HISTORICAL PERSPECTIVES INC.

Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

LPC # Department of Transportation / LA-CEQR-M

Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

LPC # Department of Transportation / LA-CEQR-M

Prepared For:

Philip Habib & Associates
102 Madison Avenue, 11th Floor
New York, New York 10016

Prepared By:

Historical Perspectives, Inc.
P.O. Box 529
Westport, CT 06881

Authors:
Julie Abell Horn, M.A., R.P.A.
Cece Saunders, M.A., R.P.A.

June 2017

EXECUTIVE SUMMARY

The New York City Department of Transportation (NYCDOT), as the lead agency on behalf of the Applicant, Capital Properties, LLC, proposes closing Thames Street to vehicular traffic between Trinity Place and Broadway in Lower Manhattan, New York County, New York (Figures 1 and 2, Appendix A). The project would designate Thames Street as a Restricted Use Street and would facilitate the development of a unified pedestrian area. The project site is the area proposed for the new pedestrian area. It includes the roadbed and sidewalks of Thames Street between Broadway and Trinity Place, and the portions of the sidewalks bordering Thames Street on both Broadway and Trinity Place. The existing Thames Street roadbed would be raised to the curb level. New paving would replace the existing street and sidewalk pavement. Two existing catch basins along the curbs at the Trinity Place end of the project site would be removed and two new catch basins would be installed within the Thames Street roadway footprint, in proximity to the existing catch basins. Appendix A provides full project plans.

This block of Thames Street was laid out and constructed in 1906, replacing the original block of Thames Street which dated to 1749 and was located to the south, under the existing building at 111 Broadway. Prior to 1906, this block-long section of Thames Street was under Block 50, which was bisected by the former Temple Street and which is now discontinued. Both 111 Broadway on the south side of Thames Street (Block 49, Lot 2, the Trinity Building) and 115 Broadway on the north side of Thames Street (Block 50, Lot 1, the United States Realty Building) are designated New York City Landmarks (LPC 1988a, 1988b). The 21-25 story Trinity Building at 111 Broadway was constructed in two stages, the first in 1905 and the second, occupying the former footprint of old Thames Street, in 1907. The 21-story United States Realty Building at 115 Broadway was constructed at the same time as the Trinity Building addition, in 1907. Both buildings have basements, and retail establishments are visible beneath the existing Thames Street level. The main entrances of both buildings are on Broadway and Trinity Place.

In April 2017, an Environmental Assessment Statement (EAS) was submitted for the project. As part of the project review, the New York City Landmarks Preservation Commission (LPC) reviewed the EAS and responded:

> LPC review of archaeological sensitivity models and historic maps indicates that there is potential for the recovery of remains from Colonial, 19th Century and Native American occupation. Accordingly, the Commission recommends that an archaeological documentary study 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 (see CEQR Technical Manual 2014) (Santucci 5/15/2017).

In response to the LPC review, the following Phase IA Archaeological Documentary Study by Historical Perspectives, Inc. (HPI) addresses the above concerns. The Area of Potential Effect (APE) for the Thames Street Pedestrian Plaza project includes those areas where there will be ground disturbance. For the purposes of this study, the APE is considered to be the entire project site.

The majority of the Thames Street project site was, until 1906, part of Block 50 and the roadbed of Temple Street. The portions of the project site at the Broadway and Trinity Place intersections consisted of sidewalks along those two streets. The entire project site has been very extensively disturbed from more than 250 years of occupation and development. The following is a summary of disturbances across the project site, contrasted with proposed project plans in each location.

- **Thames Street between Broadway and former line of Temple Street**

This section of the present Thames Street was once part of Block 50. Prior to 1906-1907, this block contained the Boreel Building, constructed in 1878, which had a full basement level below the street grade. Given the height and massing of the Boreel Building, which was eight stories tall, depth of the former basement likely was at least 8-10 feet below the street level. Foundations for the building would have been deeper than that. Additionally, utility installation and reconstruction efforts under present Thames Street and its sidewalks for water, gas, cable, vaults, etc. has created subsequent disturbance. It is assumed that this portion of the project site has been disturbed to at least 10 feet below grade.

All of the proposed project components within this segment of the project site will occur at reasonably shallow depths, for the installation of new pavement surfaces. None of the proposed work will extend beneath the level of the existing disturbance.

- **Thames Street between former line of Temple Street and Trinity Place**

This section of the present Thames Street was also once part of Block 50. It contained a variety of buildings over time. The last set of structures shown on historic maps covered the entirety of the present Thames Street project site; there were no areas that remained as open yards. All of the buildings on this part of the block also are assumed to have had basements, based on historic images and photographs that show basement levels accessed by bulkhead doors, or windows or coal chutes extending below the street level. Again, basements likely were at least 8 feet below grade, and possibly deeper, with foundations extending below the level of the basements. Again, utility installation and reconstruction efforts under present Thames Street and its sidewalks for water, gas, cable, vaults, catch basins, etc. has created subsequent disturbance. It is assumed that this portion of the project site has been disturbed to at least 8 feet below grade.

All of the proposed project components within this segment of the project site will occur at reasonably shallow depths, for the installation of new pavement surfaces and two new catch basins. The catch basins will extend approximately four feet below grade. None of the proposed work will extend beneath the level of the existing disturbance.

- **Former Temple Street roadbed and sidewalks**

Temple Street was a former road that bisected Block 50. It was 25 feet wide, including the street and sidewalks. This block of Temple Street was discontinued after 1906, when the U.S. Realty Building was constructed. Prior to its use as a city street, the Temple Street footprint was part of the de Lancey mansion grounds, and would have been located in the rear of the main house. It was shown as an informal dividing line between the two parts of Block 50 by 1755, and was in use as roadway by at least the end of the eighteenth century. Historic maps show there were water lines beneath Temple Street prior to its discontinuation. It is likely there were other unmapped utilities beneath the street as well. The former roadbed and sidewalks of Temple Street likely were the least disturbed areas of the project site, although there would have been several feet of vertical disturbance from standard roadbed and sidewalk construction on Temple Street, as well as for utility installation and reconstruction as part of the existing Thames Street. Conservatively, it is assumed that this portion of the project site has been disturbed to at least 4 feet below grade.

All of the proposed project components within this segment of the project site will occur at reasonably shallow depths, for the installation of new pavement surfaces. None of the proposed work will extend beneath the level of the existing disturbance.

- **Sidewalks on west side of Broadway at Thames Street**

The project site also includes work along the sidewalks on the west side of Broadway flanking Thames Street. These sidewalks have been reconstructed numerous times. There is a subway entrance at the northwest corner of this intersection, within the sidewalk footprint adjacent to the building at 115 Broadway. The subway runs underneath this intersection. It is assumed that this portion of the project site has been completely disturbed from prior construction.

All of the proposed project components within this segment of the project site will occur at reasonably shallow depths, for the installation of new pavement surfaces. None of the proposed work will extend beneath the level of the existing disturbance.

- **Sidewalks on east side of Trinity Place at Thames Street**

Additionally, the project site includes work along the sidewalks on the east side of Trinity Place flanking Thames Street. As with the other end of the project site, these sidewalks have been reconstructed numerous times. There are grates for vaults along these sidewalks associated with the subway that runs underneath this intersection. It is assumed that this portion of the project site has been completely disturbed from prior construction.

All of the proposed project components within this segment of the project site will occur at reasonably shallow depths, for the installation of new pavement surfaces. None of the proposed work will extend beneath the level of the existing disturbance.

It is generally understood that prior to extensive historical development in Lower Manhattan, the area was home to Native Americans (e.g. Grumet 1981:68). There was a Native American trail that ran along the approximate route of modern Broadway and habitation sites north of the project site. However, the vast degree of disturbance from hundreds of years of building construction episodes, as well as infrastructure projects such as subterranean subways, has resulted in the nearly complete obliteration of precontact period archaeological resources in this area. Given the very substantial ground disturbance to the project site, coupled with project plans that indicate new components will not extend deeper than the documented prior disturbance, HPI concludes that there is no precontact period archaeological sensitivity.

The existing Thames Street footprint was once part of Block 50 and the former Temple Street which bisected it. As described above, there were a series of buildings and occupants on the blocks, beginning in ca. 1700 when the Etienne de Lancey mansion was constructed on the west side of Broadway between Cedar and Thames Streets. The de Lancey mansion was converted into a public inn and tavern, and operated for many years as a popular spot for New York's elite until it was demolished in 1793. Later buildings on the block southeast of Temple Street included the City Hotel from ca. 1795-1849, the first Boreel Building from ca. 1850-1878, and the second Boreel Building from ca. 1878-1906. There were houses, including a parsonage, on the portion of the block northwest of Temple Street by the 1750s and 1760s, which burned in the Great Fire of 1776. Later buildings on the block were a combination of commercial and residential structures, including a well-known tavern called Old Tom's. These buildings were all razed in ca. 1906.

As described above, there is very substantial ground disturbance across the project site from multiple building episodes from ca. 1700-1906, and subsequent disturbance after 1906 from installation and reconstruction of streetbed utilities and subway construction at the two ends of Thames Street. Project plans indicate that the deepest new components will be for the installation of catch basins at approximately four feet below grade in the Thames Street roadbed near Trinity Place. These locations had been previously disturbed to at least eight feet below grade for former building basements. The remainder of the proposed project components within the project site will occur at reasonably shallow depths, for the installation of new pavement surfaces. In summary, none of the proposed work will extend beneath the level of the existing disturbance. For these reasons, HPI concludes that there is no historic period archaeological sensitivity.

Based on the conclusions outlined above, HPI recommends that no further archaeological studies are warranted for the Thames Street project site.

TABLE OF CONTENTS

FIGURES

PHOTOGRAPHS

(Locations and orientations shown on Figure 2)

1. Thames Street at Broadway with sidewalk shed scaffolding. Thames Street slopes downhill to Trinity Place in far background. View looking northwest.

2. Thames Street at Trinity Place with sidewalk shed scaffolding. View looking southeast.

3. Thames Street roadbed with sidewalk shed scaffolding. Note manholes in foreground. Trinity Place is in far background. View looking northwest.

4. Thames Street roadbed with sidewalk shed scaffolding. Note sewer manholes and catch basins in foreground. Broadway is in far background. View looking southeast.

5. Detail of sidewalk vaults on north side of Thames Street. View looking northwest.

6. Detail of sidewalk vaults and hydrant on south side of Thames Street. View looking northwest.

7. Detail of hydrant and bollards on south side of Thames Street near Trinity Place. View looking southwest.

8. Detail of sidewalk vaults and standpipe on south side of Thames Street at corner of Trinity Place. View looking southwest.

I. INTRODUCTION

The New York City Department of Transportation (NYCDOT), as the lead agency on behalf of the Applicant, Capital Properties, LLC, proposes closing Thames Street to vehicular traffic between Trinity Place and Broadway in Lower Manhattan, New York County, New York (Figures 1 and 2, Appendix A). The project would designate Thames Street as a Restricted Use Street and would facilitate the development of a unified pedestrian area. The project site is the area proposed for the new pedestrian area. It includes the roadbed and sidewalks of Thames Street between Broadway and Trinity Place, and the portions of the sidewalks bordering Thames Street on both Broadway and Trinity Place. The existing Thames Street roadbed would be raised to the curb level. New paving would replace the existing street and sidewalk pavement. Two existing catch basins along the curbs at the Trinity Place end of the project site would be removed and two new catch basins would be installed within the Thames Street roadway footprint, in proximity to the existing catch basins. Appendix A provides full project plans.

This block of Thames Street was laid out and constructed in 1906, replacing the original block of Thames Street which dated to 1749 and was located to the south, under the existing building at 111 Broadway. Prior to 1906, this block-long section of Thames Street was under Block 50, which was bisected by the former Temple Street and which is now discontinued. Both 111 Broadway on the south side of Thames Street (Block 49, Lot 2, the Trinity Building) and 115 Broadway on the north side of Thames Street (Block 50, Lot 1, the United States Realty Building) are designated New York City Landmarks (LPC 1988a, 1988b). The 21-25 story Trinity Building at 111 Broadway was constructed in two stages, the first in 1905 and the second, occupying the former footprint of old Thames Street, in 1907. The 21-story United States Realty Building at 115 Broadway was constructed at the same time as the Trinity Building addition, in 1907. Both buildings have basements, and retail establishments are visible beneath the existing Thames Street level. The main entrances of both buildings are on Broadway and Trinity Place.

In April 2017, an Environmental Assessment Statement (EAS) was submitted for the project. As part of the project review, the New York City Landmarks Preservation Commission (LPC) reviewed the EAS and responded:

> LPC review of archaeological sensitivity models and historic maps indicates that there is potential for the recovery of remains from Colonial, 19th Century and Native American occupation. Accordingly, the Commission recommends that an archaeological documentary study 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 (see CEQR Technical Manual 2014) (Santucci 5/15/2017).

In response to the LPC review, the following Phase IA Archaeological Documentary Study by Historical Perspectives, Inc. (HPI) addresses the above concerns. The Area of Potential Effect (APE) for the Thames Street Pedestrian Plaza project includes those areas where there will be ground disturbance. For the purposes of this study, the APE is considered to be the entire project site.

This Phase IA Archaeological Documentary Study was prepared to satisfy the requirements of the LPC (LPC 2002, CEQR 2014). The HPI project team consisted of Julie Abell Horn, M.A., R.P.A., who conducted the research and wrote the report; Ben Styler, who assisted with the research; and Cece Saunders, M.A., R.P.A. who managed the project and provided editorial and interpretive assistance.

II. METHODOLOGY

The present study entailed review of various resources.

- Primary and secondary sources related to the history of Lower Manhattan were reviewed, including Stokes' six-volume *Iconography of Manhattan Island*.
- Historic maps were reviewed using collections of the Map Division of the New York Public Library, the Topographical Bureau of the Manhattan Borough President's Office, the Municipal Archives of the City of New York, and other websites. These maps provided an overview of the topography and a chronology of land usage for the project site.
- Historic images were reviewed using collections of the New York Public Library, the Museum of the City of New York, and the Municipal Archives of the City of New York. A selection is presented in Appendix B.

- Index books, selected deeds and other records pertaining to the project site were reviewed at the Manhattan Borough City Register's Office and on familysearch.com.
- Project plans and reports were provided by Philip Habib Associates.
- Recent reconstruction activities for the block were reviewed using the NYCDOT database.
- Previous archaeological sites and surveys were reviewed using data available from the New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) and LPC.
- A site visit was conducted on June 13, 2017.

III. CURRENT CONDITIONS AND ENVIRONMENTAL SETTING

A. CURRENT CONDITIONS

The project site consists of the roadbed and sidewalks of Thames Street between Broadway on the southeast and Trinity Place on the northwest (Photographs 1-8). Portions of the sidewalks of Broadway and Trinity Place abutting Thames Street are included in the proposed project limits. The Thames Street roadway is 16 feet in width and is flanked by 7-foot wide sidewalks for a total of a 30-foot mapped width. Because the roadway is offset from the adjacent block of Thames Street to the west, it is primarily used by delivery vehicles for access to the two adjacent buildings' service entrances and has very little through traffic. Due to the upward slope of Thames Street from Trinity Place to Broadway, retail and service entrances via Trinity Place are one level below the retail entrances via Broadway.

Thames Street is paved with asphalt, which presently is in poor condition. Some asphalt has been patched or replaced. Mapped utilities under Thames Street (see Appendix A) include water, electricity, and telephone lines. Although not mapped, it is assumed that gas and other cable lines exist as well. Manholes within the Thames Street roadbed are labeled for sewers (at both ends of the street), Con Edison, and New York City Transit. Subway tunnels run under both Broadway (2, 4, and 5 lines) and Trinity Place (N, R, and W lines). There are two catch basins near Trinity Place which feed into storm sewers under that street.

The sidewalks are constructed of concrete and the curbs of stone. The sidewalks contain grates for vaults at both ends of the street. Two fire hydrants are located on the south side of Thames Street, flanked by metal bollards. Two standpipes (or U-vents) are located on the south side of the street.

At the time of the site visit, the entire Thames Street corridor contained sidewalk sheds and scaffolding for work being conducted on the facades of the buildings on both sides of the street. The sheds have been constructed to form a roof over Thames Street to protect traffic and pedestrians from any falling debris associated with the façade work.

B. TOPOGRAPHY AND HYDROLOGY

The Thames Street project site is located on a sloping landform, with the highest point at Broadway and the lowest point at Trinity Place. The 1865 Viele map (Figure 3) shows that the intersection of Thames Street and Broadway was approximately 34 feet above sea level. The Trinity Place intersection elevation is not given, but the map indicates that the topography sloped to the west, with a bluff located along the approximate Trinity Church alignment. The original shoreline of the Hudson River was between Trinity Place and Greenwich Street. Despite hundreds of years of development in the area, the original slope of the landform persists in the line of Thames Street today. Modern topographical surveys show that the intersection of Broadway and Thames Street is approximately 35 feet above sea level, and the intersection of Trinity Place and Thames Street is approximately 22 feet above sea level.

C. GEOLOGY

Manhattan Island lies within the Hudson Valley region and is considered to be part of the New England Upland Physiographic Province (Schuberth 1968:10). The underlying geology is made up of gneiss and mica schist with heavy, intercalated beds of coarse grained, dolomitic marble and a thinner layer of serpentine. During the three known glacial periods, the land surface in the Northeast was carved, scraped, and eroded by advancing and retreating glaciers. With the final retreat during the Post-Pleistocene, glacial debris, a mix of sand, gravel, and clay,

formed the many low hills or moraines that constitute the present topography of the New York City area (USDA 2005).

D. SOILS

The USDA soil survey for New York City maps the project site block and surroundings as "Pavement & buildings, outwash substratum, 0 to 5 percent slopes," described as

> Nearly level to gently sloping, highly urbanized areas with more than 80 percent of the surface covered by impervious pavement and buildings, over glacial outwash; generally located in urban centers (USDA 2005:11).

No soil borings were available for the project site.

IV. BACKGROUND RESEARCH/HISTORICAL OVERVIEW

A. PRECONTACT SUMMARY

The precontact era in the coastal New York region can be divided into three time periods, based on human precontact adaptation to changing environmental conditions. These are generally known as the Paleo-Indian (c.12,000 to 10,000 years ago), the Archaic (c.10,000 to 2,700 years ago) and the Woodland (c.2,700 to 300 years ago). In order to be able to assess the project site's potential for precontact exploitation, it is first necessary to review these time periods and their associated settlement patterns.

- **Paleo-Indian Period (c.12,000 y.a. - 10,000 y.a.)**

Toward the end of the Wisconsin Glaciation, during the Late Pleistocene Epoch, humans wandered across the exposed land bridge which connected Siberia and Alaska. These small groups of hunters were probably following the roaming herds of megafauna which were their chief prey. The distinctive weapon in their chipped stone tool kit was the fluted point, which has been found in association with mammoth, mastodon, bison and horse remains at various sites in the southwestern United States. Although none of these "kill sites" is located east of the Mississippi, the discovery of campsites such as that at Port Mobil, Staten Island, suggest a scattered, highly mobile population in bands of approximately 20 individuals, who ranged across a vast area necessary to support lifeways organized around the hunting of migratory game (Ritchie 1980:1-3, 13).

The fluted, lanceolate points, two to five inches in length with concave bases and channeled or fluted faces, presumably to facilitate hafting, exhibit a considerable range in shape and size. They were usually made from a high-grade silicious stone, often exotic to the region in which they are recovered, a function of their makers' seasonal migrations. Other artifacts in the Paleo-Indian tool kit include scrapers, knives, borers and gravers, tools which indicate extensive handiwork in wood, bone and leather (Ritchie 1980:3, 6).

From the locations of recorded sites in the Northeast, Paleo-Indians exhibited a marked preference for well-elevated situations. However, 30% of sites were found on or near the margins of swampy ground. Environmental characteristics which appear to have been attractive to Paleo-Indians include the proximity of major waterways, large fertile valleys and the coastal plain, where the densest population of desired food animals was supported (Ritchie 1980:7). However since 10,000 years ago, the rise in sea level estimated to be from 75 to 80 feet, has submerged large numbers of these sites.

The retreat of ice from the project area vicinity, approximately 18,000 years ago, and a global warming trend circa 14,000 years before present, encouraged Paleo-Indian settlement in the Northeast. The post-glacial environment of spruce and pine underwent a gradual modification in favor of deciduous hardwoods such as oak and hickory, which have greater importance in terms of nutritional value to both animals and humans than do conifers. By 8,000 B.C., these deciduous species dominated forests along the eastern seaboard. In addition, the megafauna on which Paleo-Indian diet was based "were rapidly becoming extinct, and were being replaced by the temperate-climate fauna that are indigenous today" (Gwynne 1982:190-191).

- **Archaic Period (c.10,000 y.a. - 2,700 y.a.)**

The warming trend at the end of the last glaciation completely transformed the Northeastern coastal environment from tundra and conifer-dominated forests, to the present deciduous woodlands with generally modern distributions of fauna. Due to the dwindling contribution of meltwater from disappearing glaciers, the reduced flow of streams and rivers promoted the formation of swamps and mudflats. These wetlands created a congenial environment for migratory waterfowl, and a host of edible plant species and shellfish. The new mixed hardwood forests of oak, hickory, chestnut, beech and elm attracted such mast-eating fauna as white-tailed deer, wild turkey, moose and beaver.

Although the Archaic diet was still based on hunting and gathering, due to the greater variety of plants available and exploited, excavated Archaic sites yield a wide array of plant processing tools, including grinding stones, mortars and pestles. The diagnostic tool was the grooved axe. In the coastal areas of New York, have been found numerous, small "nearly always multi-component sites variously situated on tidal inlets, coves and bays, particularly at the heads of the latter, and on fresh-water ponds" (Ritchie 1980:143). By the Late Archaic, these areas provided shellfish, small game, fish, salt hay and tuberous grasses, making larger more permanent settlements possible. Semi-nomadic life is still indicated, but wandering occurred within well-defined territorial limits, with seasonal movements between camps near exploitable resources. A dietary shift to shellfish in coastal New York near the end of the Archaic suggests a scarcity of large game, and a change from the early Archaic inland adaptation of forest hunting. Coastal sites show a principal reliance upon shellfish, especially oysters, hard and soft shell clams and bay scallops, which were readily available in the waters of the East River and Long Island Sound. Characteristic of the Late Archaic were "fish-tailed" projectile points and soapstone bowls (Ritchie 1980:142, 166, 167, 171). In contrast to conditions during the Paleo-Indian, Early and Middle Archaic, "by Late Archaic times sea level was so close to present levels that its subsequent small rise has failed to obliterate much of what remains on Long Island from that period" (Gwynne 1982:192). Hence the Late Archaic Wading River complex, four sites on the north shore of Suffolk County, was found at the edge of a salt marsh, on dry ground ranging only two to seven feet above mean high water (Wyatt 1982:71).

- **Woodland and Contact Periods (c.2,700 y.a. - 300 y.a.)**

From approximately 3,000 years ago until the arrival of the first Europeans, Native Americans of southern New York shared common attributes of the Woodland Stage: the advent of horticulture, extensive trade networks, large permanent or semi-permanent villages, pipe smoking, the bow and arrow and the production of clay vessels. The habitation sites of the Woodland Indians increased in size and permanence as they became ever more efficient in extracting food from their environment. The archaeological evidence from Woodland Period sites indicates a strong preference for large-scale habitation sites to be in close proximity to a major fresh water source, e.g., a river, a lake or an extensive wetland; and smaller scale sites for extractive operations, e.g., butchering stations, shell gathering loci and quarrying sites, to be situated at other resource locales. Late Woodland Stage sites of the East River Tradition in 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 1980:16). 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).

Woodland Period tool kits show some minor variations as well as some major additions from previous Archaic tool kits. Plant processing tools became increasingly common and their presence seems to indicate an intensive harvesting of wild plant foods that may have approached the efficiency of horticulture, which itself appeared during the second half of the Woodland Period. The advent of horticulture is tied in with the introduction of ceramic containers which allowed for more efficient cooking of certain types of food and may also have functioned as storage for surplus food resources. Despite the advent of agriculture, shellfish and small game remained an important component of the Woodland diet. Shellfish refuse heaps, termed "middens," reached immense proportions, covering from one to over three acres. Deer, turkey, raccoon, muskrat, ducks and other game were stalked with bow and arrows, replacing the spear and javelin, while dug-out boats, bone hooks, harpoons and nets with pebble sinkers were employed in fishing (Ritchie 1980:179-180, 267).

Historical narratives written by European travelers and settlers provide us with our only first-hand descriptions of Native American daily life and customs during 17th century. Johannes de Laet, in his *New World, or Description of West India*, published in Holland in 1625, wrote that the Native Americans:

> are divided into many nations and languages, but differ little in manners. They dress in the skins of animals. Their food is maize, crushed fine and baked in cakes, with fish, birds and wild game. Their weapons are bows and arrows, their boats are made from the trunks of trees hollowed out by fire.
>
> Some lead a wandering life, others live in bark houses, their furniture mainly mats and wooden dishes, stone hatchets, and stone pipes for smoking tobacco (Bolton 1972:16).

By the 17th century the New York City area was inhabited by Native Americans of the Delaware group, speaking a Munsee dialect, when the first Europeans arrived. The impact of the European colonization of the New York City area drastically altered the lifestyles of Native Americans. Lower Manhattan was, like other parts of New York City, occupied during the Precontact and Contact periods. Grumet (1981:68) notes that there was a Native American trail that ran down the approximate route of modern Broadway, and there were habitation sites north of the project site.

B. ARCHAEOLOGICAL SITES WITHIN A ONE MILE RADIUS

Research conducted using data from the NYSOPRHP CRIS database, the LPC, and the library of HPI revealed no archaeological sites within the APE. However, numerous archaeological sites have been documented within a one mile radius of the APE. These sites are listed below. Of note, only two vaguely mapped precontact sites have been recorded in Lower Manhattan, all well north of the project site. The remaining archaeological sites are all historic period resources.

NYSM or NYSOPRHP Site Number	Site Name/Description	Location	Site Type/Time Period
NYSM 4059	Shell Point	Near Canal St.	Unknown Precontact
NYSM 4060	N/A	Lower East side vicinity	Unknown Precontact
06101.000001	District and Extension	South Street Seaport Area	Unknown/form missing
06101.000014	Schermerhorn Row Block	South Street Seaport Area	Unknown/form missing
06101.000490	Unknown/form missing	Battery Park Area	Unknown/form missing
06101.000491	Unknown/form missing	Lower Manhattan	Unknown/form missing
06101.000604	209 Water St Site	South Street Seaport Area	c. 1775-1800
06101.000623	Block 74W Telco Site	South Street Seaport Area	c. 1740-1775
06101.001271	175 Water Street	Near South Street Seaport	c. 1740-1780
06101.001272	Historic Landfill Site, 64 Pearl Street	Financial District	Late 17th century
06101.001282	Ronson Project Site (Pearl, Bridge & Whitehall)	Financial District	17th century-modern
06101.001283	Barclay's Bank Site / 100 Water St	Financial District	1750s-1820s
06101.001284	Block 35 The Assay Site	Financial District	Revolutionary era
06101.001285	Site Washington St. Urban Renewal Project	West and Washington Streets	Early 19th century
06101.001304	City Hall Park Site	City Hall Park	18th-19th century
06101.006763	Schermerhorn Row Block	South Street Seaport Area	1780-1810
06101.006980	African Burial Ground	North of City Hall Park	18th-19th century
06101.006981	Five Points Area	Five Points	Late 18th-19th century
06101.012569	Worth St Historic Site	Worth Street and Lafayette Street	19th century

NYSM or NYSOPRHP Site Number	Site Name/Description	Location	Site Type/Time Period
06101.013334	Whitehall Ferry - 18-19th Century landfill and cribbing site	Whitehall Ferry	18th-19th century
06101.013335	Tweed Courthouse Area Deposits - burials/structures/deposits	City Hall Park	Burials, structures, deposits, 19th century
06101.013876	Federal Hall Archaeological site	Wall and New Streets	19th century
06101.015598	Whitehall Slip site	Whitehall Street	18th and 19th century
06101.015768	18th Century Battery Wall	State and Water Streets	18th century
06101.015825	Block 100, Lot 1 site	New York Downtown Hospital	19th century
06101.016117	Columbus Park Pavilion cistern	Columbus Park, north of Worth Street	19th century
06101.016196	Log Cribbing & Fill at the South Ferry Terminal Project	Battery Park	17th-19th centuries
06101.017931	Historic well beneath Corbin Building	192 John Street	19th century
06101.018000	WTC-VSC Ship	Washington Street	Late 18th century
06101.018115	Burling Slip walls - Codwise and Remsen sections	John Street	18th-19th century
06101.018120	Pier 7 complex Site (NYSM 12322) -	West Street	Early 20th century
06101.018121	Liberty Street Pilings Site (NYSM 12321) -	Liberty Street	19th century
06101.019277	60 Wall Street	60 Wall Street	Multiple historic periods

C. HISTORY OF THE PROJECT SITE

Although early Dutch trading expeditions had already been visiting the Hudson River for many years, the first settlement in what was then 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). Cartographic resources indicate that during the early historical period portions of Lower Manhattan were used for farmland or pastureland. The residential component of Manhattan was located inland, and most of the commercial activity (wharves, slips, shops, and warehouses), was located along the waterfront at the southern tip of Manhattan (Adams-Stokes 1916 [Figure 4]; Miller 1695; Lyne 1731).

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.

The earliest historical reference to the area containing the project site was in 1644, when Governor Kieft granted local resident Jan Jansen Damen land lying on both sides of what is now Broadway, extending from just south of the original Thames Street line (bordering what would become the Trinity Church holdings in 1703-1704) north to Fulton Street, and west to the Hudson River shoreline, which at the time was at about the line of Greenwich Street (Stokes 1922, Volume 4:102). A reconstructed map of New Amsterdam in 1644 by J.H. Innes indicates that the project site was within the Damen farm, at that time a large parcel of undeveloped land on the west side of Broadway (Innes 1902). The Castello map of 1660 shows the Damen house on the east side of Broadway, at what is now Cedar Street. The project site remained vacant (Figure 4). The Damen farm changed hands several times during the second half of the 1600s, although the actual deeds do not survive. In 1686, the land passed from William and Mary Dyre to Thomas Lloyd (Land Records Liber 13:202).

According to historian I.N.P. Stokes, in about 1700 Etienne de Lancey constructed a mansion house on the west side of Broadway overlapping the project site. He notes:

> The mansion and grounds occupied the entire block between Broadway, Thames, Cedar, and Greenwich Streets. It was two storeys high, of gray stone, the roof being adorned with a cupola. In the rear the ground sloped to the Hudson River (Stokes 1922, Vol. 4:540).

Etienne de Lancey's will, written in 1735, indicated that at that time the overall property also contained a warehouse, stables and a garden (Abstract of Wills III:336; Stokes 1922, Vol. 4:540).

The approximate original location of Thames Street is shown as early as 1731, on the Lyne-Bradford map, then labeled "Little Stone" Street. The map indicates a generic shading of buildings along the Broadway side of the block north of Little Stone, presumably representing the de Lancey mansion. The present Thames Street ran through these buildings and lots. To the south of Little Stone Street was another structure, which likely depicted the Van Cortlandt mansion. Officially, Thames Street was not proposed until 1749, when Nicholas Bayard asked the Common Council to grant him a slip of land on the south side of his lots adjoining the Trinity Church property in exchange for release of a strip of land 21.5 feet wide leading from Broadway down to Comfort's dock at the Hudson River shoreline, still at about the modern line of Greenwich Street. The Common Council approved his request that year, but it was not until 1755 that they ordered the street dug, regulated, and paved (Stokes 1922, Vol. 4:614).

It is likely that Thames Street began as an informal thoroughfare leading to the river and was not formalized until later. The 1755 Maerschalck map clearly shows Little Stone Street (here just noted as Stone Street), as well as a dividing line in the middle of the block north of Little Stone Street that would later be known as Temple Street (Figure 5). Shadings indicate unidentified buildings on the west side of Broadway on both sides of Little Stone Street, and on the north side of Little Stone Street as far west as Trinity Place, then known as Lumber or Lombard Street. A building numbered "16" on the south side of Stone Street at Lumber Street represented the Van Cortlandt sugar house, a stone building that was destroyed by fire in November 1769 (Stokes 1922, Vol. 4:639). The present Thames Street was located within the block north of the original Thames Street, and crosses through the footprint of these buildings and lots.

De Lancey's mansion, originally constructed as a large dwelling house, later became a public inn and tavern, and operated for many years as a popular spot for New York's elite until it was demolished in 1793. The first proprietor, in 1754, was Edward Willett, who called the tavern the Province Arms. John Crawley took over from Willett in 1762, and in 1763 George Burns succeeded Crawley. Successive names for the establishment were George Burns' Province Arms (1763), the New York Arms (1766-1771), "Bunch of Grapes" (1778-1780), and Roubalet during the Revolution (ca. 1780). John Cape ran the tavern as the State Arms from 1783-1786, Joseph Corre as the City Tavern from 1786-1788, and Edward Bardin as the City Tavern from 1788-1793 (Stokes 1918, Vol. 3:977; 1922, Vol. 4:648).

Historian Stokes wrote:

> The "long room" was the meeting-place of societies of all kinds, and the scene of celebrations, public dinners, balls, concerts, and the drama. Before the Revolution it was a rendezvous of the Sons of Liberty, and deserves enduring fame as the place where the non-importation agreement of

> 1765 was signed. Soon after the British evacuated New York, Washington, Clinton, and other officers of the American army were banqueted here by the citizens returned from exile. It was at this time called the State Arms (Stokes 1915, Vol. 1:383).

The portion of the project site on the north side of the original Thames Street between Temple Street and Trinity Place also contained buildings beginning at least by the 1750s when they were shown on the Maershalck map, but not all of their functions and occupants are known. It is likely they contained a combination of residences and businesses, as was common during the period. Two buildings mentioned by Stokes on this block were a house and lot purchased for a parsonage for the First Presbyterian Church beginning in 1762, bounded by Thames Street, Lombard Street, Little Queen Street, and the house and ground "late of George Patterson but now of Walter Dubois." The parsonage lot had a 23.5 feet frontage on Thames Street and was 96 feet deep. There was a party wall between the parsonage lot and the Dubois lot (Stokes 1928, Vol. 6:29). All of the buildings on the north side of Thames Street between Trinity Place and Temple Street were destroyed during the Great Fire of 1776, which occurred from September 20th to the 21st and burned much of Lower Manhattan, including Trinity Church. The Ratzen map from 1767, which was updated in 1776 (Figure 6), shows the extent of the fire district, in red, and indicates that the edge of the fire stopped at Temple Street within the project site, sparing the former de Lancey mansion.

In 1793, the old de Lancey mansion was demolished, and the following year it was replaced with what became known as the City Hotel, completed in 1795. The new hotel's footprint encompassed the entire block bounded by Broadway, Thames Street, Temple Street, and Cedar Street, as the streets were now known (Taylor and Roberts 1797; Figure 7). As constructed, the City Hotel was four stories with an attic and basement, and was said to be the first building in New York with a slate roof. The hotel contained more than a hundred small parlors and lodging rooms, as well as the City Assembly room, which was used for concerts and balls. There were shops located on the ground floor (Stokes 1915, Vol. 1:387, 399; 1926, Vol. 5:1672). The City Hotel was featured in a number of historic images during the 19th century (Appendix B). After a damaging fire in April 1833, which gutted the top floor and attic, it was enlarged and improved with an additional story. By the 1840s, another hotel, called the "New England House," had replaced the old Van Cortlandt mansion on the south side of Thames Street at Broadway (Stokes 1926, Vol. 5:1719-1720, 1806). The southeastern portion of the project site is within the former footprint of the City Hotel, as confirmed by the 1836 Colton map (Figure 8).

The block bounded by Thames Street, Temple Street, Trinity Place, and Cedar Street, encompassing the northwest portion of the project site, contained a number of individual buildings during late 18th and 19th centuries. The 1852 Dripps map (Figure 9) shows the configuration of the buildings on the block, and the 1852 and 1857 Perris maps (Figures 10 and 11) illustrate the types of buildings they were. The block contained a variety of frame (yellow), brick (pink), and stone (blue) structures, and nearly all were coded (by inset circles) to indicate that they were stores or were dwellings with stores under them. The stores contained a variety of different businesses. One of the well-known establishments on the block during the 19th century was a "chop house" or steakhouse known as "Old Tom's." Historic images (Appendix B) show that the chop house was located at the corner of Thames and Temple Streets. The original building was a three-story with basement structure, with the main entrance via the "crooked stoop" on Temple Street. By 1857, the frame building had been replaced with a brick building, but the chop house remained, either in the corner building or in one view, the adjacent building on Thames Street.

The City Hotel endured on Broadway until 1849, when it was demolished. The following year, William B. Astor erected a new building in its place, known as the Boreel Building, after the family that owned the property. It was five stories high and was divided into four stores, numbered 113, 115, 117, and 119 Broadway (Stokes 1926, Vol. 5:1824). Historic maps from the 1850s and 1860s show the division of the four stores within the overall building footprint (Dripps 1852 [Figure 9], Perris 1852 [Figure 10], 1857 [Figure 11], Harrison 1867 [Figure 12]). The southeastern part of the project site is located within the former footprint of the Boreel Building. According to a listing in *The Great Metropolis* of 1851 describing the original businesses of the Boreel Building,

> They are occupied as warehouses—No. 113 by Messrs. Baldwin, Dibble and Work, importers and jobbers of foreign and domestic dry goods, and John T. Martin & Brothers, wholesale clothiers; No. 115 by Hopkins, Allen & Co., wholesale dealers in foreign and domestic dry goods; No. 117 by ----, and No. 119 by Henrys, Smith & Townsend, importers and jobbers of foreign and domestic dry goods (Trow 1851:59, 61).

Several years later, in 1853, the New England House on the south side of Thames Street adjacent to the Trinity Church property was replaced with the original Trinity Building, a five-story building designed in the Romanesque Revival style by Richard Upjohn, architect of Trinity Church (LPC 1988a). The Trinity Building lot is shown as vacant on the 1852 Perris map (Figure 10) but newly built and labeled on the 1857 Perris map update (Figure 11) and the 1867 Harrison map (Figure 12). Historic images and photographs (Appendix B) show the massiveness of the Boreel Building and the Trinity Building on Broadway and Thames Street.

In 1878, the original Boreel Building was demolished and replaced with the second Boreel Building, which was eight stories high with a basement. It was designed by architect Stephen D. Hatch, and became one of his most important works (*American Architect and Building News* 1894, LPC 1988b). The new Boreel Building is labeled on the 1879 Bromley map (Figure 13), the 1885 Robinson map (Figure 14), and the 1894 Sanborn map (Figure 15), which notes by the large "S" that it was of "superior construction." The map also indicated there was "Printing in Basement." A historic photograph from the 1890s of the second Boreel Building shows the enormity of the structure.

The 1894 Sanborn map (Figure 15) represents the last configuration of the blocks north of the original Thames Street, where modern Thames Street now is located. The map illustrates that by this time, the entirety of the modern Thames Street project site was within the footprint of former buildings and the streetbed of Temple Street. All of the buildings had basements below the street level. Two undated historic photographs of the block between Temple Street and Trinity Place (Appendix B) show the buildings probably in the 1890s or just at the turn of the twentieth century.

The final change to the project site came in the early 1900s, when the U.S. Realty Company and its affiliates purchased the land on both sides of the original Thames Street, on Blocks 49 and 50, with plans to erect two new skyscrapers. As part of the project, the company purchased all of the land and buildings on the blocks between Thames Street, Cedar Street, Broadway and Trinity Place, including the Boreel Building, Old Tom's, and others, and had them demolished. Temple Street between Cedar Street and Thames Street was discontinued. In order to create a lot wide enough to construct the new 21-story Trinity Building (the original Trinity Building had been demolished), the developers petitioned the Board of Estimate and Apportionment to move Thames Street to the northeast by conveying to the city part of its property on Block 50 to create a new Thames Street, and then using the original Thames Street location for the new Trinity Building. Thames Street thus was moved 26 feet to the northeast (the original approximately 19-20 foot wide street plus an extra six feet) and was widened to 28-30 feet (today the street is recorded as officially 30.25 in width). The deeds were recorded in May 1906 (Stokes 1918, Vol. 3:1010; 1926, Vol. 5:2060).

The 1905 Sanborn map (Figure 16) illustrates the project site in flux. The new alignment of Thames Street is shown in place, although the paperwork was still a year away from being filed with the city. Block 50, north of Thames Street, is shown as vacant, attesting to the recent demolition of all the buildings on the block. Temple Street is no longer shown bisecting the block. And the new 21-story Trinity Building is depicted as completed, although it likely was still under construction. The former roadbed of Thames Street is also shown as vacant, but earmarked for a "proposed building" which would become the addition to the Trinity Building, at 25 stories in height. Photographs in Appendix B show the Trinity Building before and after the addition was completed.

The present U.S. Realty Building on Block 50, north of Thames Street, was constructed in 1907, concurrent with the addition to the Trinity Building. An undated photograph (Appendix B) shows the finished configurations of the new buildings and Thames Street. The 1923 and 1951 Sanborn maps (Figure 17) illustrate the project site in plan view.

Although there has been no change to the layout of the Thames Street project site or the two Landmarked buildings that border it since its construction in 1906, the street and sidewalks have been reconstructed a number of times. According to the NYC DOTMAP Portal, Thames Street was opened for periods during 2004-2007 for project MED-583AR and MED-583AR/EP-7, noted as "Abandon of High Pressure Water Mains in Wall Street Area." The street was again reconstructed and resurfaced in August 2011. According to the NYC DOT Infrastructure website:

> Reconstruction replaces over a foot of the roadway below the street's surface and usually includes reconstruction of the curbs and sidewalks as well. As part of reconstruction, the street may be

realigned to improve safety or operations, grading may be changed to improve storm water flow, underground utilities may be added, upgraded or relocated, traffic signals and street lights may be relocated, and street trees and pedestrian ramps may be added (http://www.nyc.gov/html/dot/html/infrastructure/construction.shtml).

Additionally, the intersections of Broadway and Trinity Place have been reconstructed numerous times. The most recent resurfacing work was completed in 2016.

V. CONCLUSIONS

A. DISTURBANCE RECORD AND PROJECT PLANS

The majority of the Thames Street project site was, until 1906, part of Block 50 and the roadbed of Temple Street. The portions of the project site at the Broadway and Trinity Place intersections consisted of sidewalks along those two streets. The entire project site has been very extensively disturbed from more than 250 years of occupation and development. The following is a summary of disturbances across the project site, contrasted with proposed project plans in each location.

- **Thames Street between Broadway and former line of Temple Street**

This section of the present Thames Street was once part of Block 50. Prior to 1906-1907, this block contained the Boreel Building, constructed in 1878, which had a full basement level below the street grade. Given the height and massing of the Boreel Building, which was eight stories tall, depth of the former basement likely was at least 8-10 feet below the street level. Foundations for the building would have been deeper than that. Additionally, utility installation and reconstruction efforts under present Thames Street and its sidewalks for water, gas, cable, vaults, etc. has created subsequent disturbance. It is assumed that this portion of the project site has been disturbed to at least 10 feet below grade.

All of the proposed project components within this segment of the project site will occur at reasonably shallow depths, for the installation of new pavement surfaces. None of the proposed work will extend beneath the level of the existing disturbance.

- **Thames Street between former line of Temple Street and Trinity Place**

This section of the present Thames Street was also once part of Block 50. It contained a variety of buildings over time. The last set of structures shown on historic maps covered the entirety of the present Thames Street project site; there were no areas that remained as open yards. All of the buildings on this part of the block also are assumed to have had basements, based on historic images and photographs that show basement levels accessed by bulkhead doors, or windows or coal chutes extending below the street level. Again, basements likely were at least 8 feet below grade, and possibly deeper, with foundations extending below the level of the basements. Again, utility installation and reconstruction efforts under present Thames Street and its sidewalks for water, gas, cable, vaults, catch basins, etc. has created subsequent disturbance. It is assumed that this portion of the project site has been disturbed to at least 8 feet below grade.

All of the proposed project components within this segment of the project site will occur at reasonably shallow depths, for the installation of new pavement surfaces and two new catch basins. The catch basins will extend approximately four feet below grade. None of the proposed work will extend beneath the level of the existing disturbance.

- **Former Temple Street roadbed and sidewalks**

Temple Street was a former road that bisected Block 50. It was 25 feet wide, including the street and sidewalks. This block of Temple Street was discontinued after 1906, when the U.S. Realty Building was constructed. Prior to its use as a city street, the Temple Street footprint was part of the de Lancey mansion grounds, and would have been located in the rear of the main house. It was shown as an informal dividing line between the two parts of Block 50 by 1755, and was in use as roadway by at least the end of the eighteenth century. Historic maps show there were water lines beneath Temple Street prior to its discontinuation. It is likely there were other unmapped utilities beneath the street as well. The former

roadbed and sidewalks of Temple Street likely were the least disturbed areas of the project site, although there would have been several feet of vertical disturbance from standard roadbed and sidewalk construction on Temple Street, as well as for utility installation and reconstruction as part of the existing Thames Street. Conservatively, it is assumed that this portion of the project site has been disturbed to at least 4 feet below grade.

All of the proposed project components within this segment of the project site will occur at reasonably shallow depths, for the installation of new pavement surfaces. None of the proposed work will extend beneath the level of the existing disturbance.

- **Sidewalks on west side of Broadway at Thames Street**

The project site also includes work along the sidewalks on the west side of Broadway flanking Thames Street. These sidewalks have been reconstructed numerous times. There is a subway entrance at the northwest corner of this intersection, within the sidewalk footprint adjacent to the building at 115 Broadway. The subway runs underneath this intersection. It is assumed that this portion of the project site has been completely disturbed from prior construction.

All of the proposed project components within this segment of the project site will occur at reasonably shallow depths, for the installation of new pavement surfaces. None of the proposed work will extend beneath the level of the existing disturbance.

- **Sidewalks on east side of Trinity Place at Thames Street**

Additionally, the project site includes work along the sidewalks on the east side of Trinity Place flanking Thames Street. As with the other end of the project site, these sidewalks have been reconstructed numerous times. There are grates for vaults along these sidewalks associated with the subway that runs underneath this intersection. It is assumed that this portion of the project site has been completely disturbed from prior construction.

All of the proposed project components within this segment of the project site will occur at reasonably shallow depths, for the installation of new pavement surfaces. None of the proposed work will extend beneath the level of the existing disturbance.

B. PRECONTACT PERIOD ARCHAEOLOGICAL SENSITIVITY

It is generally understood that prior to extensive historical development in Lower Manhattan, the area was home to Native Americans (e.g. Grumet 1981:68). There was a Native American trail that ran along the approximate route of modern Broadway and habitation sites north of the project site. However, the vast degree of disturbance from hundreds of years of building construction episodes, as well as infrastructure projects such as subterranean subways, has resulted in the nearly complete obliteration of precontact period archaeological resources in this area. Given the very substantial ground disturbance to the project site, coupled with project plans that indicate new components will not extend deeper than the documented prior disturbance, HPI concludes that there is no precontact period archaeological sensitivity.

C. HISTORIC PERIOD ARCHAEOLOGICAL SENSITIVITY

The existing Thames Street footprint was once part of Block 50 and the former Temple Street which bisected it. As described above, there were a series of buildings and occupants on the blocks, beginning in ca. 1700 when the Etienne de Lancey mansion was constructed on the west side of Broadway between Cedar and Thames Streets. The de Lancey mansion was converted into a public inn and tavern, and operated for many years as a popular spot for New York's elite until it was demolished in 1793. Later buildings on the block southeast of Temple Street included the City Hotel from ca. 1795-1849, the first Boreel Building from ca. 1850-1878, and the second Boreel Building from ca. 1878-1906. There were houses, including a parsonage, on the portion of the block northwest of Temple Street by the 1750s and 1760s, which burned in the Great Fire of 1776. Later buildings on the block were a combination of commercial and residential structures, including a well-known tavern called Old Tom's. These buildings were all razed in ca. 1906.

As described above, there is very substantial ground disturbance across the project site from multiple building episodes from ca. 1700-1906, and subsequent disturbance after 1906 from installation and reconstruction of

streetbed utilities and subway construction at the two ends of Thames Street. Project plans indicate that the deepest new components will be for the installation of catch basins at approximately four feet below grade in the Thames Street roadbed near Trinity Place. These locations had been previously disturbed to at least eight feet below grade for former building basements. The remainder of the proposed project components within the project site will occur at reasonably shallow depths, for the installation of new pavement surfaces. In summary, none of the proposed work will extend beneath the level of the existing disturbance. For these reasons, HPI concludes that there is no historic period archaeological sensitivity.

VI. RECOMMENDATIONS

Based on the conclusions outlined above, HPI recommends that no further archaeological studies are warranted for the Thames Street project site.

VII. REFERENCES

Adams, John Wolcott and I.N. Phelps Stokes
1916 *Redraft of The Castello Plan, New Amsterdam in 1660*.

American Architect and Building News
1894 Stephen D. Hatch obituary. Volume XLV, No. 974. August 25, 1894. Boston, Mass.

Bolton, Reginald Pelham
1972 *Indian Life of Long Ago in the City of New York,* enlarged ed. Harmony Books, New York.

Brodhead, John R.
1853 *History of the State of New York*. Harper and Brothers, New York.

City Environmental Quality Review (CEQR)
2014 *City Environmental Quality Review Technical Manual*. City of New York, Mayor's Office of Environmental Coordination.

City of New York, Borough of Manhattan, Department of Finance, City Register
Various Libers as cited in the text.

Colton, Joseph H.
1836 *Topographical Map of the City and County of New York and the Adjacent Country.* Published by J.H. Colton & Co., New York.

Dripps, Matthew
1852 *Map of the City of New York Extending Northward to 50th Street.*

Eisenberg, Leonard
1978 "Paleo-Indian Settlement Patterns in the Hudson-Delaware River Drainages." *Occasional Publications in Northeastern Anthropology*, No. 4.

Grumet, Robert S.
1981 *Native American Place Names in New York City.* Museum of the City of New York, New York.

Gwynne, Gretchen Anderson
1982 "Prehistoric Archaeology at Mount Sinai Harbor, Suffolk County, New York." In *The Second Coastal Archaeology Reader,* Volume V. James E. Truex, editor. SCAA, Stony Brook, New York.

Harrison, J.F,
1867 *Plan of New York City, from the Battery to Spuyten Duyvil Creek. Showing every lot and building thereon; old farm lines, street numbers at the corners of blocks, railroads, steamboat landings, bulkhead and pier lines, etc. Based on the surveys made by Messrs. Randall & Blackwell, and on the special survey by J. F. Harrison.*

Innes, J.H.
1902 Plan of New Amsterdam About 1644. In *New Amsterdam and its people; studies, social and topographical, of the town under Dutch and early English rule, by J. H. Innes. With maps, plans, views, etc*. C. Scribner's Sons, New York.

Landmarks Preservation Commission (LPC)
1988a LP-1557, Trinity Building, 111 Broadway, Borough of Manhattan. Built 1905, 1907; architect Francis Hatch Kintball.

1988b LP-1558, U.S. Realty Building, 115 Broadway, Borough of Manhattan. Built 1907; architect Francis Hatch Kimball.

2002 *Landmarks Preservation Commission Guidelines for Archaeological Work in New York City*.

Lyne, James
1731 *A Plan of the City of New York From an Actual Survey*. (Lyne-Bradford Plan). William Bradford, New York.

Maerschalck, Francis
1755 *A Plan of the City of New York from an actual Survey Anno Domini-M,DCC,IV*. Gerardus Duyckinck, New York.

Miller, John
1695 *New Yorke*. Redrawn in 1894 for Janvier's In Old New York.

Montresor, John
1766 *A Plan of the City of New-York & its Environs to Greenwich on the North or Hudson River...Surveyed in the Winter, 1766*. Mary Ann Rocque, London.

NYC DOTMAP Portal
2017 http://www.nyc.gov/html/dot/html/infrastructure/construction.shtml. Accessed June 5, 2017.

Perris, William
1852 *Maps of the City of New York.*

1857 *Maps of the City of New York.*

Philip Habib & Associates
2017 Reconstruction of Thames Street Plaza Between Broadway and Trinity Place, Borough of Manhattan. Project specifications.

Ratzen, Bernard
1767 *To His Excellency Sr. Henry Moore, Bart., Captain General and Governour in Chief, in & over the Province of New York & the Territories depending thereon in America, Chancellor & Vice Admiral of the Same, this Plan of the City of New York, is most Humbly Inscribed*. Updated to 1776 to show fire limits in red.

Ritchie, William A.
1980 *The Archaeology of New York State*. Revised Edition. Harbor Hill Books, NY.

Robinson, E.
1885 *Atlas of the City of New York*. E. Robinson, New York.

Sanborn Map Company
1894 *Insurance Maps of the City of New York: Borough of Manhattan*.

1905 *Insurance Maps of the City of New York: Borough of Manhattan*.

1923 *Insurance Maps of the City of New York: Borough of Manhattan*.

1951 *Insurance Maps of the City of New York: Borough of Manhattan*.

Santucci, Gina
2017 Archaeological Review Findings, Landmarks Preservation Commission. May 15, 2017.

Schuberth, Christopher J.
1968 *The Geology of New York City and Environs*. Natural History Press, Garden City, New York.

Smith, Carlyle Shreeve
1950 *The Archaeology of Coastal New York*, Anthropological Papers of the American Museum of Natural History, 43(2), New York.

Stokes, I.N. Phelps.
1915 *The Iconography of Manhattan Island 1408-1909.* Vol. 1. Robert H. Dodd, New York.

1916 *The Iconography of Manhattan Island 1408-1909.* Vol. 2. Robert H. Dodd, New York.

1918 *The Iconography of Manhattan Island 1408-1909.* Vol. 2. Robert H. Dodd, New York.

1922 *The Iconography of Manhattan Island 1408-1909.* Vol. 4. Robert H. Dodd, New York.

1926 *The Iconography of Manhattan Island 1408-1909.* Vol. 5. Robert H. Dodd, New York.

1928 *The Iconography of Manhattan Island 1408-1909.* Vol. 6. Robert H. Dodd, New York.

Taylor, Benjamin and John Roberts
1797 *A New & Accurate Plan of the City of New York in the State of New York in North America*.

Trow, John F.
1851 *The Great Metropolis or New York Almanac for 1851*. H. Wilson, New York.

United States Department of Agriculture (USDA)
2005 *New York City Reconnaissance Soil Survey*. United States Department of Agriculture, Natural Resources Conservation Service, Staten Island, NY.

U.S.G.S.
2016 *Jersey City, New Jersey-New York* 7.5 Minute Quadrangle.

Viele, Egbert
1865 *Sanitary and Topographic Atlas of the City of New York*. Egbert E. Viele, New York.

Wyatt, Ronald J.
1982 "The Archaic on Long Island." In *The Second Coastal Archaeology Reader*, Volume V. James Truex, editor. SCAA, Stony Brook, New York.

Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

N

Figure 1: Project site on *Jersey City, N.J-N.Y.* topographic quadrangle (U.S.G.S. 2016).

1000 0 1000 2000 3000 4000 FEET

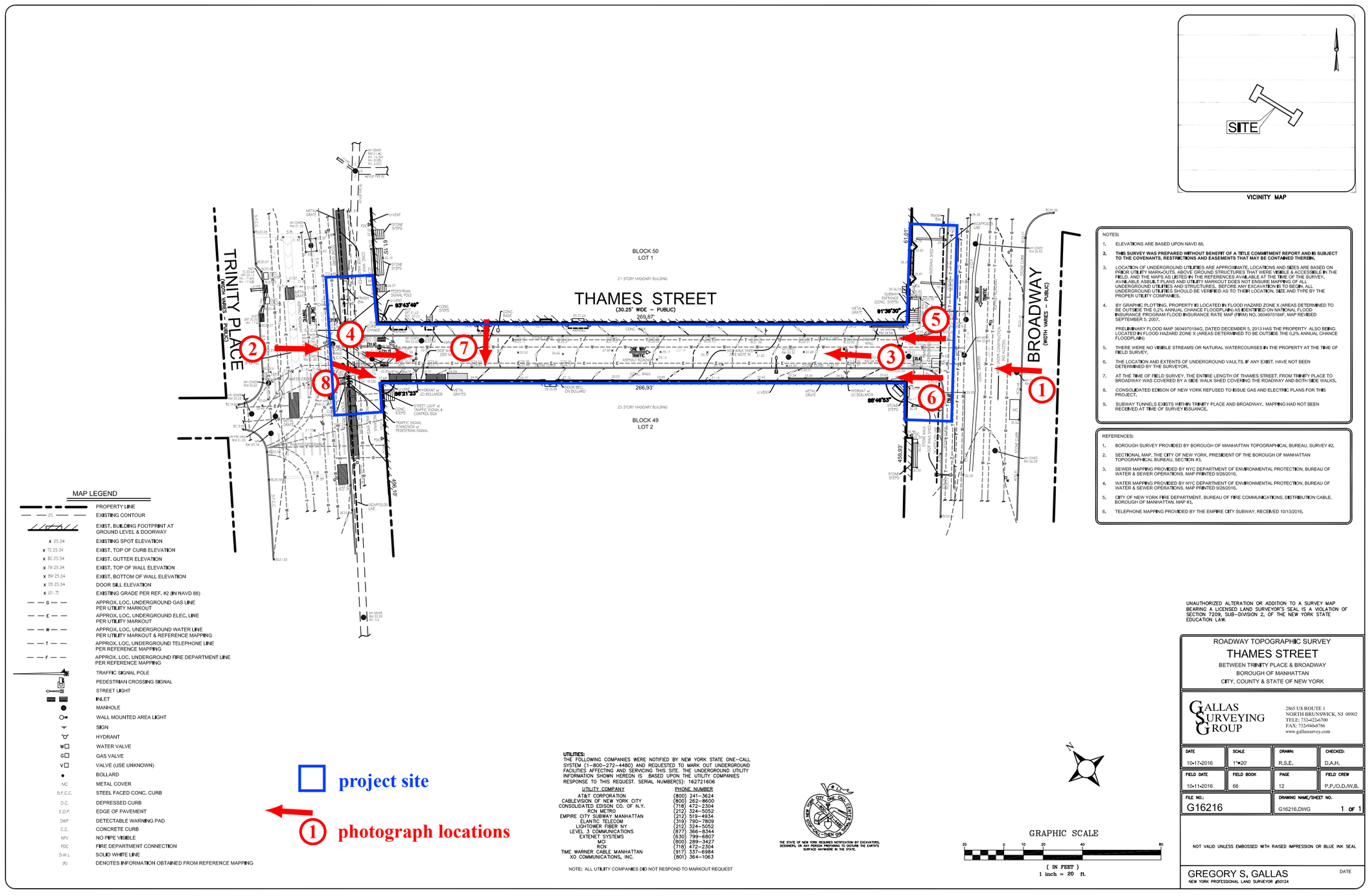
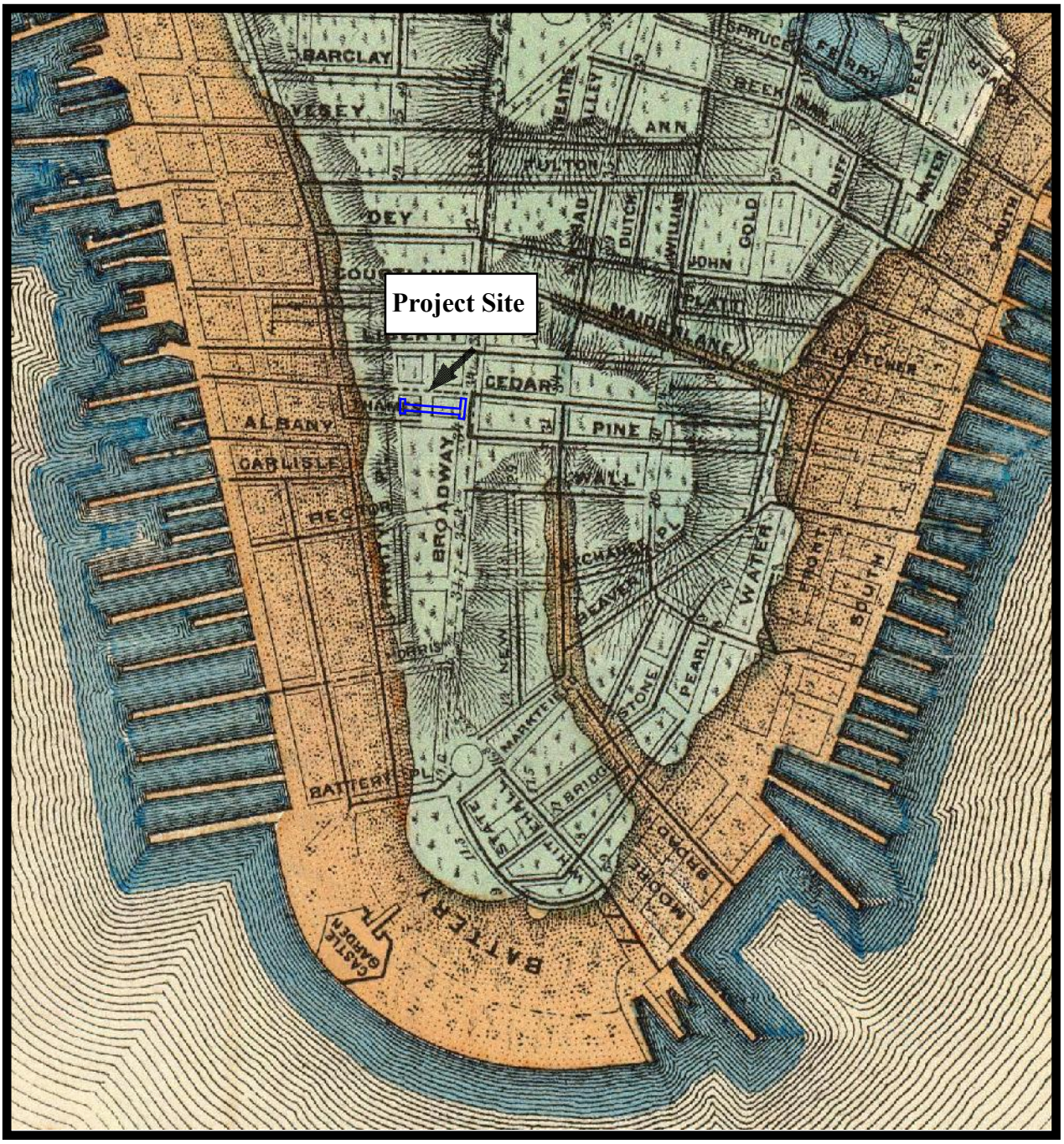


Figure 2: Project site and photograph locations on modern survey map (Gallas Surveying Group 2016).

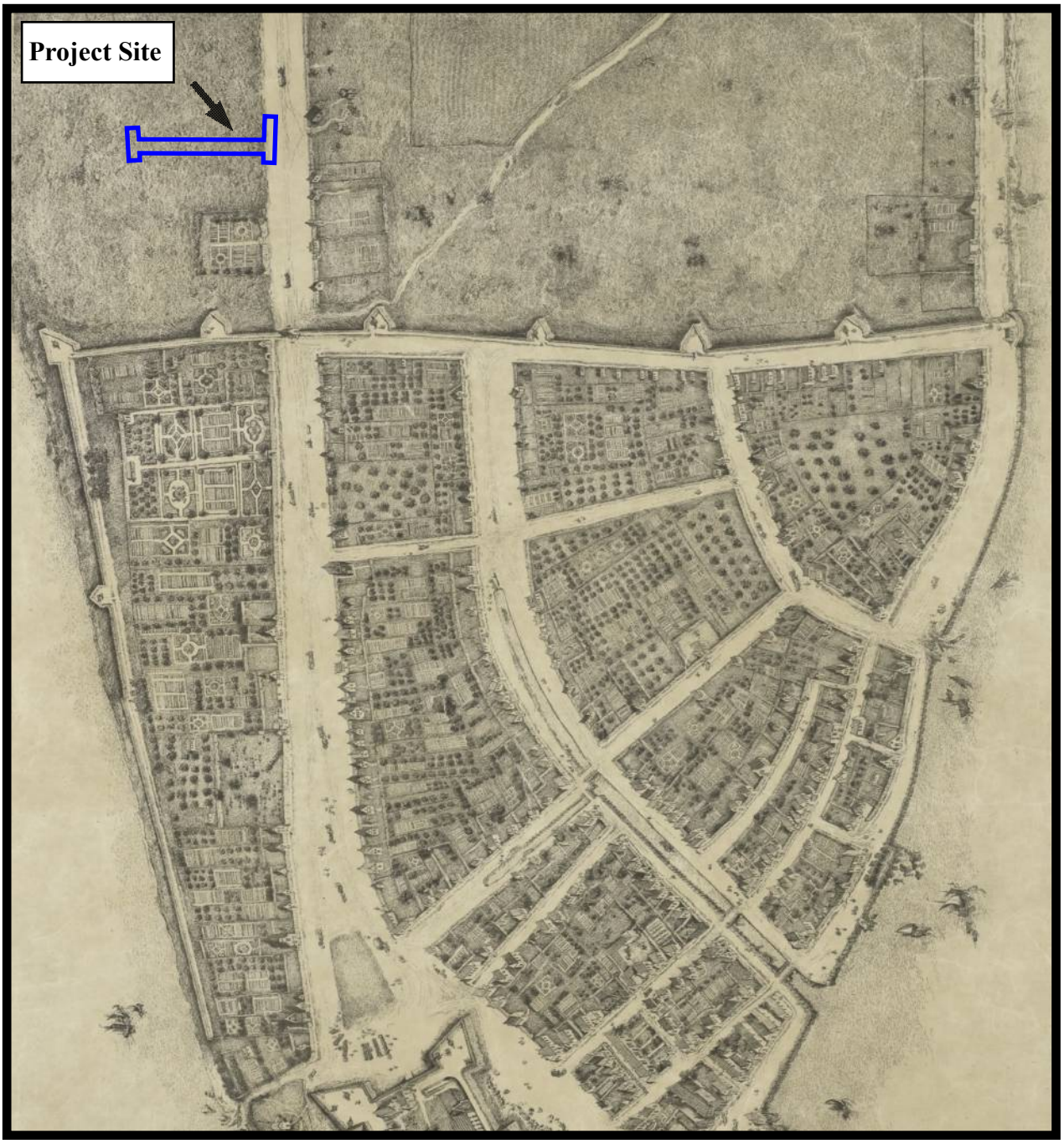


Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

N

Figure 3: Project site on *Sanitary and Topographical Map of the City and Island of New York* (Viele 1865).

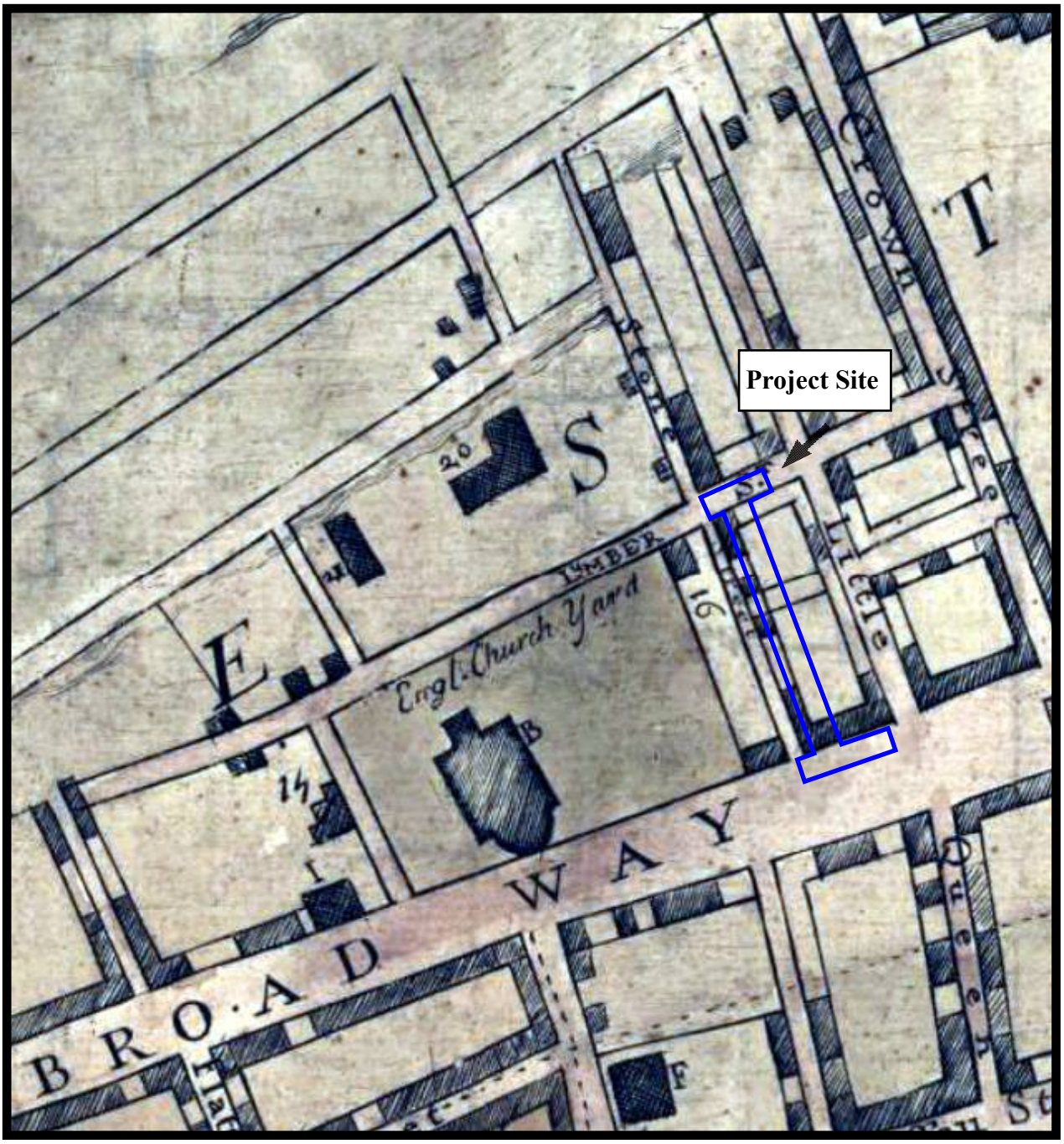
200 0 200 400 600 800 FEET



Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

Figure 4: Project site on *Redraft of The Castello Plan, New Amsterdam in 1660* (Adams-Stokes 1916).

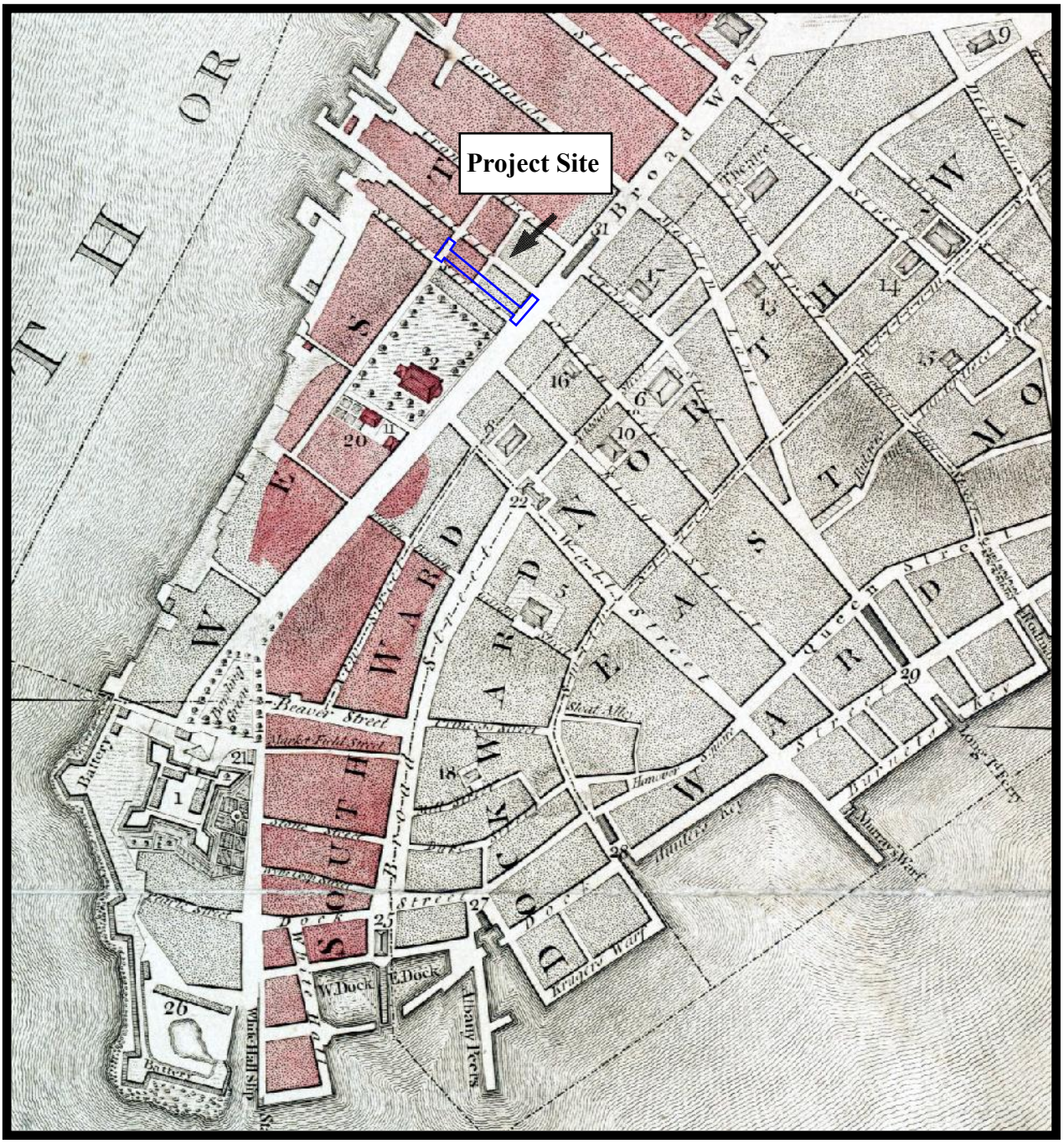
200 0 200 400 600 800 FEET



Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

Figure 5: Project site on *A Plan of the City of New York from an actual Survey* (Maerschalck 1755).

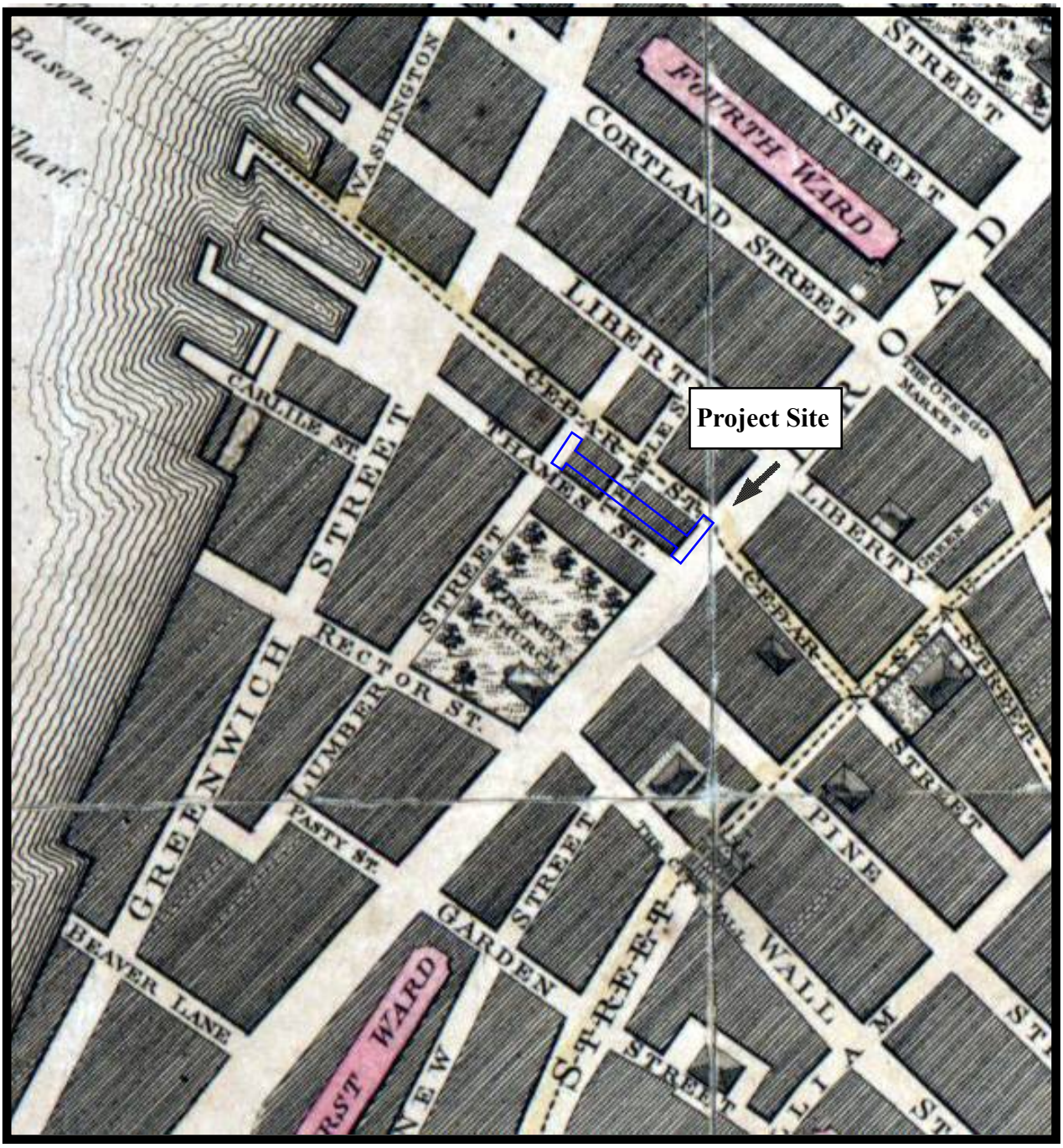
100 0 100 200 300 400 FEET



Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

Figure 6: Project site on *To His Excellency Sr. Henry Moore, Bart., Captain General and Governour in Chief, in & over the Province of New York & the Territories depending thereon in America, Chancellor & Vice Admiral of the Same, this Plan of the City of New York, is most Humbly Inscribed* (Ratzen 1767, updated to 1776 to show fire limits in red).

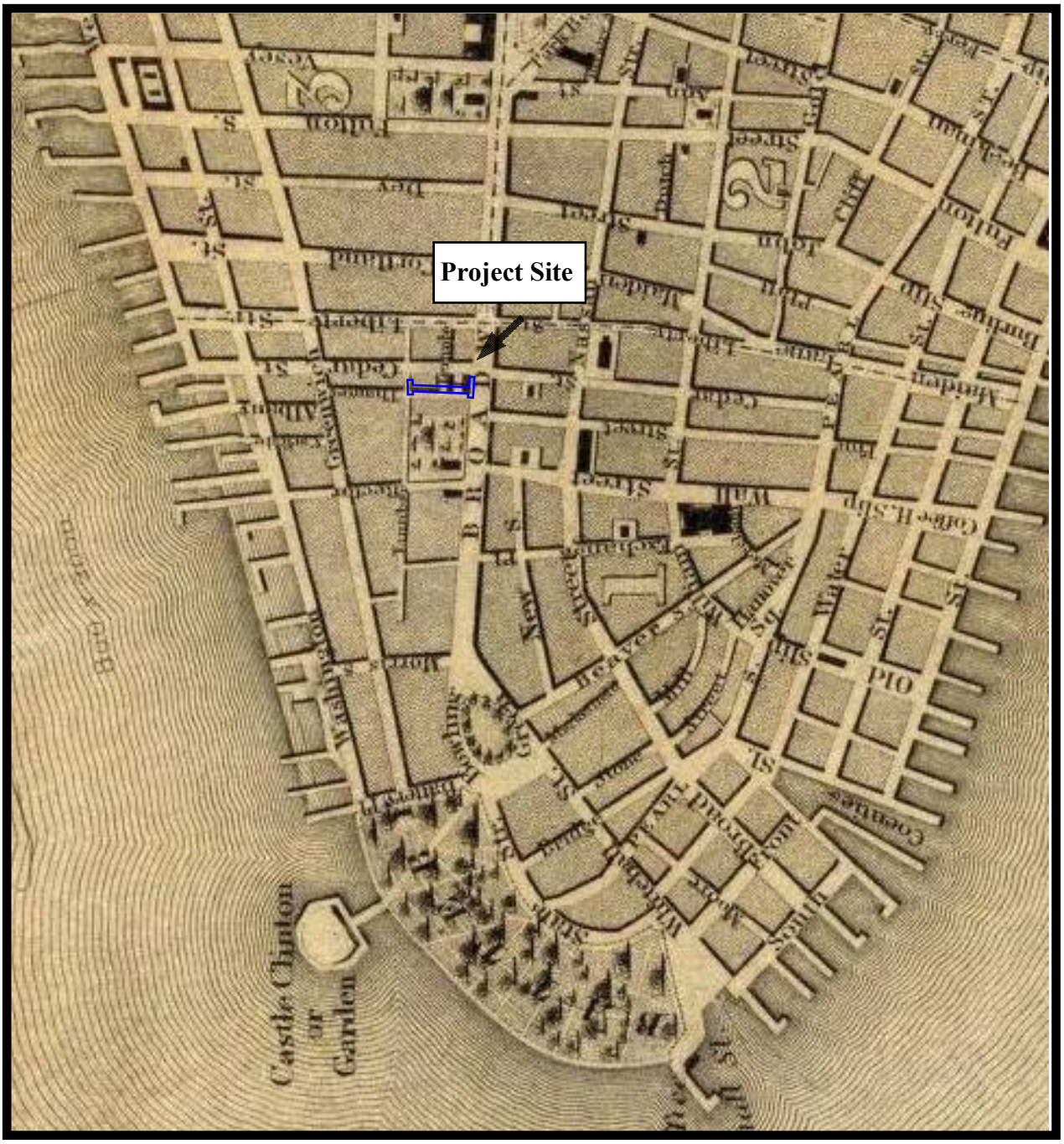
200 0 200 400 600 800 FEET



Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

Figure 7: Project site on *A New and Accurate Plan of the City of New York...* (Taylor and Roberts 1797).

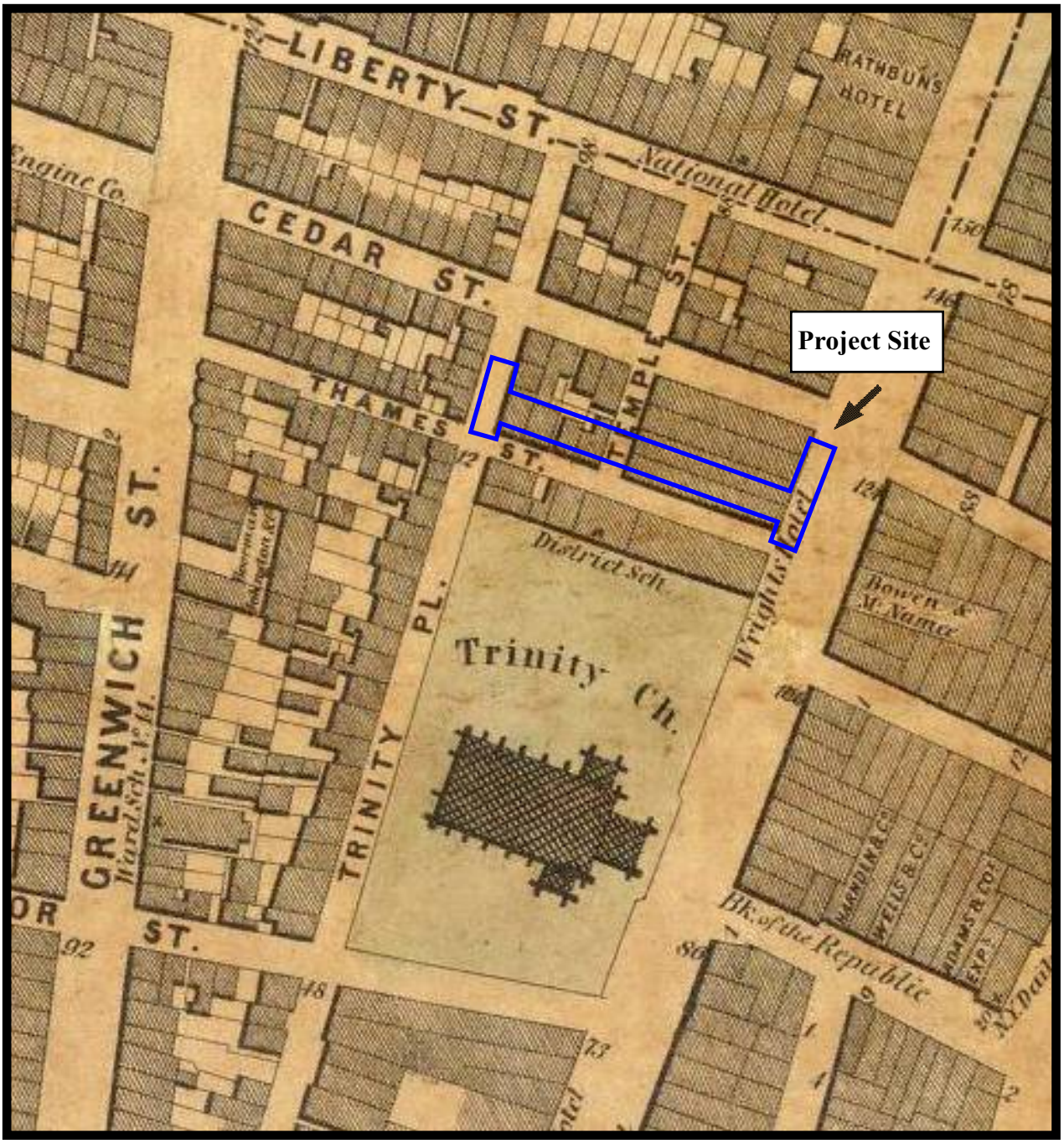
100 0 100 200 300 400 FEET



Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

Figure 8: Project site on *Topographical Map of the City and County of New-York and the Adjacent Country* (Colton 1836).

200 0 200 400 600 800 FEET

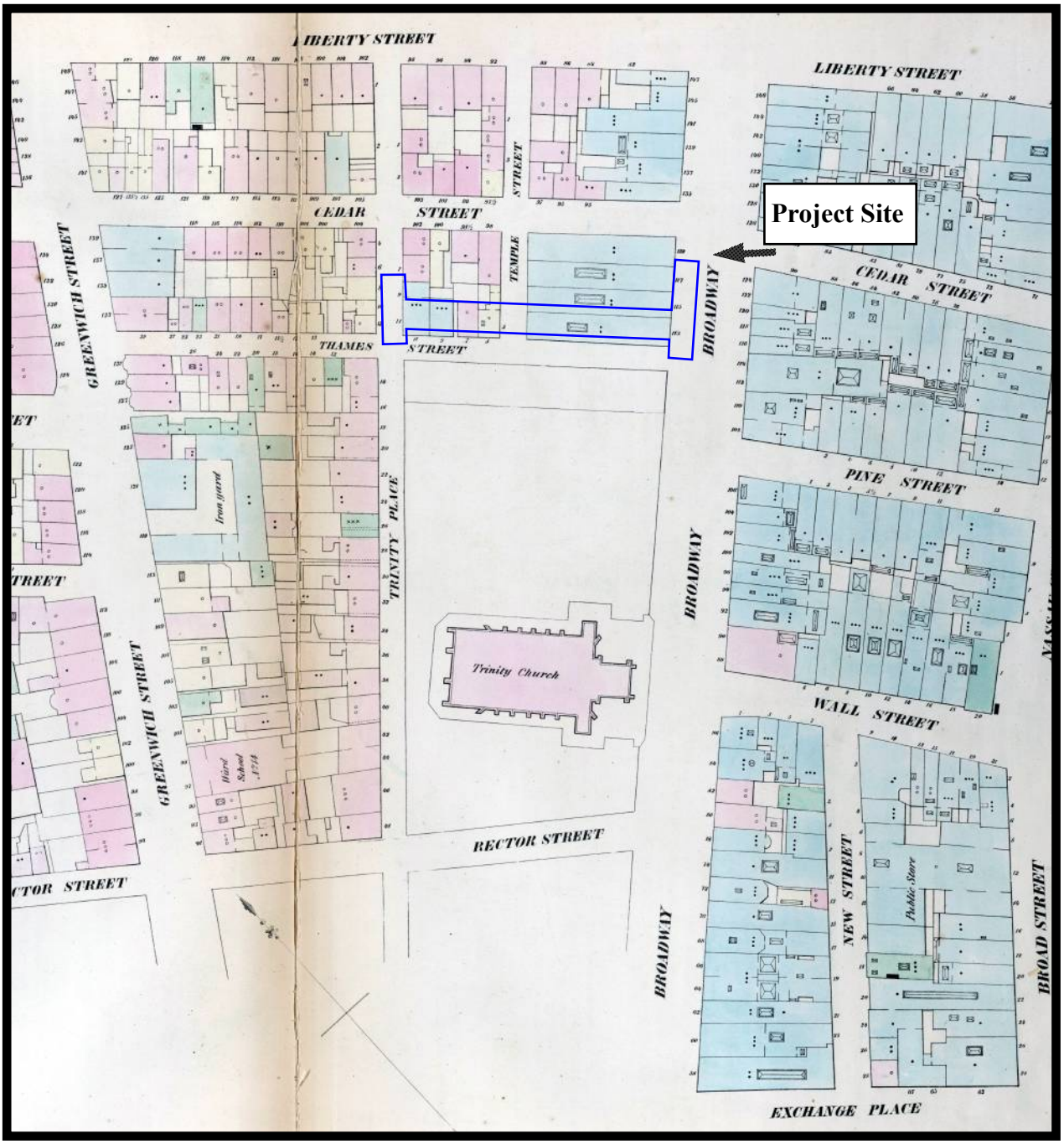


Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

N

Figure 9: Project site on *Map of the City of New York Extending Northward to Fiftieth Street* (Dripps 1852).

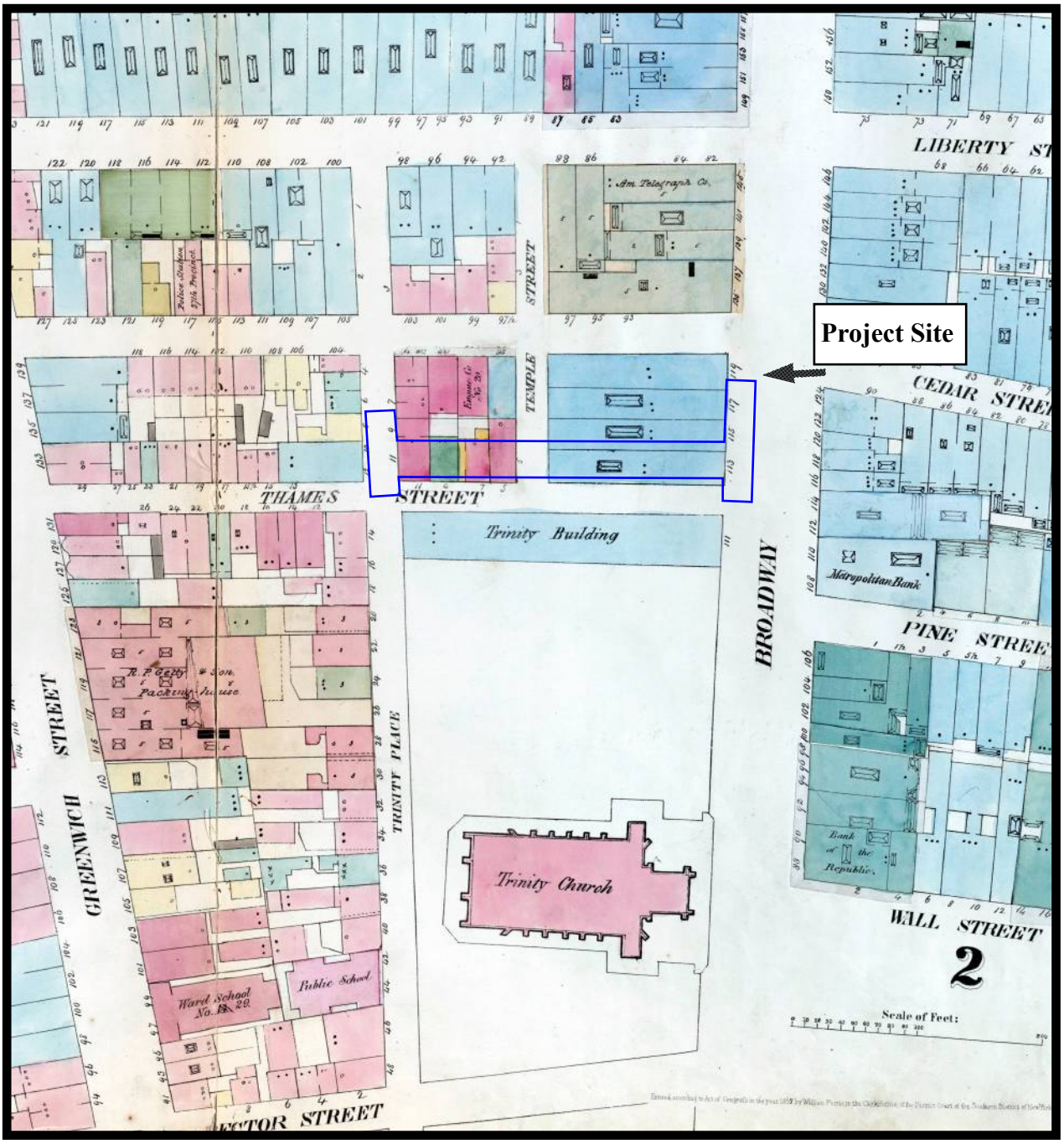
100 0 100 200 300 400 FEET



Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

Figure 10: Project site on *Maps of the City of New York* (Perris 1852).

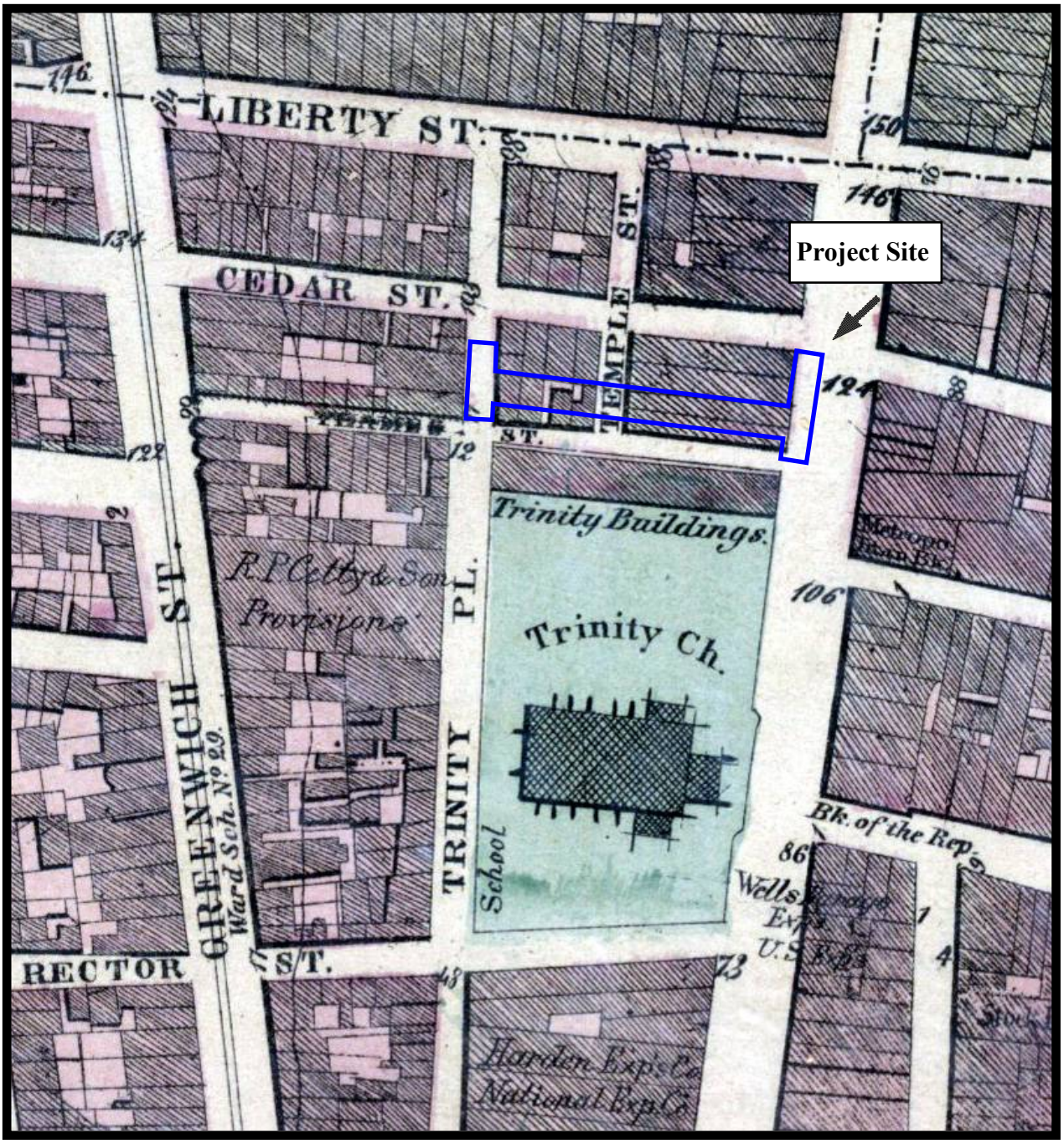
100 0 100 200 300 400 FEET



Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

Figure 11: Project site on *Maps of the City of New York* (Perris 1857).

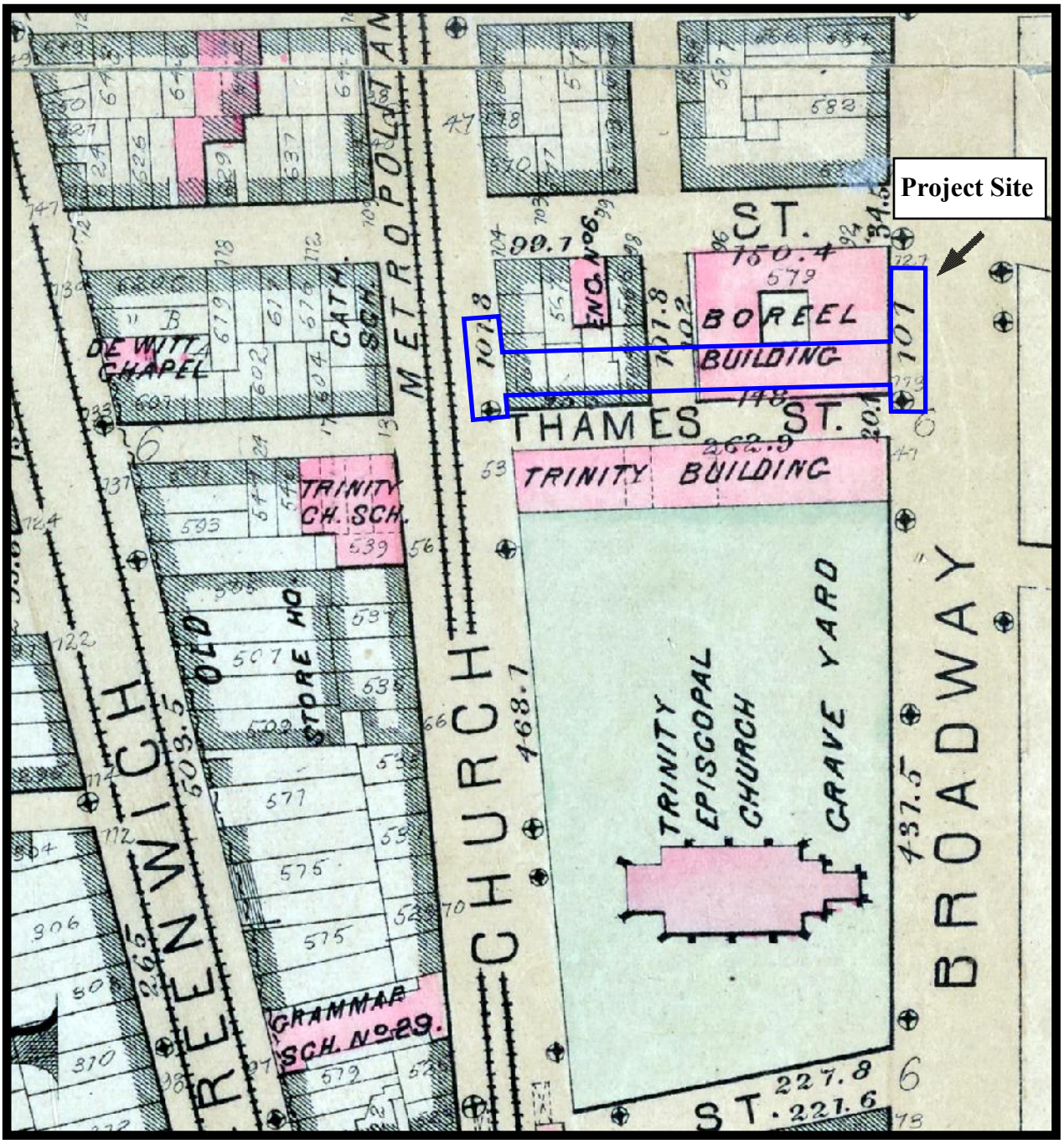
100 0 100 200 300 400 FEET



Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

Figure 12: Project site on *Plan of New York City from the Battery to Spuyten Duyvil Creek* (Harrison 1867).

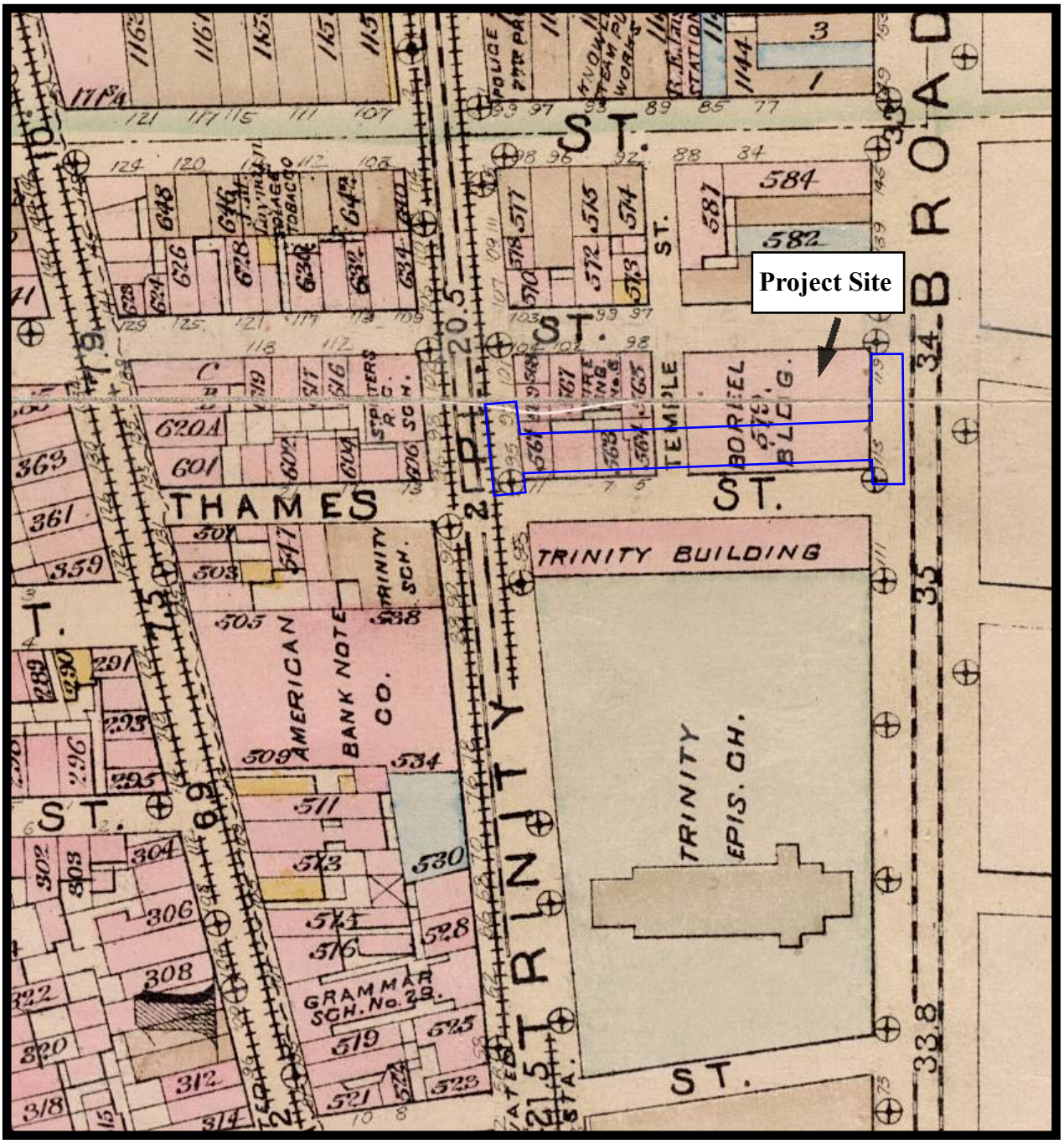
100 0 100 200 300 400 FEET



Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

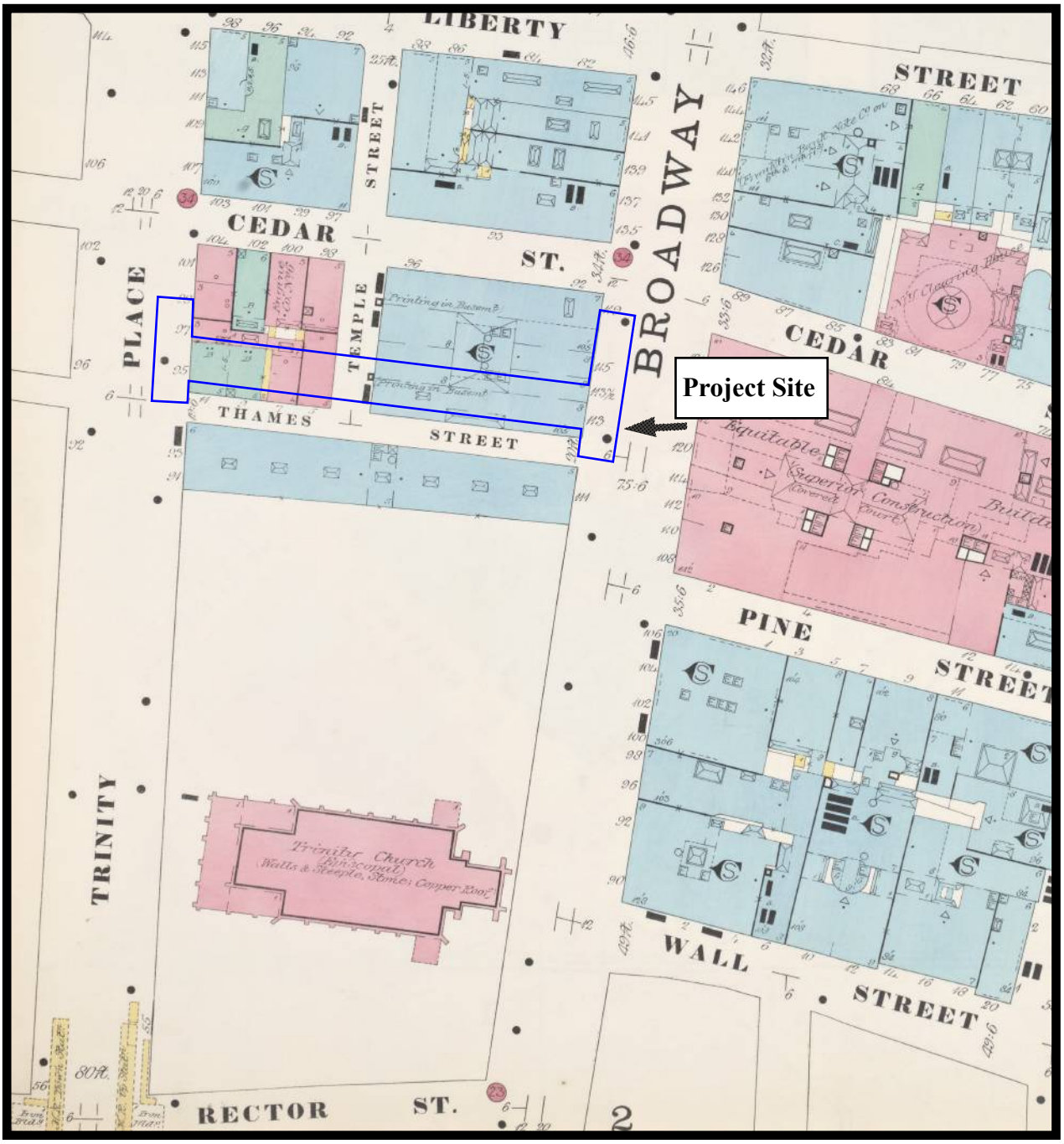
Figure 13: Project site on *Atlas of the Entire City of New York* (Bromley 1879).

100 0 100 200 300 400 FEET



Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

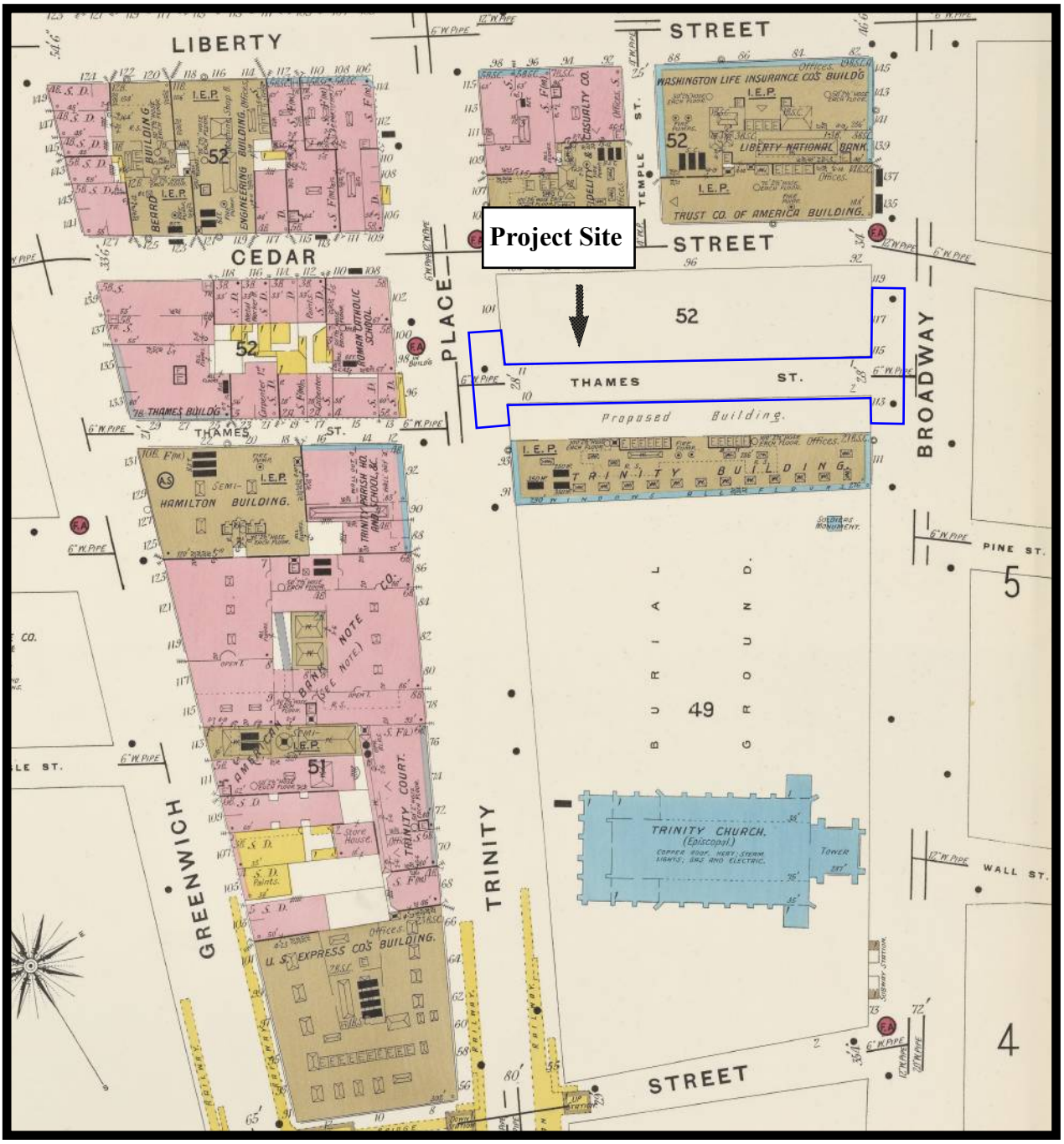
Figure 14: Project site on *Atlas of the City of New York* (Robinson 1885).



Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

Figure 15: Project site on *Insurance Maps of the City of New York* (Sanborn 1894).

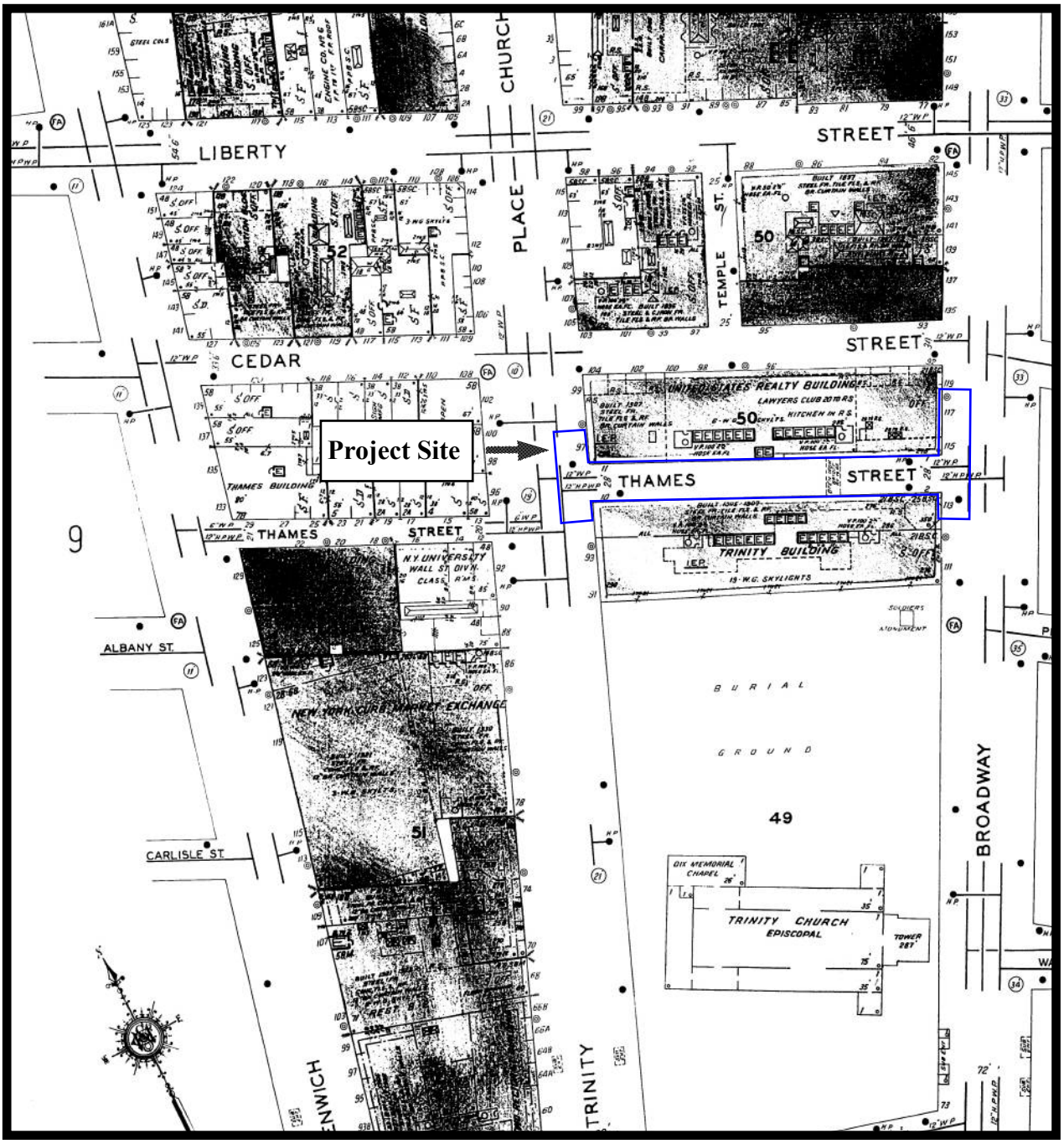
100 0 100 200 300 400 FEET



Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

Figure 16: Project site on *Insurance Maps of the City of New York* (Sanborn 1905).

100 0 100 200 300 400 FEET



Phase IA Archaeological Documentary Study
Thames Street Pedestrian Plaza
Thames Street between Broadway and Trinity Place
New York, New York

Figure 17: Project site on *Insurance Maps of the City of New York* (Sanborn 1951).

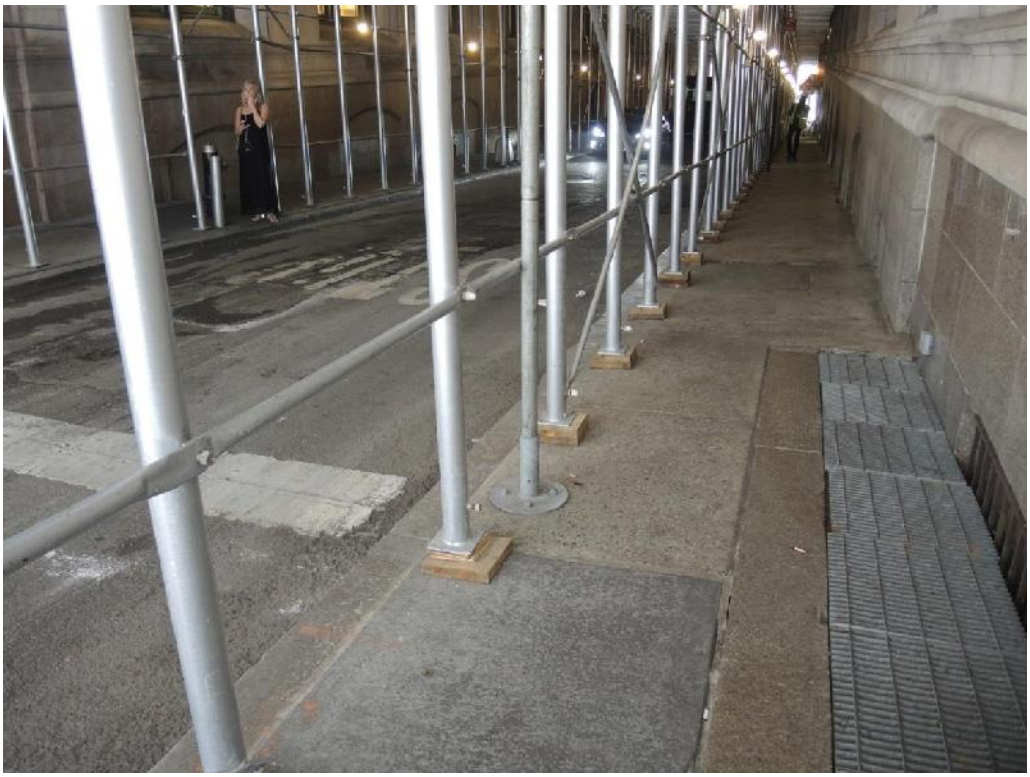
100 0 100 200 300 400 FEET

Photograph 1: Thames Street at Broadway with sidewalk shed scaffolding. Thames Street slopes downhill to Trinity Place in far background. View looking northwest.

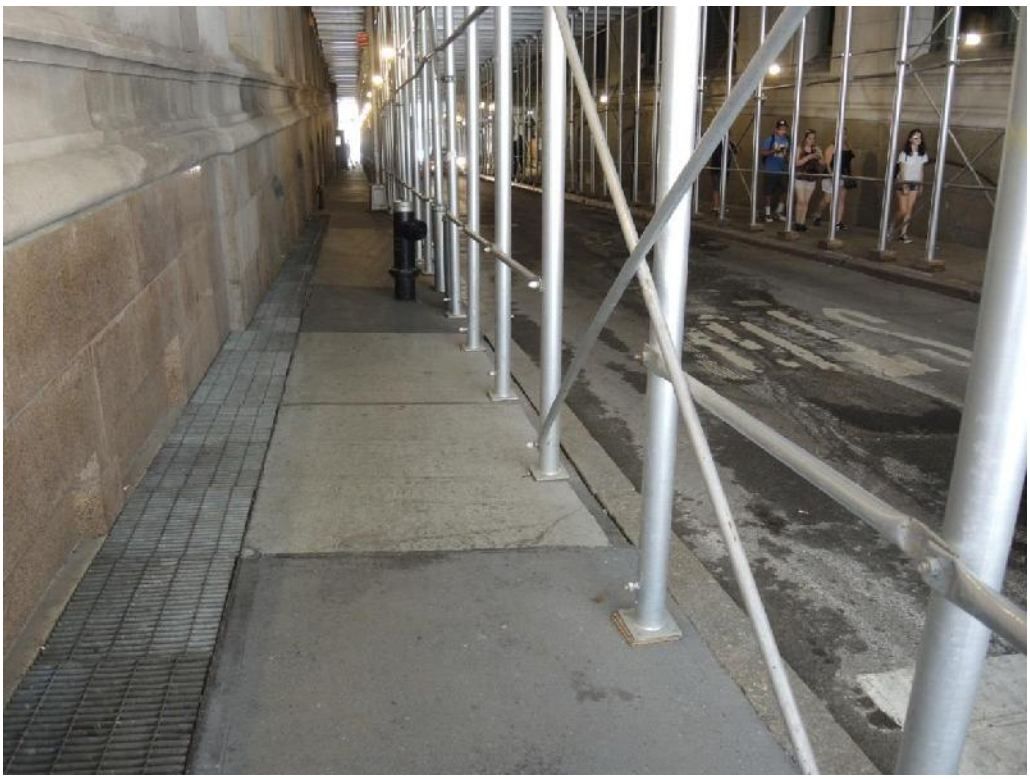
Photograph 2: Thames Street at Trinity Place with sidewalk shed scaffolding. View looking southeast.

Photograph 3: Thames Street roadbed with sidewalk shed scaffolding. Note manholes in foreground. Trinity Place is in far background. View looking northwest.

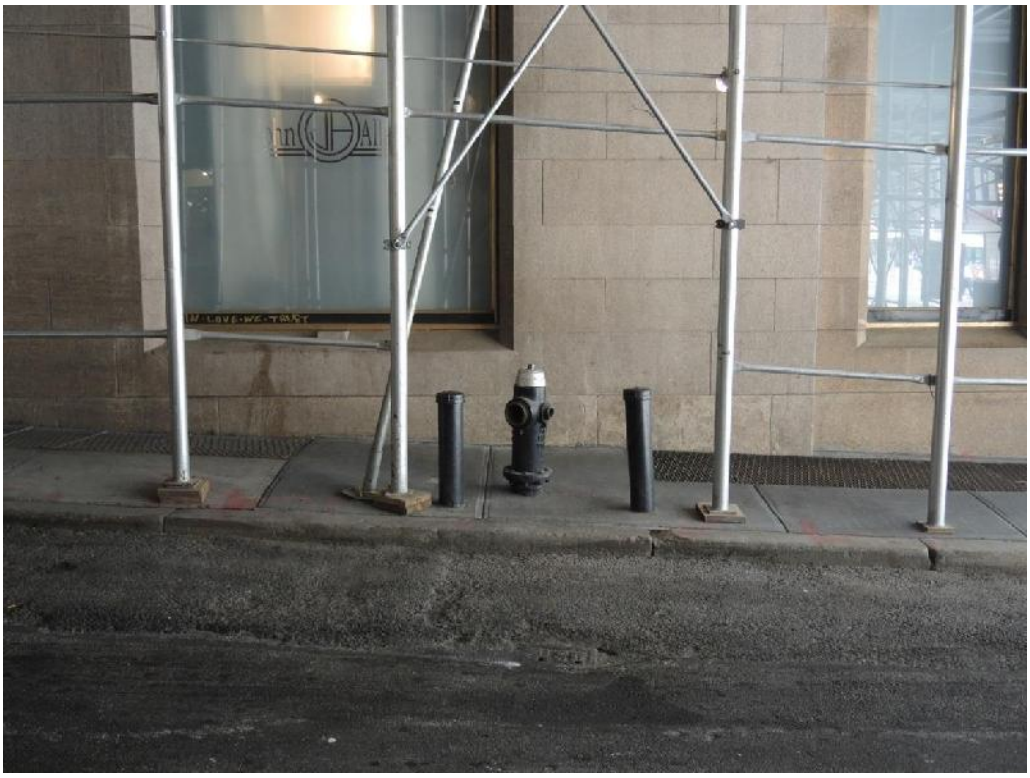
Photograph 4: Thames Street roadbed with sidewalk shed scaffolding. Note sewer manholes and catch basins in foreground. Broadway is in far background. View looking southeast.



Photograph 5: Detail of sidewalk vaults on north side of Thames Street. View looking northwest.



Photograph 6: Detail of sidewalk vaults and hydrant on south side of Thames Street. View looking northwest.



Photograph 7: Detail of hydrant and bollards on south side of Thames Street near Trinity Place. View looking southwest.

Photograph 8: Detail of sidewalk vaults and standpipe on south side of Thames Street at corner of Trinity Place. View looking southwest.

RECONSTRUCTION OF
THAMES STREET PLAZA
BETWEEN BROADWAY AND TRINITY PLACE

BOROUGH OF MANHATTAN

SITE LOCATION

KEY PLAN
SCALE: 1"=50'

PROJECT LOCATION

TABLE OF CONTENTS

PRELIMINARY – NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTIONS	BY	APPR'D

REVISIONS

THAMES STREET PLAZA
BOROUGH OF MANHATTAN

Philip Habib & Associates · Engineers and Planners
102 MADISON AVENUE · NEW YORK, NY 10016

PROJECT ID: THAMES | DATE: 05-30-2017 | SHEET 1 OF 10

1. GENERAL

1.01 ALL ELEVATIONS REFER TO NAVD88 DATUM, WHICH IS 1.1 FEET ABOVE MEAN SEA LEVEL AT SANDY HOOK, NEW JERSEY AS ESTABLISHED BY THE U.S. COAST AND GEODETIC SURVEY.

1.02 BLOCK INTERIOR ANGLES, BLOCK LENGTHS AND LEGAL GRADES WERE OBTAINED FROM THE FINAL MAPS OF THE BOROUGH OF MANHATTAN.

1.03 EXISTING UNDERGROUND AND OVERHEAD UTILITIES AS SHOWN HERE HAVE BEEN DETERMINED BY STANDARD SURVEYING METHODS AND AVAILABLE RECORDS. NEITHER THE EXACT LOCATION NOR THE INFORMATION OF THESE EXISTING UTILITIES IS GUARANTEED TO BE COMPLETE OR CORRECT.

1.04 BUS ROUTES AFFECTED BY THE PROJECT WILL OR MAY REQUIRE COORDINATION. ARRANGEMENTS FOR BUS DIVERSIONS SHALL BE MADE THROUGH:

MS. SARAH WYSS
DIRECTOR, SHORT RANGE BUS SERVICE PLANNING
MTA NEW YORK CITY TRANSIT
2 BROADWAY, ROOM A17.50
NEW YORK, NY 10004
Sarah.Wyss@NYCT.com

1.05 ALL COMMUNICATIONS AND COORDINATION MEETINGS RELATIVE TO THIS PROJECT BETWEEN THE CONTRACTOR AND ANY AGENCY, UTILITY COMPANY OR ORGANIZATION WILL BE CONDUCTED AND/OR APPROVED BY THE ENGINEER.

1.06 NO TEXT

1.07 NO TEXT

1.08 ALL SHEETING PLACED UNDER THIS CONTRACT, NO MATTER UNDER WHICH ITEMS, SHALL BE REMOVED, AND THE COST SHALL BE DEEMED INCLUDED IN THE PRICES BID FOR ALL SCHEDULED ITEMS.

1.09 THE FOLLOWING SHALL PERTAIN TO ALL ITEMS HAVING BACKFILL AS PART OF THE WORK: "THE BACKFILLING SHALL COMPLY WITH SUBSECTION 4.11.3 OF THE STANDARD SPECIFICATIONS, AND THE COST THEREOF SHALL BE DEEMED INCLUDED IN THE PRICES BID FOR ALL RELATED ITEMS UNLESS OTHERWISE SPECIFICALLY NOTED ON DRAWINGS."

1.10 ALL HYDRANTS, LIGHT POLES, TREES OR OTHER FIXED OBJECTS THAT ARE TO BE CONSTRUCTED, PLANTED, RESET, OR RELOCATED AS A RESULT OF THE PROJECT SHALL BE CONSTRUCTED OR PLANTED SO AS TO PROVIDE AT LEAST ONE AND ONE HALF (1 1/2) FOOT CLEAR DISTANCE FROM THE FACE OF THE CURB TO THE FACE OF THE OBJECT.

1.11 AS A RESULT OF CURB RELOCATION WITHIN THE CONTRACT LIMITS, EXISTING STREET APPURTENANCES PROJECTING ABOVE PAVED SURFACES, SUCH AS HYDRANTS, LAMPPOSTS AND TRAFFIC SIGNAL POLES, BUS SHELTERS, ETC., WILL HAVE TO BE RELOCATED. NOT WITHSTANDING ANY CONSTRUCTION SEQUENCE AS DEFINED BY THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL PLAN HIS CONSTRUCTION OPERATIONS TO INSURE THAT THESE APPURTENANCES ARE CONSTRUCTED OR RELOCATED IN CONJUNCTION WITH THE INSTALLATION OF THE NEW CURB. IN PARTICULAR, IN THE EVENT THE SIDEWALK IS WIDENED, THE STREET APPURTENANCES SHALL BE MAINTAINED AT THEIR EXISTING LOCATION BEHIND THE EXISTING CURB UNTIL THE NEW SIDEWALK IS CONSTRUCTED. IF THE SIDEWALK IS NARROWED, THE STREET APPURTENANCES MUST BE MOVED TO THEIR NEW LOCATIONS BEHIND THE PROPOSED NEW CURB PRIOR TO REMOVAL OF THE EXISTING CURB. SERVICES MUST BE MAINTAINED BY INSTALLING AND ENERGIZING NEW APPURTENANCES OR BY USING TEMPORARY APPURTENANCES, AS DIRECTED BY THE ENGINEER. UNLESS OTHERWISE PROVIDED FOR, ALL TEMPORARY APPURTENANCES SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE CITY.

1.12 THE CONTRACTOR SHALL INSPECT EXISTING CONDITIONS AT JOB SITE BEFORE SUBMITTING BID. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CONDITIONS ON SITE WHETHER INDICATED ON DRAWINGS OR NOT.

1.13 THE CONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE SECTIONS OF THE CURRENT NEW YORK CITY BUILDING CODES AND ALL OTHER APPLICABLE CODES, ORDINANCES, AND LOCAL LAWS.

1.14 THE CONTRACTOR SHALL SUPPLY ALL LABOR, TOOLS, MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE THE WORK AS CALLED FOR ON THE DRAWINGS AND SPECIFICATIONS.

1.15 ALL MATERIALS AND EQUIPMENT NOTED ON DRAWINGS ARE NEW UNLESS INDICATED AS EXISTING.

1.16 OMISSIONS FROM THE DRAWINGS OR SPECIFICATIONS OR THE MISDESCRIPTION OF DETAILS OF WORK WHICH ARE MANIFESTLY NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS AND SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH WORK, BUT SHALL BE PERFORMED AS IF CORRECTLY SET FORTH AND DESCRIBED TO FURNISH A COMPLETE INSTALLATION IN ACCEPTABLE CONDITION TO THE AGENCY.

1.17 THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL TRADES AT THE SITE, WHETHER PART OF THIS CONTRACT OR UNDER A SEPARATE CONTRACT.

1.18 THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL INSPECTIONS AND FINAL APPROVALS FROM ALL GOVERNING AGENCIES.

1.19 THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK, AND SHALL REPORT ANY DISCREPANCIES BETWEEN DRAWINGS AND FIELD CONDITIONS TO THE OWNER REPRESENTATIVE IN WRITING, PRIOR TO COMMENCING WORK.

1.20 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL CONDITIONS AND MATERIALS WITHIN THE PROPOSED CONSTRUCTION AREA. THE CONTRACTOR SHALL DESIGN AND INSTALL ADEQUATE SHORING AND BRACING FOR ALL STRUCTURAL OR REMOVAL TASKS. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR ANY DAMAGE OR INJURIES CAUSED BY OR DURING THE EXECUTION OF THE WORK.

1.21 THE CONTRACTOR SHALL LAY OUT HIS OWN WORK, AND SHALL PROVIDE ALL DIMENSIONS REQUIRED FOR OTHER TRADES (PLUMBING, ELECTRICAL, ETC.).

1.22 THE CONTRACTOR SHALL DO ALL CUTTING, PATCHING, REPAIRING AS REQUIRED TO PERFORM ALL OF THE WORK INDICATED ON THE DRAWINGS AND ALL OTHER WORK THAT MAY BE REQUIRED TO COMPLETE THE JOB.

1.23 ALL PIPING AND WIRING SHALL BE REMOVED TO A POINT OF CONCEALMENT AND SHALL BE PROPERLY CAPPED OR PLUGGED.

1.24 THE CONTRACTOR SHALL PROTECT ALL ADJACENT EXISTING ELEMENTS TO REMAIN. THE CONTRACTOR SHALL PROTECT THE EXISTING STAIRS AT THE PLAZA AND THE PARK AVE. VIADUCT COLUMNS AT ALL TIMES.

1.25 HAZARDOUS MATERIALS MAY BE ENCOUNTERED DURING CONSTRUCTION OPERATIONS, INCLUDING ASBESTOS AND LEAD. COMPLY WITH ALL APPLICABLE REGULATIONS, LAWS, AND ORDINANCES CONCERNING THE REMOVAL, HANDLING, AND PROTECTION AGAINST EXPOSURE OR ENVIRONMENTAL POLLUTION.

1.26 THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK, FOR THE COORDINATION BETWEEN HIS RESPECTIVE SUBCONTRACTORS AND THEIR PORTION OF WORK, AND ANY OF THE OWNER'S CONTRACTORS OR SUBCONTRACTORS.

1.27 THE CONTRACTOR IS REQUIRED TO PATCH AND REPAIR ALL ADJACENT WALLS AND SURFACES AT SITE, DAMAGED DURING DEMOLITION AND CONSTRUCTION OR WITHIN THE BUILDING AS A RESULT OF DEBRIS REMOVAL.

1.28 NEW CURBS, WALLS, AND PAVEMENTS SHALL BE BUILT TO A SMOOTH EVEN FINISH WITH A CONSISTENT TOP AND PROFILE WITHOUT WAVES OR IRREGULARITIES. ANY WORK NOT MEETING THIS QUALITY STANDARD SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

1.30 THE CONTRACTOR SHALL EXERCISE CARE DURING EXCAVATION OPERATIONS TO AVOID DISTURBING ADJACENT FACILITIES, SUB GRADE STRUCTURES. ALL DAMAGE RESULTING FROM THE CONSTRUCTION SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE REPAIRED AT NO EXPENSE TO THE CITY. ALL REPAIR WORK SHALL BE TO THE SATISFACTION OF THE RESIDENT ENGINEER.

1.31 THE CONTRACTOR SHALL EXERCISE CARE DURING EXCAVATION TO AVOID DISTURBING METRO-NORTH STAIRS, ALL COMPONENTS, HARLEM 125TH STREET STATION BUILDING ND PARK AVE. VIADUCT. ALL DAMAGE RESULTING FROM THE CONSTRUCTION SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE REPAIRED AT NO EXPENSE TO METRO-NORTH. ALL REPAIR WORK SHALL BE TO THE SATISFACTION OF THE METRO-NORTH.

1.32 CONSTRUCTION FENCE AS PER STANDARD DETAIL AND SPECIFICATIONS SHALL BE INSTALLED BY THE CONTRACTOR.

1.33 THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE PRESENCE AND LOCATION OF ALL UTILITIES AND FEATURES PRIOR TO THE START OF WORK. ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND CONSTRUCTION DOCUMENTS MUST BE REPORTED TO THE RESIDENT ENGINEER.

1.34 THE CONTRACTOR IS RESPONSIBLE FOR ALL MAINTENANCE AND PROTECTION OF TRAFFIC MEASURES NECESSARY TO ENSURE THE SAFETY OF ALL PEDESTRIAN AND VEHICULAR TRAFFIC ADJACENT TO THE FIELD CONSTRUCTION.

1.35 EXISTING UTILITIES THAT ARE NOT IDENTIFIED FOR CLEANING, ABANDONING OR REMOVING WERE NOT FOUND ON SITE, THEIR LOCATIONS ARE A RESULT OF RECORD DRAWINGS.

1.36 THE CONTRACTOR SHALL MAINTAIN AS-BUILT MEASUREMENTS AND SUBMIT AS-BUILT PLANS AT THE COMPLETION OF THE PROJECT. AS-BUILT PLANS DONE IN INK ON MYLAR SHALL BE SUBMITTED TO THE OWNER. AUTOCAD DISKS SHALL ALSO BE PROVIDED. THESE AS-BUILT PLANS SHALL BEAR THE SEAL OF A LAND SURVEYOR LICENSED IN THE STATE OF NEW YORK.

2. GRADING WORK

2.01 REMOVAL OF ALL SHRUBBERY, DEBRIS, FENCES, AND OTHER ENCROACHMENTS FOUND ON AND WITHIN THE CITY'S RIGHT OF WAY WHICH INTERFERE WITH THE NEW WORK ARE DEEMED INCLUDED IN THE PRICES BID FOR ALL SCHEDULED ITEMS, UNLESS OTHERWISE NOTED ON THE PLANS.

3. CURB WORK

3.01 CURBS AND DEPRESSED CURBS IN DRIVEWAYS ARE TO BE CONSTRUCTED WHERE SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER ALL NON-GRANITE CURB WITH RADIUS GREATER THAN 100 FEET WILL BE PAID FOR AS STRAIGHT CURB. ALL GRANITE CURB WITH RADIUS LESS THAN OR EQUAL TO 100 FEET WILL BE PAID FOR AS CORNER CURB.

3.02 ALL NEW CORNERS ARE TO BE STEEL FACED CONCRETE CURB AND TURNED TO A 12 FT. RADIUS, UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER. ALL CORNER STEEL FACING IS TO BE SHOP FABRICATED. WHEN NEW CURBING IS TO BE EXTENDED INTO CROSS STREETS, IT SHALL BE STEEL FACED CONCRETE CURB, UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER. WHERE CURB BEYOND THE CORNER IS NOT STEEL FACED CONCRETE CURB, STEEL CURB IS TO BE EXTENDED TO CLEAR PEDESTRIAN RAMPS AND/OR TO THE NEW CATCH BASINS AS CONSTRUCTED, CLEAR OF THE PEDESTRIAN CROSSWALK AS DIRECTED BY THE ENGINEER, THE COST OF THE ADDITIONAL TANGENT LENGTH OF STEEL FACED CONCRETE CURB WILL BE PAID FOR UNDER ITEM 4.09AE.

3.03 WHERE NEW CURBING IS REQUIRED ADJACENT TO EXISTING CONCRETE SIDEWALK, WHICH IS NOT TO BE REPLACED, A CONCRETE SAW-CUT SHALL BE MADE ALONG A LINE PARALLEL TO AND TWO (2) FEET BACK FROM THE NEW CURB. THE COST OF THE SAW-CUT IS INCLUDED IN THE PRICES BID FOR THE CURB ITEMS.

3.04 WHERE THE PROPOSED TOP OF CURB LINE PROFILE VARIES FROM THE EXISTING PROFILE ALONG THE TOP OF SUBWAY/SIDEWALK VENTILATORS BY MORE THAN 1", THE ENGINEER WILL DIRECT THE CONTRACTOR TO ADJUST THE TOP OF THE NEW CURB, DURING CONSTRUCTION, TO CONFORM WITH THE PROFILE OF EACH VENTILATOR AND WITH THE PROPOSED GRADES AT THE POINTS OF TANGENCY AND CURVATURE IN EACH BLOCK. THE GUTTER LINE PROFILE SHALL BE 7" BELOW PROPOSED TOP OF CURB PROFILE.

3.05 TOP OF CURB ELEVATIONS AT CORNER PEDESTRIAN RAMPS SHALL BE ESTABLISHED IN CONJUNCTION WITH ROADWAY PAVEMENT CONSTRUCTION SO AS TO PROVIDE POSITIVE SURFACE DRAINAGE FROM THE APEX TOWARDS THE CATCH BASINS, WHERE APPLICABLE.

4. SIDEWALK WORK

4.01 SIDEWALK PEDESTRIAN RAMPS WITH EMBEDDED PREFORMED DETECTABLE WARNING UNITS ARE TO BE INSTALLED AT ALL CORNERS, UNLESS OTHERWISE DIRECTED. THE COST FOR INSTALLATION OF PEDESTRIAN RAMPS SHALL BE PAID FOR UNDER THE SIDEWALK AND CURB ITEMS, AS APPLICABLE. THE COST FOR THE EMBEDDED PREFORMED DETECTABLE WARNING UNITS SHALL BE PAID UNDER ITEM NUMBER 4.13 DE. THE LOCATION AND THE EXTENT OF NEW SIDEWALK TO BE CONSTRUCTED IS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

4.02 THE CONTRACTOR IS HEREBY ADVISED THAT UNDER-SIDEWALK BUILDING VAULTS ARE PRESENT IN THE SIDEWALK AREA WITHIN THE PROJECT LIMITS.

4.03 PRIOR TO ANY SIDEWALK EXCAVATION, THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXISTENCE OF UNDER-SIDEWALK VAULTS.

4.04 THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGE TO THE UNDER- SIDEWALK BUILDING VAULTS AND/OR ITS CONTENTS AND/OR OCCUPANTS DUE TO HIS FAILURE TO VERIFY THE PRE-EXISTING VAULT CONDITION.

4.05 VAULT INFORMATION MAY BE AVAILABLE FROM THE FOLLOWING SOURCES:

A. NEW YORK CITY DEPARTMENT OF BUILDINGS

B. MS. PENNY A. JACKSON
FOIL/RECORDS ACCESS
OFFICE OF LITIGATION SERVICES AND RECORDS MANAGEMENT
NYC DEPARTMENT OF TRANSPORTATION
55 WATER STREET, 6TH FLOOR
NEW YORK, NY 10041

C. NEW YORK CITY DEPARTMENT OF FINANCE

4.06 THE CONTRACTOR SHALL RESET/ADJUST ANCHORAGE FOR SECURITY GATES WITHIN SIDEWALK AREAS, AS NECESSARY OR AS DIRECTED BY THE ENGINEER. COST OF THIS WORK SHALL BE DEEMED INCLUDED IN PRICES BID FOR SIDEWALK WORK.

4.07 ALL PROPOSED BUS PADS NEW CONTINUOUS SIDEWALK SHALL BE CONSTRUCTED FOR THE ENTIRE LENGTH OF THE BUS PAD, FROM THE CURB LINE TO THE PROPERTY LINE/FENCE LINE OR AS DIRECTED BY THE ENGINEER.

4.08 ALL PROPOSED PEDESTRIAN RAMPS SHALL BE INSTALLED AT EXISTING LOCATIONS, UNLESS OTHERWISE SHOWN ON PLANS OR DIRECTED BY THE ENGINEER

5. DRAINAGE WORK

5.01 ALL PROPOSED DRAINAGE WORK SHALL BE DONE IN CONFORMANCE WITH THE LATEST STANDARDS OF THE NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION (N.Y.C.D.E.P.) BUREAU OF SEWERS.

5.02 ALL EXISTING SEWER MANHOLES WITHIN THE CONTRACT LIMITS SHALL BE ADJUSTED, AS NECESSARY, SO THAT THEY WILL BE FLUSH WITH THE FINISHED GRADES AFTER COMPLETION OF THE WORK. ANY MANHOLES WHICH HAVE DAMAGED, WORN OR NON-STANDARD FRAMES AND COVERS SHALL BE PROVIDED WITH NEW TWENTY-SEVEN (27) INCH CASTINGS IN ACCORDANCE WITH THE LATEST STANDARDS OF N.Y.C.D.E.P. BUREAU OF SEWERS.

5.03 ANY DAMAGE TO EXISTING SEWERS, MANHOLES, BASINS AND CONNECTIONS CAUSED BY THE CONTRACTOR'S WORK SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR, AS DIRECTED BY THE ENGINEER, AT NO COST TO THE CITY.

5.04 WHERE THE HEIGHT OF AN EXISTING MANHOLE PERMITS MORE THAN ONE BASIN CONNECTION TO BE MADE ON THE SAME WALL, SPECIAL PRECAUTION SHALL BE TAKEN TO PROTECT THE STRUCTURAL INTEGRITY OF THE MANHOLE. THE MINIMUM CLEARANCE BETWEEN THE OUTSIDE WALLS OF ANY TWO BASIN CONNECTIONS OR BETWEEN A BASIN CONNECTION AND SEWER, VERTICALLY OR HORIZONTALLY, SHALL BE 12 INCHES.

5.05 THE COST OF RAISING OR LOWERING CITY OWNED MANHOLE, BASIN, AND INLET HEADS TO PROPOSED GRADES WILL BE DEEMED INCLUDED IN THE PRICES BID FOR ALL THE SCHEDULED ITEMS WHEN THE VERTICAL UPWARD MOVEMENT OF ALL HEADS IS TWENTY FOUR (24) INCHES OR LESS, WHEN THE VERTICAL DOWNWARD MOVEMENT OF MANHOLE HEADS IS SIX (6) INCHES OR LESS, AND WHEN THE VERTICAL DOWNWARD MOVEMENT OF BASIN HEADS IS THREE (3) INCHES OR LESS, UNLESS OTHERWISE PROVIDED OR DIRECTED, AND WHERE THE ADJUSTMENT IS WITHIN THE BRICK WORK LIMIT. WHEN THE EXISTING STRUCTURE CONSISTS OF A BRICK CHIMNEY OR A CONCRETE ROOF SLAB OR BRICK ON CONCRETE WALLS, THE MAXIMUM ALLOWABLE HEIGHT OF BRICK, AFTER ADJUSTMENT, SHALL BE TWENTY-FOUR (24) INCHES. ALL OTHER ADJUSTMENTS WILL BE PAID FOR UNDER THE APPROPRIATE MANHOLE, BASIN, OR INLET MODIFICATION ITEMS.

5.06 ALL EXISTING SEWERS, MANHOLES, BASINS, AND CONNECTIONS WITHIN THE LIMITS OF THIS CONTRACT AND CONTIGUOUS THERETO ARE TO BE REPAIRED, IF DAMAGED.

5.07 ALL EXISTING BASINS AND CONNECTIONS WITHIN THE LIMITS OF THIS CONTRACT AND CONTIGUOUS THERETO ARE TO BE CLEANED, FLUSHED AND OTHERWISE MADE OPERABLE TO THE SATISFACTION OF THE ENGINEER, ITEM NO. 6.50. WHERE THE EXISTING BASIN CONNECTIONS ARE FOUND TO BE DAMAGED OR IN DETERIORATING CONDITION THEY SHOULD BE REPLACED WITH NEW 12" DIAMETER DUCTILE IRON PIPE IN ACCORDANCE WITH THE N.Y.C.D.E.P. BUREAU OF SEWERS STANDARDS (ITEM NO. 52.11D12).

5.08 CATCH BASINS SHALL NOT, UNDER ANY CIRCUMSTANCES, BE CONNECTED TO A SANITARY SEWER. CATCH BASINS SHALL NOT BE LOCATED WITHIN PEDESTRIAN CROSSWALKS.

5.09 ALL NEW CATCH BASIN CONNECTIONS SHALL BE MADE TO EXISTING SEWERS AT MANHOLES, WITH 12" DIAMETER DUCTILE IRON PIPE, CLASS 56, WITH INTERNALLY LOCKED "PUSH-ON" JOINTS LAID ON 6" OF BROKEN STONE FOR THE ENTIRE WIDTH OF THE TRENCH AND FOR ONE-HALF THE PIPE DIAMETER. THE BROKEN STONE SHALL BE HARD, UN-WEATHERED STONE, UNIFORMLY GRADED FROM 1/4" TO 3/4" IN DIAMETER. IT SHALL CONFORM TO COMMERCIAL 1/4" TO 3/4" STONE. ALL NEW CATCH BASINS SHALL HAVE A HOOD ON THE OUTLET PIPE.

5.10 ALL CATCH BASINS SHALL BE TYPE 1 UNLESS OTHERWISE INDICATED ON THE DRAWINGS. ALL CATCH BASIN SHALL BE INSTALLED 8" BELOW TOP OF CURB AND DEP APPROVED.

5.11 SLOPE ON ALL NEW CATCH BASIN CONNECTIONS SHALL BE A MINIMUM OF 1/2% AND A MAXIMUM OF 4%, PROVIDED THE TOTAL DROP BETWEEN BASIN AND BASIN/ MANHOLE SHALL BE AT LEAST SIX (6) INCHES.

5.12 WHERE THE CONTRACT DRAWINGS SPECIFY A NEW CATCH BASIN IN THE SAME LOCATION AS THE EXISTING CATCH BASIN AND THE CONTRACTOR ELECTS, FOR HIS OWN CONVENIENCE, TO RELOCATE THE NEW CATCH BASIN ADJACENT TO THE PRE-EXISTING LOCATION WHILE MAINTAINING BASIN AND PIPE CONNECTION, THE CONTRACTOR SHALL PERFORM ALL WORK ASSOCIATED WITH ABANDONING THE EXISTING BASIN, AS PER SECTION 5.21 OF THE STANDARD SEWER SPECIFICATIONS, AND THE COST OF THIS WORK SHALL BE INCLUDED IN THE COST BID FOR NEW BASINS, AND MANHOLES UNLESS OTHERWISE NOTED ON THE PLANS.

5.13 ALL EXISTING SEWER HOUSE CONNECTIONS SHOULD BE CONTINUOUSLY MAINTAINED DURING ALL STAGES OF CONSTRUCTION. IF ANY HOUSE CONNECTION MUST BE DISCONNECTED FOR CONSTRUCTION PURPOSES, FLOW MUST BE MAINTAINED BY FLUMING OR OTHER SUITABLE MEANS AS DIRECTED BY THE ENGINEER AND IN SUCH A MANNER THAT NO BACK-UPS OCCUR. ANY AND ALL EXISTING SEWERS, HOUSE CONNECTIONS OR OTHER SEWER APPURTENANCES WHICH ARE TO REMAIN, AND WHICH MUST BE DISTURBED FOR CONSTRUCTION PURPOSES, SHALL BE RESTORED TO THEIR PRESENT CONDITION AFTER COMPLETION OF THE WORK, AND ANY DAMAGE DONE AS A RESULT OF THE WORK SHALL BE REPAIRED AT NO COST TO THE CITY.

5.14 CATCH BASINS IN THE PROJECT AREA SHALL BE MAINTAINED OPERABLE AT ALL TIMES. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO AVOID CLOGGING CATCH BASINS WITH DEBRIS DURING THE CONTRACTOR'S OPERATIONS. IF, AS A RESULT OF CONSTRUCTION, A FLOODING CONDITION OCCURS OR IN THE EVENT THE CONTRACTOR'S OPERATIONS DAMAGE OR BLOCK THE DRAINAGE SYSTEM, THE CONTRACTOR SHALL AT HIS/HER OWN EXPENSE IMMEDIATELY REPAIR OR RESTORE THE DRAINAGE SYSTEM AS DIRECTED BY THE ENGINEER AT NO EXTRA COST TO THE CITY.

5.15 ALL SOIL DENSITY TESTING, CONSISTING OF BOTH PROCTOR ANALYSIS OF SOIL SAMPLES AND IN-PLACE SOIL DENSITY TESTS, TO BE PERFORMED DURING THE BACKFILLING OF SEWER TRENCHES SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 40.06.3 AND 40.06.4 OF THE STANDARD SEWER SPECIFICATIONS. THE COST OF THIS WORK SHALL BE DEEMED INCLUDED IN THE UNIT PRICES BID FOR LAYING THE VARIOUS SEWER PIPES. NO SEPARATE OR ADDITIONAL PAYMENT WILL BE MADE FOR THIS WORK.

5.16 PRIOR TO FABRICATION OF NEW TYPE 3 CATCH BASIN WITH CURB PIECE, CONTRACTOR SHALL BE REQUIRED TO SUBMIT SHOP DRAWING OF ITS DETAILS TO THE ENGINEER FOR REVIEW AND APPROVAL. SHOP DRAWING SHALL NOTE ALL THE REQUIRED CONFIGURATION OF THE TYPE 3 CATCH BASIN WITH THE CURB PIECE, INCLUDING BUT NOT LIMITED TO, REINFORCEMENT DETAILS, LOCATION OF CURB, LOCATION AND ANGLE OF BASIN CONNECTS RELATION TO THE BASIN, CURB AND SIDEWALK, SETTING OF FRAMES, GRATES AND COVERS, ETC.

6. TRAFFIC WORK

6.01 "REGULATORY" AND/OR "NO PARKING-CONSTRUCTION" SIGNS USED DURING THE CONSTRUCTION PERIOD ARE TO BE FURNISHED BY THE CONTRACTOR, AS REQUIRED. THE CONTRACTOR SHALL INSTALL THESE SIGNS WHERE DIRECTED BY THE ENGINEER, AND, WHEN NO LONGER REQUIRED, SHALL CAREFULLY REMOVE THESE SIGNS AND DELIVER THEM TO THE BUREAU OF TRAFFIC. THESE SIGNS WILL BE MEASURED FOR PAYMENT UNDER ITEM 6.25 RS. THE COST OF SAID REMOVING AND DELIVERING SHALL BE DEEMED INCLUDED IN THE PRICE BID FOR ITEM 6.25 RS. A CREDIT OF $50 WILL BE TAKEN FOR EACH SIGN NOT SO DELIVERED. RELOCATION OF SIGNS SHALL NOT ENTITLE THE CONTRACTOR TO ADDITIONAL PAYMENT.

6.02 THE ENGINEER SHALL NOTIFY THE NEW YORK CITY DIVISION OF TRAFFIC AND PLANNING AT 718-433-3163 TO VERIFY ALL THERMOPLASTIC PAVEMENT MARKINGS DETAIL DRAWINGS SEVEN (7) CALENDAR DAYS PRIOR TO THE START OF WORK ON PAVEMENT MARKINGS.

6.03 THE CONTRACTOR SHALL NOTIFY NYCDOT 48 HOURS PRIOR TO THE START OF WORK TO HAVE PARK IN METERS AND/OR MUNI-METERS REMOVED. CONTRACTOR SHALL CONTACT MR. JOHN PREMUS, ADMINISTRATIVE TRANSPORTATION COORDINATOR, NYC DEPARTMENT OF TRANSPORTATION, DIVISION OF TRAFFIC OPERATIONS, 58-50 57TH ROAD, 2ND FLOOR, MASPETH, NY 11378, PHONE NUMBER (718) 894-1835, FAX NUMBER (718) 894-8397, E-MAIL jpremus@dot.nyc.gov. THE FOLLOWING INFORMATION MUST BE GIVEN TO NYCDOT. (1) PARKING/MUNI METER NUMBERS, (2) LOCATION OF METERS, AND (3) DATE WHEN METERS CAN BE RE-INSTALLED.

6.04 ALL REGULATORY AND WARNING TRAFFIC SIGNS SHALL CONFORM WITH THE NEW YORK CITY BUREAU OF TRAFFIC OPERATIONS STANDARD DRAWINGS AND THEIR STANDARD SIGN LIST.

6.05 MUNI METERS SHALL NOT BE REMOVED OR RELOCATED BY THE CONTRACTOR. ANY WORK RELATED TO MUNI METERS MUST BE PERFORMED BY THE DEPARTMENT OF TRANSPORTATION, BUREAU OF PARKING. CONTRACTOR SHALL INFORM DOT VIA PHONE AT (718) 894-8327 OR (718) 894-1835 AND SUBMIT VIA E-MAIL ALL PERTINENT DRAWINGS, AND PROPOSALS THAT REQUIRE THE REMOVAL/RELOCATION OR RE-INSTALLATION OF MUNI METERS IN THE PROJECT AREA AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT DATE. IN ADDITION, UPON COMPLETION OF THE CONTRACTED WORK, A REQUEST FOR RE-INSTALLATION OF THE MUNI METER MUST ALSO BE MADE TO DOT AT THE NUMBER PROVIDED, AT LEAST A WEEK PRIOR TO THE END OF CONSTRUCTION.

6.06 FOR ADDITIONAL NOTES ON MAINTENANCE OF TRAFFIC SEE THE MAINTENANCE AND PROTECTION OF TRAFFIC DRAWINGS FOR THIS CONTRACT.

7. OTHER UTILITIES WORK

7.01 THE CONTRACTOR IS ALERTED TO THE RULES AND REGULATIONS OF INDUSTRIAL CODE RULE 53 AND IS DIRECTED TO COMPLY. THE CITY SHALL NOT BE LIABLE FOR ANY COSTS INCURRED BY THE CONTRACTOR AS A RESULT OF THE COMPLIANCE, NON-COMPLIANCE, OR IMPROPER COMPLIANCE BY THE FRANCHISED OPERATORS OF UNDERGROUND FACILITIES, WITH SUB- PART 53-3 OF RULE 53 OF THE INDUSTRIAL CODE.

7.02 CON EDISON, NATIONAL GRID, TIME WARNER, AT&T, EMPIRE CITY SUBWAY, AND VERIZON FACILITIES ARE LOCATED WITHIN THE PROJECT LIMITS. AS A RESULT OF THIS PROJECT, THESE PRIVATE UTILITIES WILL BE REQUIRED TO PROTECT, REMOVE, REPLACE OR RELOCATE SOME OR ALL OF THEIR FACILITIES. THIS WORK WILL BE PERFORMED BY THEM OR THEIR AGENTS AT THEIR EXPENSE. CONTRACTOR TO COORDINATE ACTIVITIES WITH THEM.

7.03 ALL UTILITY POLES WILL BE REMOVED AND/OR RELOCATED BY OTHERS.

7.04 THE ENGINEER WILL CONTACT THE SPECIAL PROJECT UNIT COMMUNICATIONS DIVISION OF THE POLICE DEPARTMENT (212-374-5900) IF ANY RELOCATION OR DISCONNECTION OF POLICE DEPARTMENT FACILITIES IS REQUIRED.

8. PAVEMENT WORK

8.01 ALL HEADERS ABUTTING NEW PAVEMENT SHALL BE REMOVED WHERE DIRECTED BY THE ENGINEER; THE PRICE OF WHICH SHALL BE INCLUDED IN THE PRICE BID FOR EXCAVATION.

8.02 ASPHALTIC CONCRETE MIXTURE IS TO BE USED IN THE AREAS OF ADJUSTMENT, AND AS DIRECTED BY THE ENGINEER.

8.03 FINISHED ROADWAY PAVEMENT AT THE APEX OF ALL CORNERS SHALL BE CONSTRUCTED TO ELEVATIONS SO AS TO PROVIDE POSITIVE SURFACE DRAINAGE FROM THE APEX TOWARDS THE CATCH BASINS, WHERE APPLICABLE.

9. TRAFFIC SIGNAL WORK

9.01 THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF TRANSPORTATION-BUREAU OF TRAFFIC OPERATIONS, DIVISION OF TRAFFIC SIGNALS, AT LEAST 72 HOURS PRIOR TO START OF WORK 718-786-2788.

9.02 THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN AND REMOVE TEMPORARY TRAFFIC SIGNALS. A MINIMUM OF FOUR TEMPORARY TRAFFIC SIGNALS WITH PYLONS (ITEM NOS T-2.16 AND T-2.18) SHALL BE PROVIDED AT EACH INTERSECTIONS WHERE TEMPORARY SIGNALS ARE REQUIRED, AND SHALL MEET THE REQUIREMENTS OF THE CURRENT NYCDOT TRAFFIC ENGINEERING SPECIFICATIONS. THE ENGINEER SHALL BE SOLELY RESPONSIBLE FOR MAKING THE DETERMINATION IF THE NEED FOR PROVIDING TEMPORARY SIGNALS AT ANY INTERSECTION CAN BE WAIVED.

9.03 ALL WORK SHALL CONFORM TO DOT BUREAU OF TRAFFIC OPERATIONS STANDARDS, SPECIFICATIONS, AND DRAWINGS, LATEST EDITION.

PRELIMINARY – NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTIONS	BY	APPR'D

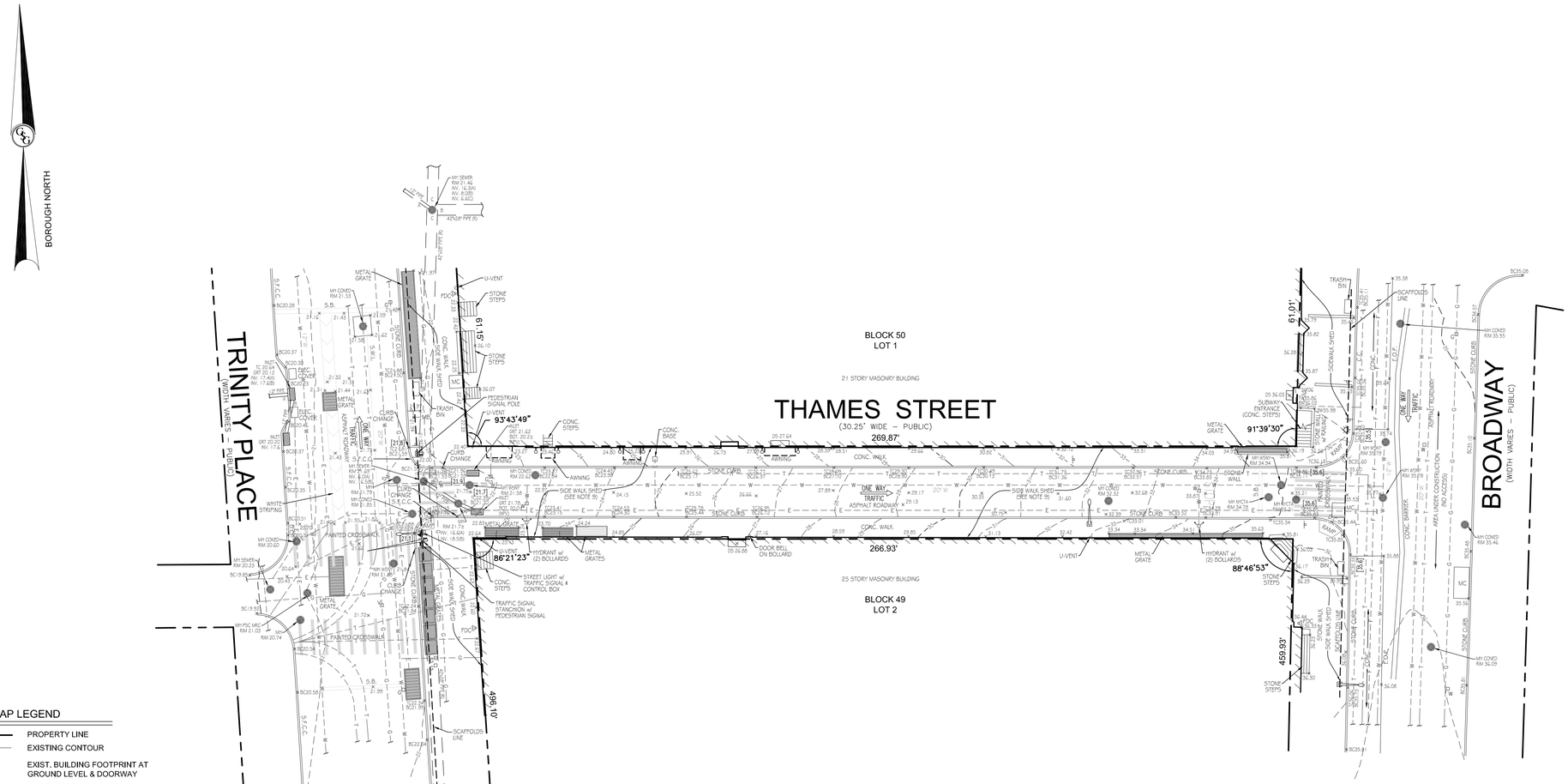
REVISIONS

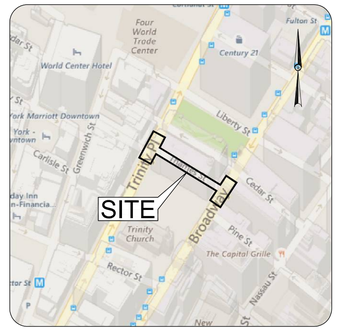
THAMES STREET PLAZA – GENERAL NOTES

BOROUGH OF MANHATTAN

PHA Philip Habib & Associates · Engineers and Planners
102 MADISON AVENUE · NEW YORK, NY 10016

PROJECT ID: THAMES | DATE: 05-30-2017 | SHEET 2 OF 10





VICINITY MAP

MAP LEGEND

	PROPERTY LINE
25	EXISTING CONTOUR
	EXIST. BUILDING FOOTPRINT AT GROUND LEVEL & DOORWAY
x 25.34	EXISTING SPOT ELEVATION
x TC 25.34	EXIST. TOP OF CURB ELEVATION
x BC 25.34	EXIST. GUTTER ELEVATION
x TW 25.34	EXIST. TOP OF WALL ELEVATION
x BW 25.34	EXIST. BOTTOM OF WALL ELEVATION
x DS 25.34	DOOR SILL ELEVATION
x [21.7]	EXISTING GRADE PER REF. #2 (IN NAVD 88)
G	APPROX. LOC. UNDERGROUND GAS LINE PER UTILITY MARKOUT
E	APPROX. LOC. UNDERGROUND ELEC. LINE PER UTILITY MARKOUT
W	APPROX. LOC. UNDERGROUND WATER LINE PER UTILITY MARKOUT & REFERENCE MAPPING
T	APPROX. LOC. UNDERGROUND TELEPHONE LINE PER REFERENCE MAPPING
F	APPROX. LOC. UNDERGROUND FIRE DEPARTMENT LINE PER REFERENCE MAPPING
	TRAFFIC SIGNAL POLE
	PEDESTRIAN CROSSING SIGNAL
	STREET LIGHT
	INLET
	MANHOLE
	WALL MOUNTED AREA LIGHT
	SIGN
	HYDRANT
W	WATER VALVE
G	GAS VALVE
V	VALVE (USE UNKNOWN)
•	BOLLARD
MC	METAL COVER
S.F.C.C.	STEEL FACED CONC. CURB
D.C.	DEPRESSED CURB
E.O.P.	EDGE OF PAVEMENT
DWP	DETECTABLE WARNING PAD
C.C.	CONCRETE CURB
NPV	NO PIPE VISIBLE
FDC	FIRE DEPARTMENT CONNECTION
S.W.L.	SOLID WHITE LINE
(R)	DENOTES INFORMATION OBTAINED FROM REFERENCE MAPPING

NOTES:

1. ELEVATIONS ARE BASED UPON NAVD 88.
2. **THIS SURVEY WAS PREPARED WITHOUT BENEFIT OF A TITLE COMMITMENT REPORT AND IS SUBJECT TO THE COVENANTS, RESTRICTIONS AND EASEMENTS THAT MAY BE CONTAINED THEREIN.**
3. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE. LOCATIONS AND SIZES ARE BASED ON PRIOR UTILITY MARK-OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE & ACCESSIBLE IN THE FIELD, AND THE MAPS AS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF THE SURVEY. AVAILABLE ASSBUILT PLANS AND UTILITY MARKOUT DOES NOT ENSURE MAPPING OF ALL UNDERGROUND UTILITIES AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES.
4. BY GRAPHIC PLOTTING, PROPERTY IS LOCATED IN FLOOD HAZARD ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS IDENTIFIED ON NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP (FIRM) NO. 3604970184F, MAP REVISED SEPTEMBER 5, 2007.

   PRELIMINARY FLOOD MAP 3604970184G, DATED DECEMBER 5, 2013 HAS THE PROPERTY ALSO BEING LOCATED IN FLOOD HAZARD ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN)
5. THERE WERE NO VISIBLE STREAMS OR NATURAL WATERCOURSES IN THE PROPERTY AT THE TIME OF FIELD SURVEY.
6. THE LOCATION AND EXTENTS OF UNDERGROUND VAULTS, IF ANY EXIST, HAVE NOT BEEN DETERMINED BY THE SURVEYOR.
7. AT THE TIME OF FIELD SURVEY, THE ENTIRE LENGTH OF THAMES STREET, FROM TRINITY PLACE TO BROADWAY WAS COVERED BY A SIDE WALK SHED COVERING THE ROADWAY AND BOTH SIDE WALKS.
8. CONSOLIDATED EDISON OF NEW YORK REFUSED TO ISSUE GAS AND ELECTRIC PLANS FOR THIS PROJECT.
9. SUBWAY TUNNELS EXISTS WITHIN TRINITY PLACE AND BROADWAY. MAPPING HAD NOT BEEN RECEIVED AT TIME OF SURVEY ISSUANCE.

REFERENCES:

1. BOROUGH SURVEY PROVIDED BY BOROUGH OF MANHATTAN TOPOGRAPHICAL BUREAU, SURVEY #2.
2. SECTIONAL MAP, THE CITY OF NEW YORK, PRESIDENT OF THE BOROUGH OF MANHATTAN TOPOGRAPHICAL BUREAU, SECTION #3.
3. SEWER MAPPING PROVIDED BY NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF WATER & SEWER OPERATIONS, MAP PRINTED 9/28/2016.
4. WATER MAPPING PROVIDED BY NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF WATER & SEWER OPERATIONS, MAP PRINTED 9/28/2016.
5. CITY OF NEW YORK FIRE DEPARTMENT, BUREAU OF FIRE COMMUNICATIONS, DISTRIBUTION CABLE, BOROUGH OF MANHATTAN, MAP #3.
6. TELEPHONE MAPPING PROVIDED BY THE EMPIRE CITY SUBWAY, RECEIVED 10/13/2016.

UTILITIES:
THE FOLLOWING COMPANIES WERE NOTIFIED BY NEW YORK STATE ONE-CALL SYSTEM (1-800-272-4480) AND REQUESTED TO MARK OUT UNDERGROUND FACILITIES AFFECTING AND SERVICING THIS SITE. THE UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS BASED UPON THE UTILITY COMPANIES RESPONSE TO THIS REQUEST. SERIAL NUMBER(S): 162721606

UTILITY COMPANY	PHONE NUMBER
AT&T CORPORATION	(800) 241-3624
CABLEVISION OF NEW YORK CITY	(800) 262-8600
CONSOLIDATED EDISON CO. OF N.Y.	(718) 472-2304
RCN METRO	(212) 324-5052
EMPIRE CITY SUBWAY MANHATTAN	(212) 519-4934
ELANTIC TELECOM	(319) 790-7809
LIGHTOWER FIBER NY	(212) 324-5052
LEVEL 3 COMMUNICATIONS	(877) 366-8344
EXTENET SYSTEMS	(630) 799-6807
MCI	(800) 289-3427
RCN	(718) 472-2304
TIME WARNER CABLE MANHATTAN	(917) 337-6984
XO COMMUNICATIONS, INC.	(801) 364-1063

NOTE: ALL UTILITY COMPANIES DID NOT RESPOND TO MARKOUT REQUEST

THE STATE OF NEW YORK REQUIRES NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

ROADWAY TOPOGRAPHIC SURVEY

THAMES STREET

BETWEEN TRINITY PLACE & BROADWAY
BOROUGH OF MANHATTAN
CITY, COUNTY & STATE OF NEW YORK

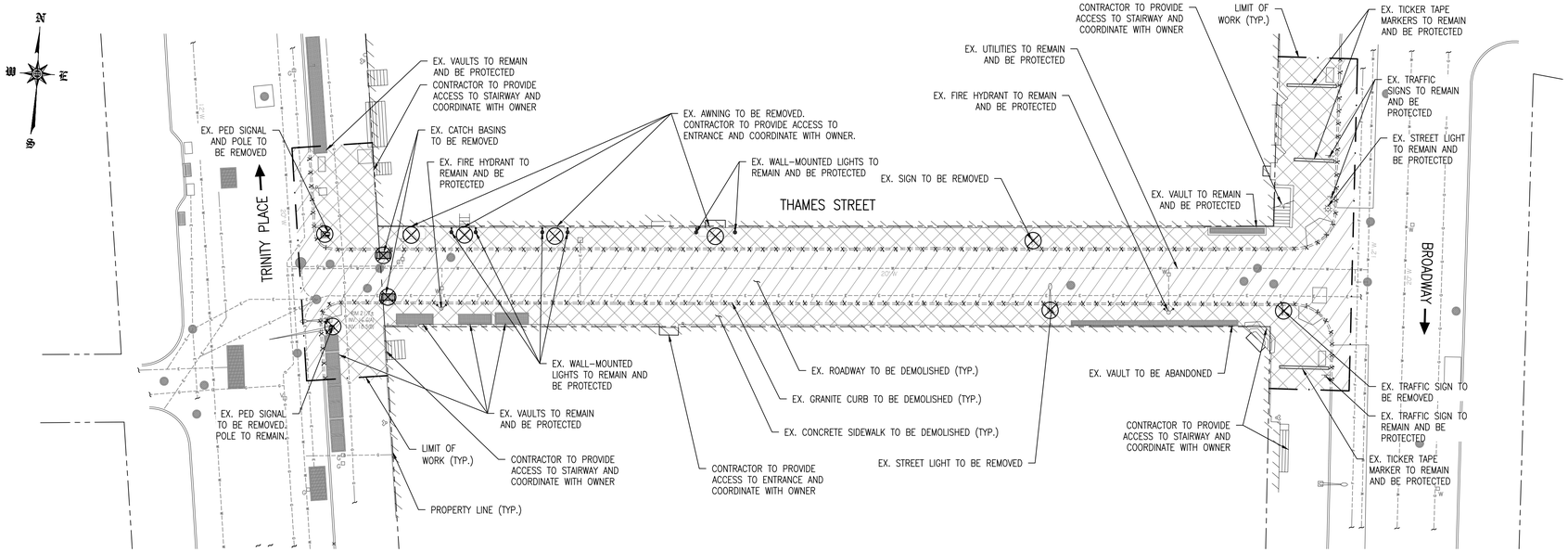
GALLAS SURVEYING GROUP
2865 US ROUTE 1
NORTH BRUNSWICK, NJ 08902
TELE: 732-422-6700
FAX: 732-940-8786
www.gallassurvey.com

DATE	SCALE	DRAWN:	CHECKED:
10-17-2016	1"=20'	R.S.E.	D.A.H.
FIELD DATE	FIELD BOOK	PAGE	FIELD CREW
10-11-2016	66	12	P.P./O.D./W.B.
FILE NO.: G16216		DRAWING NAME/SHEET NO. G16216.DWG	1 OF 1

NOT VALID UNLESS EMBOSSED WITH RAISED IMPRESSION OR BLUE INK SEAL

GREGORY S. GALLAS
NEW YORK PROFESSIONAL LAND SURVEYOR #50124

DATE



THAMES STREET PLAN

SCALE: 1"=20'

LEGEND

- CONCRETE SIDEWALK TO BE DEMOLISHED
- ASPHALT ROADWAY TO BE DEMOLISHED
- GRANITE CURB TO BE DEMOLISHED
- PROPERTY LINE
- LIMIT OF WORK
- EXISTING INFRASTRUCTURE TO BE REMOVED

DEMOLITION AND REMOVAL NOTES

1. CONTRACTOR SHALL EXERCISE CAUTION DURING DEMOLITION OPERATIONS TO PROTECT EXISTING FACILITIES TO REMAIN. SAID FACILITIES SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR IF DAMAGES AND SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE ENGINEER.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL SITE CONDITIONS BOTH ABOVE AND BELOW THE SURFACE PRIOR TO COMMENCING WORK; ANY DISCREPANCIES BETWEEN INFORMATION SHOWN ON THE DRAWINGS AND ACTUAL FIELD CONDITIONS SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
3. THE LOCATION OF ALL UTILITIES ARE SHOWN DIAGRAMMATICALLY. ADDITIONAL UTILITIES MAY BE PRESENT IN THE FIELD AND ARE TO BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.
4. THE CONTRACTOR SHALL REMOVE ALL DEBRIS AND SILT FROM EXISTING DRAINAGE STRUCTURES AND PIPING. NONFUNCTIONING STRUCTURES SHALL BE REBUILT AS PER DPR STANDARD DETAILS.
5. ALL DEBRIS SHALL BE REMOVED FROM THE SITE AT THE EXPENSE OF THE CONTRACTOR.
6. WITHIN CLEARING AND GRUBBING AREAS ENTIRE AREA TO BE CLEARED AND GRUBBED. THIS INCLUDES REMOVAL AND/OR RELOCATION OF EXISTING LANDSCAPING, REMOVAL OF STUMPS, REMOVAL OF FENCES, REMOVAL OF DEBRIS.
7. ALL EXISTING ACTIVE UTILITIES AND UTILITY APPURTENANCES TO REMAIN UNLESS OTHERWISE NOTED.
8. FOR PAVEMENT REMOVAL AREAS, ENTIRE PAVEMENT TO BE REMOVED (TO APPROXIMATE DEPTH OF 1 FOOT) UNLESS OTHERWISE NOTED.
9. ADDITIONAL CLEARING TO BE PROVIDED AS REQUIRED FOR UTILITY AND UTILITY APPURTENANCE INSTILLATION, AS REQUIRED.
10. THE CONTRACTOR SHALL COORDINATE THE SHUTTING DOWN OF ANY ACTIVE UTILITY PRIOR TO BEGINNING DEMOLITION EFFORTS.
11. CONTRACTOR TO CUT AND CAP ALL REMOVED UTILITIES IN ACCORDANCE WITH NYC DOB, NYC DEP, AND APPLICABLE AGENCY/PRIVATE UTILITY REQUIREMENTS, CONTRACTOR TO REMOVE OR ABANDON ELIMINATED UTILITIES AND UTILITY APPURTENANCES INCLUDING CONDUIT, PIPING, CABLING, JUNCTION BOXES, ETC. (TYP.)
12. WHERE NEW CONSTRUCTION ABUTS EXISTING PAVEMENTS, CURBS AND WALL, THE EXISTING MATERIALS SHALL BE CLEARLY SAWCUT TO PROVIDE A CLEAN, NEAT MATCH AND SMOOTH, FLUSH TRANSITION
13. THE CONTRACTOR SHALL ENSURE THAT LOCAL RESIDENTIAL AND COMMERCIAL SITE ACCESS IS MAINTAINED CONTINUALLY FOR ACCESS AND EMERGENCY RESPONSE DURING CONSTRUCTION AND APPROPRIATELY DELINEATED.
14. THE POTENTIAL IMPACTS FROM CONSTRUCTION ACTIVITIES SHALL BE MINIMIZED BY USING PROPERLY MAINTAINED AND MUFFLED EQUIPMENT AND ADHERING TO THE PERMITTED HOURS OF OPERATION AS REQUIRED BY THE ENGINEER, NOISE SCREENINGS SHALL BE IMPLEMENTED AS NECESSARY IN THE WORK ZONE TO PROVIDE NOISE MITIGATION FOR RESIDENCES ADJACENT TO THE WORK AREA.
15. BEST CONSTRUCTION PRACTICES TO BE IMPLEMENTED TO REDUCE/ELIMINATE DUST AND DEBRIS WITHIN AND ADJACENT TO WORK AREAS, INCLUDING WETTING SOIL SURFACES, COVERING TRUCKS AND STORED MATERIALS WITH TARPAULINS AND PROPERLY MAINTAINING EQUIPMENT.
16. LIGHTING AT CONSTRUCTION ZONES SHALL BE DIRECTED AWAY FROM RESIDENTIAL AREAS THROUGH THE USE OF SHIELDING AND OTHER METHODOLOGIES. THESE EFFORTS SHALL BE CONTINUALLY MONITORED.
17. CONTRACTOR SHALL PROVIDE TEMPORARY MEANS (PIPES, PUMPS, ETC.) TO DRAIN ANY STORM WATER WHICH MAY DEVELOP WITHIN THE PROJECT LIMITS FOR THE DURATION OF CONSTRUCTION.
18. THE CONTRACTOR SHALL KEEP ALL ROADWAYS ADJACENT TO THE IMPROVEMENT AREA CLEAR OF SOIL AND DEBRIS.
19. ALL MATERIALS HAULED FROM THE SITE TO BE PLACED IN LEAK PROOF CONTAINERS AND PROPERLY COVERED WITH TARPS, SCREENS AND/OR OTHER MECHANISMS.
20. CONTRACTOR TO PREVENT SEDIMENT FROM ENTERING STORM SEWERS DURING CONSTRUCTION. EXISTING INLETS TO BE PROVIDED WITH APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES AS NEEDED.
21. ALL VAULTS AND FIRST FLOOR AND BASEMENT LEVELS OF EXISTING BUILDINGS WITHIN THE PROJECT AREA SHALL BE INSPECTED AND DOCUMENTED IN PRE-CONSTRUCTION REPORT AND INCLUDE VIBRATION MONITORING.

0' 20' 40' 60'

PRELIMINARY – NOT FOR CONSTRUCTION

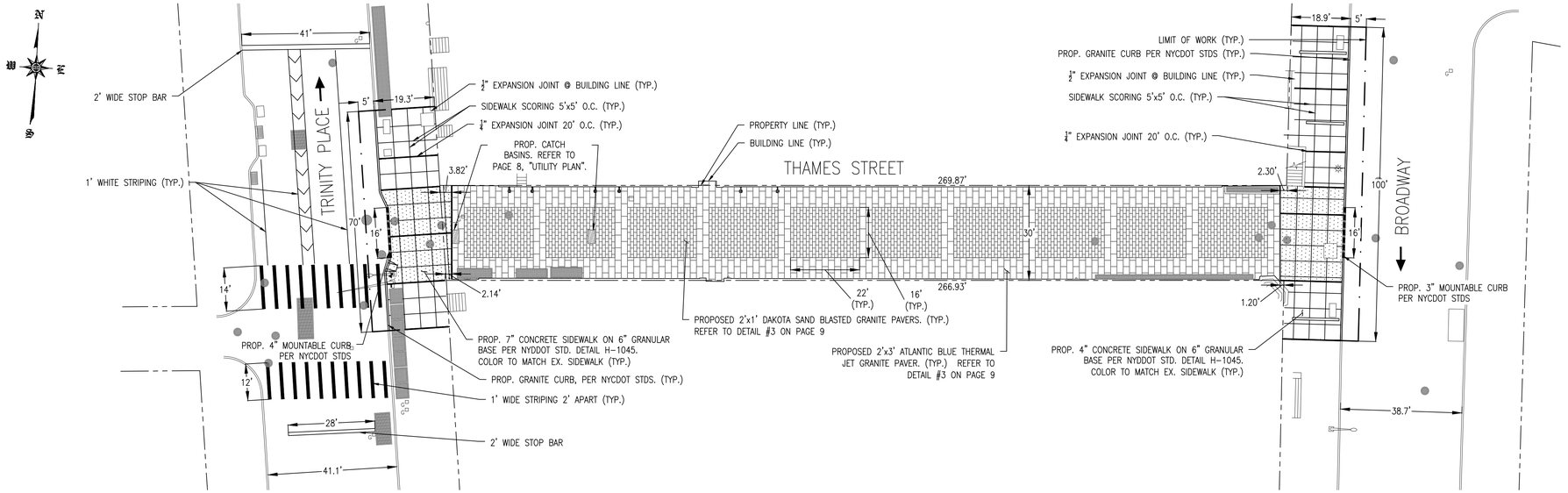
NO.	DATE	DESCRIPTIONS	BY	APPR'D
		REVISIONS		

THAMES STREET PLAZA – DEMOLITION PLAN

BOROUGH OF MANHATTAN

Philip Habib & Associates · Engineers and Planners
102 MADISON AVENUE · NEW YORK, NY 10016

PROJECT ID: THAMES | DATE: 05-30-2017 | SHEET 4 OF 10



GENERAL PLAN

SCALE: 1"=20'

0' 20' 40' 60'

PRELIMINARY – NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTIONS	BY	APPR'D

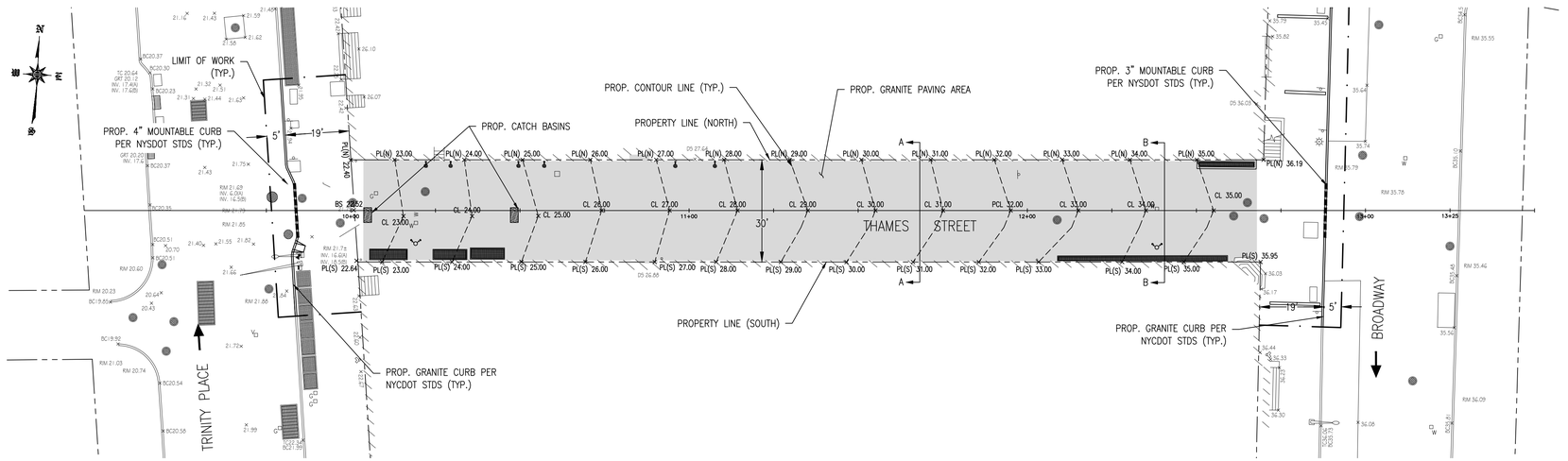
REVISIONS

THAMES STREET PLAZA – GENERAL PLAN

BOROUGH OF MANHATTAN

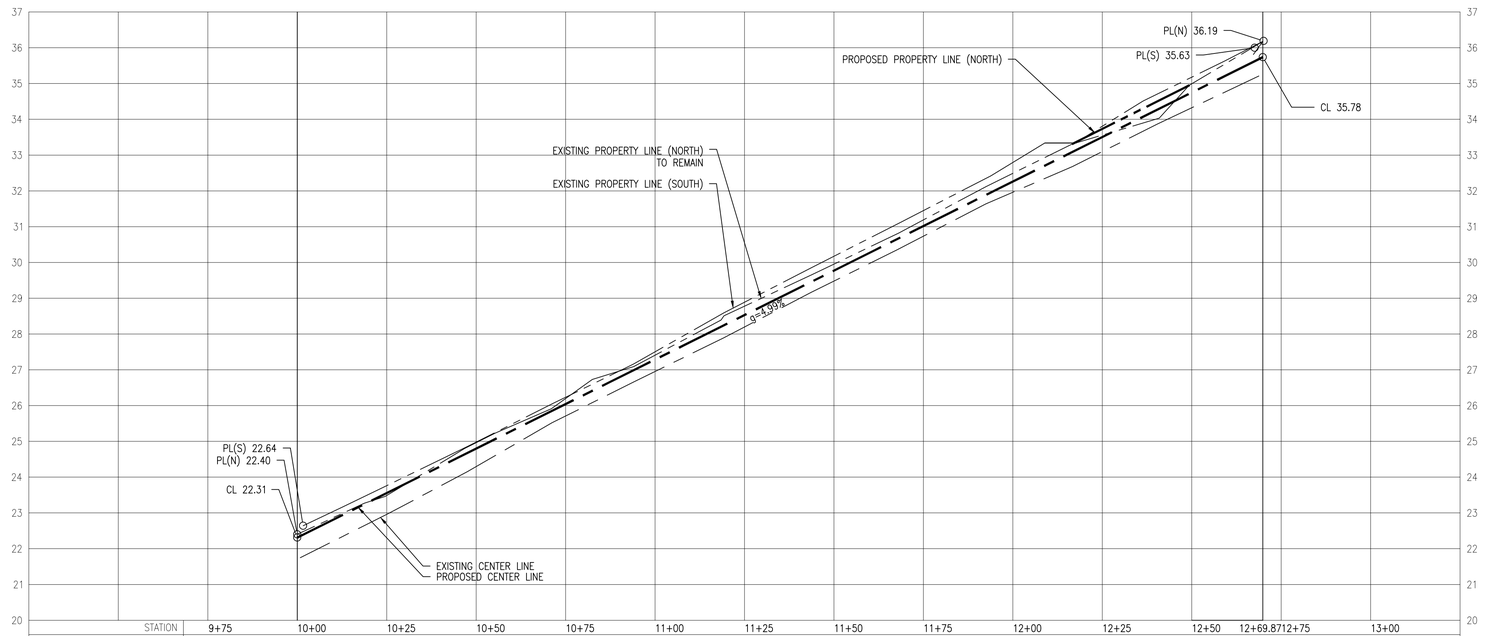
Philip Habib & Associates · Engineers and Planners
102 MADISON AVENUE · NEW YORK, NY 10016

PROJECT ID: THAMES | DATE: 05-30-2017 | SHEET 5 OF 10



THAMES STREET GRADING PLAN

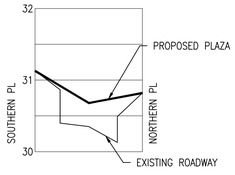
SCALE: 1"=20'



STATION	9+75	10+00	10+25	10+50	10+75	11+00	11+25	11+50	11+75	12+00	12+25	12+50	12+69.87	12+75	13+00
EX. PROPERTY LINE (N)	–	22.40	23.49	24.96	26.20	27.41	28.78	29.95	31.19	32.49	33.56	34.99	36.25	–	–
EX. PROPERTY LINE (S)	–	–	23.76	24.98	26.23	27.50	28.89	30.17	31.45	32.80	33.81	35.18	–	–	–
EX. STREET CENTERLINE	–	–	22.96	24.30	25.71	26.95	28.20	29.48	30.73	31.94	32.10	34.32	35.32	–	–
PROP. STREET CENTERLINE	–	22.31	23.55	24.80	26.04	27.24	28.49	29.74	30.99	32.24	33.50	34.76	–	–	–

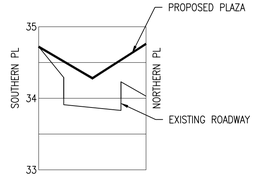
THAMES STREET PROFILE

SCALE H: 1"=20'
SCALE V: 1"=2'



SECTION A–A

SCALE H: 1"=20'
SCALE V: 1"=2



SECTION B–B

SCALE H: 1"=20'
SCALE V: 1"=2'

0' 20' 40' 60'

LEGEND:

PLAN

- EXISTING MANHOLE
- PROPOSED CATCH BASIN OR DRAIN INLET
- PEDESTRIAN RAMP
- EXISTING SIGN
- CL PROPOSED CENTER LINE
- PL EXISTING PROPERTY LINE
- PL(N) EXISTING NORTHERN PROPERTY LINE
- PL(S) EXISTING SOUTHERN PROPERTY LINE
- TC PROPOSED TOP OF CURB
- BS PROPOSED BACK OF SIDEWALK
- BC PROPOSED BOTTOM OF CURB
- EXISTING CATCH BASIN OR DRAIN INLET
- TRAFFIC DIRECTION

PROFILE

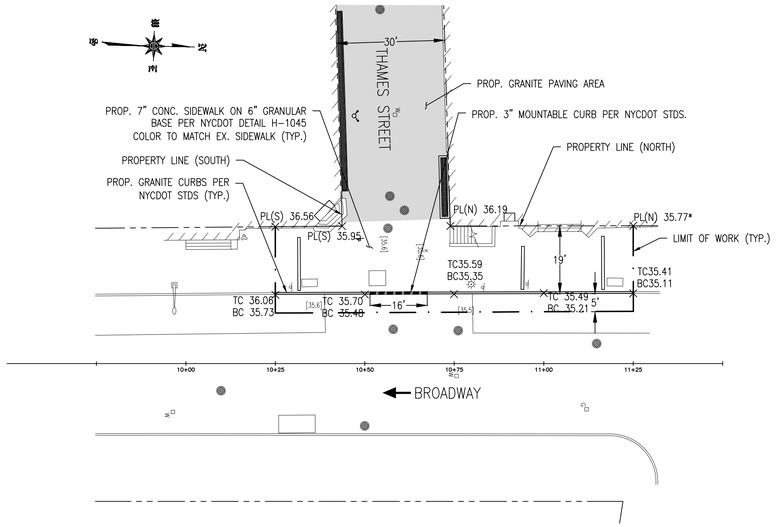
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- EXISTING STREET CENTER LINE
- PROPOSED STREET CENTER LINE
- EXISTING TOP OF CURB
- PROPOSED TOP OF CURB
- EXISTING BOTTOM OF CURB
- PROPOSED BOTTOM OF CURB

PRELIMINARY – NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTIONS	BY	APPR'D
		REVISIONS		

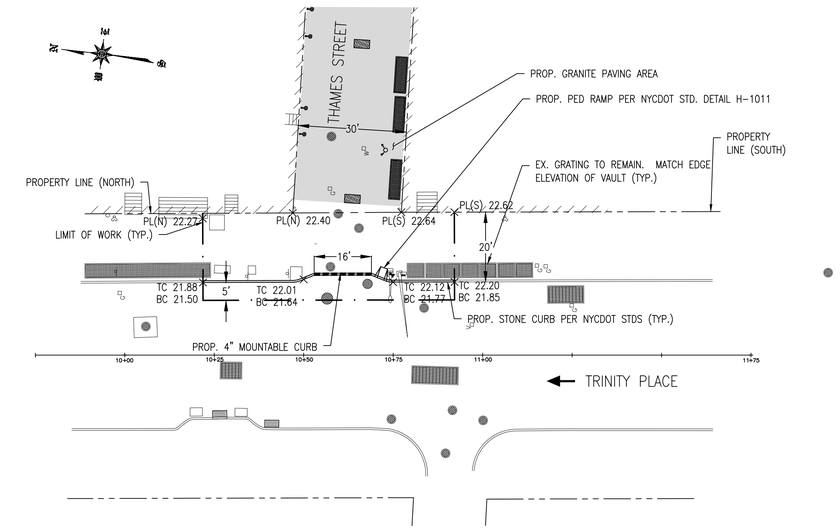
THAMES STREET PLAZA – GRADING PLAN & PROFILE
THAMES STREET
BOROUGH OF MANHATTAN

PROJECT ID: THAMES | DATE: 05–30–2017 | SHEET 6 OF 10



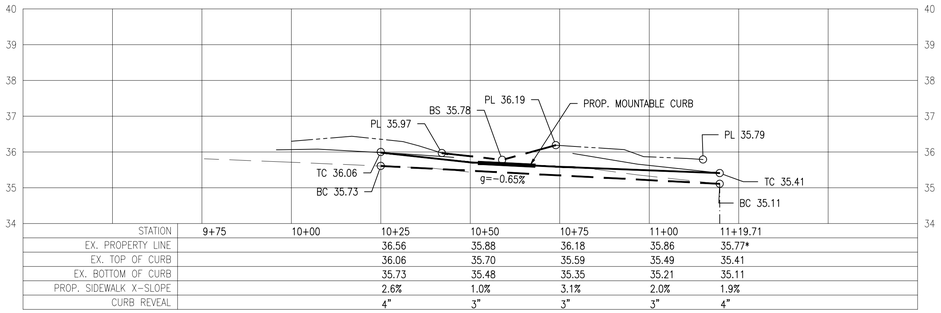
BROADWAY PLAN

SCALE: 1"=20'



TRINITY PLACE PLAN

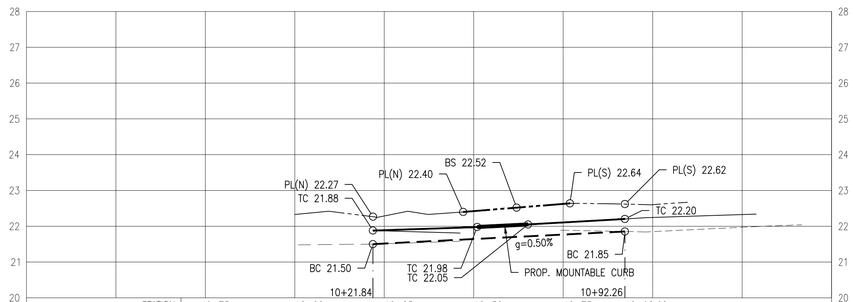
SCALE: 1"=20'



STATION	9+75	10+00	10+25	10+50	10+75	11+00	11+19.71
EX. PROPERTY LINE			36.56	35.88	36.18	35.86	35.77*
EX. TOP OF CURB			36.06	35.70	35.59	35.49	35.41
EX. BOTTOM OF CURB			35.73	35.48	35.35	35.21	35.11
PROP. SIDEWALK X-SLOPE			2.6%	1.0%	3.1%	2.0%	1.9%
CURB REVEAL			4"	3"	3"	3"	4"

BROADWAY PROFILE

SCALE H: 1"=20'
SCALE V: 1"=2'



STATION	9+75	10+00	10+25	10+50	10+75	10+92.62
EX. PROPERTY LINE			22.29	22.42	22.62	22.62
EX. TOP OF CURB			21.89	22.01	22.12	22.20
EX. BOTTOM OF CURB			21.51	21.64	21.77	21.85
PROP. SIDEWALK X-SLOPE			2.0%	2.1%	2.5%	1.8%
CURB REVEAL			5"	4"	4"	4"

TRINITY PLACE PROFILE

SCALE H: 1"=20'
SCALE V: 1"=2

0' 20' 40' 60'

* = NO SURVEY DATA AVAILABLE

PRELIMINARY – NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTIONS	BY	APPR'D

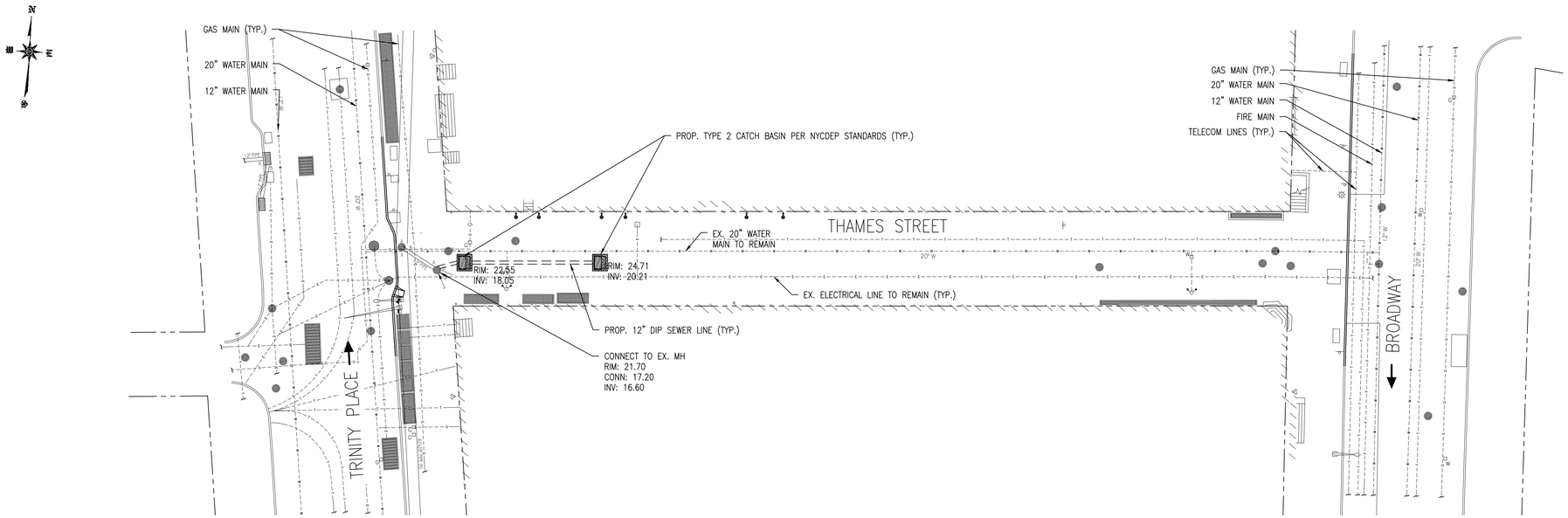
REVISIONS

THAMES STREET PLAZA – GRADING PLAN & PROFILE BROADWAY & TRINITY PLACE

BOROUGH OF MANHATTAN

Philip Habib & Associates · Engineers and Planners
102 MADISON AVENUE · NEW YORK, NY 10016

PROJECT ID: THAMES | DATE: 05-30-2017 | SHEET 7 OF 10



THAMES STREET UTILITY PLAN

SCALE: 1"=20'

0' 20' 40' 60'

PRELIMINARY – NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTIONS	BY	APPR'D

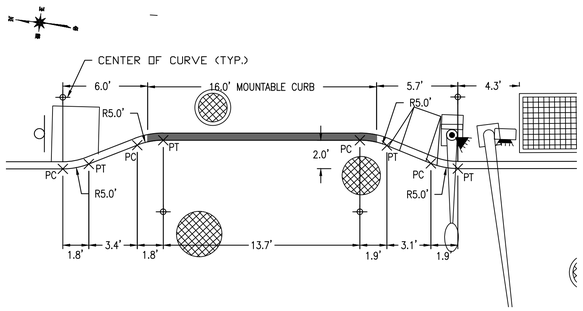
REVISIONS

THAMES STREET PLAZA – UTILITY PLAN

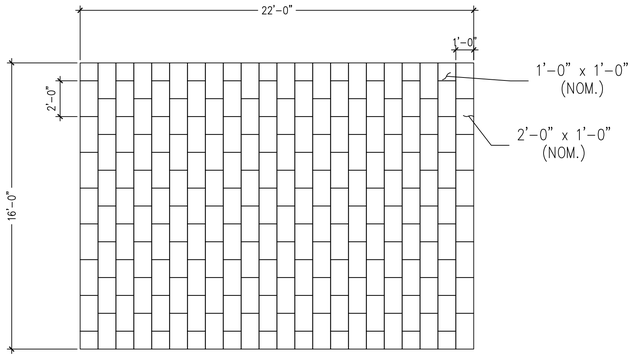
BOROUGH OF MANHATTAN

Philip Habib & Associates · Engineers and Planners
102 MADISON AVENUE · NEW YORK, NY 10016

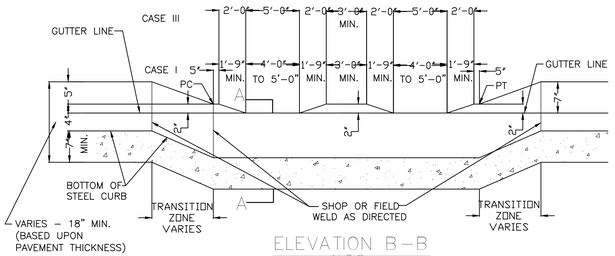
PROJECT ID: THAMES	DATE: 05-30-2017	SHEET 8 OF 10



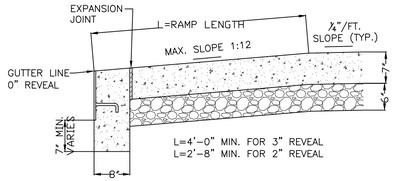
1 TRINITY ST CURB GEOMETRY DETAIL
SCALE: 1"=5'



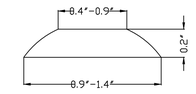
2 TYPICAL PAVING PATTERN PLAN FOR THAMES ST
SCALE: 1"=10'



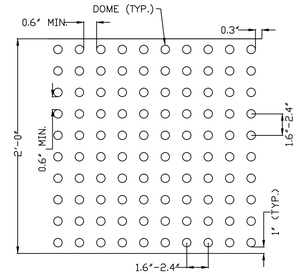
ELEVATION B–B
N.T.S.



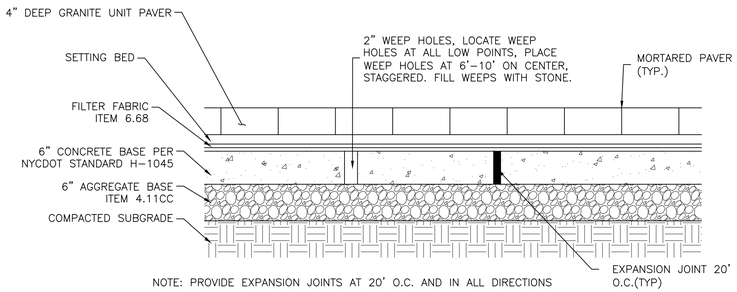
SECTION A–A
N.T.S.



DOME SECTION



DOME SPACING



NOTE: PROVIDE EXPANSION JOINTS AT 20' O.C. AND IN ALL DIRECTIONS

PAVEMENT NOTES:

1. SEE GENERAL PLAN AND DETAIL 2 FOR GRANITE PAVER LAYOUT

2. PROVIDE ONE–QUARTER (1/4) INCH EXPANSION JOINTS WITH PREFORMED FILLER AND SEALANT IN ACCORDANCE WITH THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARDS. CONTRACTOR TO SUBMIT LOCATIONS OF EXPANSION JOINTS FOR ARCHITECTS APPROVAL.

3. EXPANSION JOINTS FOR ALL CURBS SHALL BE ONE–HALF (1/2) INCH WIDTH FILLED WITH PREMOLDED JOINT FILLER AND JOINT SEALANT. EXPANSION JOINTS FOR CURBS SHALL LINE UP WITH THE PROPOSED LOCATION OF EXPANSION JOINTS IN NEW ABUTTING CONC. SIDEWALK. FILLERS SHALL COMPLETELY FILL THE JOINT AND SHALL BE CUT FLUSH WITH ALL CURB SURFACES.

4. PROVIDE ONE–QUARTER (1/4) INCH EXPANSION JOINTS WITH PREFORMED FILLER AND SEALANT IN ACCORDANCE WITH THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARDS AROUND THE UTILITY MANHOLES/CASTINGS, AROUND SURFACE SUBWAY STRUCTURE ELEMENTS AND AROUND PLAZA STRUCTURAL ELEMENTS.

5. CONTRACTOR TO PROVIDE HAND EXCAVATION, AS REQUIRED IN THE VICINITY OF EXISTING VAULTS.

6. CONTRACTOR TO PROTECT EXISTING VAULT WATERPROOFING AND STRUCTURE DURING CONSTRUCTION. ANY DAMAGE TO WATERPROOFING OR STRUCTURE IS TO BE REPAIRED BY CONTRACTOR AT NO ADDITIONAL COST.

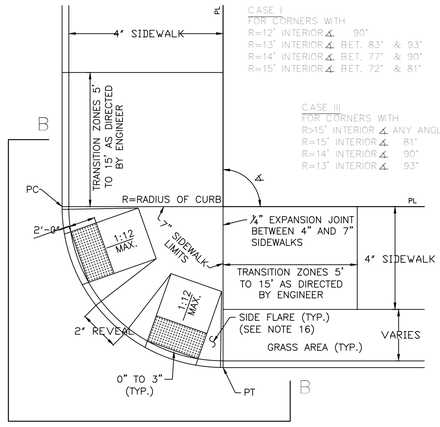
7. SEE PLAZA MATERIALS PLAN FOR PAVER DETAILS.

8. ALL NEW SIDEWALKS TO BE CONSTRUCTED USING PIGMENTED GRAY CONCRETE AS PER LOWER MANHATTAN STANDARD.

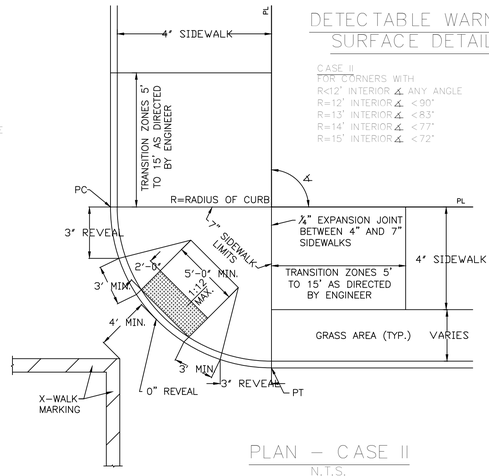
3 STONE AND CONCRETE PAVEMENT DETAIL
N.T.S

SIDEWALK PEDESTRIAN RAMP NOTES

1. REFER TO H–1011 (LATEST REVISION) FOR PEDESTRIAN RAMP DETAILS.
2. REFER TO H–1010 (LATEST REVISION) FOR STEEL FACED CURB TYPE D.
3. ALL MATERIALS AND CONSTRUCTION METHODS USED SHALL CONFORM TO SECTIONS #4.08/4.09/4.13/4.13DE OF THE STANDARD SPECIFICATIONS, LATEST EDITION, AS AMENDED.
4. WHEN INSTALLING PEDESTRIAN RAMPS IN OTHER THAN PRE–ENGINEERED CAPITAL RECONSTRUCTION PROJECTS, ALLOWANCE SHALL BE MADE FOR EXISTING CONDITIONS PROVIDED THAT THE SLOPE OF THE RAMP SHALL NOT EXCEED 1:12 AND THE ZERO INCH REVEAL IS OBTAINED. TO INSURE THAT SOUND ENGINEERING JUDGEMENT IS USED IN MEETING EXISTING CONDITIONS, ANY AND ALL VARIATIONS FROM THE DETAILS OF CONSTRUCTION HEREIN SHOWN MUST HAVE THE JOINT APPROVAL OF THE COMMISSIONER.
5. CASE II PLAN SHALL BE USED ONLY WHERE EXPLICITLY DIRECTED BY THE ENGINEER AND APPROVED BY THE COMISSIONER PRIOR TO DESIGN/INSTALLATION.
6. SURFACE OF ALL PEDESTRIAN RAMPS SHALL BE STABLE, FIRM AND SLIP RESISTANT. CONCRETE RAMP SURFACE SHALL HAVE A COARSE BROOM FINISH RUNNING PERPENDICULARTO THE SLOPE, EXCLUSIVE OF THE DETECTABLE WARNING FIELDS.
7. LANDINGS BETWEEN THE PROPERTY LINE AND THE BACK EDGE OF RAMPS SHALL HAVE A MINIMUM CLEAR DIMENSION OF 5 FT. BY 5 FT. SQUARE. HOWEVER, WHERE CASE I RAMPS ARE USED THE MINIMUM CLEAR DIMENSION SHALL BE 4 FT. BY 4 FT. SQUARE. THE MAXIMUM CROSS SLOPE AT LANDINGS IS 1/4" PER FOOT IN ANY DIRECTION. LANDINGS MAY OVERLAP WITH ADJACENT LANDINGS OR A SINGLE LANDING MAY SERVE MULTIPLE CURB RAMPS.
8. ALL EXPOSED STEEL SURFACES SHALL BE GROUND SMOOTH.
9. ON FULL WIDTH SIDEWALKS, EXPANSION JOINTS TO BE PLACED AT BUILDING FACES AND STRUCTURES, AS WELL AS AT BACK FACE OF CURB.
10. ALL DIMENSIONS AND NOTES SHALL BE APPLICABLE TO GRANITE CURB INSTALLATIONS AND/OR CONCRETE CURB INSTALLATIONS.
11. THE DETAILS PROVIDED ARE NOT DRAWN TO SCALE. THE QUANTITY OF DOMES DEPICTED ON THE DETECTABLE WARNING FIELD (THE DOMES AND THE ENTIRE 2 FT. WIDE SURFACE) IS FOR ILLUSTRATION ONLY.
12. THE SIZE OF THE DETECTABLE WARNING FIELD SHALL BE 2 FT. IN THE DIRECTION OF TRAVEL AND SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP AS SHOWN, EXCLUSIVE OFSIDE FLARES.
13. DETECTABLE WARNINGS SHALL BE LOCATED SO THAT THE EDGE OF THE WARNING FIELD NEAREST TO THE ROADWAY OR STREET SURFACE IS 0" TO 3" FROM THE BACK OF CURB AS SHOWN.
14. DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL.
15. THE DETECTABLE WARNING FIELD SHALL BE THE COLOR SPECIFIED IN THE CONTRACT DOCUMENTS OR SHALL VISUALLY CONTRAST WITH THE ADJOINING CURB RAMP, OR OTHER ADJACENT WALKWAY SURFACES WHERE THERE IS NO CURB RAMP, EITHER LIGHT–ON–DARK, OR DARK–ON–LIGHT AS DEFINED IN THE AMERICANS WITH DISABILITIES ACCESSIBILITY GUIDELINES (ADAAG).
16. PAVEMENT LINES FOR DETECTABLE WARNING UNITS ARE THE 2FT. DIMENSION SHOWN IN THE DETAILS EXTENDING THE FULL WIDTH OF THE CURB RAMP.
17. WHEN STREET FURNITURE (LAMP POSTS, TRAFFIC SIGNAL POSTS, UTILITY POSTS, HYDRANTS, ETC.) INTERFERES WITH THE CONSTRUCTION OF A SIDE FLARE ADJACENT TO A NON–WALKING (GRASS) AREA, SAID SIDE FLARE SHALL BE REPLACED WITH A CONCRETE CURB, AS DIRECTED BY THE ENGINEER, PROVIDED THE INTERFERENCE CAN BE AVOIDED AND LEFT IN PLACE.



PLAN – CASE I, CASE III
N.T.S.



PLAN – CASE II
N.T.S.

DETECTABLE WARNING SURFACE DETAILS

CASE I
FOR CORNERS WITH
R<12' INTERIOR ∠ ANY ANGLE
R=12' INTERIOR ∠ <90°
R=13' INTERIOR ∠ <83°
R=14' INTERIOR ∠ <77°
R=15' INTERIOR ∠ <72°

4 SIDEWALK PEDESTRIAN RAMP– NYCDOT H–1011
N.T.S.

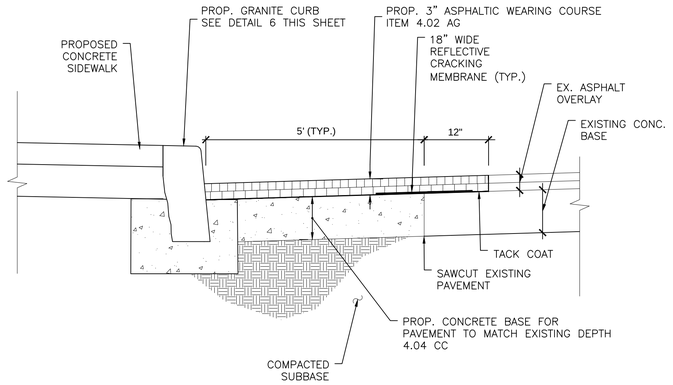
PRELIMINARY – NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTIONS	BY	APPR'D
		REVISIONS		

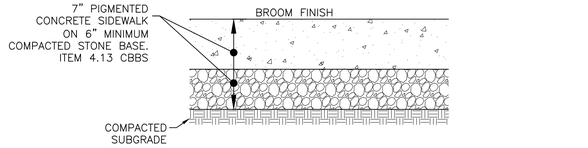
THAMES STREET PLAZA – DETAILS I
BOROUGH OF MANHATTAN

Philip Habib & Associates · Engineers and Planners
102 MADISON AVENUE · NEW YORK, NY 10016

PROJECT ID: THAMES	DATE: 05–30–2017	SHEET 09 OF 10

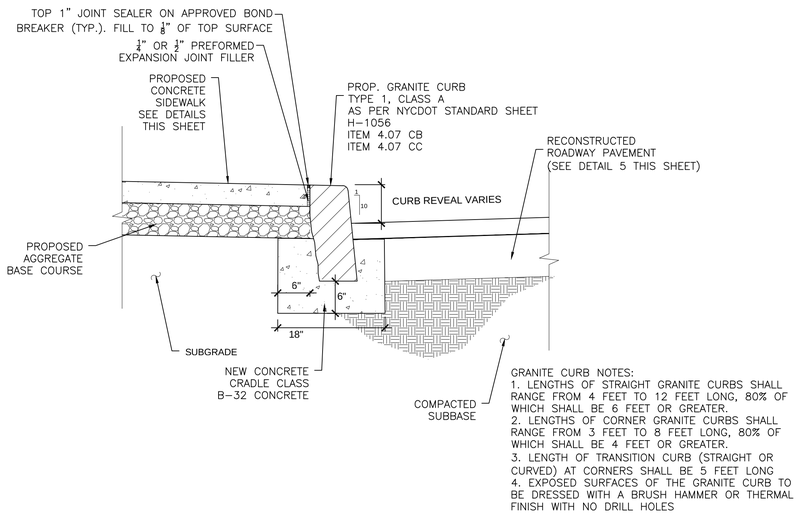


5 ROADWAY PAVEMENT DETAIL
N.T.S



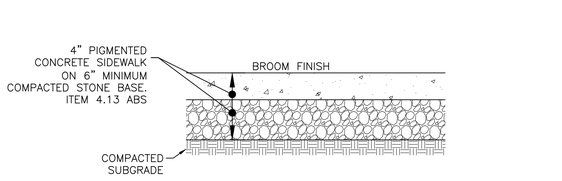
NOTES:
1. PROVIDE EXPANSION JOINTS AT 20' O.C.
2. PROVIDE SCORED JOINTS AT 5' O.C.
3. SIDEWALK TO COMPLY WITH NYCDOT H-1045

7 STANDARD 7" CONCRETE SIDEWALK
N.T.S



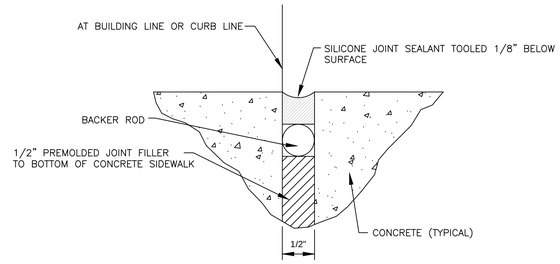
GRANITE CURB NOTES:
1. LENGTHS OF STRAIGHT GRANITE CURBS SHALL RANGE FROM 4 FEET TO 12 FEET LONG, 80% OF WHICH SHALL BE 6 FEET OR GREATER.
2. LENGTHS OF CORNER GRANITE CURBS SHALL RANGE FROM 3 FEET TO 8 FEET LONG, 80% OF WHICH SHALL BE 4 FEET OR GREATER.
3. LENGTH OF TRANSITION CURB (STRAIGHT OR CURVED) AT CORNERS SHALL BE 5 FEET LONG
4. EXPOSED SURFACES OF THE GRANITE CURB TO BE DRESSED WITH A BRUSH HAMMER OR THERMAL FINISH WITH NO DRILL HOLES

6 GRANITE CURB DETAIL
N.T.S

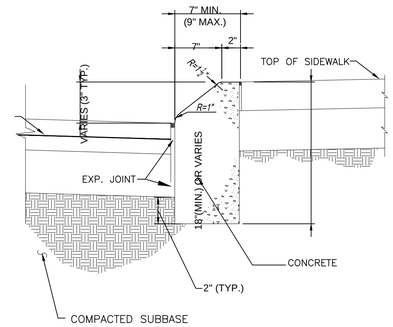


NOTES:
1. PROVIDE EXPANSION JOINTS AT 20' O.C.
2. PROVIDE SCORED JOINTS AT 5' O.C.
3. SIDEWALK TO COMPLY WITH NYCDOT H-1045

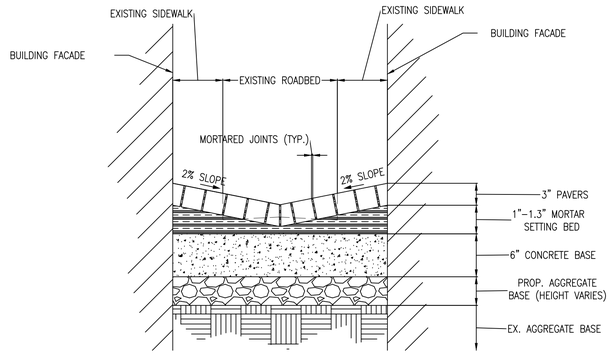
8 STANDARD 4" CONCRETE SIDEWALK
N.T.S



9 EXPANSION JOINT DETAIL
N.T.S



10 MOUNTABE CURB DETAIL
N.T.S



11 STONE AND CONCRETE PAVEMENT DETAIL
N.T.S.

PRELIMINARY – NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTIONS	BY	APPR'D
		REVISIONS		

THAMES STREET PLAZA – SITE DETAILS II

BOROUGH OF MANHATTAN

Philip Habib & Associates · Engineers and Planners
102 MADISON AVENUE · NEW YORK, NY 10016

PROJECT ID: THAMES | DATE: 05-30-2017 | SHEET 10 OF 10

APPENDIX B: HISTORIC IMAGES AND PHOTOGRAPHS

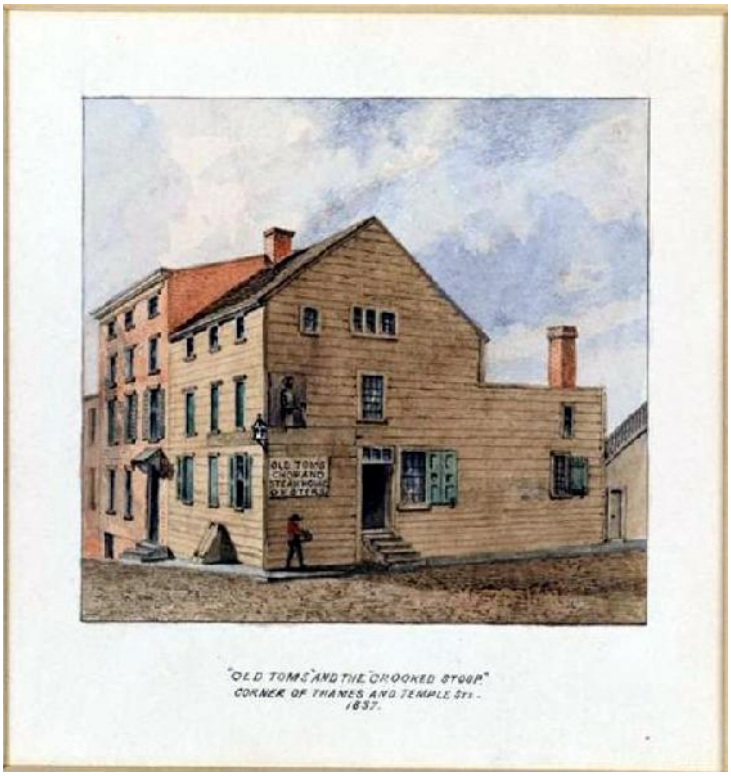
Ca. 1796-1797 view of Trinity Church, with Van Cortlandt mansion, original Thames Street and City Hotel to right. Couple standing in front of City Hotel mark approximate location of modern Thames Street. Courtesy New York Public Library.

City Hotel views, 1830. Courtesy Museum of the City of New York.

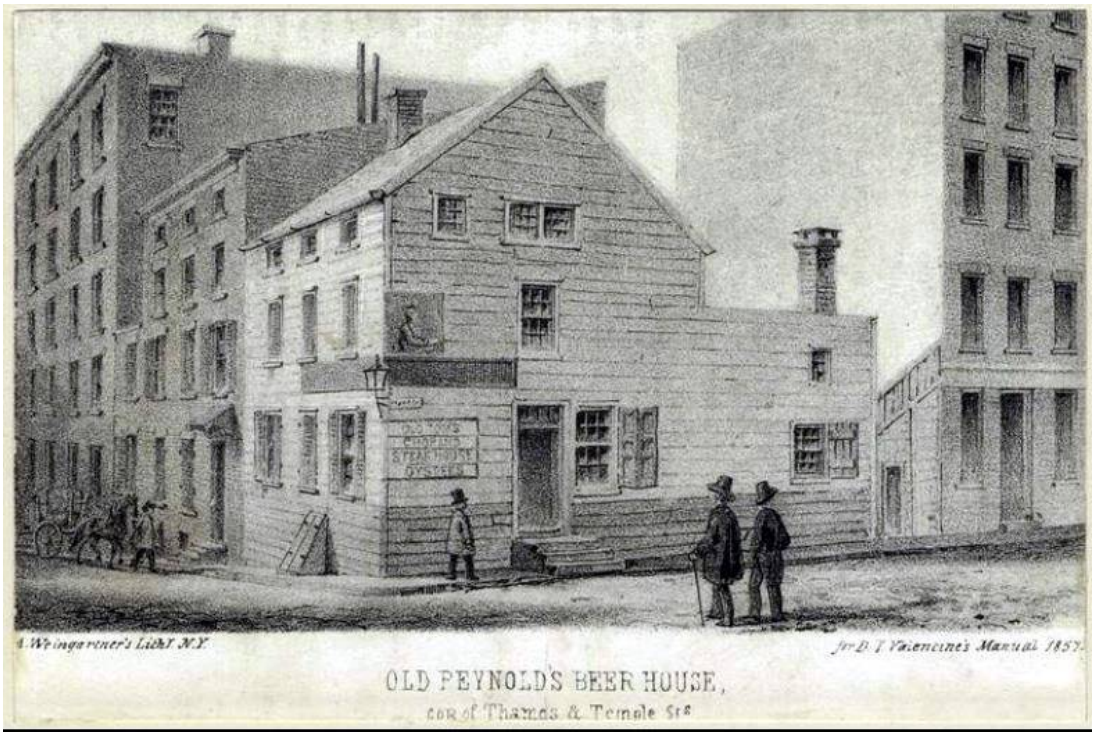
Ca. 1840 image of City Hotel (Stokes 1918, Vol. 3:Plate 125). Original Thames Street is to left of hotel. Modern Thames Street is located under footprint of City Hotel.

New England House and enlarged City Hotel in 1848. Original Thames Street is between the two buildings. Modern Thames Street is located under footprint of City Hotel. Courtesy Museum of the City of New York.

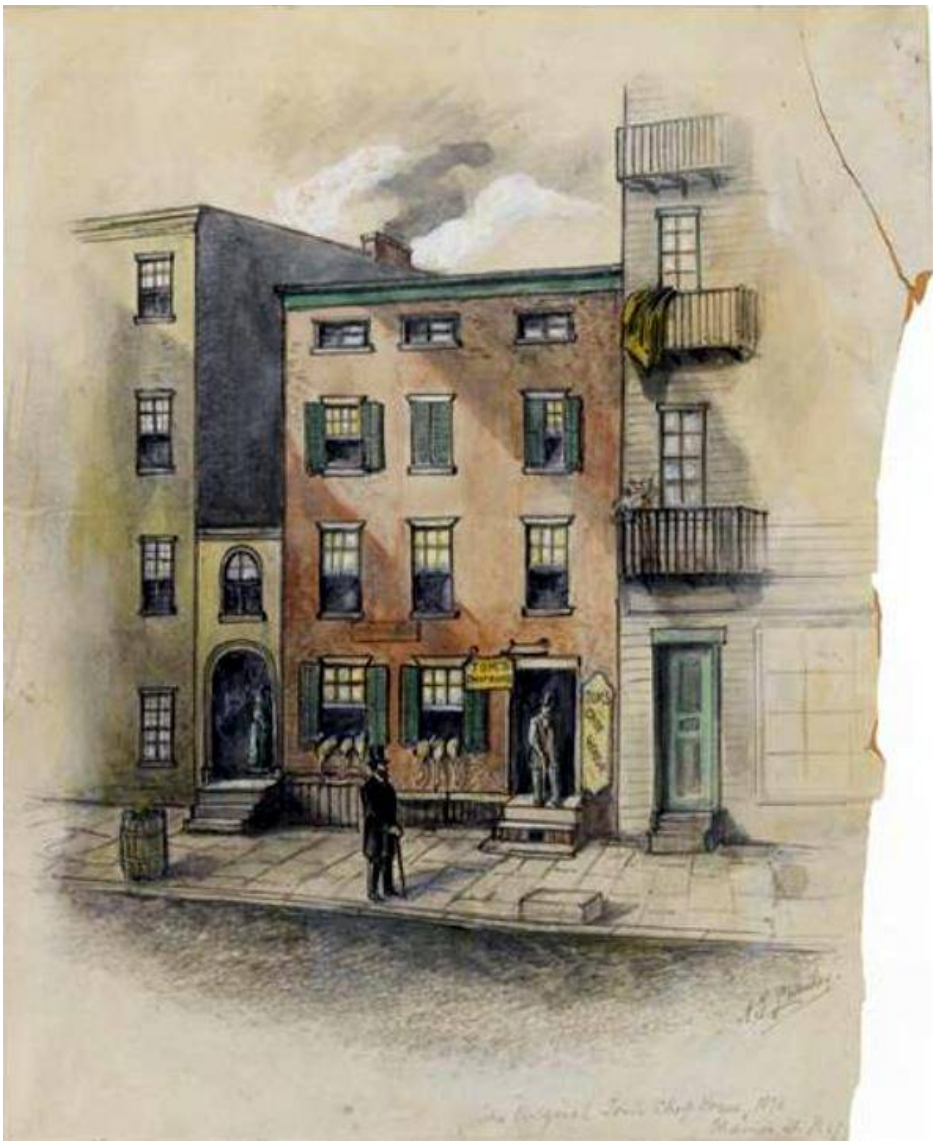
Undated image of City Hotel, published in 1905. Courtesy Museum of the City of New York.



Northwest corner of Thames and Temple Streets in 1857. "Old Tom's Chop and Steak House, Oysters." Modern Thames Street runs under the buildings in the image. Note bulkhead doors on left to basement level. Courtesy Museum of the City of New York.



A similar image of the corner of Thames and Temple Streets in 1857, showing additional buildings. Sign on building says Old Tom's Chop House but caption says Old Reynold's Beer House. Modern Thames Street runs under the buildings in the image. Again note bulkhead doors on left to basement level. Courtesy New York Public Library.



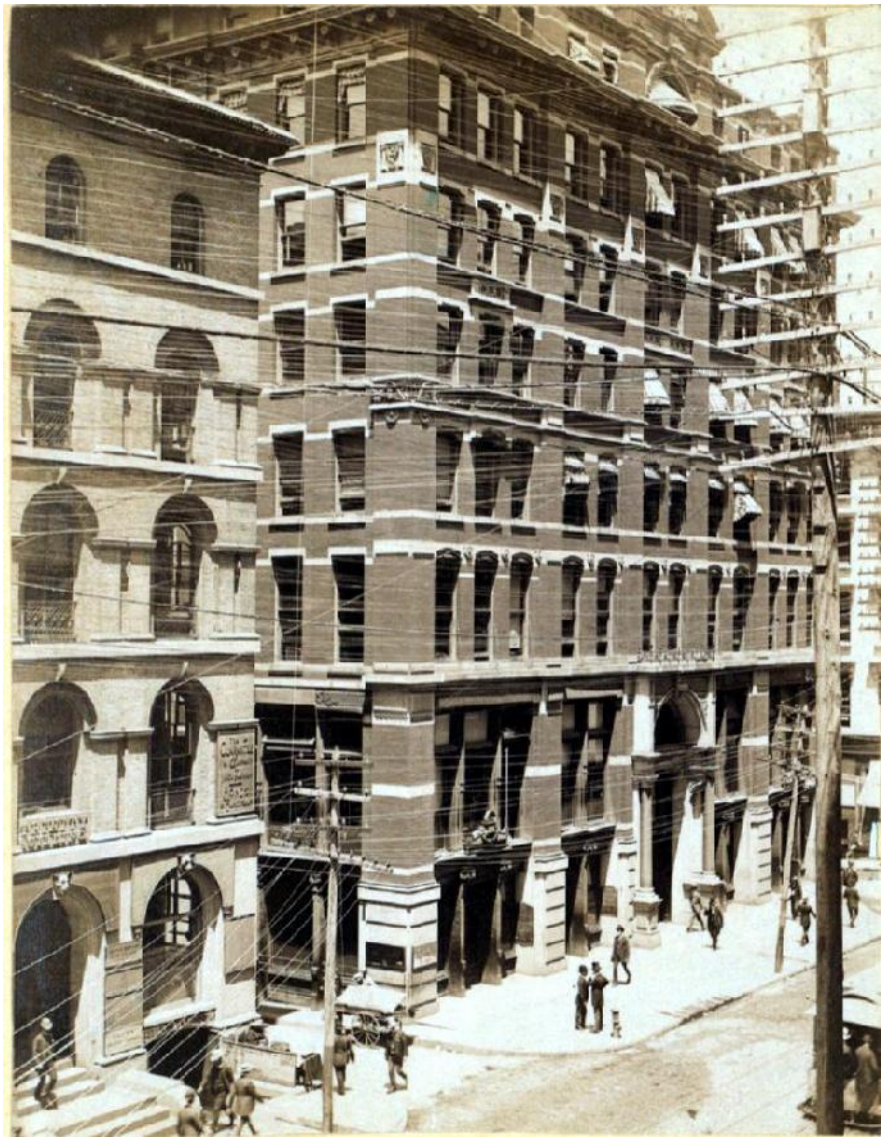
1876 view of Old Tom's Chop House on north side of original Thames Street between Temple Street and Trinity Place. Previous views showed the restaurant at the corner of Temple Street (building on right). Courtesy Museum of the City of New York.

Ca. 1904 image of Old Tom's. Corner of original Thames Street and Temple Street. Courtesy Museum of the City of New York.

1851 image of the newly constructed Boreel Building stores. Original Thames Street is to the left, with New England House and Trinity Church to left of Thames Street. Modern Thames Street runs under the Boreel Building. From *The Great Metropolis or New York Almanac for 1851* (Trow 1851).

Undated image of Broadway buildings. Original Trinity Building on left was constructed in 1853; original Boreel Building in center in 1849. Original Thames Street ran between them. Modern Thames Street runs under Boreel Building.

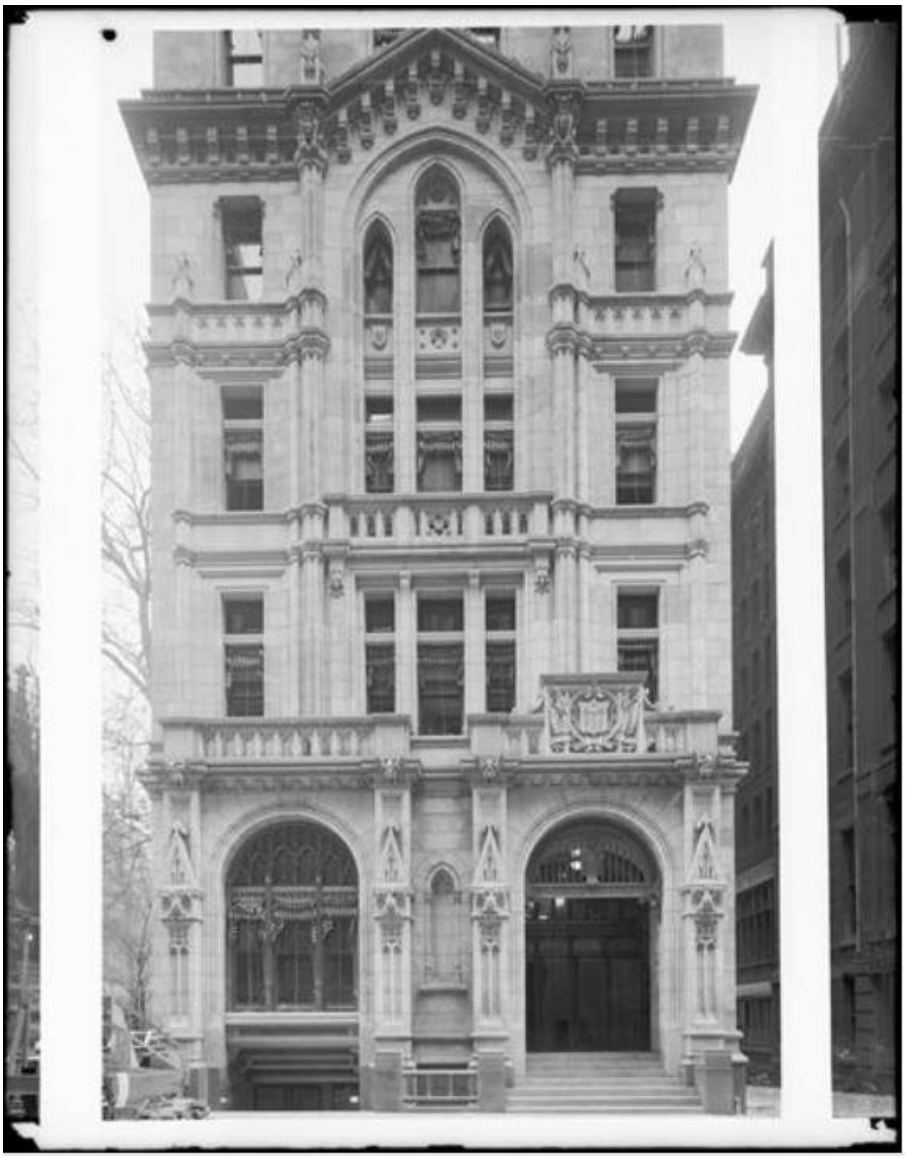
Undated ca. 1870s photograph of first Boreel Building (built 1849) on Broadway between original Thames Street on left and Cedar Street on right. Modern Thames Street footprint is under Boreel Building. Courtesy Museum of the City of New York.



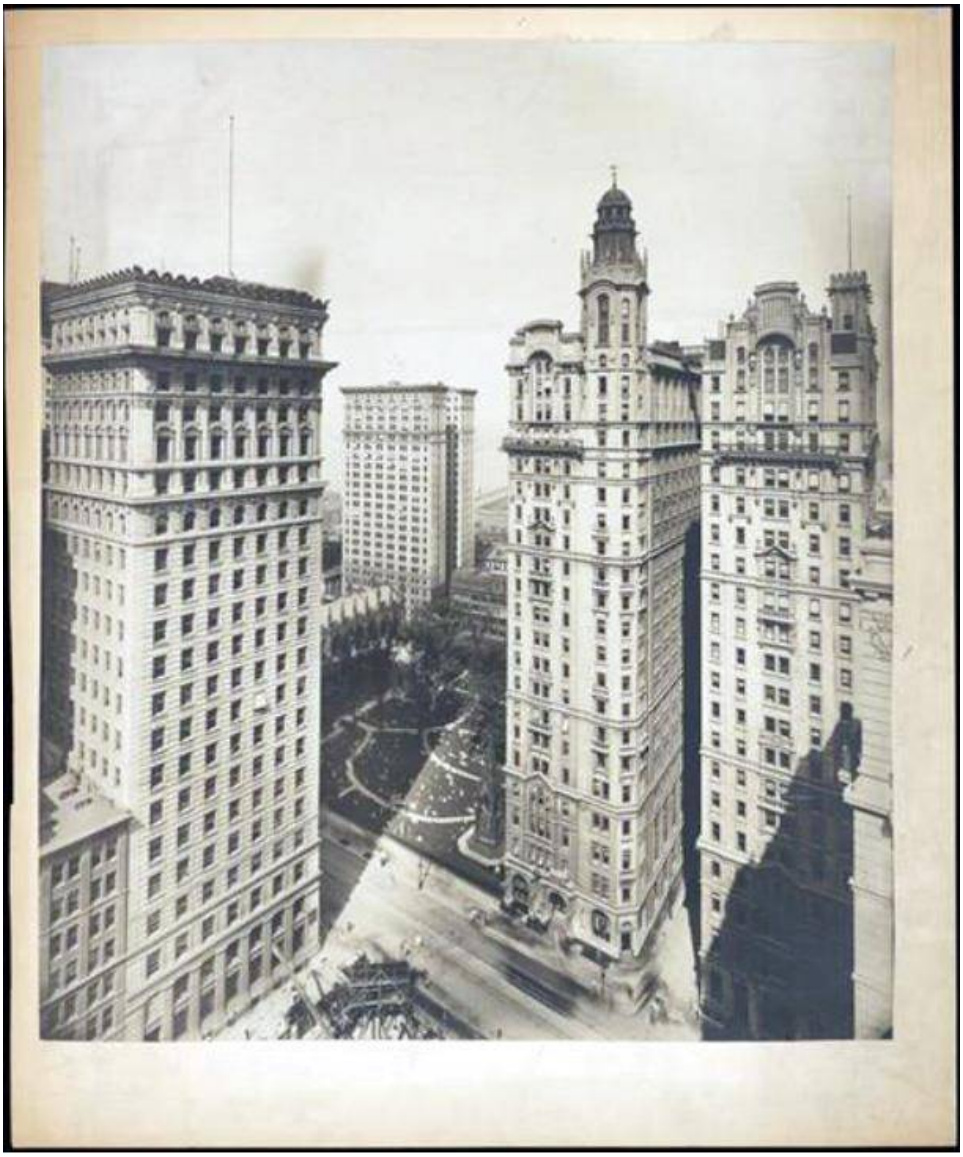
Undated ca. 1890s photograph of original Trinity Building on left, Thames Street in center, and second Boreel Building (built 1878) on right. Modern Thames Street footprint is under Boreel Building. Courtesy New York Public Library.

Undated photograph of original Thames Street in foreground, buildings on north side of Thames Street on left and background, with former Temple Street at lamppost. Rear of second Boreel Building is beyond lamppost. Courtesy Museum of the City of New York.

Undated photograph of original Thames Street in foreground, buildings on north side of Thames Street on left and background, with former Temple Street at lamppost. Rear of second Boreel Building is beyond lamppost. Wider view than previous image. Courtesy New York Public Library.



Ca. 1905 photograph of lower floors of existing Trinity Building prior to addition that covers original Thames Street, shown on right. Second Boreel Building on far right of image. Courtesy Museum of the City of New York.



Undated photograph (post 1907) showing existing Trinity Building with addition (center), existing Thames Street, and existing U.S. Realty Building (right). Courtesy Museum of the City of New York.