken in 2017 (see Boring Plan – Subsurface Investigation prepared by Soil Mechanics Drilling Corporation in Appendix A) are presented in Table 2.

Table 2: Mapped Soils Within the Project Area

Name	Soil Horizon Depth	Color	Texture	Slope %
Urban land, tidal	0-6 inches (0-15 cm)	N/A	Cemented material	0-3
marsh substratum	6-20 inches (15-50 cm)	N/A	Cemented material	
	20-79 inches (50 cm-2 m)	N/A	Very sandy gravel	

Existing Conditions

There is no vegetation visible within the Project Area. All portions of the Project Area appear to be occupied to the lot lines by existing buildings (Photographs 1-6) with basements. The Historic Building at 423 Broadway (former Lot 11), which will be restored, currently has a basement level that extends 8 feet (2.4 meters) bgs. The building at 301 Canal Street also has a basement that is excavated to 7 feet (2 meters) bgs. The buildings located at 419-421 Broadway (Lot 12) are single-story structures with a basement, constructed around 1955 (see Boring Plan – Subsurface Investigation prepared by Soil Mechanics Drilling Corporation in Appendix A). In addition to these structures, there is an entrance for the Canal Street MTA Subway Station along Canal Street, parallel to the building at 419 Broadway (Photograph 1).

Archaeological Site File Search

Consultation with the NYC LPC and the NYS CRIS indicates that the project lies within an Area of Archaeological Sensitivity. Nine archaeological sites and one New York State Museum area (NYSM 4059) have been documented within a half-mile radius of the Project Area and 14 archaeological survey reports have been completed and filed with the OPRHP and/or LPC, as shown in Table 3.

Site Identifier	Site Name	Period/ Cultural Affiliation	Description	References
NYSM 4059; ACP NYRK 9	Shell Point	Pre-contact	Village, shell middens.	(Parker 1920)
06101.007671	576 Broome Street	Historic/Euro- American?	Backyard of 576 Broome Street (Block 578 Lot 79), a four-story brick building; privy excavation	(Frissell, Clark, and Wall 1997)
06101.017265	Spring Street Presbyterian Church Cemetery/Vaults	Historic with human remains	Human burials associated with the Spring Street Presbyterian Church	URS Corp (Mooney, Morin, Wiencek and White 2008)
06101.001285	Washington Street Urban Renewal site	19 th century	1826 Foundry and historic land fill	

Table 3: Archaeological Sites Identified Within 0.5-miles (0.8-kilometers) of the Project Area

Site Identifier	Site Name	Period/ Cultural Affiliation	Description	References
06101.018564	St. Philip Cemetery	19 th century with human remains	Partially mortared stone and brick retaining wall; human remains uncovered; this was the former site of the St. Philips Cemetery (c.1795-1853).	Historical Perspectives, Inc. (HPI 2006)
06101.016117	Columbus Park Pavilion cistern	19 th century	Cistern excavation and monitoring	Chrysalis Archaeology (Loorya and Ricciardi 2007)
06101.012569	Worth Street Historic Site	19 th century	Foundation remains of Broadway Tabernacle Church, foundation remains of late 19 th century building, truncated mid-19 th century well	URS Corps (Morin 2003)
06101.013335	Tweed Courthouse Area	Historic with human remains	Burials, structures, and other deposits.	Hartgen Archaeological Associates (Raemsch 2003)
06101.006980	African Burial Ground	Historic/African American with human remains	A portion of an 18 th century cemetery with unmarked graves for free and captive Africans and African Americans.	John Milner Associates (Perry, Howson, and Bianco 2006)
06101.006981	Five Points Archaeology area	Historic/Irish, African American	Archaeological remains of 19 th century Five Points neighborhood	John Milner Associates (Yamin <i>et</i> <i>al</i> . 2000)

The archaeological sensitivity of the area is based on documentary and archaeological evidence for 18th and 19th century settlements and burial locations that have been identified south of Worth Street (including those associated with the African Burial Ground and the First Almshouse [Raemsch 2003]). The African Burial Ground and the Commons Historic District was designated by LPC in 1991 due to its archaeological sensitivity. The northern boundary of this archaeological district extends to Duane Street and Pearl Street between Broadway and Centre Street, roughly six blocks south of the Project Area.

The Project Area is within the NR-listed (90NR00770) and LPC Designated (LPC-00768) SoHo Cast Iron Historic District. The SoHo Cast Iron Historic District is historically significant for its contribution to residential and commercial history, and its architecture. This district comprises roughly 500 buildings within 28 blocks bounded by Broadway, West Broadway, Canal, Howard, Crosby, East Houston and West Houston Streets. According to the NR nomination form, this district has "the largest concentration of full and partial cast-iron facades anywhere in the world" (LPC 1973). These buildings mostly date to between 1860 and 1890, and exhibit an ornate style of decoration in Italianate, Renaissance Revival, French Second Empire, Queen Anne, and Romanesque styles that, through the use of cast-iron, were less expensive to produce than in stone. As mentioned earlier, the Project Area includes one building listed with the OPRHP and LPC as a building contributing to the N/SR and LPC listed SoHo Cast Iron Historic District, 423 Broadway.

7 Prehistoric Sensitivity

Prehistoric cultural sequences represented in New York comprise the three major archaeological time periods known as the Paleoindian (c. 13,500-10,000 years Before Present, or B.P.), Archaic (10,000-3,000 years B.P.), and Woodland (3,000-350 years B.P.). Overall, these generalized cultural sequences, with minor localized subdivisions (e.g., Early Archaic, Late Woodland), conform well to the wider settlement and site patterns observed throughout the Mid-Atlantic and Northeast regions of eastern North America.

The results of more than twenty years of archaeological studies in New York and the southern New England region suggests that the locations of pre-contact archaeological sites appear to be strongly influenced by the proximity of navigable bodies of water (e.g., streams, rivers, bays), natural sources of fresh drinking water (e.g., springs, seeps), elevated landforms, and lithic outcrops (sources of raw material for the manufacture of stone tools). Typically, pre-contact archaeological deposits encountered on landforms associated with larger water bodies like rivers or bays, contain a greater diversity of artifact assemblages, subsurface features, and overall dimensions. Sites located away from water sources are typically considered to be short-term resource procurement zones. These are considered logistically mobile sites where a limited range of activities were performed, such as hunting, nut collecting, plant processing, or lithic raw material procurement (i.e. quarries). Archaeological assemblages recovered from these loci frequently contain a low diversity of artefactual remains, due to the short term/specialized use of resource procurement zones.

Archaeological Documentary Study (Phase 1A)

One pre-contact archaeological site, NYSM area 4059, is documented within a half-mile of the Project Area. This site, a Native American village, was located north of City Hall Park in the location of the former Collect Pond, known to the indigenous peoples as "Klock" (Bolton 1975) and to the Dutch as "Kolch" (small pond or pit-hole). Identified as Shell Point, it likely marks the presence of shell middens that were identified in the area during the early historic period.

Although the NSYM area 4059 is mapped in CRIS across a broad area that includes the Project Area, the boundaries of the site are not substantiated by archaeological investigation. Prior to the arrival of Europeans, the Project Area was a marshy, swampy area prone to flooding from the Hudson and East Rivers. The marshy area may have been an area where hunting took place during the pre-contact area. However, because of the fluctuations in water level, the Project Area is unlikely to contain evidence of pre-contact habitation. As mentioned earlier, 19th century cutting and filling, followed by construction, also impacted the Project Area and vicinity. Based on this understanding, the Project Area has a low potential for the presence of intact soils and archaeological deposits dating to the precontact era.

Historic Context

Several sources (primary and secondary) were consulted to develop the historic context for the Project Area and surroundings. For instance, trends in development and land use can be discerned by a study of historic-period maps. In combination with deeds and conveyances, these data can shed light on ownership and development. Photography became more widely used beginning in the mid-19th century, offering snapshots of streetscapes and buildings. Together with secondary accounts, these resources provide the pieces for reconstructing past landscapes.

Beginning with the earliest available conveyance records, the Project Area was documented as part of the larger landholdings of Nicholas Bayard, a nephew of Peter Stuyvesant (Table 4).

	Former Lot 1			Former Lot 11			Former Lot 12		
Year	Grantor	Grantee	Notes	Grantor	Grantee	Notes	Grantor	Grantee	Notes
1767	Dirck Lefferts	to Leonard and E	lsie Lispenha	rd and Henry a	nd Mary Barclay				
1783	Nicholas Baya	Nicholas Bayard leased to Abraham Mortier							
1788	Nicholas and	Stephen Bayard a	ind John Dyc	kman					

Table 4: Historic Deeds and Conveyances

	Former Lot 1			Former Lot	11		Former Lot 12		
Year	Grantor	Grantee	Notes	Grantor	Grantee	Notes	Grantor	Grantee	Notes
1792				Nicholas Bayard, Peter Van Livingston, William, Mary and Catharine Beekman, John A. Graham, Henry Ten Eyck, Peter W. Dowe, and Elias Smith	Daniel Ludlow and Brockhust Livingston	Liber 48:191; lots 3, 7 1/2-11			
1808	Joseph and William Blackwell, James G. and Frances E. Forbes, William and Harriet Howell	William and Harriet Howell	Partition deed lots 1, 2, 8, 10, 12 Liber 81:382				Joseph and William Blackwell, James G. and Frances E. Forbes, William and Harriet Howell	William and Harriet Howell	Partition deed lots 1, 2, 8, 10, 12 Liber 81:382
1821				Joseph and William Blackwell	William and Harriet Howell, James Grant and Frances Elizabeth Forbes	Liber 155:199			
1821				William and Harriet Howell	Benjamin Lord	Liber 156:161			
1822	John and Mary Ashfield	Joseph Blackwell	Lots 1, 2, 8-12 Liber 155:397				John and Mary Ashfield	Joseph Blackwell	Lots 1, 2, 8-12 Liber 155:397
1822	Thomas and Ann Stevenson	Joseph Blackwell	Lots 1, 2, 8-12 Liber 155:399				Thomas and Ann Stevenson	Joseph Blackwell	Lots 1, 2, 8-12 Liber 155:399
1822	James Kip	Joseph Blackwell	Lots 1, 2, 8-12 Liber 155:402				James Kip	Joseph Blackwell	Lots 1, 2, 8-12 Liber 155:402
1822	John J. and Martha Montayne	Joseph Blackwell	Lots 1, 2, 8-12 Liber 157:202				John J. and Martha Montayne	Joseph Blackwell	Lots 1, 2, 8-12 Liber 157:202

Veer	Former Lot	1		Former Lot	Former Lot 11			Former Lot 12		
Year	Grantor	Grantee	Notes	Grantor	Grantee	Notes	Grantor	Grantee	Notes	
1822	Thomas and Elizabeth Duggan	Joseph Blackwell	Lots 1, 2, 8-12 Liber 157:205				Thomas and Elizabeth Duggan	Joseph Blackwell	Lots 1, 2, 8-12 Liber 157:205	
1826	Joseph Blackwell (ex)	Frances Elizabeth Forbes	Lots 1, 2, 10, 11, 12 Liber 203:62	Joseph Blackwell (ex)	Frances Elizabeth Forbes	Lots 1, 2, 10, 11, 12 Liber 203:62	Joseph Blackwell (ex)	Frances Elizabeth Forbes	Lots 1, 2, 10, 11, 12 Liber 203:62	
1827	Frances Elizabeth Forbes	Thomas W. Marshall	Lots 1, 2, 12 Liber 213:132				Frances Elizabeth Forbes	Thomas W. Marshall	Lots 1, 2, 12 Liber 213:132	
1848				Benjamin Lord, Edward O. West, and Anna Lord	separation agreement	Liber 593:11				
1856				Jacob Smith (heir), John, Levey and Betsey E. Smith	Charles H. Dearborn	Liber 708:678				
1862				Lemuel Goodwin	Lucretia P. Woodman	Lots 10, 11 Liber 1036:147 Asst of Interest				
1865				Albert Varney	Joseph Cushing and Andrew T. Roberts	Liber 917:589				
1866				Joseph A. Vaisin	Peter Schenck	Liber 981:144 Trust Deed				
1867				Elizabeth Ann and Benjamin Berry	Charles W. Woodman	Liber 1008:651 1/99 int.				
1868				Elizabeth Ann and Benjamin Berry	Charles W. Woodman	Liber 1026:500 1/99 int.				
1868				Wentworth, Andrew J. Sr.	James S. Kimball	Liber 1026:503 1/16 int, 1/11 int.				
1868				Amaziah Goodwin (heir), Amy and Hannah Goodwin	Increase S. Kimball	Liber 1036:375 1/9 int, 1/11 int				

	Former Lot 1	1		Former Lot	Former Lot 11			Former Lot 12		
Year	Grantor	Grantee	Notes	Grantor	Grantee	Notes	Grantor	Grantee	Notes	
1868				Lydia Jane Morse (heir), Amy Goodwin and Stephen N. Morse	lncrease S. Kimball	Liber 1028:601 1/11 int				
1870				Peter Schenck (trustee)	Certificate	Liber 1139:117 , Discharg e of Mortgag e				
1870				Hannah M. (signs only) and Joseph Cushing	Andrew T. Roberts	Liber 1140:457				
1871				Charles H. Dearborn	Thomas W. Marshall	Liber 1127:299				
1871				Joseph and Catherine M. Goodwin	William Emery	Liber 1172:503				
1872				lsaac Wentworh	Jeremiah G. Shaw	Liber 1224:682				
1872				Joanna and William Carter	William Emery	Liber 1224:684				
1873				Mary Staples	Edmund Grant	Liber 1265:514				
1873				Mary Elisabeth Foye (heir), Benjamin Lord and Merrith S. Foye	Charles W. Woodman	Liber 1273:182				
1875				Joanna Bell, William Carter or Emery	Jeremiah G. Shaw	Liber 1321:7				
1875	Ann Marshall, widow; Thomas Marshall, deceased	Mary Louise Van Ness	Quitclai m; Liber 1340:10							
1878				Benjamin Lord (ex of)	Benjamin Lord (ex of)	Liber 1441:418				
1882				Edmund and Mary J. Grant	Jeremiah G. Shaw	Liber 1648:466				

	Former Lot 1			Former Lot 11			Former Lot 12		
Year	Grantor	Grantee	Notes	Grantor	Grantee	Notes	Grantor	Grantee	Notes
1883	Ann Marshall (devisee of) Thomas W. Marshall	Mary L. Van Ness	Liber 1727:326				Ann Marshall (devisee of) Thomas W. Marshall	Mary L. Van Ness	Liber 1727:326
1883							Ann Marshall widow and devisee of Thomas W. Marshall	Mary L. Van Ness and Caroline E. Marshall	Liber 1731:399
1883				Abraham Wentworth (ex od)	Jeremiah G. Shaw	Liber 1749:270			
1883				Lydia Goodwin	Harriette Emery	Liber 1749:273			
1886							Caroline E. Marshall and Mary L. Van Ness	Mary L. Van Ness and Caroline E. Marshall	Liber 1996:22
1886							Caroline E. Marshall and Mary L. Van Ness	Ann Marshall	Liber 1996:22
1886							Gilbert N., Edmund C., Albert A., Herbert, and Robert T. Marshall	Mary L. Van Ness and Caroline E. Marshall	Liber 1991:45
1886				John W. Wentworth, heir of Benjamin Lord	Patience McCrillis	Liber 2004:126			
1887							Gilbert N., Edmund C., Albert A., Herbert, and Robert T. Marshall	Mary L. Van Ness and Caroline E. Marshall	Liber 2007:44

	Former Lot 1			Former Lot	Former Lot 11 Former Lot 12			t 12		
Year	Grantor	Grantee	Notes	Grantor	Grantee	Notes	Grantor	Grantee	Notes	
1887				Sophronia A. Witham	Jeremiah G. Shaw	Liber 2022:253				
1887				Nancy and John Perkins	Jeremiah G. Shaw	Liber 2022:255				
1887				Simon Ricker	James P. Jones	Liber 2022:257				
1887				Charles H. and Almon F. Wentworth, Melissa Grant, Isa M. Wentworth, Isaac Grant	Jeremiah G. Shaw	Liber 2022:259				
1887				Joel and Fannie Goodwin	Jeremiah G. Shaw	Liber 2022:262				
1887				William, Alonso, Melisa, and Catharine W. Wentworth	Jeremiah G. Shaw	Liber 2022:264				
1887				Benjamin L. and Sarah A. Staples	Jeremiah G. Shaw	Liber 2022:289				
1887				Christopher Staples	Jeremiah G. Shaw	Liber 2022:291				
1889				Augustus Cruikshank, trustee of Benjamin Lord	Samuel Inslee	Conveya nce; Liber 2229:1				
1893							George Putnam Smith (referee), Mary L. Van Ness, Plaintiff, against Mutual Life Insurance Company, et al. Defendents	Samuel Inslee	Conveya nces Liber 16:268	

	Former Lot 1			Former Lot 11			Former Lot 12			
Year	Grantor	Grantee	Notes	Grantor	Grantee	Notes	Grantor	Grantee	Notes	
1893							Samuel Inslee	Leon Wasserman	Liber 13:399 Lease	
1894	Mary L. Van Ness	E. Wachsman	Liber 23:222 Lease							
1901	Mary L. Van Ness	E. Wachsman	Liber 66:140 Lease							
1901	Mary L. Van Ness	E. Wachsman	Liber 67:100 Lease							
1904	Mary L. Van Ness	Emmanuel Wachsman	Liber 83:189 Lease							
1907	Mary L. Van Ness	Emmanuel Wachsman	Liber 110:279 Lease							
1911	Mary L. Van Ness	Emmanuel Wachsman	Liber 133:336 Lease							
1918	Mary L. Van Ness	Mary K. Marshall , Penelope A. Luttgen	Deed; Liber 3091:398							
1924- 31	Mary K. Marshall, P. Agnes, Luttgen	Edward Katz and Louse Wender	Lease; Liber 3411:199							
1927	Beatrice Churchin	Mary K. Marshall (executors)	1/2 interest; Liber 3628:189							
1929	Agnes Madeline Sack	Elmer Marshall Luttgen	RTI of 1; Liber 3740:413							
1943	Beatrice Churchin	Louis Kohn	Liber 4232:33							
1943	Ellmer Marshall Luttgen	Louis Kohn	Liber 4235:320							
1944	Frederick Williams Luttgen	Louis Kohn	Liber 4292:461							

	Former Lot 1			Former Lot 11			Former Lot 12		
Year	Grantor	Grantee	Notes	Grantor	Grantee	Notes	Grantor	Grantee	Notes
1946				Walter B. and Frieda B. Mount, Raymond I. and Eunice O. Mount, Russell T. and Nora S. Mount, and Grace Inslee Hepburn	Weissleder Realty Corp, 270 Bway, NYC	Deed Liber 4439:326			
1946				Weissleder Realty Corp	Samuel Weissleder	Deed Liber 4439:331			
1952				Weissleder Realty Corp	Samuel Weissleder	Correctio n Deed Liber 4770:140			
1953				Samuel Weissleder	Max Gordon	Deed Liber 4847:427 (1st mortgag e)			
1954							Grace Inslee Hepburn	Broadway- Canal Corp	Deed Liber 4885:357
1954							Russell, Raymond, Eunice and Frieda Mount	Broadway- Canal Corp	Deed Liber 4885:381
1955							Broadway- Canal Corp	Gene Kohn (Lawrence, Ll), Cynthia Wulwick, Julie Bass	Deed Liber 4944:10 (mortg)
1956				Samuel Weissleder, Max Gordon	Suffern Sportswear, Inc.	Deed Liber 4981:613 (mortg)			
1956				Suffern Sportswear, Inc.	Broadway Canal Co., Gene Kohn	Deed Liber: 4981:615			

The property had passed to Bayard in the late 17th century from his brother-in-law Augustine Herrman, who acquired extensive tracts of land in the 1660s (LPC 1973). The property came to be known as the Bayard Farm in the 18th century and retained its rural

Archaeological Documentary Study (Phase 1A)

character because of its separation from the core of the city, in lower Manhattan. Frequent flooding of the area near present-day Canal Street caused the farm and nearby territories north of Canal Street to remain outskirts of the city. According to the LPC designation report for the SOHO Historic District, the district lies in part within the western section of the Bayard Farm.

Also of note is the settlement of African men and women, once captive but eventually freed after a period of twenty-year service to the Dutch West Indian Company. Indeed, the historic district was home to the first free black settlement on Manhattan Island (Stokes 1915, LPC 1973). Archival research indicates that Domingo and Marycke Angola, a free black married couple, owned land between Houston Street, Prince Street, Greene Street, and Broadway in 1663. A free black settlement remained in this area for roughly two hundred years, until the character of the area changed from residential to commercial in the 19th century (LPC 1973).

Because the Project Area remained on the outskirts of city-limits until the late 18th century, mid-18th-century plans of the city are among the earliest to include the Project Area. The Ratzer *Plan of the City of New York, in North America: Surveyed in the Years 1766 & 1767* shows the Project Area as part of swampy Lispenard's Meadow surrounded by farmland. As shown in Figure 5, no development is shown within the Project Area.



Figure 5: 1767 Ratzer Plan of the City of New York

In North America: Surveyed in the Years 1766 & 1767, the plan shows the Project Area as marshy land. The Project Area is part of extensive farmland that was situated north of the city limits.

The 1797 A new & accurate plan of the city of New York in the state of New York in North America shows no change to the Project Area, as shown in Figure 6.





This resource shows Broadway extended north of present-day Canal Street. However, Canal Street is not yet depicted, as the area is still illustrated by swamps and tributaries.

Several Revolutionary War-era fortifications and redoubts were established throughout Manhattan: two were on Mercer Street between Broome and Spring Streets, one stood in the center of the block bounded by Grand, Broome, Mercer and Greene Streets, and one stood between Grand and Broome Streets (Stokes 1915).

Following the war, Nicholas Bayard, III mortgaged his farm. It was later divided into lots near the end of the 18th century, with little development taking place until the first decade of the 19th century (LPC 1973; Table 4). One of the earliest businesses to have operated near the Project Area was Blackwell's Foundry, a cast-iron foundry and sales shop that was established at the corner of Broadway and Canal by 1794. This business is documented within present-day Lot 2 of Block 231, outside the limits of the Project Area.

By 1808, the Project Area was part of a partition deed that comprised of (then) Lots 1, 2, 8, 10, and 12. The Blackwells retained ownership of former Lots 1 and 12 until 1826, when this portion of Blackwell's estate was conveyed to Frances Elizabeth Forbes (Table 4). Meanwhile, the history of Lot 11 followed a slightly different path, as it passed through ownership of the Bayards to Ludlow and Livingston, then Blackwell, followed by Howell and others, until Howell sold the parcel to Benjamin Lord in 1821 (Table 4). It was Lord who built the brick, Federal-style building that stands on former Lot 11 today.

Early 19th-century development of the area was facilitated by the municipal closing of Collect Pond, which was located roughly 0.24-miles (0.39 kilometers) southeast of the Project Area. At the time, the Collect was a health hazard to Manhattan residents. According to the Historic District designation report:

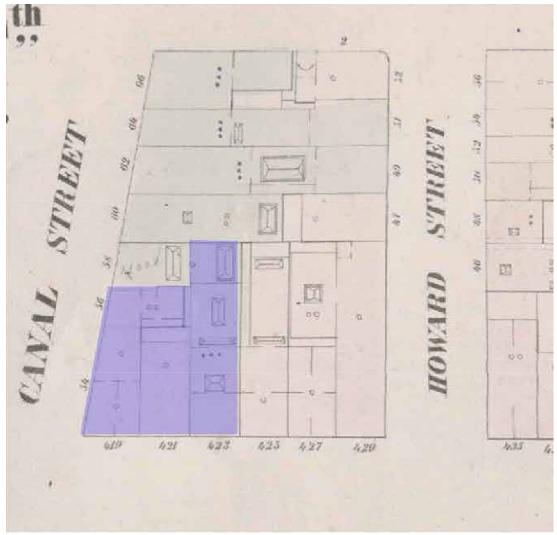
"the shores of the Collect were strewn with a sluggish sewer of green water and parts of Lispenard's Meadow was a bog that yearly claimed a number of cows. It was also a breeding ground for the mosquitoes that almost every summer spread the dreaded yellow fever plagues. After years of bickering and numerous plans and proposals, Bayard's Hill which stood over one hundred feet above the present grade of Grand Street and the other hills in the vicinity were cut down and used, together with the City's rubbish, to fill in the marshy land" (LPC 1973:5)."

Surface recontouring included filling the stream that ran from the Collect, through Lispenard's Meadow, and fed into the Hudson River. The polluted stream contained sewage and run-off from the tanneries and other manufactories that bordered the Collect. This stream ran parallel to present-day Canal Street. Draining the meadow was a constant project, and in 1805 a ditch was dug along present-day Canal Street to drain the meadow and the Collect (Kadinsky 2016). A c.1886 illustration shown in Figure 7, intended to represent c.1800, shows a stone bridge built over the canal to extend Broadway to the north and a tavern on the corner of Broadway and the canal, across the street from the Project Area.

Figure 7: c1886 Illustration of a c. 1800 Stone Bridge over the canal at present-day Canal Street



Broadway was paved and sidewalks constructed from present-day Canal Street to Astor Place in 1809. By 1817, the canal was filled, and from that point on, development of the present-day SOHO Historic District accelerated. Between 1815 and 1850, Broadway north of Houston Street was an affluent and fashionable residential district. Rows of houses in the Federal style were constructed along portions of Canal Street and Spring Street. At this time, the extant house at 423 Broadway was constructed. But by 1850, the character of the district changed from residential to commercial, as brick retail shops were replaced by cast iron, marble and brownstone storefronts (LPC 1973). In addition to stores and warehouses, the area became home to hotels and musical venues, making Broadway between Canal and Houston Streets the "entertainment center of the city" (LPC 1973:6). Fire insurance maps dating to 1854 shown in Figure 8 and 1857 shown in Figure 9 show the Project Area is improved with several buildings.





Building development is shown within former Lots 1, 11, and 12.



Figure 9: 1857 Fire Insurance Map

Two buildings are shown on former Lot 12 (419-421 Broadway), one building on former Lot 1 (301 Canal Street), and one building on former Lot 11 (423 Broadway).

An 1856 photograph of Broadway at Figure 10 shows three buildings standing in former Lots 11 and 12: the extant building at 423 Broadway (pointed out with an arrow above it) and two, taller buildings at the corner of Broadway and Canal Street.



Figure 10: 1856 Photograph from the Metropolitan Museum of Art

Three buildings are shown within the Project Area facing Broadway on former Lots 11 and 12.

The area changed again from entertainment-centered to commercial from 1860 through the 1890s. Large factories and stores were constructed throughout the district to accommodate

the mercantile and dry-goods trade. Lace, silk, and other textiles are some of the specialized commodities manufactured and sold in the area at that time (LPC 1973). However, no change is shown in Lots 11 and 12, as shown in Figure 11 through Figure 13.

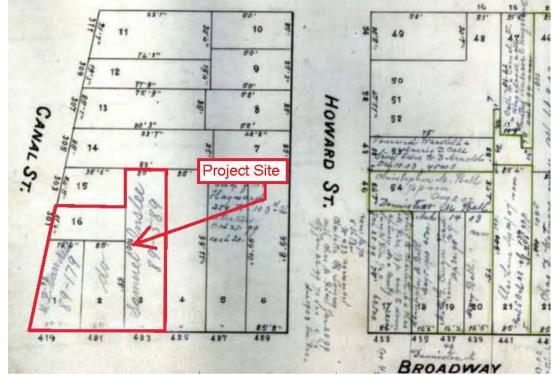


Figure 11: Exerpt from c1890 Block Book Vol. 2 Canal to Fourteenth Street

Property ownership is shown within the Project Area.



Figure 12: 1891 Photograph of the Northwest Corner of Canal Street and Broadway

Source: The Museum of the City of New York

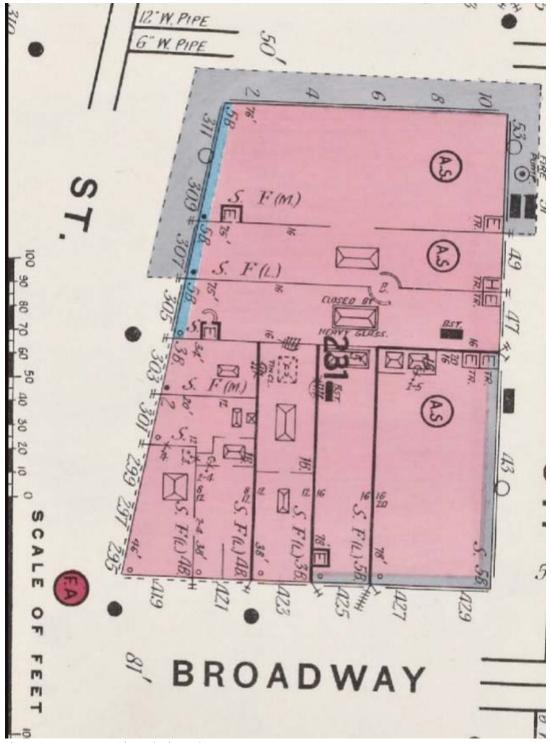




A dwelling is shown at 301 Canal Street, manufacturing at 419-421 Broadway, and light manufacturing at 423 Broadway

The area drew little attention from developers at the turn of the 20th century, and many of the buildings fell into decay. Fire insurance maps from 1903 and 1921 illustrate the Project Area had remained much the same as it had since the mid-19th century, while development occurred in all areas surrounding the Project Area, as shown in Figure 14 through Figure 17.





The same structures are shown in the Project Area.

Figure 15: 1910 Photograph



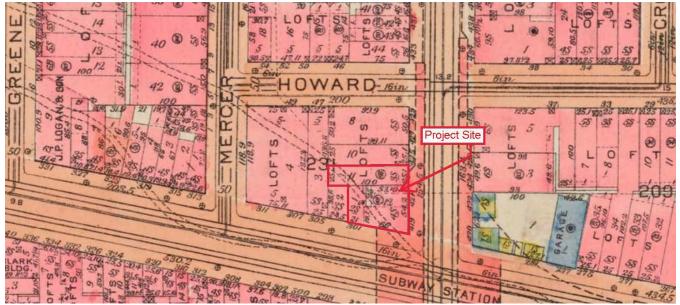
The buildings at 419-421 and 423 Broadway are shown (source: New York Historical Society)



Figure 16: 1914 Photograph

Photograph of the northwest corner of Canal Street and Broadway (source: the New York Historical Society)

Figure 17: 1920 Fire Insurance Map



The development conditions of the site in 1920 are shown

Around the 1950s, the two buildings on Lot 11 were demolished and replaced by the extant, single-story structures at 419-421 Broadway. One of these buildings was a Nedick's restaurant in 1973, as shown in Figure 18 and Figure 19.

Figure 18: 1973 Photograph of 419-421 Broadway



The extant single-story building on former Lot 11 is shown as constructed. Nednick's restaurant occupied the building at 419 Broadway. The Historic Building is shown at right of photograph (source: LPC).



Figure 19: 1973 Photograph of the Historic Building

The three-story Historic Building at 423 Broadway is shown in the center of this 1973 photograph (source: LPC).

By the 1960s, the growing presence of artists in the area once again led to a character change for the neighborhoods, who were interested in the loft space that characterized the upper stories of these 19th-century buildings. This led to zoning changes and city-wide attention to the history and preservation of the SOHO Historic District.

A limited review of historic maps, photographs, conveyances, and historical accounts demonstrates that the SOHO district has undergone extensive landscape transformations from the late 18th to the mid-20th century. However, the Project Area seems to have remained unimproved until around 1822, when the structure at 423 Broadway was built. By 1856, two more buildings had been built on the property that comprise former Lot 11 (419-421 Broadway) and one building on former Lot 1 (301 Canal). In the 1950s, the two buildings on Lot 12 were demolished and replaced with the buildings that currently occupy the lot. Former Lots 1, 11 and 12 were disturbed by building construction by the mid-19th century that covered the entirety of all three lots through the 20th century. Based on this understanding, the Project Area has a low potential for the recovery of intact archaeological deposits dating to the historic period.

9

Results

The area in and around the Project Area was marshy and prone to floods prior to the 19th century, suggesting that the Canal Street area was close to sea level. At times, flooding from both the Hudson and the East Rivers cut directly across Manhattan Island at present-day Canal Street, virtually creating two islands out of one. This was likely the case during the pre-contact era, making the area a likely place for hunting but generally uninhabitable for indigenous peoples. These environmental conditions were exacerbated during the colonial and early historic periods by growing populations around the Collect Pond, as well as the growth of tanneries and other manufactories that polluted the fresh and brackish waterways. By the early 19th century, the meadow and Collect were drained and subsequently filled, enabling new development and growth of the city northward. These conditions- the cutting and filling of previously flood-prone and marshy land to today's elevation (roughly 18 feet [5.4 meters] amsl) – makes the sensitivity of the Project Area for pre-contact sites low.

In 1775, Broadway was extended north of Canal Street to Astor Place, though it was known as Great George Street at the time. In 1794, the street name was changed to Broadway. At that time, the area around Canal Street was still largely agricultural, and Broadway was primarily a residential street, akin to a suburb to the denser settlement to the south (LPC 1973, Kieran 1982). Indeed, the area was seemingly cut-off from the city settlement to the south by the frequent floods and marshy lands that characterized the Canal Street area. This landscape changed in the early 19th century when present-day Canal Street was cut and filled, and residential settlement soon followed. By late 1820 into the early 1830s, the character of Broadway changed from residences to small retail shops. Commercial development of the area continued rapidly from that point on. Below is a review of the history of development on former Lots 1, 11 and 12.

Former Lot 1- 301 Canal Street

Between 1767 and the 1790s, the area around the Project Area remained part of the farm and extensive landholdings of the Bayard family, with minimal evidence of development. By 1792, the Bayard farm was fragmented, partitioned and conveyed to various recipients. Although it is unclear when the building was constructed, it is evident on the site by 1854 as a second-class brick or stone dwelling with a store under (see Figure 8).

The building and property was owned by members of the Van Ness family in the late 19th and early 20th century (see Table 4), but the conveyance records indicate that they leased the property to others. The 1894 Fire Insurance Map indicates that the building was a twostory brick dwelling with a skylight and stand pipe (see Figure 13). In 1903, the building is illustrated as a brick building with frame cornice, party wall, stand pipe and hose, skylight and dumb waiter (see Figure 14). The building is shown on 1924 and 1951 aerial photographs. No building records prior to 1902 could be recovered for former Lot 1, however, it is evident that the building underwent some small alterations in 1914, 1919, and 1962, and an Electric Sign Application (ESA) was requested in 1919 (NYC Department of Building).

The entire lot has been occupied to the lot lines by a two-story structure since the 1850s and excavated to a depth of seven feet below grade. There is no documentary evidence of outbuildings or extramural features (and no documentary evidence of earlier structures) on the lot. Because of this, the lot is unlikely to retain any evidence of intact soils or archaeological deposits.

Former Lot 11- 423 Broadway

The 17th and 18th-century history of this site is like former Lot 1. Originally part of the Bayard farm and landholdings, the Lot was part of a partition deed in 1792. After changing hands several times, the property was conveyed to Benjamin Lord in 1822.

The LPC designation report notes that the extant structure on former Lot 11 is typical of the modified Federal style of buildings that lined Broadway in the 1820s. Construction of the building began in 1822 and was completed in 1823 by an unknown architect (LPC 1973). The original owner of the building was Benjamin Lord, who acquired the property from William and Harriet Howell. On the 1854 Fire Insurance Map, the building is illustrated as a third-class brick or stone store with three skylights, which were likely used for added lighting in the work spaces on the top floor (see Figure 8). In 1894, the building was documented as a second-class three-story brick warehouse with two skylights (see Figure 13). Little change is evident by 1903, when the building is illustrated as a three-story brick building with a basement that functioned as store and factory (light manufacturing) (see Figure 14).

The building, an extant three-story and three-bay building with a brick and iron cornice façade, originally functioned as a store and dwelling. No evidence of applications for alterations appear to have been filed (other than an ESA in 1930), but LPC noted that the

ground floor façade was new and that the iron cornices were likely added in the 1860s (LPC 1973).

Because the entire lot has been occupied by a brick structure since the 1820s (with no documentary evidence of outbuildings or extramural features) and has been excavated to a minimum of eight feet below the ground surface for the basement, the lot is unlikely to retain any evidence of intact soils or archaeological deposits.

Former Lot 12- 419-421 Broadway

Like Lots 1 and 11, Lot 12 was part of the Bayard farm and landholdings in the 18th century. It appears to be a part of the same partition as former Lot 1, with a documented parallel ownership until the 1880s when both lots were owned by the Van Ness family (see Table 4). Like Lot 1, the property at former Lot 12 was leased to various other occupants.

Two buildings were constructed on the site by 1854, as documented on the Fire Insurance Map from that year (see Figure 8) and the 1856 photograph of the corner of Broadway at Canal Street (see Figure 10). In 1894, a four-story warehouse is illustrated at 419 Broadway and a four-story second-class warehouse is illustrated at 421 Broadway (see Figure 13). In 1903, both buildings were noted as four-story stores and factories (light manufacturing) with basements. These buildings are shown on 1924 and 1951 aerial photographs. However, records from the Department of Building suggest that the buildings were demolished in the 1950s and replaced by two, single-story buildings with basements (see Appendix A). In 1973, 419 Broadway was Nedick's restaurant and shop (LPC 1073; see Figure 18 and Figure 19).

Because the entire lot was occupied by two four-story buildings with basements (without documentary evidence of outbuildings or extramural features) for roughly one hundred years between 1850s and 1950s, then replaced by new buildings and basements in 1955, the lot is unlikely to retain any evidence of intact soils or archaeological deposits. The sequence of development, demolition and redevelopment has potentially disturbed the site.

10

Conclusions

Based on the results of the site file search, as well as LPC and OPRHP sensitivity models, the Project Area appeared to have a moderate to high sensitivity for 18th and 19th century archaeological components. However, a subsequent review of historic maps, conveyance records, building records, historic photographs, and soil borings indicates that the entirety of all three former lots were impacted in the 19th century by cutting and filling of the marshy lands (which were a nuisance to city residents) and subsequent construction of multi-story retail and manufacturing buildings with basements that, in the cases of former Lots 1 and 11, are still extant. 19th-century land recontouring near Lispenard's Meadow and present-day Canal Street were different from the 18th-century episodes of filling that took place along the downtown, formerly coastal area (e.g., Water Street). Near Canal Street, the hazardous conditions of the marsh necessitated draining and cutting, followed by re-deposition of soils from Bayard's Hill. These actions, which are documented, were quickly followed by development (e.g., 19th-century building construction).

No portions of these lots were undeveloped in the mid-19th century, and there is no documentary evidence of outbuildings or extramural features, leaving very little potential for the recovery of intact soils or archaeological deposits. Like former Lots 1 and 11, Lot 12 was improved with two four-story manufacturing buildings that also contained basements from roughly 1850 to 1950. Then in the 1950s, the two buildings were demolished and replaced with smaller retail buildings that also had basements. The sequence of construction, demolition, and redevelopment on Lot 12 has very likely disturbed the site, making the sensitivity for intact soils and archaeological deposits in the lot low. Based on this assessment, no further archaeological work is recommended for the property.

11

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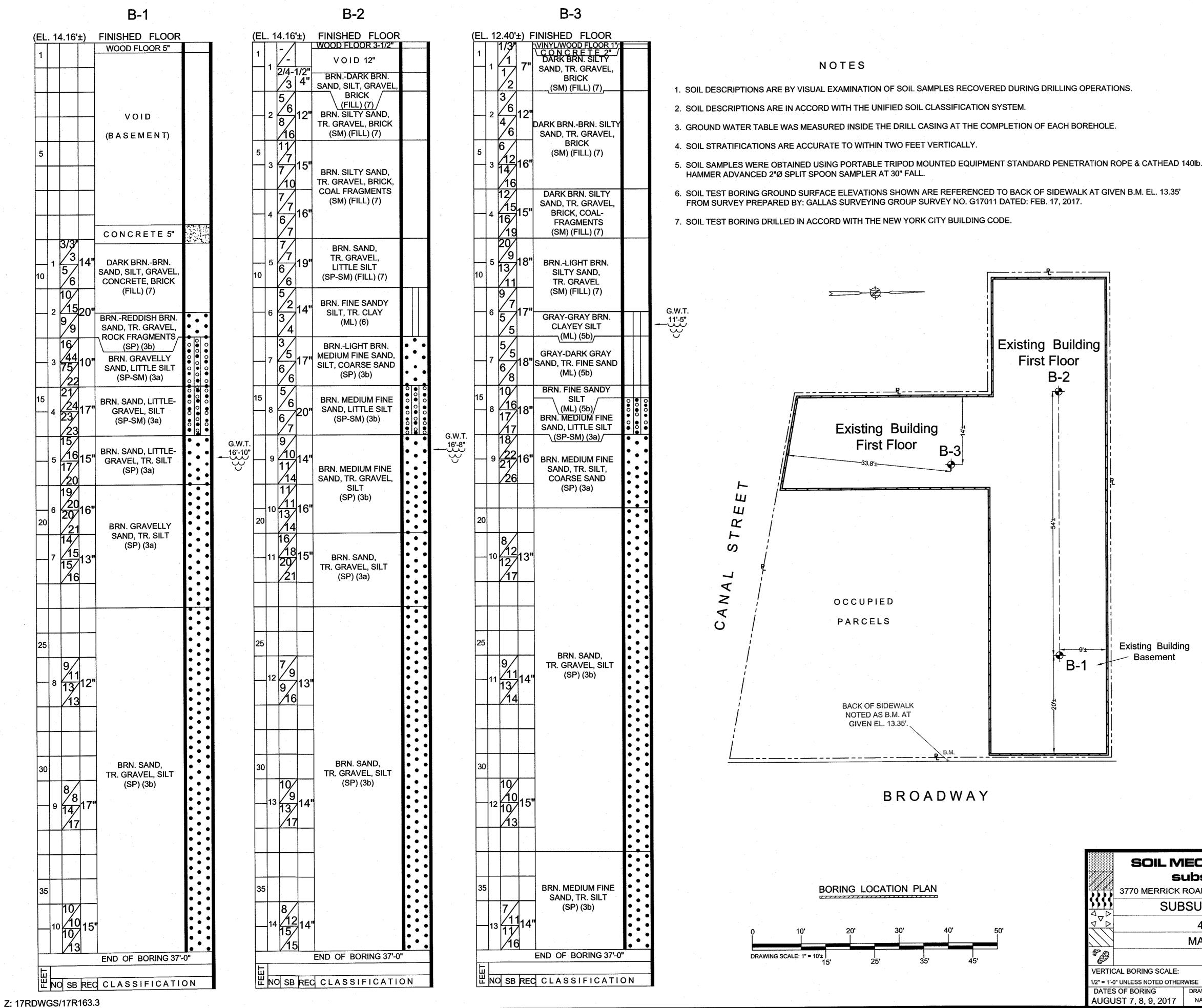
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Appendix A

Boring Plan – Subsurface Investigation Prepared by Soil Mechanics Drilling Corporation Dates of Boring: August 7-9, 2017



		UNI	FIED SOIL	CL/	ASSIFICATION			
	SOIL GROUPS				SAND SOIL SYMB			
	1a Thru 1d		В	EDF	ROCK		$\langle \rangle \rangle$	
	GW	WELL	GRADED GRAVELS, GF	RAVEL	L SAND MIXTURES, LITTL	E OR NO FINES		
-	GP		LY GRADED GRAVELS OR NO FINES	OR G	RAVEL SAND MIXTURES	•		
	GM		GRAVELS, GRAVEL - S	ΔΝΠ -				
	GC	CLAYE	EY GRAVELS, GRAVEL	- SANI	D - CLAY MIXTURE			
1	SW	WELL	GRADED SANDS, GRAV	VELLY	Y SANDS, LITTLE OR NO	FINES	000	
	SP	POORLY GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES						
	SM	SILTY	SANDS, SAND - SILT M	IXTUF	RES	· · · · · · · · · · · · · · · · · · ·	0 0	
	SC		EY SANDS, SAND - CLA	Y MIX	TURES	<u></u>		
b.	·····							
	ML				SANDS, CLAYEY SILTS, SLIGHT PLASTICITY			
	CL	INORGANIC CLAYS OF LOW TO SANDY CLAYS			MEDIUM PLASTICITY, GRAVELLY CLAYS SILTY CLAYS			
	OL				C SILTY CLAYS OF LOW PLASTICITY			
	MH	INORGANIC SILTS, MICACEOU SILTY SOILS, ELASTIC SILTS			R DIATOMACEOUS FINE	SANDY OR		
	СН	INORGANIC CLAYS OF HIGH F			LASTICITY, FAT CLAYS			
		· · ·			-			
	OH				TO HIGH PLASTICITY, ORGANIC SILTS			
	Pt	PEAT AND OTHER HIGHLY OR						
	ALLOWABLE SOIL BEARING PRESSURES, N.Y.C. BLDG. CODE TABLE 1804.1							
	CLASS OF MATERIALS (Notes 1 and 3) ★					MAXIMUM ALLOWA		
	1. BEDROCK (NOTES 2 and 7) ★				(TSF)	(kPa)		
· · ·	1b MEDIUM HARD ROC	K - GNEISS, DIABASE, SCHIST CK - MARBLE, SERPENTINE			60 40	5,746 3,830		
	1c INTERMEDIATE ROC 1d SOFT ROCK - WEAT	CK - SHALE, SANDSTONE THERED ROCK			20 8	1,915 766		
•	2. SANDY GRAVEL & GRAVE 2a DENSE	L (GW, GF	P) (NOTES 3, 4, 8, and 9) ★		10	958		
	26 MEDIUM 3. GRANULAR SOILS (GC, GM, SW, SP, SM, & SC)(NOTES 4, 5, 8, and			1 (1)	6	575		
	3a DENSE	M, SW, SP	, SM, & SC)(NOTES 4, 5, 8, and	*	6 3	575 287		
	3b MEDIUM 4. CLAYS (SC, CL, & CH)(NO	TES 4, 6, 8	3, and 9)		3			
	4a HARD 4b STIFF				5 3	479 287	· ·	
	4c MEDIUM	& MH)(NO	TES 4, 8, and 9) *	_	2	192		
	 5. SILTS & SILTY SOILS (ML & MH)(NOTES 4, 8, and 9) ★ 5a DENSE 5b MEDIUM 				3 1.5	287 144		
	6. ORGANIC SILTS, ORGANIC CLAYS, PEATS, SOFT CLAYS,				SEE 1804.2.1 *	SEE 1804.2.1		
	LOOSE GRANULAR SOILS, & VARVED SILTS 7. CONTROLLED & UNCONTROLLED FILLS				SEE 1804.2.2 OR 1804.2.3 ★ SEE 1804.2.2 OR 1804.2.3 ★		4.2.3 ★	
			OTES FOLLOWING TABLE	1804.1	IN THE NY C BLDG CODE F		MATION	
						·····	· · ·	
				SPO	ON BLOWS PER F	TOOT	· · · ·	
	SA	ACTIO	SILT	SPO(ON BLOWS PER F	OOT AY		
	LOOSE				ON BLOWS PER F	OOT AY 4 OR LESS	8 TO 30	
	SA		SILT LESS THAN 10		ON BLOWS PER F CL SOFT	OOT AY		
	LOOSE MEDIUM	ND &	SILT LESS THAN 10 10 TO 30 GREATER THAN 31		ON BLOWS PER F CL SOFT MEDIUM HARD	OOT AY 4 OR LESS GREATER THAN GREATER THA	N 30	
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