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Second Avenue Subway: Phase Two

**SECOND AVENUE BETWEEN EAST 104TH AND EAST 125TH STREETS AND
EAST 125TH STREET BETWEEN SECOND AVENUE AND ADAM CLAYTON
POWELL, JR. BOULEVARD
NEW YORK, NEW YORK**

Supplemental Phase 1A Archaeological Documentary Study

Prepared for:

Metropolitan Transportation Authority Capital Construction
2 Broadway, 8th Floor
New York, NY 10004-2207

Prepared by:



AKRF, Inc.
440 Park Avenue South
New York, NY 10016
212-696-0670

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1783

Management Summary

SHPO Project Review Number: 17PR02965

Involved Agencies: Metropolitan Transportation Authority
New York City Transit
Federal Transit Administration

Phase of Survey: Supplemental Phase 1A Documentary Study

Location Information

Location: Manhattan
Minor Civil Division: 06101
County: New York County

Survey Area

Length: Approximately 1.6 miles, non-contiguous
Width: Variable along the project corridor
Area: 27.4 acres/1,193,193 square feet (including the streetbed of Second Avenue)

USGS 7.5 Minute Quadrangle Map: Central Park Quadrangle

Report Author: Elizabeth D. Meade, MA
Registered Professional Archaeologist 16353

Research and Writing Assistance: Elizabeth P. Martin, PhD and Molly McDonald, MA

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A. INTRODUCTION

The Metropolitan Transportation Authority (MTA) is planning to construct Phase 2 of the Second Avenue Subway (“SAS Phase 2”) in Manhattan, New York (see **Figure 1**). The project would extend subway service northward along Second Avenue from its current terminus at 96th Street. The route would continue up Second Avenue to 125th Street (also known as Dr. Martin Luther King, Jr. Boulevard) and then west beneath 125th Street to a point in the vicinity of Lenox Avenue (the western terminus of the tail track will depend on final design options). New stations would be constructed at 106th Street, 116th Street, and 125th Street (between Lexington Avenue and Park Avenue). The 125th Street Station would provide connections to the existing Lexington Avenue subway line (4/5/6 trains) and Metro-North Railroad. As described in greater detail below, this Supplemental Archaeological Assessment of the SAS Phase 2 alignment analyzes the archaeological sensitivity of areas of planned construction including station entrances and ancillary facilities and utility installation/relocation within streetbeds that were not previously analyzed as part of earlier archaeological assessments (see **Figures 2** and **3A** to **3H**). This analysis will also examine new information regarding disturbance to update and reassess previous analyses of the area’s archaeological sensitivity.

B. PROJECT DESCRIPTION

Phase 1 of the subway alignment was recently completed with a northern terminus at East 105th Street. The overall SAS Phase 2 alignment remains largely consistent with the original preliminary engineering (PE) design that was analyzed in the 2004 Second Avenue Subway Final Environmental Impact Statement (FEIS) (described in greater detail below). Some changes have occurred to the SAS Phase 2 design because of experience gained during Phase 1 of the Second Avenue Subway, updated design standards, current engineering practices, current operations planning, and because of new developments or constructability considerations that required relocation of several station entrances and ancillary facilities.

Phase 2 would involve the construction of three stations at 106th Street, 116th Street, and 125th Street. SAS Phase 2 tracks would extend from the existing Phase 1 tail tracks near 105th Street and continue along Second Avenue until East 124th Street, where the alignment would curve east of Second Avenue before continuing west along East 125th Street towards a new station to be located between Lexington and Park Avenues. Tail tracks providing train storage would extend west of the station. The current design includes two storage tracks, with two options: (1) a two-train per track storage option (for a total of four trains) for which the tail tracks would extend between Fifth Avenue and Lenox Avenue; and (2) a three-train per track storage option (for a total of six trains) for which the tail tracks would extend between Lenox Avenue and Adam Clayton Powell, Jr. Boulevard. Either tail track option would require the construction of an ancillary facility.

Beginning at the bulkhead of the Phase 1 tail tracks at 105th Street and extending to a point near East 110th Street, cut-and-cover construction methods would be used to build the 106th Street station. The station would include two entrances and two ancillary facilities. North of East 110th Street, the SAS Phase 2 tracks would connect to an existing tunnel (referred to as “Section 13”) that was constructed

during the 1970s in anticipation of the project and extends to a point near East 120th Street. Because Section 13 was not originally intended to serve as a station, the existing tunnel box will be demolished and the subway structure would be reconstructed to accommodate a full station, including a mezzanine level. The 116th Street station would be constructed between East 115th Street and East 118th Street using cut-and-cover construction methods. The station will include entrances and ancillary facilities as well as a new bellmouth structure that would be constructed between 118th and 120th Streets, also using cut-and-cover construction methods, that would provide accommodations for a potential future extension of the subway to the Bronx. Depending on construction scheduling, either one or two tunnel boring machines (TBMs) would be launched from the bellmouth structure that would be used to mine the remainder of the SAS Phase 2 alignment in two parallel, descending bored tunnels north of East 120th Street and along East 125th Street. Additional mining and some limited open-cut construction would take place for construction of the 125th Street Station between approximately Third Avenue and Park Avenue. The depth of the bored tunnels would increase from a depth of approximately 45 feet below the ground surface near the 116th Street station to more than 120 feet below the ground surface west of the 125th Street Station.

Finally, in advance of construction, it will be necessary to acquire temporary subsurface easements beneath a number of properties throughout the alignment. These easements would be located along the northern and southern sides of East 125th Street between Third and Madison Avenues and opposite each of the possible ancillary facilities for the two- and three-train tail track options. For the most part, these easements would be used to install rockbolts, which would be used during construction to secure the new tunnels being to the rockface. Rockbolts would have no structural effect on the buildings located above them, either during or after construction, and would not affect existing building occupants. Once the tunnel lining is complete, the rockbolts would be abandoned in place and any future developments on the properties above would not impact the new tunnels.

C. PROJECT BACKGROUND

An extensive analysis of cultural resources, including archaeological resources, was completed as part of the 2004 FEIS. The Federal Transit Administration (FTA) issued a Record of Decision (ROD) for the Second Avenue Subway project on July 8, 2004. The ROD was issued based on the findings presented in the FEIS, which examined the potential impacts of the 8.5-mile-long Second Avenue Subway from East 125th Street in Harlem to Hanover Square in Lower Manhattan. The FEIS identified the environmental impacts of the Second Avenue Subway during its construction and the permanent impacts once the subway is operational. It also identified mitigation measures to alleviate the identified impacts. As part of the FEIS, a Phase 1A Archaeological Documentary Study (“Phase 1A study”) of the proposed subway route was prepared by Historical Perspectives, Inc. (HPI) in 2003 (HPI 2003a). HPI’s 2003 study and numerous supplemental studies that were prepared thereafter—including an assessment of previous soil borings (HPI 2003b)—identified areas of prehistoric and historic archaeological sensitivity along much of the subway alignment (see **Figures 3A to 3H**).

A Programmatic Agreement (PA) among FTA, the Metropolitan Transportation Authority New York City Transit (MTA NYCT), and the New York State Historic Preservation Officer (SHPO), was executed on April 8, 2004 to describe the procedures that would be followed to document and protect cultural resources that could be impacted by the construction of the subway. The PA sets forth the steps to be followed in the event that new project elements were added to locations that were not analyzed in the FEIS and also included provisions for future archaeological analysis of locations of soils borings completed as part of the subway’s construction. Exhibit G of the PA establishes the protocols that must be followed to ensure the completion of the soil borings program can help to inform future archaeological analyses without resulting in impacts to archaeological resources. This

Supplemental Phase 1A Archaeological Documentary Study has been prepared to ensure that the protocols outlined in the PA are followed in an appropriate manner.

D. AREA OF POTENTIAL EFFECTS FOR ARCHAEOLOGICAL RESOURCES

2003 AREA OF POTENTIAL EFFECTS

For the assessment of the Second Avenue Subway’s proposed alignment in the 2003 Phase 1A study and the 2004 FEIS, the locations of ancillary facilities, stations, and station were based on conceptual and preliminary engineering. In the vicinity of the Phase 2 subway alignment, the area of potential effects (APE) analyzed in HPI’s 2003 Phase 1A Archaeological Assessment (see **Figures 3A to 3H**) included the streetbed of Second Avenue from western lot line to eastern lot line between East 104th Street and the Harlem River Drive Street; East 125th Street from western lot line to eastern lot line between Second Avenue and Fifth Avenue; and the location of a proposed ancillary building at the southwest corner of Second Avenue and East 125th Street (including Block 1789, Lots 10 to 15, 21, 26 to 30, 34 to 37, 39, 42, 43, and 45; a portion of the streetbed of East 124th Street between Second and Third Avenues; and Block 1788, Lots 28 and 29). Several shaft sites to the north of the Phase 2 subway alignment were also included in the 2003 APE.

AREA OF POTENTIAL EFFECTS FOR THIS ASSESSMENT

Since the completion of the 2004 FEIS, the design for the stations, ancillary facilities, and utility relocations for Phase 2 of the subway alignment has advanced considerably and includes areas of potential disturbance located outside the APE analyzed in the FEIS. Therefore, consistent with the requirements of the PA, this assessment was prepared to evaluate the potential for impacts to archaeological resources in areas within the Phase 2 APE that were not assessed in the 2003 Phase 1A study or the 2004 FEIS. These newly added areas are summarized in **Table 1-1**.

**Table 1-1
Area of Potential Effects (APE) for Supplemental Analysis**

Station/ Feature	Component	Location	Block	Lot(s)
106th Street Station	Ancillary 1	Southeast corner of Second Ave and East 106th Street	1677	47 and 49 to 52
	Ancillary 2	Northeast corner of Second Ave and East 109th Street	1681	1, 2, 3, 4, 52, and 104
	Entrance 1	Northeast corner of Second Ave and East 106th Street	1678	1 (part)
	Entrance 2	Southeast corner of Second Ave and East 108th Street	1678	1 (part)
	East 106th Street Improvements	Streetbed 200 feet west and 200 feet east of Second Avenue	n/a	n/a
	East 108th Street Improvements	Streetbed 210 feet west and 85 feet east of Second Avenue	1656	1 and 100
	East 109th Street Improvements	Streetbed 40 feet west and 105 feet east of Second Avenue	n/a	n/a
	East 110th Street Improvements	Streetbed 200 feet west and 205 feet east of Second Avenue	n/a	n/a
116th Street Station	Ancillary 1	Northeast corner of Second Ave and East 115th Street	1687	1, 2, 3, and 102
	Ancillary 2	Southwest corner of Second Avenue and East 120th Street	1784	12 (part), 23 to 28, 120, 122, and 128
	Entrance 1	Northeast corner of Second Avenue and East 116th Street	1688	1, 2, and 45 (part)
	Entrance 2	Northeast corner of Second Avenue and East 118th Street	1795	1 to 4

Table 1-1 (continued)
Area of Potential Effects (APE) for Supplemental Analysis

Station/Feature	Component	Location	Block	Lot	
116th Street Station (continued)	East 115th Street Improvements	Streetbed 90 feet west and 50 feet east of Second Avenue	n/a	n/a	
	East 116th Street Improvements	Streetbed 200 feet west and 200 feet east of Second Avenue	n/a	n/a	
	East 117th Street Improvements	Streetbed 200 feet west and 200 feet east of Second Avenue	n/a	n/a	
	East 118th Street Improvements	Streetbed 200 feet west and 200 feet east of Second Avenue	n/a	n/a	
	East 119th Street Improvements	Streetbed 50 feet west and 50 feet east of Second Avenue	n/a	n/a	
	East 120th Street Improvements	Streetbed 200 feet west and 200 feet east of Second Avenue	n/a	n/a	
125th Street Station	Ancillary 1/ Entrance 1	Southeast corner of East 125th Street and Lexington Ave	1773	20 (part)	
	Ancillary 2	Southwest corner of Park Avenue and East 125th Street	1749	33 (part)	
	Entrance 2 (Option 1)	Northwest corner of Lexington Avenue and East 125th Street	1774	17 and 56	
	Entrance 2 (Option 2)	Southwest corner of Lexington Avenue and East 125th Street	1773	17, 18, and 57	
	Entrance 3	Southeast corner of Park Avenue and East 125th Street and a portion of the Park Avenue streetbed	1773	4, 69, 72	
	Park Avenue Improvements	Streetbed 200 feet south of East 125th Street	n/a	n/a	
	Temporary Subsurface Easements for Rockbolting (at depth of approximately 60 to 110 feet below ground surface)		South side of East 125th Street between Third Avenue and Lexington Avenue	1773	20 (part)
			North side of East 125th Street west of Third Avenue	1774	Parts of 20, 30, and 33
			South side of East 125th Street between Lexington Avenue and Park Avenue	1773	Parts of 7, 58, 61, 62, and 67
			North side of East 125th Street Lexington Avenue and Park Avenue	1774	Parts of 1, 5, 6, 7, 8, 9, and 17
			South side of East 125th Street between Park Avenue and Madison Avenue	1749	Parts of 33, 46, 48, 49, and 50
		North side of East 125th Street Madison Avenue and Park Avenue	1750	Parts of 21, 23-28, 31, 32, and 34	
	East of Second Avenue between East 121st and East 124th Streets	1797	1 (part)		
125th Street Curve	Tunnel(at depth of 50 to 75 feet below ground surface)	East of Second Avenue between East 121st and East 124th Streets	1801	1 (part)	
125th Street Tunnel	Tunnel(at depth of 110 to 120 feet below ground surface)	Streetbed between Fifth Avenue and Adam Clayton Powell, Jr. Blvd	n/a	n/a	
Two-Train Tail Track Option	Temporary Subsurface Easement	North side of East 125th Street between 5th Avenue and Lenox Avenue	1723	10 (part)	
	Ancillary	South side of East 125th Street between 5th Avenue and Lenox Avenue	1722	62 and 63	

Table 1-1 (continued)
Area of Potential Effects (APE) for Supplemental Analysis

Station/Feature	Component	Location	Block	Lot
Three-Train Tail Track Option	Temporary Subsurface Easement	North side of East 125th Street west of Lenox Avenue	1910	1 (part) and 1272 (part)
	Ancillary	South side of East 125th Street west of Lenox Avenue	1909	41 (part)

The depth of the tunneling and rockbolting efforts associated with the construction of the 125th Street station range between 50 and 120 feet below the ground surface, far below the depth where archaeological resources would be expected to be located. Therefore, the archaeological sensitivity of the newly added project elements associated with the subsurface easements along East 125th Street between Third and Madison Avenues, the tunnel curve east of Second Avenue between East 120th and East 125th Streets, and the extension of the tunnel along East 125th Street between Fifth Avenue and Adam Clayton Powell, Jr. Boulevard are not assessed in this Phase 1A Archaeological Documentary Study.

E. AREAS OF ARCHAEOLOGICAL SENSITIVITY IDENTIFIED IN THE 2003 PHASE 1A STUDY

The 2003 Phase 1A identified areas of archaeological sensitivity across much of the proposed Phase 2 subway alignment. A supplemental review of soil borings completed by HPI in 2003 following the completion of the Phase 1A study further clarified the depth of archaeological sensitivity within the APE analyzed at that time. The locations and depths of archaeological sensitivity as identified in the 2003 archaeological investigations are summarized in Table 1-2.

Table 1-2
Areas of Archaeological Sensitivity Identified in the 2003 Phase 1A Study

Location	Type of Sensitivity	Depth of Sensitivity from Phase 1A (in feet)	Depth of Sensitivity from Soil Boring Supplement (in feet)
East 125th Street Between Second Avenue and Fifth Avenue	Precontact	3 to 15	Near Second Ave: 16 to 21 Second to Third Ave: 14 to 19 Lexington to Park Ave: 18 to 23 Madison to Fifth Ave: 16 to 21 West of Fifth Ave: 17 to 22
Block 1789, Lots 10 to 15, 21, 26 to 30, 34 to 37, 39, 42, 43, and 45	Precontact and Historic	Historic sensitivity: 0 to 15 Precontact Sensitivity: 5 to 15	No change
Streetbed of East 124th Street west of Second Avenue	Precontact and Historic	Historic sensitivity: 0 to 15 Precontact Sensitivity: 5 to 15	No change
Block 1788, Lots 28 and 29	Precontact and Historic	Historic sensitivity: 0 to 15 Precontact Sensitivity: 5 to 15	No change
Second Avenue from East 125th Street to a point 180 feet south	No Sensitivity	n/a	n/a
Second Avenue north and south of East 124th Street	Precontact and Historic	Historic sensitivity: 0 to 12 Precontact sensitivity: 12 to 17	No change

Table 1-2 (continued)
Areas of Archaeological Sensitivity Identified in the 2003 Phase 1A Study

Location	Type of Sensitivity	Depth of Sensitivity from Phase 1A (in feet)	Depth of Sensitivity from Soil Boring Supplement (in feet)
Second Avenue between East 124th and East 121st Streets	Precontact	10 to 18	No change
Second Avenue immediately south of 123rd Street	Precontact and Historic	12 to 17	No change
Second Avenue between East 120th and East 121st Streets	No Sensitivity	n/a	n/a
Second Avenue between East 111th Street and East 120th Street, east and west of existing tunnel	Precontact	13 to 18	No sensitivity within streetbed of East 118th Street or along west side of Second Avenue south of East 118th Street; No sensitivity along west side of Second Avenue between East 115th and East 116th Streets; Sensitivity 18 to 23 feet along the west side of Second Avenue just south of East 115th Street
Second Avenue south of East 112th Street, east of tunnel	Precontact and Historic	0 to 12 or 30	No change
Second Avenue between East 110th and East 111th Streets	No Sensitivity	n/a	n/a
Second Avenue between East 109th and East 110th Streets	Precontact	18 to 23	No change
Second Avenue between East 106th and East 109th Streets	No Sensitivity	n/a	n/a
Second Avenue between East 105th and East 106th Streets	Precontact	0 to 22	No change
Second Avenue between East 104th Street and East 105th Street, east and west of existing tunnel	Precontact	0 to 22	No change

Sources: HPI 2003a and HPI 2003b.

F. ARCHAEOLOGICAL MONITORING OF SOIL BORINGS AND TEST PITS

In preparation for Phase 2 of the subway’s construction, a soil boring program is proposed along Second Avenue between East 105th and East 125th Streets and along East 125th Street between Second and Adam Clayton Powell Jr. Boulevard. Pursuant to the terms of the PA, for any boring programs associated with the construction of the Second Avenue Subway, an attempt must be made to ensure that soil borings are not located in areas that have been identified as sensitive for human remains. In the event that borings cannot be relocated to avoid areas sensitive for human remains, archaeological monitoring during the completion of hand-augured soil borings must be completed, as described in the PA. If after reviewing the soil boring plan, the archaeological consultant determines that additional borings are necessary to better assess archaeological sensitivity, MTA will complete the additional borings in consultation with the archaeological consultant.

On April 21, 2017, AKRF prepared a memorandum summarizing the following: (1) an assessment of the proposed boring locations to determine if additional borings would be required for archaeological purposes; (2) a comparison of the proposed boring location to areas identified as sensitive for human remains in the 2003 Phase 1A and supplemental studies; and (3) a review of any proposed boring locations in areas that were not yet included in an archaeological assessment to ensure that human remains would not be impacted by the advancement of those borings.

An AKRF archaeologist reviewed the draft proposed plan for a Geotechnical Investigation Program provided by MTA. AKRF's April 2017 memorandum concluded that the majority of the borings would not result in impacts to archaeological resources with the exception of nine proposed borings that were located within a previously identified area of archaeological sensitivity associated with the former Harlem African Burial Ground. The zone of sensitivity is bounded by and including the streetbeds of Second Avenue, East 124th Street, East 127th Street, and a point east of First Avenue. The draft boring program identified nine proposed boring locations within the area of archaeological sensitivity: EPE 123-, EPE 123-5, EPE 124-, EPE 124-1, EPE 124-2, EPE 124-3, EPE 124-4, EPE 124-5, and EPE 125-1. Given the boring locations' distance from the historic cemetery and the location where disarticulated remains were recovered, it was determined that it was unlikely that human remains would be present in the borings' location, but the possible presence cannot be fully ruled out. Therefore, pursuant to the terms of the PA, it was recommended that the nine borings located within the area of sensitivity be monitored by a qualified archaeologist in a manner consistent with that described in the PA. An archaeological monitoring plan dated April 28, 2017 was prepared by AKRF and submitted to SHPO and the New York City Landmarks Preservation Commission (LPC). In comments transmitted through the New York State Cultural Resource Information System (CRIS) on May 10, 2017, SHPO concurred with the monitoring plan. In a comment letter dated May 9, 2017, LPC concurred with the monitoring plan.

Subsequent to the preparation of the April 21, 2017 memorandum and its subsequent acceptance by LPC and SHPO, the proposed boring program was modified. The modifications involved minor changes to the number of borings that would be located within the area of sensitivity with several proposed borings being removed from consideration and others being renumbered. In addition, an additional boring program was proposed to investigate soils in the vicinity of the project site as part of an Environmental Site Investigation as were a series of 22 test pits. In a second memorandum prepared by AKRF and submitted to LPC and SHPO on August 1, 2017, it was recommended that this boring be monitored as described above and pursuant to the terms of the abovementioned Archaeological Monitoring Plan dated April 28, 2017 to ensure that the soil boring does not contain evidence of human remains associated with disturbed soils originating in the location of the Harlem African Burial Ground.

The August 1, 2017 memorandum concluded that none of the proposed test pit locations are within areas of sensitivity for human remains and all appear to be limited to areas of existing utility disturbance or in areas that have been identified as either not archaeologically sensitive or areas that are at shallower depths than areas of archaeological sensitivity. The memorandum stated that in the event that the plans for the proposed test pits are changed and would result in impacts to archaeologically sensitive areas as identified in the 2003 Phase 1A study or that would extend to depths of more than one foot below known utilities, then archaeological monitoring of the test pit excavation may be necessary. In that event, prior to the completion of any necessary archaeological monitoring, a Monitoring Plan should be prepared and submitted to LPC and SHPO for review and comment.

As stipulated in the PA, after the completion of the test pits, the archaeological consultant must review the boring logs in consultation with SHPO, LPC, FTA, and MTA. The consultant will use that information to prepare a written memorandum summarizing the subsurface soils and the results of the monitoring in the locations of the five geotechnical borings and one environmental boring within the zone of sensitivity for the Harlem African Burial Ground. The memorandum prepared by the archaeological consultant will recommend additional analysis in any areas where soil borings indicate soils that are likely to contain archaeological resources or where the findings are inconclusive and will eliminate from further consideration any areas where the borings show a clear lack of

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archaeological sensitivity. The memorandum summarizing the boring logs and recommendations for additional archaeological analysis (if any) will be submitted to SHPO, FTA, and LPC for review and comment pursuant to the terms of the PA. In comment letters dated August 8, 2017 and August 18, 2017, LPC and SHPO (respectively) concurred with these recommendations.

A. RESEARCH GOALS

This Supplemental Phase 1A of the Second Avenue Subway Phase 2 project site has been designed to satisfy the requirements of the LPC and follows the guidelines of the New York Archaeological Council (NYAC). The study documents the development history of the proposed project corridor and its potential to yield archaeological resources, including both precontact and historic cultural resources. In addition, this report documents the current conditions of the project site, as well as previous cultural resource investigations that have taken place in the vicinity.

This study has four major goals: (1) to determine the likelihood that the project sites were occupied during the precontact (Native American) and/or historic periods; (2) to determine the effect of subsequent development and landscape alteration on any potential archaeological resources that may have been located within the project sites; (3) to make a determination of the project site's potential archaeological sensitivity; and (4) to make recommendations for further archaeological analysis, if necessary. The steps taken to fulfill these goals are explained in greater detail below.

The first goal of this study is to determine the likelihood that the project site was inhabited during the precontact or historic periods, and identify any activities that may have taken place in the vicinity that would have resulted in the deposition of archaeological resources.

The second goal of this Supplemental Phase 1A study is to determine the likelihood that archaeological resources could have survived intact within the project site after development and landscape alteration (e.g., grading). Potential disturbance associated with paving, utility installation, and other previous development-related impacts was also considered. As described by NYAC in their Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State:

An estimate of the archaeological sensitivity of a given area provides the archaeologist with a tool with which to design appropriate field procedures for the investigation of that area. These sensitivity projections are generally based upon the following factors: statements of locational preferences or tendencies for particular settlement systems, characteristics of the local environment which provide essential or desirable resources (e.g., proximity to perennial water sources, well-drained soils, floral and faunal resources, raw materials, and/or trade and transportation routes), the density of known archaeological and historical resources within the general area, and the extent of known disturbances which can potentially affect the integrity of sites and the recovery of material from them (NYAC 1994: 2).

The third goal of this study is to make a determination of the project sites' archaeological sensitivity. As stipulated by the NYAC standards, sensitivity assessments should be categorized as low, moderate, or high to reflect "the likelihood that cultural resources are present within the project area" (NYAC 1994: 10). For the purposes of this study, those terms are defined as follows:

- Low: Areas of low sensitivity are those where the original topography would suggest that Native American sites would not be present (i.e., locations at great distances from fresh and salt water resources), locations where no historic activity occurred before the installation of municipal water

and sewer networks, or those locations determined to be sufficiently disturbed so that archaeological resources are not likely to remain intact.

- Moderate: Areas with topographical features that would suggest Native American occupation, documented historic period activity, and with some disturbance, but not enough to eliminate the possibility that archaeological resources are intact on the project sites.
- High: Areas with topographical features that would suggest Native American occupation, documented historic period activity, and minimal or no documented disturbance.

As mentioned above, the fourth goal of this study is to make recommendations for additional archaeological investigations where necessary. According to NYAC standards, Phase 1B testing is generally warranted for areas determined to have moderate sensitivity or higher. Archaeological testing is designed to determine the presence or absence of archaeological resources that could be impacted by a proposed project. Should they exist within the project corridor, such archaeological resources could provide new insight into the precontact and historic occupation of northern Manhattan.

B. RESEARCH METHODOLOGY

DOCUMENTARY RESEARCH

To satisfy the four goals as outlined above, documentary research was completed to establish a chronology of the APE's development, landscape alteration, and to identify any individuals who may have owned the land or worked and/or resided there, and to determine if buildings were present there in the past. Data was gathered from various published and unpublished primary and secondary resources, such as historical maps, topographical analyses (both modern and historic), historic and current photographs (including aerial imagery), newspaper articles, local histories, and previously conducted archaeological surveys. These published and unpublished resources were consulted at various repositories, including the Main Research Branch of the New York Public Library (including the Local History and Map Divisions). File searches were conducted at LPC, the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP), and the New York State Museum (NYSM). Information on previously identified archaeological sites and previous cultural resources assessments on file with OPRHP and NYSM was accessed through the New York State Cultural Resource Information System (CRIS).¹ Online textual archives, such as Google Books and the Internet Archive Open Access Texts, were also accessed.

CARTOGRAPHIC REVIEW AND HISTORICAL MAP GEOREFERENCING

As described in **Chapter 1, "Introduction and Project Description,"** portions of the APE were previously analyzed in a 2003 Phase 1A study (HPI 2003a) and a supplemental soil borings analysis (HPI 2003b). Due to the age of these investigations and the recent availability of new information regarding utility-related disturbance and from the results of more recent archaeological investigations in the immediate vicinity of the project corridor, the full APE was reevaluated as part of this supplemental archaeological investigation. Modern advancements in mapping technology and geographic information systems (GIS) were used to more thoroughly analyze the development of the project corridor. This effort involved georeferencing historical maps of the project sites that were published between the 18th and 20th centuries. The maps were aligned with the modern street grid so that analysis could be completed with respect to changes in the elevation/topography of the landscape; filling in or other modification of marshes and streams; and the extent to which the

¹ <https://cris.parks.ny.gov>.

construction of both historic and modern structures (including residential and commercial buildings) affected the landscapes. In addition, any available information on disturbance that may have occurred since the previous reports were prepared was incorporated into this report as appropriate. After identifying the likelihood that archaeological resources were deposited within the project sites and the likelihood that they could remain intact given subsequent development and landscape alteration, a sensitivity determination was made for each of the project sites with respect to both precontact and historic period resources.

Chapter 3: Environmental Context and Assessment of Landscape Modification

A. SURFACE GEOLOGY AND BEDROCK FORMATIONS

Manhattan's physical setting was shaped by massive glaciers of up to 1,000 feet thick that retreated from the area towards the end of the Pleistocene shortly before humans began to occupy the region between 11,000 and 12,000 years before present. There were four major glaciations that began approximately 17,000 years ago and lasted until roughly 12,000 years ago when the Wisconsin period—the last glacial period—came to an end (Reeds 1925). The island of Manhattan is found within a geographic bedrock region known as the Manhattan Prong of the New England (Upland) Physiographic Province (Isachsen, et al. 2000). Bedrock in the vicinity of the project alignment is composed of metamorphic rocks known as Inwood Dolomite and Manhattan Schist (Reeds 1925). The majority of the bedrock is Manhattan Schist while the Inwood Marble deposits intrude through the center of the schist and represent “dolomite marble, calc-schists, granulite, and quartzite overlain by calcite marble” (Fisher, et al. 1995). Both types of bedrock date to the Ordovician and Cambrian Periods of the Paleozoic Era and were likely formed more than 435 million years before present (Isachsen, et al. 2000). The surface geology in this part of Manhattan is characterized by glacial till of variable texture, though bedrock is shallower near the western portion of the SAS Phase 2 alignment (Cadwell 1989).

B. TOPOGRAPHY AND HYDROLOGY

Prior to European settlement and subsequent landscape modification (discussed in greater detail below), the landscape of northeastern Manhattan fluctuated in the millennia that followed the end of the glacial period. Between 12,000 and 6,000 years before present, sea levels fluctuated followed by a rapid rise in sea levels, reaching their current state by approximately 3,000 years ago (Geoarcheological Research Associates 2007). This process “raised the base level of the small creeks draining Manhattan and...initiated a mosaic of estuarine and near shore environments in the brackish zone” eventually creating marshes along Manhattan's shores (ibid:43). Several marshy areas crossed through the project corridor prior to landscape modification in northeastern Manhattan.

As seen on the 1865 Viele map (see **Figure 4**), the large creek originally bisected the eastern side of Manhattan and ran to a point west of Fifth Avenue before turning north and continuing along the west side of Fifth Avenue and further to the northwest. The creek was allegedly “so imposing it split the Manhattan holdings of its original occupying tribes” (Koeppel 2000:10). The 1820 Randel map depicts the creek running east-west surrounded by thick tracks of marsh between approximately East 106th Street and East 109th Street. A large pond was situated across what is now East 125th Street just east of Third Avenue. A small stream crossed Second Avenue between East 121st and East 122nd Streets. A second stream with a large associated marshland was situated just south of the southern end of the project corridor, in the vicinity of what is now Second Avenue and East 103rd Street. A long, narrow valley containing a marsh-bordered stream extended to the northeast of the project site starting from a point near Second Avenue and East 113th Street. Additional hills crossed Second Avenue between what is now East 113th and East 121st Streets.

Both the 1865 Viele map (see **Figure 4**) and the ca. 1820 Randel map depict a number of hills in the vicinity of the project site which appear to have been graded as part of the transformation of the

landscape in this portion of Manhattan. One such hill was located to the south of the Haerlem Creek marshes near Second Avenue and East 106th Street. The only remaining landscape element in the vicinity of the project site is Snake Hill or Mount Morris, currently located within Marcus Garvey Park in the area bounded by Madison Avenue, Mount Morris Park West, and East 120th and 124th Streets. Snake Hill was preserved because its solid rock construction made its leveling too costly and as such, it was allowed to interrupt the planned line of Fifth Avenue (American Scenic and Historic Preservation Society 1915).

Throughout much of the historic period, the northern reaches of Harlem were flat lands identified on the British Headquarters Map as the Harlem Plains. It has been suggested that the plains were formed in a formerly wooded area that was modified by Native Americans through periods of controlled burning and subsequently converted into farmland after European settlement (Bean and Sanderson 2008; Sanderson 2009).

C. SOIL PROFILE

The Web Soil Survey maintained by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS)¹ indicates that at least eight soil complexes are located in the vicinity of the project corridor. The soil complexes within the project site are as follows:

- Urban Land-Flatbush complex (UFA);
- Urban Land-Flatbush complex with low impervious surface (UFAI);
- Urban Land-Laguardia complex (ULA);
- Urban Land-Laguardia complex with low impervious surface (ULAI);
- Urban Land, Tidal Marsh Substratum (UmA);
- Urban Land, Outwash Substratum (UoA);
- Urban Land, Reclaimed Substratum (UrA); and
- Urban Land, Till Substratum (UtA)

All of these soil types are associated with urban development and anthropogenic landscape modification and all of which are characterized by level ground with slopes between 0 and 3 percent. Typical soil profiles for all of these types involves 15 to 20 inches of cement/pavement over gravelly sand or gravelly sandy loam.

Early 20th century soil borings published as part of the 1937 “Rock Data Map” of Manhattan were reviewed as part of this analysis (see **Appendix A**). These borings indicate a layer of “fill” underlying the early-20th century surface of the streetbeds throughout the project corridor. It is likely that the fill deposits may represent disturbed soils or historic deposits containing materials such as brick and glass, which are often identified as “fill” or “historic fill” for geotechnical and project design purposes. These deposits may therefore not represent materials that were imported for the purpose of filling in the street grade. The rock data map includes only a small number of borings from within the blocks and lots adjacent to the streetbeds, although those borings may suggest that the “fill” identified within the streetbeds was in fact disturbed soil and not imported fill. Two borings located at the southeast corner of Second Avenue and East 110th Street (*Rock Data Map* Volume 3, Sheet 19, Boring 8) and at the southwest corner of Second Avenue and East 111th Street (*Rock Data Map* Volume 3, Sheet 19, Boring 9) both depict 16 feet of “earth fill” beneath the ground surface. Historic

¹ Accessible at: <https://websoilsurvey.nrcs.usda.gov/app/>.

maps do not indicate that this location was inundated by marsh or wetlands that were filled prior to the construction of the streets. Additional borings to the east, within the interior of the block bounded by East 110th and 11th Streets and First and Second Avenues (e.g., *Rock Data Map* Volume 3, Sheet 19, Boring 44) suggest that the areas adjacent to the streetbed were documented as having layers of sandy loam immediately under the ground surface, possibly representing historic ground surfaces that were disturbed during the construction of the streetbeds.

D. LANDSCAPE AND TOPOGRAPHIC MODIFICATION

LANDSCAPE MODIFICATION

The landscape of northeastern Manhattan has changed dramatically since the island was first settled by Europeans. The topography of the island prior to human occupation was formed through the advancement and retreat of glaciers, which left behind sandy hills and low-lying swamps in their wake (Schubert 1968). Geologist Louis P. Gratacap described the transformation of Manhattan’s natural landscape as:

A manifold mound of drifted material, a surface formation of gravel, stones, sand and earth, sculptured by streams and interrupted by natural subsidences or dips in the underlying rocks, which the engineering requirements of the city encountered as the population steadily moved northward in its peaceful conquest of this wild and beautiful region (Gratacap 1904: 5)

The construction of the city’s street grid beginning in the early 19th century contributed greatly to the large-scale transformation of Manhattan island as hills were cut down and the resulting sediments used to fill in low-lying areas (Koepfel 2015). One of the most significant modifications to the natural landscape was the filling of the Haarlem Creek and the marshes that surrounded it, which occurred far later than the transformation of other areas within the neighborhood (ibid).

RECONSTRUCTION OF 19TH CENTURY TOPOGRAPHY

As seen in **Table 3-1**, information regarding street corner elevations was collected from six historic and modern maps: the ca. 1820 Randel Farm maps; the 1850 Hayward profile drawing of Northern Manhattan; the 1885 Robinson atlas; the 1891 Bromley atlas; the ca. 1937 Rock Data Map; and the 2013 LIDAR Data relative to the North American Vertical Datum of 1988 (NAVD88). A discussion of the datums from which each of these elevations was recorded follows the table.

Table 3-1
Street Elevation Data Collected from Historical and Modern Maps

Intersection:	1811 Bridges	1820 Randel	1850 Hayward	1885 Robinson	1891 Robinson	1937 Rock Data Map	1930 Bromley	1955 Bromley	2013 LIDAR (MBD)	2013 LIDAR (NAVD88)
Second/104th	----	----	----	7	7	7	7	7	7.8	9.4
Second/105th	----	----	----	9.2	9.16	9.2	9.2	9.2	9.4	11.0
Second/106th	----	----	14.6	7	7	7	7	7	8.4	10.0
Second/107th	----	----	----	9.2	9.25	9.2	9.2	9.2	n/a	n/a
Second/108th	----	----	----	7	7	7	7	7	7.6	9.2
Second/109th	----	----	13.3	9.2	9.17	9.2	9.2	9.2	9.9	11.5
Second/110th	----	----	11.9	8.5	8.42	8.4	8.4	8.4	10.2	11.8
Second/111th	----	----	15.11	10.7	10.58	10.8	10.9	10.6	11.3	12.9
Second/112th	----	----	5.11	11.2	11.17	11.2	11.2	11.2	11.8	13.4
Second/113th	----	----	3.5	9	9	9	9	9	10	11.6
Second/114th	----	----	9.3	11.2	11.17	11.2	11.2	11.2	n/a	n/a

Table 3-1 (continued)
Street Elevation Data Collected from Historical and Modern Maps

Intersection:	1811 Bridges	1820 Randel	1850 Hayward	1885 Robinson	1891 Robinson	1937 Rock Data Map	1930 Bromley	1955 Bromley	2013 LIDAR (MBD)	2013 LIDAR (NAVD88)
Second/115th	-----	-----	15.3	13.4	13.33	13.3	13.3	13.3	14.2	15.8
Second/116th	-----	-----	13	14.11	14.92	14.9	14.9	14.9	14.8	16.4
Second/117th	-----	-----	11.2	12.7	12.6	12.6	12.6	12.6	13.2	14.8
Second/118th	-----	-----	15.3	12.7	12.6	12.6	12.6	12.6	13.3	14.9
Second/119th	-----	-----	15.4	14.9	14.77	14.8	14.8	14.8	14.7	16.3
Second/120th	-----	-----	15.8	12.7	12.62	12.6	12.6	12.6	14.1	15.7
Second/ 121st	-----	-----	8.4	12.7	12.62	12.6	12.6	n/a	14	15.6
Second/122nd	-----	-----	5.4	10.1	10.83	10.8	10.8	10.8	11.9	13.5
Second/123rd	-----	-----	9.2	13	13	13.9	13	13	14.4	16.0
Second/124th	-----	-----	11.11	12.7	12.62	12.6	12.6	12.6	14.1	15.7
Second/125th	-----	-----	13.1	10.3	10.25	10.2	10.2	10.2	11.8	13.4
125th/Third	12.9	-----	13.8	13.3	13.29	13.3	13.2	13.3	15.4	17.0
125th/Lexington	-----	-----	n/a	17.6	17.5	17.5	17.5	17.5	16.8	18.4
125th/Park Ave	-----	-----	19.2	23.0	23.07	23	23	23	+21.2	22.8
125th/Madison	-----	-----	n/a	21.7	21.58	21.6	21.6	21.6	21.2	22.8
125th/Fifth	21.6	25.55	17.4	17.4	17.33	17.3	17.3	17.3	18.7	20.3
125th/Lenox Ave	23.5	-----	-----	24.5	24.42	24.4	24.4	24.4	25.1	26.7
125th/Adam Clayton Powell Jr. Blvd	26.3	-----	26.9	23	23	23	23	23	23.6	25.2

Notes: The elevations on these maps are identified as "above high tide" with the exception of the following: 1820 Randel ("Medium between low and high tides", which Rose-Redwood [2003] indicates is the mean of high and low tide); 1850 Hayward (datum not given); 1937 Rock Data Map (Manhattan Borough Datum [MBD]); and 2013 LIDAR (NAVD88) though for the sake of comparison, the 2013 LIDAR data is also presented as converted to MBD. See below for a discussion of datum points. Furthermore, the 1885, 1891, 1930, and 1955-1966 maps and atlases appear to be depicting the city's legal grade at these intersections; this may not have been the same as the actual elevation.

A significant problem with the comparison of these data sets is the lack of an accurate, consistent datum across all maps. A datum is the point from which surface elevations are measured (where the elevation is considered to be 0). Elevations of the same ground surface, recorded at the same time, but taken relative to different datum points, will obviously differ despite the fact that they refer to the same location. As shown in **Table 3-1**, datums have historically been linked to tidal action, either mean sea level (representing the average of high and low tide) or the high water mark. Therefore, understanding the datum from which an elevation was measured is critically important to an analysis of historic elevations and landscape change. However, given historic surveying techniques and inaccuracies that may exist in measuring tides and elevations, especially during the 19th century, as well as sea level rise, discrepancies may be encountered when comparing current and historic elevation data.

Two of the earliest maps that show elevation information, the 1811 Bridges map (see **Figure 5**) of the city's proposed street grid (based on surveys by John Randel) and John Randel's ca. 1820 farm maps, were both created by the same cartographer. However, elevations were measured relative to different datum points (Rose-Redwood 2003). The datum used for the 1811 map has been determined to be

similar or identical to the modern Manhattan Borough Datum (MBD), which is 2.75 feet higher than the National Geodetic Vertical Datum of 1929 (NGVD29), an approximation of mean sea level at Sandy Hook, New Jersey (ibid: 125).¹ Geographer Reuben Rose-Redwood completed an extensive analysis of the datum used on Randel’s ca. 1820 Farm Maps and concluded that the Farm Map datum was 5.63 feet below the 1811/Manhattan Borough Datum and 2.88 feet below NGVD29. The NGVD29 datum has largely been replaced by the North American Vertical Datum of 1988 (NAVD88), the 0-point of which is approximately 1.1 feet higher than the 0-point of NGVD29. See Table 3-2 for a comparison of historic and current datum information.

**Table 3-2
Comparison of Historic Datum Elevations**

	ca. 1820 Randel Farm Map Datum*	NGVD29	NAVD88	Manhattan Borough Datum
Elevation (in feet)	5.63	2.75	3.85	0 (datum)
	3.98	1.1	0 (datum)	-1.65
	2.88	0 (datum)	-1.1	-2.75
	0 (datum)	-2.88	-3.98	-5.63

Source: *As calculated by Rose-Redwood (2003).

Small differences in elevation between historical maps may therefore vary according to the datum that was used to calculate the elevation as well as the exact point where the elevation was measured, which likely also varied as some cartographers measured the center of intersections and others measured specific street corners. Furthermore, the National Oceanic and Atmospheric Administration (NOAA) has calculated that since 1850, the mean sea level near the Battery at the southern end of Manhattan has risen at a rate of approximately 0.11 inches per year, or almost one foot over the course of a century. Therefore, while the location of sea level should not contribute greatly to differences in elevation as depicted on historical maps, some variation may be the result in the change of sea level itself or in inaccurate ways of measuring sea level and high tide during the historic period.

The 1811 map does not provide elevation information along the corridor of Second Avenue, though it does indicate elevations at several points along 125th Street. Randel’s ca. 1820 Farm Maps similarly exclude elevation information along the majority of Second Avenue and includes only information for the area near the intersection of East 125th Street and Fifth Avenue. Using Rose-Redwood’s (2003) calibration method, the ca. 1820 elevation of 25.5 feet at the intersection of Fifth Avenue and East 125th Street would be calculated as 19.87 feet relative to the MBD. The 1811 Bridges map, the datum point for which Rose-Redwood (2003) suggests is also relative to the MBD, identifies the elevation in the same vicinity as 21.6 feet. Subsequent maps indicate that the same intersection was situated at an elevation of 17.3 feet relative to the modern MBD. This may suggest that the area was graded by several feet, likely during the construction of the modern street grid. Similar differences are apparent between the elevations presented on Hayward’s 1850 profile drawings of Manhattan’s Avenues. Hayward’s map does not indicate the datum from which the elevations were recorded but may have been similar to the MBD used in the decades that followed as two of the data four points that correspond to data points on the 1811 Bridges map are similar. The data presented in Hayward’s map suggests that the construction of the city’s streets involved the grading of certain areas and filling of

¹ Therefore, the same ground surface that is measured at 0 feet relative to the Manhattan Borough Datum would be measured at 2.75 feet relative to NGVD29.

others. As shown in **Table 3-1**, the majority of this modification occurred in the mid-19th century and the street elevations have changed only slightly since 1885, likely as a result of the construction, reconstruction, and maintenance of road surfaces and utilities as well as the removal of surface street transportation elements between the late-19th century and the present.

DEPTHS OF FILL

The 2003 Phase 1A and subsequent soil borings assessment (HPI 2003a and HPI 2003b) examined a number of soil borings that identified between 4 and 29 feet of “fill” materials across many of the streetbeds within the project corridor of the second phase of the subway’s construction. As mentioned previously, it is possible that the fill deposits may represent disturbed soils rather than materials that were imported for the purpose of filling in the street grade. For example, the 2003 soil borings assessment reported that in Boring B115-1A, located along the western side of Second Avenue to the south of East 115th Street, 18 feet of fill were identified beneath the ground surface. As shown in **Table 3-1**, the elevation of the streetbed of Second Avenue near East 115th Street has increased by less than one foot since the 1880s and the current elevation may be more than a foot less than its elevation ca. 1850. Historical maps, including the ca. 1820 Randel farm map and the 1865 Viele map (see **Figure 4**) suggest that a hill was present in the vicinity of Second Avenue and East 115th Street. It is therefore possible that the hill was graded slightly during the construction of the street grid in the area and to fill in low-lying areas to the east. However, it does not appear that as much as 18 feet of fill would have been imported into the area to change the street grade so dramatically.

Furthermore, the intersection of East 125th Street and Fifth Avenue is the only intersection where elevation information was presented on the 1811 Bridges map (see **Figure 5**) and the ca. 1820 Randel atlas. The 1811 elevation of the intersection is identified as 21.6 and, as mentioned previously, Rose-Redwood (2003) indicates that that map recorded elevations relative to a datum similar to the modern Manhattan Borough Datum. The ca. 1820 map identifies the elevation of the intersection as 25.55 feet, which is 19.87 feet relative to the MBD when calculated using Rose-Redwood’s conversion method as outlined above. The 1850 Hayward profile of street elevations identifies the elevation of the same intersection as 17.4 feet (relative to an unknown datum), the 1937 Rock Data Map identifies the elevation of the intersection as 17.3 feet relative to the MBD and 2013 LIDAR data suggests that the elevation is 20.3 feet relative to NAVD88 and 18.7 feet relative to the MBD. This suggests an overall elevation decrease of nearly three feet, though error was likely introduced into these calculations as a result of the differences in datum used, differences in the portion of the intersection where the elevation was measured, and the accuracy of 19th century surveying techniques and equipment. Despite these potential sources for error, a soil boring reviewed as part of the 2003 analysis identified 17 feet of fill within the streetbed of East 125th Street west of Fifth Avenue. The landscape reconstruction based on historical maps does not support the incorporation of such dense fill deposits in this area and as such, it does not appear that the identified fill represents new materials brought in for the purposes of raising the grade in this area.

A. INTRODUCTION

In general, Native American habitation sites are most often located in coastal areas with access to marine resources, near fresh water sources and areas of high elevation and level slopes less than 10 to 12 percent (NYAC 1994). Further indication of the potential presence of Native American activity near a project site is indicated by the number of precontact archaeological sites that have been previously identified in the vicinity. HPI's 2003 Phase 1A and its various addenda included an analysis of soil borings, historical maps, a summary of the precontact context in northeastern Manhattan, a summary of previously identified Native American archaeological sites, and other documentary evidence which could indicate if the project site was sensitive for precontact archaeological resources. Areas of precontact archaeological sensitivity were identified at various depths across much of the project corridor in the 2003 Phase 1A study and supplemental analyses (see Table 1-2 and Figures 3A to 3H).

B. PREVIOUSLY IDENTIFIED NATIVE AMERICAN ARCHAEOLOGICAL SITES

To supplement the review of known archaeological sites that was completed by HPI in 2003, information regarding such previously identified archaeological sites was obtained from various locations including the site files of OPRHP and NYSM, accessed via the New York State Cultural Resources Information System (CRIS)¹ and published accounts such as R.P. Bolton's 1922 work, *Indian Paths in the Great Metropolis*. These sites are summarized in Table 4-1, below. Because many of these sites were discovered and reported by archaeologists who worked before modern anthropological training was standard in the profession (e.g., Parker 1920, Bolton 1922) in the early 20th century, there is limited descriptive information available.

Table 4-1
Known Precontact Archaeological Sites within One Mile of the Project Corridor

Site Name/ Number	Time Period	Approximate Distance from Project Site	Site Type
<i>Conykeest</i> OPRHP #00501.00541 NYSM #4064	Prehistoric	Within project corridor	<i>Reckgawawanack</i> camp or fishing place with shell midden on waterfront near intersection of 121st Street and Pleasant Avenue. OPRHP files note that this may be the same site as NYSM site 4063.
NYSM #4062	Prehistoric	0.7 miles	Shell middens
NYSM #4063	Prehistoric	0.03 miles	<i>Reckgawawanack</i> village, camp or fishing place near the waterfront at the end of 110th Street. OPRHP files note that this may be the same site as NYSM site 4064.
NYSM #7248	Prehistoric	0.3 miles	Traces of occupation
NYSM #7249	Prehistoric	0.6 miles	Traces of occupation

Notes: Only sites on the island of Manhattan have been included in this analysis; additional sites within one mile of the project corridor have been identified in the Bronx and in Queens.
Sources: The New York State Cultural Resources Information System (CRIS); Parker 1922, and Bolton 1922.

¹ Accessible at: <https://cris.parks.ny.gov>.

These sites were described in greater detail in the 2003 Phase 1A, but many seem to be connected with the larger settlement of *Conykeest*. Bolton (1922) includes maps that identify several Native American sites in the immediate vicinity of the project corridor (see **Figure 5**). A large camp site was at one time situated on the shore of the Harlem River east of modern Pleasant Place between 119th and 122nd Streets. The camp was accessed via a trail that crossed southwest-northeast across much of what is now East Harlem and which crossed Second Avenue between East 121st and East 122nd Streets. The campsite was first reported by historian James Riker, who identified the site after it was discovered during the excavation of a basement in the area (Riker 1881). Riker described stone tools and debitage made of imported “buff-colored flint” (ibid: 137). Bolton (1922) described it as “a site of some importance...affording extensive hunting, fishing, and oystering facilities” for the chieftaincy of the *Reckganaweck*, the local population at the time of European Contact (Bolton 1922: 73). It is likely that the camp was occupied seasonally (ibid).

Bolton’s map indicates that a second site, known as *Konaande Kongh*, was formerly located to the south of the marshes lining the Haerlem Creek in the area approximately bounded by Lexington and Madison Avenues and East 98th and East 101st Streets. It is likely that additional long- and short-term occupation sites would have existed throughout East Harlem throughout the precontact period.

A. INTRODUCTION

The general historic context of East Harlem neighborhood is provided in HPI's 2003 Phase 1A of the entire SAS project corridor. This supplemental analysis briefly summarizes the historic occupation of the broader neighborhood and specifically focuses on the development and occupation histories of those areas outside the APE studied in 2003 (see **Table 1-1**). The following chapter summarizes the development and disturbance record, and where necessary, the occupation histories of each of these locations. This chapter focuses on map-related structures, landscape modification, and other development as identified on historical maps, most notably the 1782 British Headquarters Map (and its 1900 reproduction by B.F. Stevens); the 1811 Bridges map (see **Figure 5**); the ca. 1820 Randel farm map; the 1836 Colton map (see **Figure 6**); the 1851 Dripps map (see **Figure 7**); the 1867 Dripps map; the 1879 Bromley atlas; the 1885 Robinson Atlas (see **Figures 8A** and **8B**); the 1891 Bromley atlas; and Sanborn maps published in 1896 (see **Figures 9A** and **9B**), 1902 (see **Figure 10**), 1911, 1939, and 1951. Where appropriate, this section incorporates information from the 2003 Phase 1A and also includes new research where necessary as described in **Chapter 2, "Research Goals and Methodology."**

B. HISTORIC PERIOD CONTEXT

The neighborhood now known as East Harlem was first settled in the 17th century, during the Dutch occupation of Manhattan. While the main settlement of New Amsterdam was limited to the southern tip of the island, the village of Nieu Haarlem was established to the north. The landscape of that part of Manhattan was characterized by flat, open land—identified on the 1782 British Headquarters Map as the "Harlem Plains"—adjacent to the waters of the Harlem River and its surrounding marshland. Nieu Haarlem was therefore attractive to Dutch settlers, though conflicts with Native American groups resulted in the failure of early settlements established between the 1630s and the 1650s (Burrows and Wallace 1999). A more permanent village was established in 1658 by Dutch Director-General Peter Stuyvesant and the small settlement slowly grew into a rural village throughout the 18th century (*ibid*). A significant component of the economy at the time was slavery, and Nieu Haarlem was home to a large population of enslaved individuals of African descent. The landscape of the neighborhood was transformed by slave labor from its, as enslaved Africans owned by the Dutch West India Company were responsible for the construction of roads connecting the settlements of Nieu Haarlem and New Amsterdam (*ibid*). The Harlem African Burial Ground was established in the vicinity of modern East 126th Street, East 127th Street, First Avenue, and Second Avenue in the 17th century that was in use through the mid-19th century (Harlem African Burial Ground Task Force n.d.).

Following the Revolutionary War, development on the island of Manhattan increased dramatically, though the urban portion of New York was still largely contained to the southern end of the island. New Harlem remained a small, rural village through the first several decades of the 19th century. In 1811, the city government planned an elaborate street grid across most of Manhattan and the construction of the linear streets and avenues was implemented over the decades that followed (Koeppel 2015). The construction of these streets was an elaborate landscape alteration effort, as hills were leveled and low-lying areas filled in to create a level, orderly grid that was consistent with early

19th century values regarding the use of space (Upton 1992). While much of the Harlem area was comprised of level plains, to the south and west of the flatlands were tall hills, massive creeks, and thick tracts of marshland. The creation of the modern street grid obliterated many of these early natural landmarks from the surface (Koeppel 2015).

Beginning in the 1830s, as urban development surged to the north, a series of streetcar and rail lines were constructed along the newly constructed avenues. A rail line was constructed along what is now Park Avenue in the 1830s and additional street rail lines were added along Second and Third Avenues in the mid-19th century. The increased access to downtown Manhattan resulted in an increase in residential development in the Harlem area, as farms were divided into blocks and lots and developed with new commercial and residential buildings. The Second Avenue elevated train line was constructed by the Manhattan Railway Company in 1880 (Burrows and Wallace 1999). By the late-19th century, surface trolley lines further increased the neighborhood's accessibility, connecting East Harlem with Manhattan neighborhoods to the south and west as well as to the bridges crossing the Harlem River. Hyde's 1898 map of New York's trolley lines depicts street cars within the project corridor along Second, Third, Lexington, Madison, and Lenox Avenues and along East 109th, 110th, 116th, and 125th Streets. The construction of subsurface train lines brought about the demise of elevated trains and the Second Avenue line closed in 1940 (*New York Times* 1940).

SANITARY INFRASTRUCTURE IN THE 19TH CENTURY

Like many neighborhoods in northern Manhattan, the increased residential development of East Harlem was encouraged by the installation of water and sewer lines within area streetbeds. Despite its status as one of America's largest and most industrial cities, New York did not have a reliable network of water and sewer lines until the mid-19th century. Harlem's water supply was insufficient by the early 19th century, as natural bodies of water were filled in and well water was nearly depleted (Koeppel 2000). The first water pipes were installed in the early 19th century by the Manhattan Company, the precursor to what would later become the Chase Manhattan Bank (Koeppel 2000). These wooden pipes carried water from local sources to areas of Lower Manhattan, however water coverage in northern Manhattan occurred later in the 19th century. The initial water supply system could not be sustained for very long because local water sources became too polluted for continued use. It was not until 1842 that the Croton Aqueduct system brought significant amounts of clean water into Manhattan. Sewers were not installed throughout the majority of New York City until after the 1850s and many buildings were not immediately connected to the sewers after their initial installation (Goldman 1997). The 1865 Viele map (see **Figure 4**) depicts the early limited sewer networks in East Harlem that appeared to empty into nearby waterways, including lines along Fifth Avenue north of East 124th Street; Third Avenue between East 123rd Street and the Harlem River; Third Avenue between East 110th Street and Harlem Creek; East 118th and 122nd Streets between Third Avenue and the Harlem River; and First Avenue between Harlem Creek and East 118th Street. By the late 1870s, maps indicate that water and sewer lines were present within most streetbeds in the area.

Historic properties that were developed before water and sewer networks were accessible in the mid-19th century relied on backyard shaft features (e.g., privies, cisterns, and wells) for the purposes of water gathering and sanitation. Privies—the shaft features constructed beneath outhouses—are typically expected to be located at the rear of the historic property while wells and cisterns are typically located closer to a dwelling. These features would have remained in use until municipal water and sewer networks became available in the mid- to late-19th century, and possibly for decades after and were typically filled with refuse either during or following their periods of active use.

**C. HISTORIC DEVELOPMENT OF SUPPLEMENTAL APE LOCATIONS:
106TH STREET STATION**

The 106th Street Station APE is made up of various project sites within the area along Second Avenue between East 104th Street and a point just north of East 110th Street. The station includes two proposed subway entrances, two ancillary facilities, and areas of utility relocation/improvement within four streetbeds adjacent to the proposed station.

ANCILLARY 1: BLOCK 1677, LOTS 47 AND 49 TO 52

The proposed location of Ancillary 1 at the southeast corner of East 106th Street and Second Avenue is comprised of five modern lots and seven historic lots as indicated in **Table 5-1**. Lots 47 and the majority of 52 are currently occupied by a lumber yard. Lot 47 is developed with a 1-story brick structure and the northern limit of the lumber yard is lined with a 1-story brick wall while other areas within the lumber yard contain storage sheds. Lot 49 is entirely developed with a 2-story building with a basement at 3062 Second Avenue and the rear (eastern portion of the lot) is developed with a 2-story (with basement) structure at 300 East 106th Street. Lots 50, 51, and the western portion of 52 are developed with identical 4-story (with basement) buildings. The building on Lot 50 (2060 Second Avenue) has an undeveloped rear yard while the rear yards of the buildings on Lots 51 and the western portion of 5 (2058 and 2056 Second Avenue, respectively) contain 1-story rear additions. Since several historical lots were merged into modern Lot 52, the remainder of this section will identify these lots by their historic lot numbers.

**Table 5-1
Historic and Modern Lots included within Ancillary 1 of the 106th Street Station**

Modern Lot Number	Historic Lot Number	Historic/Modern Address
Block 1677, 47	47	306 East 106th Street
Block 1677, 49	49	2062 Second Avenue/300 East 106th Street
Block 1677, 50	50	2060 Second Avenue
Block 1677, 51	51	2058 Second Avenue
Block 1677, 52	49½	302 East 106th Street
	48	304 East 106th Street
	52	2056 Second Avenue

The portion of Harlem in which the location of Ancillary 1 is situated is west of an area known as “Montagne’s Point,” the neck of land that stretched out to the East River south of Haerlem Creek and north of the marshes in the vicinity of East 104th Street (Stokes 1967). John Le Montagne had been granted the land from the freeholders of Harlem and he conveyed the land to Johannis Benson in 1776, whose heirs would continue to own the farm into the 19th century (*The New York Supplement* 1902).

The property is depicted as undeveloped farmland on the 1782 British Headquarters Map, the 1811 Bridges map (see **Figure 5**), and the ca. 1820 Randel map, all of which suggest that it was located on a former hill. Randel’s map indicates that the site was within the farm of Sampson Benson, whose home is depicted to the west of Third Avenue. Benson resided in the home for many years and also operated a nearby grist mill before his death in 1821 at the age of 90 (“WH” 1882). He was the owner and occupant of the property during the Revolutionary War, during which time Benson and his fled and the family home was used as a British army hospital and barracks until the end of the war allowed the Benson family to return (ibid). A fortification known as “Benson’s Redoubt” was located to the

west of Second Avenue in the vicinity of East 106th Street (Stokes 1967). Members of the Benson family owned extensive tracts of land throughout what is now East Harlem.

Colton's 1836 map (see **Figure 6**) of Manhattan depicts the location within the larger property of the Red House, a tavern with a race course and playing fields (Gill 2011). Sampson's Benson's grandson, Andrew McGown, who constructed and operated the Red House beginning in the early 1820s and later leased it to other operators (City of New York Superior Court 1882). Colton's map depicts the location of the ancillary facility within a wooded area located in the interior of an approximately oval trotting course. A building identified as "Red House" was located southeast of the corner of Second Avenue and East 106th Street although it is not clear if the building was situated in the site of Ancillary 1. The 1851 Dripps map (see **Figure 7**) continues to depict the "Red House Hotel" in the vicinity of the Ancillary 1 project site. That map depicts a different trotting course in the same general vicinity. A building is depicted in the same location as the structure seen on the 1836 Colton map, although it is unclear if it is the same structure. Two additional outbuildings had been constructed to the north that may have overlapped with the location of Ancillary 1.

The 1867 Dripps map continues to depict the "Red House Course" in operation, though it suggests that its property holdings had been greatly reduced. A structure associated with the Red House is depicted on that map along the eastern side of Second Avenue midway between East 105th and 106th Streets, though it appears to have been south of the location of Ancillary 1. Two structures associated with "H. Westheimer" were located at the southeastern corner of Second Avenue and East 106th Street, within the project site. By the publication of the 1879 Bromley atlas, the area had been divided into blocks and lots for individual development. That map, which does not depict exact building footprints for all lots, suggests that historic lots 48, 49½, and 52 were developed at the time. Historic lot 49 was developed with a structure with a barn or stable immediately adjacent to the east (mirroring the alignment of the buildings located on the property today) and a stable or barn was also located on historic Lot 50. Lots 47 and 51 were all vacant at that time. The 1885 Robinson atlas (see **Figure 8A**) depicts the site in much the same way: wood frame buildings were located at the northern ends of historic lot 48 and 49½; a brick structure with adjacent brick stable were located on Lot 49; and Lot 47 was vacant. The map also shows that a brick structure had replaced the stable on Lot 50 and a large wood frame barn or stable had been constructed across historic lots 51 and 52.

The 1891 Bromley atlas and 1896 Sanborn map (see **Figure 9A**) depict a row of brick structures within historic Lots 49 through 52. It is unclear if these are the same buildings seen on earlier maps although they appear to be the structures that occupy these lots today. The maps also indicate two 4-story wood frame buildings on historic Lots 48 and 49½ and continue to show Lot 47 as vacant. The 1911 Sanborn map reflects the development of Lot 47 with a 6-story (with basement) tenement building with a small rear yard to the south. The map also shows that the wood frame buildings on historic lots 48 and 49½ also had basements and that the undeveloped yard to the east of the building on Lot 50 contained a large oven associated with a bakery located on the lot. The 1939 Sanborn reflects the demolition of the buildings on historic lots 48 and 49½ and the tenement on Lot 47 was demolished before the publication of the 1951 Sanborn map.

ANCILLARY 2: BLOCK 1681, LOTS 1 TO 4, 52, AND 104

The location of Ancillary 2 at the northeast corner of Second Avenue and East 109th Street is currently divided into six modern lots as defined in **Table 5-2**. Lots 1 through 4 and 52 are each developed with a 4-story (with basement) building. Current Sanborn maps indicate that Lots 2, 3, and 5 have undeveloped rear yards while the building on Lot 4 has a small rear extension and the

Table 5-2

Historic and Modern Lots included within Ancillary 1 of the 106th Street Station

Modern Lot Number	Historic Lot Number	Historic/Modern Address
Block 1681, Lot 1	1	2122 Second Avenue
Block 1681, Lot 2	2	2124 Second Avenue
Block 1681, Lot 3	3	2126 Second Avenue
Block 1681, Lot 4	4	2128 Second Avenue
Block 1681, Lot 52	52	2130 Second Avenue
Block 1681, Lot 104	4½	303 East 109th Street
	48½ (part)	304 East 110th Street

building on Lot 1 has a 1-story rear addition that covers the entire footprint of the lot. Lot 104 is developed with a 4-story residential building with a small 1-story outbuilding in its otherwise undeveloped rear yard.

The 1811 Bridges (see **Figure 5**) and ca. 1820 Randel map depict the project site as an undeveloped portion of the Peter Benson farm. The 1836 Colton map (see **Figure 6**) suggests that Second Avenue in the vicinity of the project site was “open or being regulated,” however the project site itself continued to be vacant. The 1851 Dripps map (see **Figure 7**) depicts a structure along the northern side of East 109th Street, which was open by that time, though the project site was undeveloped. The 1867 Dripps map continues to depict the project site as vacant land.

The 1879 Bromley atlas is the first to depict development on the project site, and it indicates that each of the five historic lots within the project site contained a structure at that time. The 1885 Robinson atlas (see **Figure 8A**) depicts identical brick structures with narrow rear yards on Lots 1 through 4 and 52 and a small brick building on Lot 104 with an undeveloped front, rear, and side yard. Similar buildings are depicted on the 1891 Bromley atlas, though that map indicates that the building on Lot 104 occupied the entire width of the lot and did not have a side yard along its western side as shown on the 1885 map. This appears to be in error as the 1896 Sanborn map (see **Figure 9A**) once again depicts the side yard on the lot. That map also indicates that the building on Lot 104 was three stories in height and that it featured a small 1-story wood frame addition near its northeastern corner. The buildings on Lots 1 through 4 and 52 are identified on the map as 4 stories tall.

The 1911 Sanborn map does not depict significant changes to the project site, though it does indicate that each of the buildings on the site were constructed with basements. A narrow 1-story addition had been constructed to the rear (east) of the building on Lot 1 and the building on Lot 104 is identified as an Industrial School. The 1939 Sanborn map indicates that the remainder of the rear yard of Lot 1 had been developed with a 1-story extension which is identified as “roofer” on the map. An oven was also constructed to the rear of the building on Lot 4, which was in use as a bakery at that time. No changes to the project site are depicted on Sanborn maps published between 1951 and the present.

ENTRANCE 1: BLOCK 1678, PART OF LOT 1

The location of Entrance 1 is currently a concrete-paved park and playground adjacent to the Franklin Houses. The property was originally divided into five historic lots, as defined in **Table 5-3**.

Table 5-3

Historic and Modern Lots included within Entrance 1 (Option 1) of the 106th Street Station

Modern Lot Number	Historic Lot Number	Historic Address
Block 1677, part of Lot 1	1	2064 Second Avenue
	2	2066 Second Avenue
	3	2068 Second Avenue
	4	2070 Second Avenue
	4½	301 East 106th Street

As seen on the 1811 Bridges (see **Figure 5**) and ca. 1820 Randel maps, the location of Entrance 1 was located where a hill led down to the marshes that lined the southern side of the Haerlem Creek. The 1836 Colton map (see **Figure 6**) depicts trees in this area adjacent to the trotting course of the Red House Hotel. The 1851 Dripps map (see **Figure 7**) suggest that the parcel continued to be partially inundated by marshland. The 1867 Dripps map depicts the area as a filled but undeveloped portion of the Red House property, whose smaller race track ran to the east. The parcel was undeveloped at the time of the publication of the 1879 Bromley atlas. With the exception of historic Lot 4, all of the lots were developed with brick structures by the publication of the 1885 Robinson atlas and lot 4 was developed by the time the 1896 Sanborn map was issued (see **Figures 8A and 9A**). Subsequent maps indicate that each of the buildings was constructed with a basement. The buildings continue to be depicted on Sanborn maps published through 1951 and they appear to have been demolished in advance of the construction of the existing Franklin Houses in 1959.

ENTRANCE 2: BLOCK 1678, PART OF LOT 1

The location of Entrance 1 is located to the north of the Franklin Houses campus within a portion of Block 1678, Part 1 East 108th Street near the southeast corner of Second Avenue and East 108th Street. The project site is currently a paved parking lot. The project site covers an area that was historically divided into three historic lots, portions of which are in the location of the proposed subway entrance, as summarized in **Table 5-4**.

Table 5-4

Historic and Modern Lots included within Entrance 2 of the 106th Street Station

Modern Lot Number	Historic Lot Number	Historic Address
Block 1678, Lot 1	49 (part)	300 East 108th Street/2094 Second Avenue
	50 (part)	2092 Second Avenue
	51 (part)	2090 Second Avenue

The 1811 Bridges, ca. 1820 Randel, 1836 Colton, and 1851 Dripps maps depict the project site within the marshes bordering the northern side of the Haerlem Creek (see **Figures 5 to 7**). The creek continues to be depicted on the 1867 Dripps map, which does not appear to depict marshland in general, but indicates that the land to the south of East 108th Street was undeveloped and therefore it may not have been entirely filled at that time. The 1879 Bromley atlas reflects the filling of much of the creek and its associated marshland to the west of Second Avenue, though the waterway remained open to the east and the extent to which the project site was filled at that time is unclear, though the streetbed of East 108th Street appears to have been constructed by that time, and fire hydrants were located along the northern side of the street west of Second Avenue. The 1885 Robinson Atlas depicts

a structure at the western end of historic Lot 49, at the southeast corner of Second Avenue and East 108th Street (see **Figure 8A**). However, the project site is again depicted as undeveloped land on the 1891 Robinson atlas and appeared to remain vacant on the 1896 and 1911 Sanborn maps (see **Figure 9A**). The 1939 Sanborn map depicts the project site and the surrounding area as having been developed with a 1- to 3-story “moving picture theatre” that had been constructed in 1925 and portions of which were constructed with a basement. A photograph taken of the site of the site of Entrance 2 in 1937¹ depicts several small stores along the Second Avenue frontage of the theater, which was at that time known as the “Verona.” By the publication of the 1951 Sanborn map, the building appears to have been converted into a factory involved with the silvering and cutting of mirrors. All of the buildings on the project site were demolished during the construction of the Franklin Houses in the mid-1950s.

EAST 106TH STREET STREETBED IMPROVEMENTS

The construction of the Phase 2 of the Second Avenue Subway would require the replacement or relocation of utilities within the streetbed of East 106th Street for a distance 200 feet west and 200 feet east of the streetbed of Second Avenue. The 2003 Phase 1A study determined that the streetbed of Second Avenue at East 106th Street is sensitive for archaeological resources dating to the precontact period between depths of 0 and 22 feet below the ground surface.

There are no structures depicted within this portion of the streetbed on historical maps. The 1811 Bridges (see **Figure 5**) and ca. 1820 Randel map depicts the streetbed immediately south of the marsh that lined the Harlem Creek. The majority of the utility improvement area was situated on a hill at that time. This hill appears to have been cut down as part of the extensive landscape modification that occurred in this area in the early- to mid-19th century. As shown in **Table 3-1**, the 1850 Hayward map indicates that the elevation in the vicinity of the intersection of Second Avenue and East 106th Street was 14.6 feet, although the datum from which that was measured was not provided. If the datum used was similar to the MBD, then comparisons with later maps indicates that the street grade in this area may have been reduced by as much as 7 feet by the publication of the 1885 Robinson Atlas.

The 1836 Colton and 1851 Dripps maps depict the race course and gardens associated with the Red House Hotel within the streetbed of East 106th Street on either side of Second Avenue (see **Figures 6** and **7**). The 1867 Dripps map, which reflects the alteration of the Red House property, depicts a portion of the smaller race course within the streetbed of East 106th Street to the east of Second Avenue near the eastern end of the project site. The 1879 Bromley and 1885 Robinson atlases confirm the presence of water lines within the streetbed of East 106th Street and the 1891 Bromley atlas depicts both sewer and water lines within the streetbed, though utilities were likely installed much earlier (see **Figure 8A**). The 1896 Sanborn depicts both fire signals and hydrants within the streetbed to the east of Second Avenue (see **Figure 9A**).

Modern surveys of utilities suggest that the streetbed of East 106th Street is developed with a variety of utilities including water, sewer, gas, electric, and telecommunications lines, electric and telecommunications vaults, catch basins, hydrants, lampposts, and other subsurface features. Two large (6-by-8-foot) twin combined sewers run through the center and southern sides of the streetbed with a gap measuring less than 10 feet separating them. The sewers were installed in 1939.

¹ Accessible at: <https://digitalcollections.nypl.org/items/510d47dc-ded7-a3d9-e040-e00a18064a99>.

EAST 108TH STREET STREETBED IMPROVEMENTS

Streetbed improvements within East 108th Street would extend to a distance 205 feet west and 200 feet east of Second Avenue. The 1811 Bridges, ca. 1820 Randel, 1836 Colton, and 1851 Dripps maps depict the streetbed as inundated by marsh associated with the Harlem Creek (see **Figures 5** through **7**). A historic mill appears to have intruded into the line of what would later become East 108th Street to the west of the project site as shown on a map of the Benson farm created by Bridges in 1825. The 1836 map identifies the streetbed as one of several that were “open or being regulated” but the 1851 map does not appear to indicate that it was fully constructed, as were other nearby streets. The street appears to have been built by the publication of the 1867 Dripps map. While subsequent maps depict the presence of water and sewer lines and fire hydrants within the streetbed, though no map-documented structures are identified within the streetbed.

As described previously, East 108th Street was de-mapped west of Second Avenue after the Jefferson Park Junior High School and the Franklin Houses were constructed in 1958 and 1959, respectively. The streetbed is developed with modern utilities, including water, sewer, gas, electric, and telecommunications lines, electric and telecommunications vaults, catch basins, hydrants, lampposts, and other subsurface features. An existing combined sewer measuring 2.5 feet by 2 feet, 4 inches was installed within the streetbed in 1879. Nearly all of the utility-related disturbance is limited to the northern half of the streetbed.

EAST 109TH STREET STREETBED IMPROVEMENTS

Streetbed improvements within East 109th Street would extend to a distance 40 feet west and 105 feet east of Second Avenue. The 1811 Bridges, ca. 1820 Randel, 1836 Colton, and 1851 Dripps maps depict the location of the streetbed within the property of Benjamin P. Benson, whose home was located to the west of the project site (see **Figures 5** through **7**). The 1836 Colton map does not depict any development near the streetbed but identifies the blocks to the east of Second Avenue “open or being regulated.” As shown in **Table 3-1**, the 1850 Hayward map indicates that the elevation in the vicinity of the intersection of Second Avenue and East 109th Street was 13.3 feet, although the datum from which that was measured was not provided. If the datum used was similar to the Manhattan Borough Datum, then comparisons with later maps indicates that the street grade in this area may have been reduced by as much as 4 feet by the publication of the 1885 Robinson Atlas, which identifies the elevation of the intersection as 9.2 feet.

The 1851 Dripps map appears to indicate that the street was developed by that time. The map also shows several small buildings on the blocks lining East 109th Street near Second Avenue, but does not depict any structures within the streetbed. Subsequent maps depict the presence of water and sewer lines and fire hydrants within the streetbed, though no map-documented structures are identified within the streetbed. The 1898 Hyde map depicts a trolley line within the streetbed east of Second Avenue. The streetbed is developed with modern utilities, including water, sewer, gas, electric, and telecommunications lines, electric and telecommunications vaults, catch basins, hydrants, lampposts, and other subsurface features. An existing combined sewer measuring 4 feet by 2 feet, 8 inches runs through the center of the streetbed.

EAST 110TH STREET STREETBED IMPROVEMENTS

Streetbed improvements within East 110th Street would extend to a distance 205 feet west and 200 feet east of Second Avenue. As with the streetbed of East 109th street, the location of modern East 110th Street was included within the Benjamin P. Benson property. The 1836 Colton map depicts the blocks to the east of Second Avenue as “open or being regulated” and also shows a large residential property surrounded by elaborate, ornate gardens that extended to a point just east of the project site

(see **Figure 6**). The street appears to have been constructed by the publication of the 1851 Dripps map. As shown in **Table 3-1**, the 1850 Hayward map indicates that the elevation in the vicinity of the intersection of Second Avenue and East 110th Street was 11.9 feet, although the datum from which that was measured was not provided. If the datum used was similar to the Manhattan Borough Datum, then comparisons with later maps indicates that the street grade in this area may have been reduced by nearly 3.5 feet by the publication of the 1885 Robinson Atlas, which shows the elevation of the intersection as 8.5 feet.

Subsequent maps depict the presence of water and sewer lines and fire hydrants within the streetbed, though no map-documented structures are identified within the streetbed. The 1885 Robinson atlas depicts parallel streetcar/trolley lines running through the streetbed of East 110th Street, which appear to have been removed by the early 20th century. The streetbed is currently developed with modern utilities, including water, sewer, gas, electric, and telecommunications lines, electric and telecommunications vaults, catch basins, hydrants, lampposts, and other subsurface features. Much of the streetbed would have been disturbed by the installation of very large (7-by-11-foot), parallel sewer lines that run through the central portion of the street.

**D. HISTORIC DEVELOPMENT OF SUPPLEMENTAL APE LOCATIONS:
116TH STREET STATION**

The 116th Street Station APE is made up of various project sites within the area along Second Avenue between East 114th Street and a point just north of East 122nd Street. The station includes two proposed subway entrances, two ancillary facilities, and areas of utility relocation/improvement within six streetbeds adjacent to the proposed station.

ANCILLARY 1: BLOCK 1687, LOTS 1, 2, 3, AND 102

The location of Ancillary 1 is at the northeast corner of Second Avenue and East 115th Street. The site currently contains four lots (Block 1687, Lots 1, 2, 3, and 102), as identified in **Table 5-5**. Lot 1, situated at the northeast corner of Second Avenue and East 115th Street, is currently developed with a 4-story (with basement) building with a 2-story (with basement) rear addition and a small 1-story addition at the rear (eastern) end of the lot. Lot 2 is developed with a 4-story (with basement) building with a 2-story rear addition. Lot 102 (historically known as Lot 2½) is currently a vacant lot that is enclosed by a chain link fence and appears to be used for storage. Lot 3 is developed with a 4-story (with basement) building with an undeveloped rear yard.

**Table 5-5
Historic and Modern Lots included within Ancillary 1 of the 116th Street Station**

Modern Lot Number	Historic Lot Number	Modern/Historic Address
Block 1687, Lot 1	1	2240 Second Avenue/301-303 East 115th Street
Block 1687, Lot 2	2	2242 Second Avenue
Block 1687, Lot 102	2½	2244 Second Avenue
Block 1665, Lot 3	3	2246 Second Avenue

Maps dating to the first half of the nineteenth century, such as the 1811 Bridges map (see **Figure 5**) and 1820 Randel map, depict the location of Ancillary 1 as undeveloped portion of the Waldron farm. The 1865 Viele map (see **Figure 4**) indicates that the site of Ancillary 1 was located at the base of a hill that extended to the west and southwest. A second hill was located to the east of the project site that bordered a valley through with a marshy stream ran from a point near the intersection of East 113th and Second Avenue to the northeast, draining into the Harlem River at a point near East 123th Street just west of First Avenue. The 1836 Colton and 1851 Dripps maps continues to depict the site

as undeveloped (see **Figures 6 and 7**). The 1867 Dripps map continues to depict the project site as undeveloped, though several lots to the east were developed by that time.

The 1879 Bromley atlas, which does not depict exact building footprints, indicates that each of the four lots within the location of Ancillary 1 was developed by that time. The 1885 Robinson Atlas (see **Figure 8A**) depicts each of the four buildings as a stone-faced brick structure. Furthermore, the map indicates that the rear yard of Lot 1 was entirely developed with a brick extension. The 1891 Bromley atlas identifies each of the buildings as 4-story structures, but suggests that the brick extension on the building on Lot 1 did not cover the extreme eastern end of the lot, where a small 1-story extension exists at the present. That small extension is depicted on the 1896 Sanborn map (see **Figure 9A**), which also reflects the construction of a rear addition on Lot 102 (historic Lot 2½). By the publication of the 1911 Sanborn map, a rear extension had been constructed within the rear yard of the building on Lot 2, as well. No changes are depicted on Sanborn maps published in 1939 and 1951, however the 1951 Sanborn indicates that the upper floors of the building on Lot 102 were “boarded up.” NYCDOB records indicate that that building was demolished in 1972. No other changes to the project appear to have occurred since that time.

ANCILLARY 2: BLOCK 1784, LOTS 23 TO 28, 120, 122, AND 128

The site of Ancillary 2 is located at on the western side of Second Avenue between East 119th and East 120th Streets. The site currently contains all or part of nine modern lots within Block 1784, including Lots 23, 24, 25, 26, 27, 28, 120, 122, and 128. The site was divided into the ten historic lots, as summarized in **Table 5-6**. Lots 25, 26, 27, and 28 are currently developed with a series of vacant, adjoining 4-story (with basement) apartment buildings with a narrow vacant alley to the rear (west). Lot 128 is currently occupied by a 5-story (with basement) brick apartment building with a small undeveloped rear yard and it also appears to be vacant/abandoned. Lot 120 is a paved, vacant lot. Lots 122, 23, and 24 are developed with 3-story (with basement) buildings. The rear yards of Lots 122 and 24 are fully developed with 1-story additions while a 1-story (with basement) addition is located to the rear of the building on Lot 23 and the remainder of the rear yard is undeveloped. The building on Lot 24 is currently used as a church and the building on Lot 23 appears to be vacant.

Table 5-6

Historic and Modern Lots included within Ancillary 2 of the 116th Street Station

Modern Lot Number	Historic Lot Number	Modern/Historic Address
Block 1784, Lot 122	22½	2325 Second Avenue
Block 1784, Lot 23	23	2327 Second Avenue
Block 1784, Lot 24	24	2329 Second Avenue
Block 1784, Lot 25	25	2331 Second Avenue
Block 1784, Lot 26	26	2333 Second Avenue
Block 1784, Lot 27	27	2335 Second Avenue
Block 1784, Lot 28	28	2337 Second Avenue; 248-250 East 120th Street
Block 1784, Lot 120	20½	247 East 119th Street
	20¼	249 East 119th Street
Block 1784, Lot 128	28½	249 East 120th Street

Historical maps show that the project site was vacant through the late-19th century (see **Figures 5 through 7**). The 1867 Dripps map suggests that the two historic lots at the northwest corner of the intersection of East 119th Street and Second Avenue—located outside the project site—were developed with structures but that the remainder of the eastern end of the block was undeveloped. The 1879 Bromley atlas, which does not depict specific building footprints, is the first to depict buildings

on the site of all of the historic lots included within the proposed ancillary facility. That map suggests that buildings were constructed along the Second Avenue frontage of the project site. At that time, modern Lot 128 appears to have been incorporated into the undeveloped rear yards of the buildings on Lots 25 through 28.

The 1885 Bromley atlas depicts four identical brick structures with undeveloped rear yards on Lots 25 through 28 (see **Figure 8B**). Lots 122, 23, and 24 were developed with three identical brick structures that were slightly smaller than those to the north and which also had undeveloped rear yards. Historic Lots 20 $\frac{1}{4}$ and 20 $\frac{1}{2}$, now included within modern Lot 120, were each developed with a small wood frame structure with an undeveloped rear yard. The 1891 Bromley atlas depicts the same 4-story structures on Lots 25 through 28, though their rear yards had been subdivided into a new lot (historic Lot 28 $\frac{1}{2}$ and modern Lot 128) which was developed with a 5-story brick building. The rear yard of Lot 28 is depicted on that map as having been developed with a brick addition. No changes appear on Lots 122, 23, and 24. The western half of modern Lot 122 (historic Lot 20 $\frac{1}{2}$) appears on the map as developed with a wood frame structure, but the eastern half (historic Lot 20 $\frac{1}{4}$) was vacant at that time.

The 1896 Sanborn map depicts similar conditions on Lots 23 through 28 and 128, though the map depicts the addition to the building at the rear of Lot 28 as a 1-story commercial structure within what is now an alley west of the existing buildings (see **Figure 9B**). This 1-story building was demolished at some point between the publication of the 1939 and 1951 Sanborn maps. The 1896 Sanborn depicts a rear building at the western end of Lot 122, separated from the 3-story building to the west by a narrow central courtyard. The rear building is identified on the map as a brick warehouse and appears to still be present in the rear yard of this property, though the courtyard was developed with a 1-story addition between 1896 and 1911. The 1896 Sanborn continues to depict a 3-story wood frame house continues to be depicted on historic Lot 20 $\frac{1}{2}$, though historic Lot 20 $\frac{1}{4}$ was by that time redeveloped with a narrow 1-story wood frame building that was associated with a wagon yard located on the property.

With the exception of modern Lot 122, the buildings depicted on the project site on the 1896 Sanborn appear to be the same structures that are located on the project site today and no significant changes to the site are depicted on subsequent historical maps. The 1911 Sanborn map reflects the consolidation and redevelopment of historic Lots 20 $\frac{1}{2}$ and 20 $\frac{1}{4}$ into what is now Lot 122. At that time, the combined lots were developed with a single 6-story (with basement) building with a narrow undeveloped rear yard and an undeveloped alley to the east and a courtyard area to the west. This building appears to have been demolished after the publication of the 1951 Sanborn map.

ENTRANCE 1: BLOCK 1688, LOTS 1, 2, AND PART OF 45

The location of Entrance 1 is at the northeast corner of Second Avenue and East 116th Street. This site comprises all or part of four modern lots within Block 1688, including Lots 1 and 2 in their entirety and a portion of Lot 45. The site was originally divided into four historic lots, as identified in **Table 5-7**. Lot 1 is situated at the northeast corner of Second Avenue and East 116th Street and is currently developed with two adjacent 1-story commercial buildings.¹ Lot 2, to the north of Lot 1, is currently developed with a vacant 2-story building.² Lot 45, a large T-shaped lot, is entirely

¹ Current Sanborn maps (2016) indicate that a 5-story (with basement structure) is located in the western half of Lot 1, however this appears to be either inaccurate or outdated.

² Current Sanborn maps depict this lot as vacant, which also appears to be in error.

developed with a 16-story (with basement) senior housing complex, although the portion that is situated within the project site includes a 1-story (with basement) gym and community center that were constructed in 1973.

Table 5-7

Historic and Modern Lots included within Entrance 1 of the 116th Street Station

Modern Lot Number	Historic Lot Number	Historic Address
Block 1688, Lot 1	1	2262 Second Avenue and 301-202 East 116th Street
Block 1688, Lot 2	2	2264 Second Avenue
Block 1688, Lot 45 (part)	3	2266 Second Avenue
	4	2268 Second Avenue

Historical maps depict this project site as undeveloped throughout much of the early 19th century (see **Figures 5** through **7**). The 1851 Dripps map depicts the project site as undeveloped and shows only a single building on the block, located to the northwest of the proposed subway entrance. The 1867 Dripps map depicts two structures within the project site: one located on modern Lot 1, which at that time was part of a larger land parcel, and another in the vicinity of modern Lot 53 to the north of the project site, which was also part of a separate, larger parcel.

The 1879 Bromley atlas, which does not depict specific building footprints, suggests that historic Lots 1 through 4 were all developed with structures at that time. The 1885 Robinson and 1891 Bromley atlases depict identical 4-story brick structures with undeveloped rear yards on Lots 1 through 4 (see **Figure 8B**). The 1896 Sanborn map identifies the buildings on Lots 1 through 4 as 5-story structures and indicates that the dwelling on Lot 4 as an industrial building (see **Figure 9B**).

Few changes are depicted on the 1911 Sanborn map, though that map indicates that all buildings on the project site were constructed with basements. By the publication of the 1939 Sanborn map, the building on Lot 4 had been demolished. A 1-story extension had been constructed to the rear (east) of the building on Lot 2 and the former rear yard of Lot 1 had been developed with a 1-story (with basement) commercial building that was at that time used as a mattress factory. No changes are depicted on the 1951 Sanborn map.

ENTRANCE 2: BLOCK 1795, LOTS 1 TO 4

The proposed location of the second entrance to the 116th Street Station is situated at the northeast corner of Second Avenue and East 118th Street. The site currently contains four lots (Block 1795, Lots 1, 2, 3, and 4). The site was divided into the same number of lots during the historic period, as summarized in **Table 5-8**. Lot 1, located at the corner of East 118th Street and Second Avenue, is developed with a 2-story (with basement) structure currently in use as a church. Lots 2 and 3, located immediately to the north of Lot 1, contain a paved parking lot. Lot 4 is developed with a 3-story (with basement) building with residential units on the upper floors.

Table 5-8
Historic and Modern Lots included within Entrance 2 of the 116th Street Station

Modern Lot Number	Historic Lot Number	Modern/Historic Address
Block 1795, Lot 1	1	2302 Second Avenue/301 East 120th Street
Block 1795, Lot 2	2	2304 Second Avenue
Block 1795, Lot 3	3	2306 Second Avenue
Block 1795, Lot 4	4	2308 Second Avenue

Historical maps depict the project site as vacant through at least 1867. The 1867 Dripps map appears to suggest that Lots 1 through 4 were included within the larger property of a Methodist Church that was located to the north. The church, which featured a basement, had been constructed between 1860 and 1861 (Seaman 1892). Its congregation worshipped there until 1882, when, in an attempt to move away from the Second Avenue elevated train, the church was relocated to a new site along East 118th Street to the east of Second Avenue (ibid). There is no indication that the church was constructed with a cemetery or burial vaults. The 1879 Bromley atlas identifies the “Second Avenue Methodist Episcopal Church” and suggest that the land to the south was divided into lots and it was therefore not part of the church property. The 1879 Bromley atlas depicts a small building at the western end of Lot 4 and suggests that the remainder of the project site was undeveloped.

The 1885 Robinson atlas depicts a small brick building on Lot 4 that was set back from Second Avenue, likely the same building seen on the 1879 Bromley atlas (see **Figure 8B**). Lots 1 through 3 are also shown on that map as developed with brick buildings. The 1896 Sanborn map depicts these buildings more accurately (see **Figure 9B**). Lot 1 is depicted as developed with a 5-story brick building with a narrow undeveloped rear yard. Lots 2 and 3 are depicted as developed with identical 5-story buildings with 1-story wood frame outbuildings at the northeast corner of the rear yard of each, though the building on Lot 2 is identified as having an industrial use. The building on Lot 4 is depicted as a 3-story brick structure with a wooden rear porch and undeveloped front and rear yards. No changes appear on the 1911 Sanborn map with the exception of the possible extension of the building on Lot 4 to cover the former front yard.¹ The publication of the 1939 and 1951 Sanborn maps show that a small 1-story addition had been added to the rear of the building on Lot 1, which was at that time occupied by an undertaker.

EAST 115TH STREET STREETBED IMPROVEMENTS

Streetbed improvements within East 115th Street would extend to a distance 90 feet west and 50 feet east of Second Avenue. The 1811 Bridges, ca. 1820 Randel, 1836 Colton, and 1851 Dripps maps suggest that the location of the streetbed was in an undeveloped area and that the street may not have been built during the first half of the 19th century (see **Figures 5 through 7**). As shown in **Table 3-1**, the 1850 Hayward map indicates that the elevation in the vicinity of the intersection of Second Avenue and East 115th Street was 15.3 feet, although the datum from which that was measured was not provided. If the datum used was similar to the Manhattan Borough Datum, then comparisons with later maps indicates that the street grade in this area may have been reduced by as much as 2 feet by the publication of the 1885 Robinson Atlas, which identifies the elevation of the intersection as 13.4 feet.

The street appears to have been built by the publication of the 1867 Dripps map, although a building on a former historic estate to the west of the project site protruded into the street bed of East 115th

¹ No records are on file with the Department of Buildings to suggest that this is a new building.

Street at that time. The building was situated on a different historic property than was the portion of East 115th Street included within the project site, and as such, no historic development associated with the building that protruded into the streetbed would be expected within the project site, as they were owned by different entities. The building was removed from the streetbed before the publication of the 1879 Bromley atlas.

While subsequent maps depict the presence of water and sewer lines and fire hydrants within the streetbed, though no map-documented structures are identified within the streetbed in the late-19th or 20th centuries. The streetbed is developed with modern utilities, including water, sewer, gas, electric, and telecommunications lines, electric and telecommunications vaults, catch basins, hydrants, lampposts, and other subsurface features. An existing combined sewer measuring 4 feet by 2 feet, 4 inches was installed within the streetbed in 1937. Nearly all of the utility-related disturbance is limited to the northern half of the streetbed.

EAST 116TH STREET STREETBED IMPROVEMENTS

Streetbed improvements within East 116th Street would extend to a distance 200 feet west and 200 feet east of Second Avenue. The 1811 Bridges, ca. 1820 Randel, 1836 Colton, and 1851 Dripps maps suggest that the location of the streetbed was in an undeveloped area (see **Figures 5** through **7**). The 1836 Colton map indicates that 116th Street was “open or being regulated” and the 1851 Dripps map appears to suggest that it was built at that time. As shown in **Table 3-1**, the 1850 Hayward map indicates that the elevation in the vicinity of the intersection of Second Avenue and East 116th Street was 13 feet, although the datum from which that was measured was not provided. If the datum used was similar to the Manhattan Borough Datum, then comparisons with later maps indicates that the street grade in this area may have been increased by more than one foot by the publication of the 1885 Robinson Atlas, which identifies the elevation of the intersection as 14.11 feet.

Maps published in the late 19th and early 20th centuries depict the presence of water and sewer lines and fire hydrants within the streetbed, though no map-documented structures are identified within the streetbed. The 1898 Hyde map depicts a trolley line within the streetbed east and west of Second Avenue. The streetbed is developed with modern utilities, including water, sewer, gas, electric, and telecommunications lines, electric and telecommunications vaults, catch basins, hydrants, lampposts, and other subsurface features. An existing combined sewer measuring 4 feet by 2 feet, 4 inches was installed within the center of the streetbed in 1937.

EAST 117TH STREET STREETBED IMPROVEMENTS

Streetbed improvements within East 117th Street would extend to a distance 200 feet west and 200 feet east of Second Avenue. The 1811 Bridges and ca. 1820 Randel maps depict the location of the streetbed as undeveloped (see **Figure 5**). The 1836 Colton map indicates that 117th Street was not yet opened, although the 1851 Dripps map appears to suggest that it was built at that time (see **Figures 6** and **7**). As shown in **Table 3-1**, the 1850 Hayward map indicates that the elevation in the vicinity of the intersection of Second Avenue and East 117th Street was 11.2 feet, although the datum from which that was measured was not provided. If the datum used was similar to the Manhattan Borough Datum, then comparisons with later maps indicates that the street grade in this area may have been increased by approximately 1.5 feet by the publication of the 1885 Robinson Atlas, which identifies the elevation of the intersection as 12.7 feet.

Maps published in the late 19th and early 20th centuries depict the presence of water and sewer lines and fire hydrants within the streetbed, though no map-documented structures are identified within the

streetbed. A 1929 photograph¹ of the streetbed of East 117th Street east of Second Avenue depicts fire hydrants along the street. The Second Avenue elevated train line—constructed by the Manhattan Railway Company in 1880 (Burrows and Wallace 1999)—featured a stop at 117th Street, and Sanborns published between 1896 and 1939 depict the elevated station extending partially into the streetbed of East 117th Street east and west of Second Avenue. The elevated line closed in 1940 and its tracks were demolished shortly afterward (*New York Times* 1940).

The streetbed of East 117th Street is developed with modern utilities, including water, sewer, gas, electric, and telecommunications lines, electric and telecommunications vaults, catch basins, hydrants, lampposts, and other subsurface features. An existing combined sewer measuring 4 feet by 2 feet, 4 inches was installed within the center of the streetbed in 1936.

EAST 118TH STREET STREETBED IMPROVEMENTS

Streetbed improvements within East 118th Street would extend to a distance 200 feet west and 200 feet east of Second Avenue. The 1811 Bridges and ca. 1820 Randel maps depict the location of the streetbed as undeveloped (see **Figure 5**). The 1836 Colton map indicates that 118th Street was not yet opened, although the 1851 Dripps map appears to suggest that it was built at that time (see **Figures 6 and 7**). As shown in **Table 3-1**, the 1850 Hayward map indicates that the elevation in the vicinity of the intersection of Second Avenue and East 118th Street was 15.3 feet, although the datum from which that was measured was not provided. If the datum used was similar to the Manhattan Borough Datum, then comparisons with later maps indicates that the street grade in this area may have been reduced by more than 2.5 feet by the publication of the 1885 Robinson Atlas, which identifies the elevation of the intersection as 12.7 feet. Maps published in the late 19th and early 20th centuries depict the presence of water and sewer lines and fire hydrants within the streetbed, though no map-documented structures are identified within the streetbed.

The streetbed of East 118th Street is developed with modern utilities, including water, sewer, gas, electric, and telecommunications lines, electric and telecommunications vaults, catch basins, hydrants, lampposts, and other subsurface features. An existing combined sewer measuring 4 feet by 2 feet, 4 inches runs through the center of the streetbed.

EAST 119TH STREET STREETBED IMPROVEMENTS

Streetbed improvements within East 119th Street would extend to a distance 50 feet west and 50 feet east of Second Avenue. The 1811 Bridges and ca. 1820 Randel maps depict the location of the streetbed as undeveloped (see **Figure 5**). The 1836 Colton map indicates that 119th Street was “opened or being regulated and the 1851 Dripps map appears to suggest that it was built at that time (see **Figures 6 and 7**). Photographs taken in 1919² and 1920³ of the streetbed east of Second Avenue between First and Second Avenues are included within the collection of the New York Public Library, and show the street lined with blue stone sidewalks and interrupted by the elevated train line at Second Avenue.

As shown in **Table 3-1**, the 1850 Hayward map indicates that the elevation in the vicinity of the intersection of Second Avenue and East 119th Street was 15.4 feet, although the datum from which that was measured was not provided. If the datum used was similar to the Manhattan Borough Datum,

¹ Accessible at: <https://digitalcollections.nypl.org/items/510d47dd-170a-a3d9-e040-e00a18064a99>.

² Accessible at: <https://digitalcollections.nypl.org/items/510d47dd-1752-a3d9-e040-e00a18064a99>.

³ Accessible at: <https://digitalcollections.nypl.org/items/510d47dd-174c-a3d9-e040-e00a18064a99>.

then comparisons with later maps indicates that the street grade in this area may have been reduced by less than one foot by the publication of the 1885 Robinson Atlas, which identifies the elevation of the intersection as 14.9 feet. Maps published in the late 19th and early 20th centuries depict the presence of water and sewer lines and fire hydrants within the streetbed, though no map-documented structures are identified within the streetbed.

The streetbed of East 119th Street is developed with modern utilities, including water, sewer, gas, electric, and telecommunications lines, electric and telecommunications vaults, catch basins, hydrants, lampposts, and other subsurface features. An existing combined sewer measuring 4 feet by 2 feet, 4 inches runs through the center of the streetbed of East 119th Street west of Second Avenue that was installed in 1935. No sewers run to the east of Second Avenue within the project site, though additional utility lines are present.

EAST 120TH STREET STREETBED IMPROVEMENTS

Streetbed improvements within East 120th Street would extend to a distance 200 feet west and 200 feet east of Second Avenue. The 1811 Bridges and ca. 1820 Randel maps depict the location of the streetbed as undeveloped though a historic road ran northwest-southeast across the streetbed of East 120th Street east of Second Avenue (see **Figure 5**). The 1836 Colton map indicates that 119th Street was mapped but not yet opened though the 1851 Dripps map appears to suggest that it was built at that time (see **Figures 6** and **7**). As shown in **Table 3-1**, the 1850 Hayward map indicates that the elevation in the vicinity of the intersection of Second Avenue and East 120th Street was 15.8 feet, although the datum from which that was measured was not provided. If the datum used was similar to the Manhattan Borough Datum, then comparisons with later maps indicates that the street grade in this area may have been reduced by more than 3 feet by the publication of the 1885 Robinson Atlas, which identifies the elevation of the intersection as 12.7 feet. Maps published in the late 19th and early 20th centuries depict the presence of water and sewer lines and fire hydrants within the streetbed, though no map-documented structures are identified within the streetbed. Maps of existing utilities within East 120th Street were not available for review at the time that this report was prepared. However, it is assumed that utilities are present beneath the road surface in a similar manner as the other streets in the vicinity of the 116th Street station.

E. HISTORIC DEVELOPMENT OF SUPPLEMENTAL APE LOCATIONS: 125TH STREET STATION

The 125th Street Station APE is made up of various project sites within the area generally bounded by Madison Avenue, Third Avenue, East 124th Street and East 125th Street. The station includes three proposed subway entrances, two ancillary facilities, construction easements, and areas of utility relocation/improvement within streetbeds. As described in **Chapter 1, "Introduction and Project Description,"** several project elements associated with the construction of the 125th Street Station—including the construction of the tunnel between Fifth Avenue and Adam Clayton Powell, Jr. Blvd; rockbolting easements between Third and Madison Avenues, and the curve of the tunnel east of Second Avenue between East 120th and East 125th Streets—are at great depths of 50 to 120 feet below the ground surface. As these depths are far below deposits associated with the human occupation of Manhattan, the archaeological sensitivity of those portions of the supplemental APE is not described in this document.

ANCILLARY1 AND ENTRANCE 1: BLOCK 1773, PART OF LOT 20

Ancillary1 and Entrance 1 for the 125th Street station would be located on nearby properties along the eastern side of Lexington Avenue between East 124th and East 125th Streets. The site includes a

portion of modern Lot 20, which covers the majority of Block 1773. The project site was historically divided into all or part of fifteen lots, as summarized in **Table 5-9**. Lot 20 is currently developed with a large, 1- to 2-story building that was constructed in 1999 and is currently developed with a vacant commercial building formerly containing grocery and clothing stores. Though Sanborn maps do not indicate that the building has a basement, building records on file with NYCDOB indicate that the building was constructed with a basement, which is defined by NYCDOB as a partially subterranean level that is 50 percent or more above grade.

Table 5-9
Historic and Modern Lots included within Ancillary 1 and Entrance 1 of the 125th Street Station

Modern Lot Number	Historic Lot Number	Historic Address
Block 1773, part of Lot 20	20	149 East 124th Street/2053 Lexington Avenue
	21	151 East 124th Street
	22	153 East 124th Street
	22½	155 East 124th Street
	23	157 East 124th Street
	24	159 East 124th Street
	25	161 East 124th Street
	25½ (part)	163 East 124th Street
	47 (part)	162 East 125th Street
	48	158-160 East 125th Street
	49	154-156 East 125th Street
	50	150-152 East 125th Street
	51	148 East 125th Street
	52	146 East 125th Street
	53	144 East 125th Street/2055-2061 Lexington Avenue

Maps dating to the early 19th century depict the site of Ancillary 1/Entrance 1 near what was then the northern limits of the village of Harlem. Lexington Avenue was neither planned nor built at that time, and a historic street known as Haerlembridge Road ran to the east of the project site and west of what is now Third Avenue. The 1811 Bridges and ca. 1820 Randel maps depict the project site as undeveloped land within the larger property of John H. Raub, identified as Raub’s Tavern” on the Bridges map (see **Figure 5**). The tavern was likely the Harlem Coffee House, which was opened by Raub in 1807 (Stokes 1967). Several buildings associated with the Raub property were located a short distance to the east of the project site, along the western side of Harlembidge Road, also known as the Old Boston Post Road. In 1828 and 1829, after the implementation of the modern street grid, Raub asked the City for permission to close the historic road that ran through his property so that East 124th Street could be constructed west of Third Avenue, despite requests from neighbors to keep the road open (Minutes of the Common Council 1917, 17:335 and 18:241).

The 1836 Colton map depicts the property in similar conditions, but does not identify the owners or occupants of the buildings on the property to the east (see **Figure 6**). The 1851 Dripps map continues to depict the project site as vacant land, though additional development had occurred on the block in the immediate vicinity (see **Figure 7**). The closest developments to the project site were along the southern side of East 125th Street within and west of what is now the streetbed of Lexington Avenue. The 1867 Dripps map continues to depict the project site as undeveloped land, though several new buildings had been constructed immediately to the east.

The 1879 Bromley atlas reflects the construction of Lexington Avenue to the west of the project site and the division of the block to the east into lots. Historic Lots 20, 21, 22, 22½, 23, 24, 25, and 25½ occupied the southern portion of the Ancillary 1 and Entrance 1 project site. The 1879 map depicts two structures within those lots, including a small structure at the northeast corner of historic Lot 20 and a larger structure that extended across a portion of historic Lots 23 through 25.¹ This structure appears to have been associated with the historic home of John H. Raub, whose dwelling formerly along Harlem Bridge Road appears on the 1879 map to the east of the project site. The northern half of the project site was divided into historic Lots 47 to 53, which are identified on the map as part of a coal yard. Several large sheds associated with the coal yard were located on that portion of the project site at that time. A wood frame shed identified at the southeast corner of Lexington Avenue and East 125th Street was a former church that had been moved from a site across the street after the construction of Lexington Avenue in the early 1870s (see discussion of Entrance 2 [Option 1], below).

By the publication of the 1885 Robinson atlas, much of the project site was redeveloped (see **Figure 8B**). Lots 20 through 24 had been redeveloped with a row of identical stone-fronted homes and a smaller row of identical stone homes was located on historic Lots 25 and 25½. With the exception of historic Lot 20, each of the homes featured an undeveloped rear yard. The rear yard of historic Lot 20 was developed with a small brick structure that fronted onto Lexington Avenue. The former coal yard on Lots 49 through 53 had been redeveloped with a large complex of brick and wood frame buildings, though it is possible that the wood frame buildings on the site were the same as those depicted on the 1879 Bromley atlas. The southern portion of historic Lots 47 and 48 to the east were developed with a brick roller skating rink and the northern portion of the lots contained wood frame buildings. The 1891 Bromley atlas identifies the rowhouses along the southern side of the project site within historic Lots 20 to 24 as 4-story stone-fronted brick buildings and those on historic Lots 25 and 25½ as 3-story (with basement) buildings. The buildings on the lots on the northern half of the project site in historic Lot 48 to 53 are identified as 2-story wood or brick structures with partially undeveloped rear yards. Historic Lot 47 was developed with a 1-story brick structure that was part of the Harlem Theater, built on the site of the roller skating rink seen on the 1885 Robinson atlas. The 1896 Sanborn map provides more information on the buildings in the northern half of the site, indicating that many were warehouses and that many of the buildings were interconnected, including the buildings on Lot 47 despite the fact that the remainder of the Harlem Theater had been demolished. The wood frame structure at the northwestern corner of the project site is identified as “Hall &c.” (see **Figure 9B**).

Few changes are depicted on the 1911 Sanborn map, which shows that all of the buildings on the southern half of the project site were constructed with basements. The 1911 Sanborns suggest that a floor had been added to the buildings on historic Lots 25 and 25½, making them 4-story buildings with basements. The buildings at the western end of the northern half of the project site are identified as a “Salvation Army Hall” and a “Dance Hall.” A ca. 1932 photograph of the southeast corner of East 125th Street and Lexington Avenue² depicts the former church as converted into a series of small shops on the ground floors of the buildings within the site of Ancillary 1/Entrance 1. The 1939 and 1951 Sanborn maps depict the expansion of the warehouse buildings in the northeastern portion of the project site to the south, almost fully occupying the footprints of historic lots 49 and 50. Records on file with NYCDOB show that the majority of the buildings were demolished in the 1970s and

¹ The 1879 Bromley atlas does not identify the lot numbers on this project site in the same manner as later maps, and the lots are instead numbered sequentially and no ½ numbers are used.

² Accessible at: <https://digitalcollections.nypl.org/items/510d47dd-4594-a3d9-e040-e00a18064a99>.

1980s and the lot was redeveloped with a parking lot and a small park before the existing building was constructed in 1999.

ANCILLARY 2: BLOCK 1749, PART OF LOT 33

The location of Ancillary 2 for the 125th Street station is situated along the western side of Park Avenue (historically known as Fourth Avenue) between East 124th and East 125th Streets. The site includes a portion of modern Lot 33, which covers the majority of Block 1749. The project site is currently a paved, vacant lot. The project site was historically divided into smaller properties, including portions of thirteen historic lots, as summarized in **Table 5-10**.

The 1811 Bridges map depicts the project site as vacant land although a building was located on the block further to the west, in the vicinity of modern Madison Avenue, which was not constructed until the late-19th century (see **Figure 5**). Randel's ca. 1820 farm map shows the project site within a larger property owned by the "heirs of John Sickels" and indicates that large hills were present to the south of the project site. The 1836 Colton map continues to depict the project site as undeveloped land. Railroad tracks are depicted along Park (Fourth) Avenue and a "proposed branch of R. Road" is identified on the map along East 125th Street to the west of Park Avenue. The 1851 Dripps map also indicates that the project site was vacant and it suggests that it was a wooded area.

The 1867 Dripps map is the first to depict development on the project site and it continues to identify the eastern portion of the block as belonging to the "heirs of John Sickels." While the majority of the eastern portion of the block was included within the Sickles property, historic Lot 40, at the southwest corner of Park Avenue and East 125th Street, is shown on the 1867 map as a separate developed parcel whose owner is identified as, "Crawford."

Table 5-10

Historic and Modern Lots included within Ancillary 2 of the 125th Street Station

Modern Lot Number	Historic Lot Number	Historic Address
Block 1749, Lot 33	31 (part)	71 East 124th Street
	31½ (part)	73 East 124th Street
	32 (part)	75 East 124th Street
	33	Before ca. 1890: 2298 Park Avenue After ca. 1890: 1800 Park Avenue/ 77 71 East 124th Street
	34	Before ca. 1890: 2300 Park Avenue After ca. 1890: 1802 Park Avenue
	35	Before ca. 1890: 2302 Park Avenue After ca. 1890: 1804 Park Avenue
	36	Before ca. 1890: 2304 Park Avenue After ca. 1890: 1806 Park Avenue
	37	Before ca. 1890: 2306 Park Avenue After ca. 1890: 1808 Park Avenue
	38	Before ca. 1890: 2308 Park Avenue After ca. 1890: 1810 Park Avenue
	38½ or 39½	Before ca. 1890: 2310 Park Avenue After ca. 1890: 1812 Park Avenue
	39	Before ca. 1890: 2312 Park Avenue After ca. 1890: 1814 Park Avenue
	40	Before ca. 1890: 2314 Park Avenue After ca. 1890: 1816 Park Avenue/ 76-80 East 125th Street

The 1879 Bromley atlas reflects additional development along Park Avenue in the northern half of the proposed ancillary location. By that time, historic Lots 37, 38, 39½, 39 were developed in addition to the building that was previously seen on historic Lot 40. Historic Lots 33 through 36 were vacant at the time and historic Lots 31, 31½, and 32 were also developed. While the 1879 Bromley atlas does not depict individual building footprints, the 1885 Robinson atlas provides more detail on the development of the project site (see **Figure 8B**). The map shows that the rear yard of Historic Lot 40, now the property of “G.B. Brown, Plumber,” had been developed with a wood frame structure. The buildings on historic Lots 37 through 39 were identical brick structures with undeveloped rear yards. Historic Lots 33 through 36 were developed with brick buildings, though the rear yards of lots 33 through 35 was redeveloped with a stone-faced building that fronted on East 124th Street and the rear yard of Lot 36 was undeveloped. Historic Lots 31, 31½, and 32 were developed with identical stone-faced buildings. The 1891 Bromley atlas shows that all of the buildings lining Park Avenue were four stories in height while the buildings along East 124th Street were three stories with basements. The 1896 Sanborn map depicts the project site in a similar manner, but also depicts small rear additions or outbuildings in the rear yards of several buildings on these historic lots (see **Figure 9B**).

Few changes are depicted on the 1911 Sanborn map. That map indicates that all of the buildings along the Park Avenue frontage of the project site featured basements. Several of the buildings at the southwest corner of East 125th Street and Second Avenue had been combined and converted into the “Harlem Central Hotel.” This is referred to as the “Hotel Naomi” on the 1939 and 1951 Sanborn maps, which otherwise depicts no changes to the project site. Photographs of this location taken in the

1920s and 1930s are in the collection of the New York Public Library.¹ The buildings on the site were later demolished and the site was converted into a paved parking lot.

ENTRANCE 2 (OPTION 1): BLOCK 1774, LOTS 17 AND 56

Entrance 2 (Option 1) of the proposed 125th Street station would be located along the western side of Lexington Avenue between East 125th and East 126th Streets. The project site comprises Block 1774, Lots 17 and 56. Lot 17, located at the northwest corner of Lexington Avenue and East 125th Street, is currently developed with a 3-story commercial office building that was constructed in 2001. Lot 56, located at the southeast corner of Lexington Avenue and East 126th Street, is currently developed with a 5-story (with basement) office building that was constructed in 2009. The project site was historically divided into thirteen historic lots, as summarized in **Table 5-13**.

Table 5-11
Historic and Modern Lots included within Entrance 2 (Option 1) of the 125th Street Station

Modern Lot Number	Historic Lot Number	Historic Address
Lot 17	13	127 East 125th Street
	14	129 East 125th Street
	15	131 East 125th Street
	15½	133 East 125th Street
	16	135 East 125th Street
	17	137 East 125th Street
	18	2078 Lexington Avenue
	19	2080 Lexington Avenue
Lot 56	56	2082-2090 Lexington Avenue
Lot 56 and part of Lot 17	57	130 East 126th Street
Lot 56 and part of Lot 17	58	128 East 126th Street
Lot 56 and part of Lot 17	59	126 East 126th Street
Lot 56 and part of Lot 17	60	124 East 126th Street

As described previously, Lexington Avenue was not constructed through the Harlem area until the late-19th century. The 1811 Bridges and ca. 1820 depict the location of Entrance 2 (Option 1) as an undeveloped area (see **Figure 5**). The Randel map indicates that the site was near the boundary between the farms of Lawrence Benson and the heirs of John S. Sickles. The 1836 Colton map continues to depict the site as vacant land, however, it indicates that a Methodist church was located immediately to the west of the project site (discussed in greater detail below) (see **Figure 6**). The more-accurate 1851 Dripps map appears to suggest that the church was at least partially located within the project site and partially within the streetbed of what is now Lexington Avenue (see **Figure 7**). The 1851 map depicts an additional structure to the north of the church, fronting on East 126th Street. To the west of the church was a large parcel of land—also partially within the project site—that was developed with three unidentified structures. The 1867 Dripps atlas depicts a Methodist Episcopal church to the east of the project site, within the streetbed of what is now Lexington Avenue through the church property is shown as partially located within the project site. Neither the 1851 nor the 1867 map is accurate enough to clearly depict how much of the church property was situated within the site of proposed Entrance 2 (Option 1).

¹ Accessible at: <https://digitalcollections.nypl.org/items/510d47dd-18b4-a3d9-e040-e00a18064a99>.

The 1879 Bromley atlas was published after the construction of Lexington Avenue to the east of the project site. That map indicates that historic Lots 17 and 66, which lined the eastern side of the project site, were narrower than the lots to the west as a result of the construction of Lexington Avenue through what was originally the eastern portion of those lots. The 1885 Robinson atlas depicts the project site as similarly developed (see **Figure 8B**). The southern half of the site was developed with a row of brick buildings labeled “Empire City.” The rear portions of historic Lots 15, 15 ½, 16, and 17 had been subdivided into historic Lot 18 and 19, both of which were developed with a stone-fronted brick structure. The northern half of the project site was developed with fewer buildings. Historic Lot 56 was developed with a brick building at the northern end of the lot and a brick stable at the southern end of the lot. Historic Lot 57 was fully developed with a wood frame structure. Historic Lot 58 was developed with a small, L-shaped brick structure at the northwestern corner of the lot while the remainder of the property was undeveloped. Historic Lot 59 was developed with a small wood frame building that featured a narrow alley along its eastern wall that led to the undeveloped rear yard to the south. Finally, historic Lot 60 was developed with a wood frame structure in the center of the lot, and its undeveloped front and rear yards were connected by a narrow alley along the eastern side of the building.

The 1891 Bromley atlas depicts some changes to the northern half of the project site, including the redevelopment of historic Lot 59 with a large, 3-story wood frame shed, the redevelopment of historic Lot 60 with a 5-story brick building, and the construction of small wood frame outbuildings on the property of historic Lot 58. The 1896 and 1911 Sanborn maps depict similar conditions on the project site (see **Figure 9B**). The latter map indicates that all of the buildings on the southern half of the project site were constructed with basements, as were the buildings on historic Lots 56 and 60 in the northern half of the site. The 1939 Sanborn map depicts few changes to the project site, and indicates that the building on historic Lot 60 was “boarded up.” The 1951 Sanborn map continues to indicate that the upper stories of the building was boarded up. That map also indicates that a large portion of the historic lots to the east within the northern half of the project site was redeveloped with a garage/repair shop. These buildings were torn down in the late 20th century and the project site was eventually converted into a parking lot before the existing buildings were developed in the early 2000s.

THE FIRST METHODIST EPISCOPAL CHURCH OF HARLEM

The Methodist Church on East 125th Street between Third and Park (Fourth Avenues) originated as the Harlem Mission, which was established in 1830 to minister to the growing Methodist population of Harlem (Silber 1882). The church was historically referred to as the First Methodist Episcopal Church of Harlem, the 125th Street Methodist Episcopal Church, or the Harlem Methodist Episcopal Church. In 1832, the Methodist Episcopal church purchased eight lots of ground “with a house and outbuildings on them” and erected a wood frame church on the property (ibid:28). The original plan for the church called for it to be “forty-five feet front and sixty feet deep, with a basement story nine and a half feet in the clear, viz: four and a half under ground [sic] and five feet above ground, and that the house be twenty feet post in the clear” (ibid:36). The congregation moved to a larger church property in 1870 (ibid). A ceremony was held in November 1870 to mark the closure of the old church (*New York Times* 1870). The frame structures was allegedly “removed to the south-east corner of 125th Street and Lexington Avenue, where it [was] occupied as a court room,” located within the site of proposed Ancillary 1/Entrance 1, as discussed above (Seaman 1892: 306).

There is evidence that Methodist church on 125th Street maintained burial vaults on the property. While legislation governing the burial of humans on Manhattan island grew increasingly strict during the 19th century, by 1851 human interments were banned only south of 86th Street (Inskeep 2000).

Many churches in the early to mid-19th century maintained burial vaults for the use of their clergy and parishioners. The 125th Street Methodist church allegedly maintained burial vaults “in the rear” of the church” (Seaman 1892:491). A biographic profile of John Cranwill Tackaberry—who had been the pastor of the Harlem Mission in the late-1830s—suggests that upon his death in 1852, “his remains were first deposited in the vault of the 125th-street church, afterward they were removed to Greenwood” (Warriner 1885:278).

As part of this Supplemental Phase 1A Study, contact was initiated with the archives of the New York Annual Conference of the United Methodist Church, which holds the original church records for the 125th Street Church and its successor, Saint James ME Church. The archivist reported that the early church records included within the archives pertain only to general member information including baptisms and marriages and that death and cemetery records are not on file. However, the archives do include a letter written by the church’s Executive Secretary Frederick B. Newell in 1942—the year the church was sold to the New York Society of the Methodist Church—that describes the former cemetery as follows:

It is my understanding that originally there was a cemetery on East 125th Street known as the St. James M.E. Cemetery and at the same time when the City of New York made it illegal to have bodies buried in the Borough of Manhattan a plot was purchased in the White Plains Rural Cemetery on North Broadway, White Plains, New York, to which all the bodies of the St. James M.E. Cemetery were moved (Newell 1942).

The White Plains Rural Cemetery was established in 1855 on grounds surrounding the cemetery of the White Plains Methodist Church, established 1792, and the two cemeteries were consolidated in 1882 (Raftery 2011). A representative from the White Plains Rural Cemetery confirmed that a plot was purchased in 1875 by the “(St. James) ME Church in Harlem” and that records indicate that 900 burials were relocated from the “Harlem ME Church” though the cemetery does not hold information regarding the identifies of those reinterred (White Plains Rural Cemetery, pers. comm. 2017). As described in **Chapter 6, “Conclusions and Recommendations,”** additional research in the form of a Topic Intensive Documentary Study is required to confirm the boundaries of the historic church property to determine the extent to which it overlapped with the project site and to further document the potential for this project site to contain human remains.

ENTRANCE 2 (OPTION 2): BLOCK 1773, LOTS 17, 18, AND 57

An option for Entrance 2 (Option 2) of the proposed 125th Street Station would be located along the western side of Lexington Avenue between East 124th and East 125th Streets. The project site comprises Block 1773, Lots 17, 18, and 57.¹ The project site is currently developed with a series of commercial buildings. Lots 17 and 18 are developed with 1- to 2-story buildings, a portion of which has a basement, and Lot 57 is developed with a 2-story commercial building. The properties included within this project site are summarized in **Table 5-11**.

¹ Lot 18 is a small, irregular lot located within Lot 17.

Table 5-12

Historic and Modern Lots included within Entrance 2 (Option 2) of the 125th Street Station

Modern Lot Number	Historic Lot Number	Historic Address
Block 1773, Lots 17 and 18	16	131 East 124th Street
	17/18	133 East 124th Street/2046-2050 Lexington Avenue
Block 1773, Lot 57	56	134 East 125th Street/2054-2062 Lexington Avenue
	56/57	132 East 125th Street

The 1811 Bridges, ca. 1820 Randel, and 1836 Colton maps depict the location of Entrance 2 (Option 2) as undeveloped land (see **Figures 5 and 6**). As seen on the Randel map, this project site was situated near the convergence of three unusually-shaped historic properties, including the previously-discussed Raub and Sickles estates and that of John Adriance. Lexington Avenue was not constructed until the late-19th century, and as such, it is not depicted on early maps. The 1851 Dripps map is the first to depict development on the project site (see **Figure 7**). As described previously, that map identifies a building along the southern side of East 125th Street in the vicinity of what is now Lexington Avenue as well as two additional structures to the west. The 1867 Dripps map reflects additional development, showing all or part of four historic properties, each developed with a single building, within the project site.

By the publication of the 1879 Bromley atlas, Lexington Avenue had been constructed through the center of the block on which the project site formerly stood. As a result of the construction of the street through previously developed land, the project site became divided into several lots of unusual size or shape. Modern Lot 57 was divided into two parcels: Lot 56, a narrow, undeveloped lot immediately adjacent to Lexington Avenue, and Lot 57, which was developed with a building. Modern Lot 17 was also divided into two parcels, historic Lots 16 and 17, each of which was developed with structures separated by a narrow alley. The 1885 Robinson atlas depicts historic Lot 57 as entirely developed with a brick structure with a wood frame addition at its southern (rear) end (see **Figure 8B**). Historic Lot 58, only a portion of which overlaps with modern Lot 57, was developed with a wood frame building that was separated from the brick structure on historic Lot 57 by a narrow alley. The 1885 map depicts modern Lot 17 as divided into two narrow lots (historic Lots 16 and 17), each of which was developed with a small wood frame building. The irregular shape of modern Lot 18 is also depicted on that map and its odd shape appears aligned with a historic farm boundary line.

The 1891 Bromley atlas reflects the construction of the existing buildings on modern Lot 57. The map depicts a large 2-story brick building at the northern end of the lot, with three smaller 2-story buildings (two brick and one wood frame) to the south, with a narrow alley lining their west side. Historic Lot 16 was at the time developed with a 3-story wood frame building with an undeveloped rear yard. Historic Lot 17 was also developed with a wood frame building, but its rear yard was occupied by a brick addition. The 1896 Sanborn map depicts the same structures, but also identifies a small wood frame outbuilding at the northeast corner of historic Lot 16 (see **Figure 9B**). The 1911 Sanborn map depicts no changes to the buildings on Lot 57. However, it reflects the consolidation of historic Lots 16 and 17, which were redeveloped with a 2-story (with basement) office building by that time. The office building had an undeveloped rear yard, although modern Lot 18 was developed with a trapezoidal 1-story store. The location of Entrance 2 (Option 2) was recorded in several photographs taken in the 1910s and 1920s that are preserved in the collection of the New York Public

Library.¹ By the publication of the 1939 Sanborn map, the northern half of Lot 17 had been developed with a 1-story building identified as a “private garage.” No changes to the site appear on Sanborn maps published in 1951 or on modern Sanborn maps.

ENTRANCE 3: BLOCK 1773, LOTS 4, 69, AND 72 AND PARK AVENUE STREETBED

Entrance 3 of the proposed 125th Street station would be located along the eastern side of Park Avenue between East 124th and East 125th Streets and would include a portion of the streetbed of Park Avenue.

EASTERN PORTION OF ENTRANCE 3 (BLOCK 1773, LOTS 4, 69, AND 72)

This portion of the project site comprises Block 1773, Lots 4, 69, and 72. Lot 69, at the southeast corner of Park Avenue and East 125th Street, is currently developed with two commercial buildings: a 4-story (with basement) hotel and 1-story (with basement) commercial building. Lots 4 and 72 are vacant and overgrown. The project site was historically divided into five historic lots, as summarized in **Table 5-12**.

Table 5-13
Historic and Modern Lots included within Entrance 3 of the 125th Street Station

Modern Lot Number	Historic Lot Number	Historic Address
Block 1773, Lot 4	4	Before ca. 1890: 2289-2291 Park Avenue After ca. 1890: 1807 Park Avenue
	69	104-106 East 125th Street
Block 1773, Lot 69	70	Before ca. 1890: 2297-2299 Park Avenue After ca. 1890: 1813 Park Avenue/ 100-102 East 125th Street
	71	Before ca. 1890: 2295 Park Avenue After ca. 1890: 1811 Park Avenue
Block 1773, Lot 72	72	Before ca. 1890: 2293 Park Avenue After ca. 1890: 1809 Park Avenue

The 1811 Bridges and ca. 1820 depict the location of Entrance 3 as an undeveloped part of the previously-discussed “heirs of John Sickles” property (see **Figure 5**). The 1836 Colton map continues to depict the site as vacant land (see **Figure 6**). By the publication of the 1851 Dripps map, the project site was divided into lots, several of which were developed with structures (see **Figure 7**). The map depicts modern 69 as divided into two parcels. The northern parcel was developed with a structure along Park Avenue and a small outbuilding was located at the southeast corner of the historic lot. The southern half of modern Lot 69 was developed with a structure at the southwest corner of the historic lot, the remainder of which was undeveloped. Modern Lots 4 and 72 appear to have been part of one larger historic lot, which was developed with two large structures. The 1867 Dripps map depicts modern Lot 69 as divided into three historic lots, the northernmost of which contained the same buildings seen on the 1851 Dripps map. Two additional structures were located in the southern two-thirds of the lot, though it is unclear if they are the same structures seen on the previous map. Modern Lots 4 and 72 continue to be depicted as a single property developed with two structures. It is unclear if they are the same structures seen on the 1851 Dripps map, as they are oriented the same way, but

¹ Accessible at: <https://digitalcollections.nypl.org/items/510d47dd-18ae-a3d9-e040-e00a18064a99>; <https://digitalcollections.nypl.org/items/510d47dd-4596-a3d9-e040-e00a18064a99>; and <https://digitalcollections.nypl.org/items/510d47dd-4592-a3d9-e040-e00a18064a99>.

are in a slightly different alignment on the lot. The 1879 Bromley atlas, which does not depict individual building footprints, appears to depict the project site in similar conditions, although it does identify Lots 4 and 72 as distinct properties.

The 1885 Robinson atlas depicts additional development within the northern half of modern Lot 69 (historic Lots 69 and 70) (see **Figure 8B**). The map depicts a brick structure at the western end of the lot as well as three adjacent wood frame buildings to the east, with a small portion of the rear yard left undeveloped. Historic Lot 71, representing the southern half of modern Lot 69, was developed with a wood frame dwelling with undeveloped front and rear yards. Lot 72 is also shown as developed with a wood frame building, though a narrow alley along the northern side of the block was left undeveloped, as was the lot's rear yard. Lot 4 was developed with three wood frame buildings at the time, including a structure identical and adjacent to the one on Lot 72 and two sheds or stables within the side and rear yards of the property.

The 1891 Bromley atlas reflects the redevelopment of Lots 4 and 72 with identical, 5-story brick buildings. Historic Lot 71 was also redeveloped with a brick structure at the western end of the lot and a wood frame addition covering the former rear yard. No changes appear to have occurred on historic Lots 69 and 70 to the north. The 1896 Sanborn map depicts the site in a similar manner, though it suggests that the wood frame additions had been added to the rear (southern) sides of two of the three small wood frame buildings within historic Lot 69 (see **Figure 9B**). That map also suggests that the brick structure on historic Lot 71 was far smaller than that seen on the 1891 Bromley atlas, with the wood frame rear addition taking up a larger portion of the former rear yard.

The 1911 Sanborn map depicts new development within historic Lot 69, where a 2-story (with basement) building had been built on the site of the wooden storefronts seen on previous maps. Historic Lot 71 was also redeveloped, with a 1-story (with basement) building that covered the length of the historic lot and is identified on the map as a bowling alley. No changes appear to have occurred on Lots 4 or 72, though the map indicates that the buildings on those lots were constructed with basements. The buildings on Lots 4 and 72 were demolished in the late-20th century.

WESTERN PORTION OF ENTRANCE 3 AND PARK AVENUE STREETBED IMPROVEMENTS

This portion of Entrance 3 to the 125th Street station would be located within the central median of Park Avenue (historically Fourth Avenue) immediately south of East 125th Street. The project would also require streetbed improvement across Park Avenue between East 124th and East 125th Streets. The location of the entrance and streetbed improvements is situated beneath the elevated viaduct that carries the tracks of the Metro-North Railroad over Park Avenue. This area contains support columns associated with the viaduct and is also developed with a 1-story comfort station that was built ca. 1897. No historical maps depict any other buildings within this portion of the Park Avenue streetbed during the 19th or 20th centuries.

The 1811 Bridges (see **Figure 5**) and ca. 1820 Randel maps depict the older Harlem Road to the south of the project site, running along the approximate line of East 124th Street. Park (Fourth) Avenue was developed with a street rail line that connected lower Manhattan with East 125th Street in the 1830s (Koeppel 2015). This rail line is depicted along Park (Fourth) Avenue on the 1836 Colton map (see **Figure 6**). The stone viaduct between East 98th and East 111th Streets was first constructed in 1874 and at that time, the tracks ran through an open cut at street grade (Gray 1995). In 1897, the New York Central Railroad Company constructed the existing elevated steel viaduct and the Harlem-125th Street station connecting the older viaduct with the Harlem Bridge to the north (ibid). It is assumed that the existing comfort station was built at the same time as the station. The 1874 Bromley atlas depicts the railroad tracks at street grade, and while it depicts the railroad cut

within Park Avenue between East 124th and East 125th Streets, no tracks are shown in that particular block. The 1879 Taylor birds’ eye drawing of Manhattan depicts the tracks within a cut with bridges carrying the cross-streets over Park Avenue. The 1885 Robinson atlas depicts a vast network of railroad tracks running through the cut in the center of Park Avenue (see **Figure 8B**). The 1896 Sanborn depicts the “elevated structure of the NY Central and Hudson River RR &c” along Park Avenue (see **Figure 9B**). The viaduct is depicted on the 1911, 1939, and 1951 Sanborn maps, which all depict the comfort station. Sanborn maps published between 1951 and the present depict a small, 1-story store beneath the viaduct to the north of the comfort station, but this building is no longer present within the project site.

As shown in **Table 3-1**, the 1850 Hayward map indicates that the elevation in the vicinity of the intersection of Park Avenue and East 125th Street was 19.2 feet, although the datum from which that was measured was not provided. If the datum used was similar to the Manhattan Borough Datum, then comparisons with later maps indicates that the street grade in this area may have raised by nearly 4 feet by the publication of the 1885 Robinson Atlas, which identifies the elevation of the intersection as 23.0 feet. This grade change was likely associated with the development of the railroad cut and the associated bridges that carried the side streets over it.

**F. HISTORIC DEVELOPMENT OF SUPPLEMENTAL APE LOCATIONS:
TAIL TRACK OPTIONS**

ANCILLARY FOR TWO-TRAIN PER TRACK TAIL TRACK OPTION: BLOCK 1722, LOTS 62 AND 63

If the two-train per track ancillary option is selected, an Ancillary would be constructed along the southern side of West 125th Street just east of Lenox Avenue on Block 1722, Lots 62 and 63. Lot 62 (62 West 125th Street) is currently developed with a 4-story (with basement) building with a narrow undeveloped rear yard. Lot 63 (64-66 West 125th Street) is developed with identical 1-story (with basement) commercial buildings with 1-story (with basement) rear additions that occupy the entire footprint of the lot. Lot 63 was historically divided into two smaller lots, as summarized in **Table 5-14**.

Table 5-14

Historic and Modern Lots included within the Two-Train Tail Track Ancillary Option

Modern Lot Number	Historic Lot Number	Modern/Historic Address
Block 1722, Lot 62	62	62 West 125th Street
	63	64 West 125th Street
Block 1722, Lot 63	64	66 West 125th Street

Historical maps, including the 1811 Bridges and ca. 1820 Randel maps, depict the location of the Ancillary as vacant, but near the confluence of several historic roads that ran through the area (see **Figure 5**). The Randel map suggests that a branch of the Harlem Road—identified on later maps as the “Old Kingsbridge Road”—ran through the northern ends of modern Lots 62 and 64 and that the vacant land to the east of the historic road was owned by Lawrence Benson while the land to the west belonged to Sampson A. Benson. The 1836 Colton map depicts 125th Street as “open or being regulated” (see **Figure 6**). While the map does not depict specific development on modern Lots 62 or 63, the “Harlem Park Trotting Course” is depicted to the southwest, a small portion of which ran through the southwest corner of what is now Block 1772. The trotting course is no longer depicted on the 1851 Dripps map, which continues to depict the historic Harlem Road running only through Block 1772, connecting West 124th and West 125th Streets (see **Figure 7**). Modern Lots 62 and 63 were

otherwise undeveloped at that time. The 1867 Dripps map and 1879 Bromley atlas indicates that Block 1772 was divided into blocks and lots, and while many lots were developed with buildings, modern Lots 62 and 63 continued to be vacant.

The 1885 Bromley atlas is the first to depict development on the project site, and it appears to depict the three structures that currently occupy the location of the proposed Ancillary (see **Figure 8B**). At that time, the rear yards of the buildings on modern Lot 63 were undeveloped. The 1902 Sanborn map indicates that the structures on modern Lot 63 are identified as “brick or stone” office buildings with wood façades (see **Figure 10**). The 1912 Sanborn map reflects the construction of the rear additions to the buildings on modern Lot 63, which is identified as a “moving pictures” theater. No additional changes are depicted on Sanborn maps published through the present.

ANCILLARY FOR THREE-TRAIN PER TRACK TAIL TRACK OPTION: BLOCK 1909, LOT 41 (PART)

If the three-train per track ancillary option is selected, an Ancillary would be constructed along the southern side of West 125th Street just west of Lenox Avenue on Block 1909, part of Lot 41. The irregularly-shaped lot is comprised of five historic lots, four of which are included in the project site, as summarized in **Table 5-15**. The portion of the lot included within the project site is currently developed with three commercial buildings along West 125th Street, including a 1-story building at 112 West 125th Street; a 1-story (with basement) building at 114 West 125th Street; and a 1-story (with basement) building at 116-118 West 125th Street.

**Table 5-15
Historic and Modern Lots included within Three-Train Tail Track Ancillary Option**

Modern Lot Number	Historic Lot Number	Modern/Historic Address
Block 1909, Lot 41 (part)	40	112 West 125th Street
	41	114 West 125th Street
	42	116 West 125th Street
	43	118 West 125th Street

The 1811 Bridges and ca. 1820 Randel maps depict the location of the proposed ancillary within an undeveloped portion of the Sampson A. Benson farm (see **Figure 5**). The 1836 Colton map indicates that the previously-mentioned Harlem Park Trotting Course passed through the site of the ancillary at that time (see **Figure 6**). The course is no longer depicted on the 1851 Dripps map, which shows the ancillary site as undeveloped land. The 1867 Dripps map and 1879 Bromley atlas both depict historic Lots 40 through 43, along West 125th Street, as vacant. The 1885 Robinson atlas depicts development across each of the historic lots included within the project site. Historic Lots 40 and 41 were developed with identical stone-fronted brick homes, the northernmost of which was identified as “Witherbee” (see **Figure 8B**). Finally, a large brick shed or stable was constructed across the rear (western) portion of historic lots 42 and 43 and continued to the west onto historic lots 44 and 45, outside the site of the proposed ancillary.

The 1891 Bromley atlas depicts several changes to the location of the proposed ancillary facility. The stone-fronted brick building on historic Lot 40 is depicted as either replaced with a larger building or having been extended through the addition of a rear extension to the building, which is identified as being 4 stories in height. The “Witherbee” building on historic Lot 41 continues to be depicted as such. Historic lots 42 and 43 had been redeveloped with adjoining 2-story brick buildings that covered the footprints of the historic lots in their entirety. The 1902 Sanborn map does not depict changes to the project site, though it does indicate that the buildings on historic Lots 42 and 43 were

used for industrial purposes (see **Figure 10**). The 1912 Sanborn map depicts similar conditions on the project site, as does the 1951 Sanborn map, although it does note that each of the buildings historically on those lots were constructed with basements. Records on file with NYCDOB indicate that historic Lot 40 (112 West 125th Street) was redeveloped with the existing 1-story building in 1979. The buildings on historic Lots 41 through 43 appear to be the same structures shown on those properties on previous maps, but it appears that they were altered to remove their upper floors, leaving only the ground floors remaining.

A. CONCLUSIONS

As part of the background research for this Supplemental Phase 1A Archaeological Documentary Study, various primary and secondary resources were analyzed, including historical maps and atlases, historic photographs and lithographs, newspaper articles, and local histories. The information provided by these sources was analyzed to reach the following conclusions.

ASSESSMENT OF PREVIOUS DISTURBANCE

STREETBED DISTURBANCE ASSOCIATED WITH LANDSCAPE MODIFICATION

The locations of the project site streetbeds have all been disturbed to some extent as a result of the construction of the streets and grading and paving associated with street maintenance. It is assumed that all of the streetbeds are disturbed to depths of approximately 1 to 1.5 feet below the surface of the existing streetbeds. The construction of the city's modern street grid between the early and mid-19th centuries resulted in extensive disturbance as hills were leveled and low-lying areas filled in to create the relatively level, flat street surfaces seen today. As shown in **Table 3-1**, a comparison of historic elevation information from the early- to mid-19th century to the present day indicates that the surface elevation of some streetbeds has been lowered while others have been raised as a result of the construction and maintenance of streets. However, the full extent to which the landscape of the streetbeds has been modified is unknown given the fact that the oldest maps providing surface elevation do not provide specific information regarding the datum from which those elevations were measured. However, the streetbeds do not appear to have been modified by dramatic amounts of fill or leveling since at least 1850 and all elevations differences appear to be within 5 feet of their original grades. Additional disturbance to streetbeds would have resulted from the construction and demolition of both at-grade and elevated train and streetcar lines. Such lines formerly ran along Second Avenue throughout the entire length of the project corridor and along Third and Park Avenues at East 125th Street.

STREETBED DISTURBANCE ASSOCIATED WITH UTILITY INSTALLATION

In addition, all of the project site streetbeds have been disturbed to greater depths as a result of the installation of extensive networks of utilities, including water, sewer, gas, electric, and telecommunications lines in addition to other subsurface vaults, conduits, catch basins, fire hydrants, and street lighting connections. However, portions of some of the streetbeds do not contain utility lines or feature large gaps between existing utility lines and may therefore contain undisturbed soils. For the purposes of this analysis, it is assumed that the locations of any existing utilities are considered to be disturbed from the ground surface to a depth of one to two feet below the bottom of the utility line and to a distance of one to two feet on either side, beyond the outer edges of each utility line, representing the trench that was likely dug as part of the line's installation. Any location where no utilities are present or where there is a space of five feet or more between the outer edges of existing utilities should be considered undisturbed. Those locations beneath the disturbed portions of existing utility trenches are also considered undisturbed in areas that have not experienced landscape modification. This assessment of disturbance associated with the installation of utilities also applies to the streetbed of Second Avenue as analyzed in the 2003 Phase 1A Study.

DISTURBANCE WITHIN BLOCKS AND LOTS

All of the locations of proposed ancillary facilities and subway entrances have been disturbed to some extent by the construction and demolition of buildings during the 19th and 20th centuries. The construction of buildings with basements would have resulted in deeper disturbance—assumed to be 8 to 10 feet or more below the ground surface—than the construction of buildings without basements.

PRECONTACT SENSITIVITY ASSESSMENT

The precontact sensitivity of project sites in New York City is generally evaluated by a site's proximity to level slopes of less than 10 to 12 percent, water courses, well-drained soils, and previously identified precontact archaeological sites (NYAC 1994). As described in **Chapter 4: Precontact Archaeological Resources**, extensive Native American activity has been documented in the vicinity of northeast Manhattan. A large Native American village was located to the southeast of the project corridor. It is highly likely that Native Americans utilized the various resources offered by the varied landscape that defined the project site prior to European settlement. Marine life and wild game would have been abundant in this area during the precontact period. Marshes, streams, and ponds would have provided an important source of plant and animal food resources as well as fresh water. Similarly, the elevated hills that originally marked the landscape would have provided critical vantage points and protection. It has been suggested that the Native American population of northeastern Manhattan strategically burned forest to encourage growth and to assist with agricultural efforts, showing that they made use of the flatlands as well (Bean and Sanderson 2008).

However, despite the high likelihood that Native Americans utilized the land across the project corridor, Native American archaeological sites are typically found at shallow depths, within the top 5 feet of the original ground surface. Given the extent of development and landscape modification on the project site during the 19th and 20th centuries, much of the pre-development ground surface was likely destroyed as a result of development between the 18th and 19th centuries. However, in any areas where the original ground surface may be present and undisturbed, those surfaces would be considered to be sensitive for precontact archaeological resources. The precontact archaeological sensitivity of specific portions of the project site is described in greater detail below in **Section B: Sensitivity Determinations for Specific Supplemental Project Elements**.

HISTORIC SENSITIVITY ASSESSMENT

The village of Harlem remained a relatively rural area through the mid-19th century. Several of the supplemental APE sites were developed with or were in close proximity to houses or other buildings (e.g., historic mills) that were constructed in the late-18th or early-19th centuries. The bulk of the residential development of the neighborhood occurred beginning in the 1860s and 1870s, when water and sewer infrastructure was available in the neighborhood and train and streetcar lines increased the area's availability, making it an attractive residential area for commuters. All of the supplemental APE locations were developed with structures at some point during the 19th and 20th centuries and therefore all have experienced disturbance to some degree. However, those sites that were developed that did not contain basements and where earlier phases of occupation were documented would be expected to retain historic sensitivity.

Given the extent to which this project sites within the APE were developed, it is possible that domestic shaft features (e.g., privies, cisterns, and wells) that were constructed on the site for the purposes of water gathering and sanitation prior to the installation of water and sewer lines could still be present. Such features were typically filled with household refuse after they were no longer needed for the purpose for which they were originally constructed, and are therefore of high archaeological research value. Shaft features were typically constructed of brick or stone and extended to significant

depths, often to 10 to 15 feet below the project site or more. As such, these types of features frequently survive disturbance episodes, even if the upper portions are truncated during development. Shaft features could be present in portions of the site that were not fully excavated as part of 19th and 20th century development. The historic period archaeological sensitivity of specific portions of the project site is described in greater detail below in **Section B: Sensitivity Determinations for Specific Supplemental Project Elements**.

B. SENSITIVITY DETERMINATIONS FOR SPECIFIC SUPPLEMENTAL PROJECT ELEMENTS

The archaeological sensitivity of each project site within the supplemental APE is summarized in **Table 6-1** and depicted in **Figures 11A to 11C**. As described in **Chapter 1, "Introduction and Project Description,"** several of the project elements will involve tunneling at great depths, including the 125th Street tunnel curve and the temporary easements along 125th Street. The depth of these project elements is sufficient that it would not impact soils associated with past human occupation of the APE and the archaeological sensitivity of those project elements is therefore not assessed in this document.

PRECONTACT ARCHAEOLOGICAL RESOURCES

As described above, each of the supplemental APE locations possesses general sensitivity for precontact archaeological resources. Deeply buried resources associated with the occupation of Manhattan prior to the rise of sea levels and the formation of marshes ca. 3,000 years before present may be present in filled areas. However, the actual sensitivity of these locations depends on the extent to which these areas were disturbed as a result of subsequent development. Many of the street surfaces were cut down during the construction of the city's street grid and were then further disturbed by the installation of utilities and streetcar lines in addition to the construction and maintenance of roads. Areas that have been disturbed as a result of the grading of streets/installation of utilities or as a result of the construction of buildings are therefore determined to have no precontact archaeological sensitivity. However, locations where marsh and river deposits were filled in advance of the construction of the modern landscape of Harlem could potentially contain deeply buried archaeological resources beneath the depths of the marsh. Additional information will be collected through the completion of a soil boring program that will provide greater information on the potential depth of such resources.

HISTORIC PERIOD ARCHAEOLOGICAL RESOURCES

Regarding archaeological resources from the historic period, given the extent to which all of the project sites were subsequently redeveloped, it is most likely that historic period archaeological resources within the APE would include shaft features such as cisterns, privies, and wells. Therefore, any project sites that contained or were immediately adjacent to map-documented structures pre-dating the 1850s or 1860s are potentially sensitive for archaeological resources associated with the historic period occupation of the area.

Table 6-1
Sensitivity Determinations for Specific Project Elements

Station	Project Element	Summary of Development	Disturbance Assessment	Recommendations for Further Work
106th Street Station	Ancillary 1 (Block 1677, Lots 47 and 49-52)	Within the Red House Tavern property/trotting course; developed with several structures in 1867 and redeveloped before 1879.	Basement excavation associated with current and former buildings on the property likely disturbed shallow surface associated with site activity pre-dating the late-19th century	None
	Ancillary 2 (Block 1681, Lots 1 to 4, 52, and 104)	Undeveloped until late-19th century, buildings had basements and undeveloped rear yards	While the rear yard areas of several buildings within the project site were not developed, the excavation of basements and construction of outbuildings in the rear yards likely disturbed shallowly buried resources	None
	Entrance 1 (Block 1678, Part of Lot 1)	Project site is partially occupied by filled marsh; developed with buildings with basements in the late-19th century; site incorporated into Franklin Houses campus in 1959	Basement excavation associated with current and former buildings on the property likely disturbed shallow surface associated with site activity pre-dating the late-19th century; possible that deeply buried resources may exist beneath the fill in the location of the marsh	Review soil borings in vicinity to determine if the bottom of the marsh deposits can be identified
	Entrance 2 (Block 1678, Part of Lot 1)	Project site inundated by marsh until late-19th century; developed with building with basement in early 20th century; site incorporated into Franklin Houses campus in 1959	Basement excavation and construction of existing parking lot likely disturbed shallow resources; possible that deeply buried precontact archaeological resources may exist beneath the fill in the location of the marsh	Review soil borings in vicinity to determine if the bottom of the marsh deposits can be identified
	East 106th Street Improvements	No map-documented structures within streetbed	Street grading may have disturbed historic ground surface by as much as 7 feet; additional disturbance associated with the installation of utilities	None
	East 108th Street Improvements	Inundated by Harlem Creek until late-19th century; No map-documented structures within streetbed	Deeply buried precontact archaeological resources may exist beneath the fill in the location of the marsh	Review soil borings in vicinity to determine if the bottom of the marsh deposits can be identified
	East 109th Street Improvements	No map-documented structures within streetbed	Street grading may have disturbed historic ground surface by as much as 4 feet; additional disturbance associated with the installation of utilities	None
	East 110th Street Improvements	No map-documented structures within streetbed	Street grading may have disturbed historic ground surface by as much as 3.5 feet; additional disturbance associated with the installation of utilities	None

Table 6-1 (continued)
Sensitivity Determinations for Specific Project Elements

Station	Project Element	Summary of Development	Disturbance Assessment	Recommendations for Further Work
116th Street Station	Ancillary 1 (Block 1687, Lots 1, 2, 3, and 102)	Developed in the late-19th century	Basement excavation and construction of existing buildings likely disturbed all shallow resources	None
	Ancillary 2 (Block 1784, Lots 23 to 28, 120, 122, and 128)	Developed in the late-19th century	Basement excavation and construction of existing buildings likely disturbed all shallow resources	None
	Entrance 1 (Block 1688, Lots 1, 2, and part of 45)	Developed in the late-19th century; partially redeveloped in 1973 for construction of existing senior housing facility	Basement excavation and construction/demolition of existing and historic buildings likely disturbed all shallow resources	None
	Entrance 2 (Block 1795, Lots 1 to 4)	First developed in the late-19th century; subsequently developed with a series of small buildings, most with basements and some with rear yards	Basement excavation and construction and demolition of historic buildings on the property likely disturbed precontact ground surface	None
	East 115th Street Improvements	No map-documented structures within streetbed	Street grading may have disturbed historic ground surface by as much as 2 feet; additional disturbance associated with the installation of utilities	None
	East 116th Street Improvements	No map-documented structures within streetbed	Street grading and other improvements may have increased elevation of the streetbed; additional disturbance associated with the installation of utilities; potential for undisturbed precontact ground surface in areas not impacted by the installation of utilities	Review final project plans and determine if undisturbed portions of the streetbed would be affected
	East 117th Street Improvements	No map-documented structures within streetbed	Street grading and other improvements may have increased elevation of the streetbed; additional disturbance associated with the installation of utilities; potential for undisturbed precontact ground surface in areas not impacted by the installation of utilities	Review final project plans and determine if undisturbed portions of the streetbed would be affected

Table 6-1 (continued)
Sensitivity Determinations for Specific Project Elements

Station	Project Element	Summary of Development	Disturbance Assessment	Recommendations for Further Work
116th Street Station	East 118th Street Improvements	No map-documented structures within streetbed	Street grading may have disturbed historic ground surface by as much as 2.5 feet; additional disturbance associated with the installation of utilities	None
	East 119th Street Improvements	No map-documented structures within streetbed	Street grading and other improvements may have reduced the elevation of the streetbed by less than one foot; additional disturbance associated with the installation of utilities; potential for undisturbed precontact ground surface in areas not impacted by the installation of utilities	Review final project plans and determine if undisturbed portions of the streetbed would be affected
	East 120th Street Improvements	No map-documented structures within streetbed	Street grading and other improvements may have reduced the elevation of the streetbed by more than three feet; additional disturbance associated with the installation of utilities; potential for undisturbed precontact ground surface in areas not impacted by the installation of utilities	None
125th Street Station	Ancillary 1 and Entrance 1 (Block 1773, Part of Lot 20)	Located just west of the historic home/tavern of John H. Raub; developed with a variety of structures throughout the 19th and 20th centuries; current building constructed across Lot 20 in 1999.	It is unclear if the entire building was constructed with a basement; only the buildings historically along the southern half of the project site had basements in the past, though additional disturbance would have resulted from the construction and demolition of buildings on the site during the 19th and 20th centuries. Deeply buried shaft features could remain in portions of the site where basements are not present.	Phase 1B testing after the demolition of on-site buildings
	Ancillary 2 (Block 1749, Part of Lot 33)	Developed in the late-19th century; developed with various buildings with basements; later converted into a paved parking lot	Basement excavation and construction and demolition of historic buildings likely disturbed all shallow resources	None

**Table 6-1 (continued)
Sensitivity Determinations for Specific Project Elements**

Station	Project Element	Summary of Development	Disturbance Assessment	Recommendations for Further Work
125th Street Station	Entrance 2 (Option 1) (Block 1774, Lots 17 and 56)	Developed before 1851, site of Methodist Episcopal Church (which had burial vaults) possibly overlapped with the entrance location). Subsequently developed/redeveloped with a number of buildings; Lot 17 developed with existing building (which does not have a basement) in 2001 and Lot 56 developed with existing building (which has a basement) in 2009	Disturbance associated with the construction and demolition of historic buildings.	Topic Intensive Study of church property to determine possible presence of burial vaults on the project site
	Entrance 2 (Option 2) (Block 1773, Lots 17, 18, and 57)	Developed before 1851; subsequently developed and redeveloped during the 19th and early 20th centuries	Basement excavation and construction and demolition of historic buildings likely disturbed all shallow resources; Deeply buried shaft features could remain in portions of the site where basements are not present (Lot 57).	Phase 1B testing after the demolition of on-site buildings on Lot 57
	Entrance 3, Eastern Portion (Block 1773, Lots 4, 69, and 72)	Developed before 1851; subsequently developed with buildings with basements during the 19th and early 20th centuries	Basement excavation and construction and demolition of historic buildings likely disturbed all shallow resources and potential shaft features	None
Two-Train Tail Track Option	Entrance 3, Western Portion, and Park Avenue Streetbed Improvements	No map documented structures except for existing comfort station; streetbed formerly within a railroad cut	Railroad cut would have disturbed all shallow resources.	None
	Ancillary	Partially occupied by a historic road surface and later the Harlem Park Trotting Course; project site developed with buildings with basements in the late-19th century	Disturbance associated with the construction of historic buildings with basements would have destroyed shallow resources.	None
Three-Train Tail Track Option	Ancillary	Partially occupied by a the Harlem Park Trotting Course; project site developed with buildings with basements in the late-19th century	Disturbance associated with the construction of historic buildings with basements would have destroyed shallow resources.	None

C. RECOMMENDATIONS

As summarized in **Table 6-1**, four types of additional archaeological analysis are recommended in the supplemental APE elements. For the 106th Street station, the locations of Entrance 1, Entrance 2, and the East 108th Street streetbed improvements are in locations where deeply buried archaeological resources could be present beneath locations of filled marsh. As described in **Chapter 1, “Introduction and Project Description,”** a Geotechnical Investigation Program of the project corridor will be completed by the MTA in the near future. It is recommended that the boring logs from that investigation be reviewed to determine the potential depth of buried ground surfaces that predate the formation of the marshes ca. 3,000 years ago. If project elements would result in disturbance to those buried soil levels, then additional levels of archaeological analysis would be required pursuant to the terms of the 2004 PA. As dictated by the PA, all boring logs (including those monitored by an archaeologist) will be reviewed by an archaeologist and a memorandum summarizing that review will be submitted to LPC and SHPO. This review may result in revisions to the depths of archaeological sensitivity as determined in the 2003 Phase 1A and subsequent soil boring analysis, which relied on soil boring information that is now more than fourteen years old. Any changes to the depths of potential sensitivity within the 2003 APE will be determined in consultation with LPC and SHPO pursuant to the terms of the 2004 PA.

The proposed streetbed improvements within East 116th Street, East 117th Street, and East 119th Street could potentially impact undisturbed precontact ground surfaces that may have survived disturbance associated with the construction of streets and the installation of utilities. Upon the finalization of project plans, the final plans should be reviewed by a qualified archaeologist to determine if the proposed improvements would impact potentially undisturbed areas as described above in **Section A, “Streetbed Disturbance Associated with Utility Installation.”**

The preparation of a Topic Intensive Documentary Study is recommended for the location of Entrance 2 (Option 1) of the 125th Street Station to clarify the historic boundaries of the 125th Street Methodist Church and to determine the likelihood that the burial vaults associated with the church could be located within the site of Entrance 2 (Option 1). The document would be prepared pursuant to the terms outlined in the 2004 PA.

Finally, Phase 1B testing after the demolition of existing buildings is recommended in two locations. The site of Ancillary 1 and Entrance 1 of the 125th Station and the location of Entrance 2 (Option 2) of the 125th Street Station were developed before the installation of water and sewer lines in the neighborhood and were not fully developed with buildings with basements during the 19th and 20th centuries. Buried domestic shaft features may be present on these properties. Prior to the completion of Phase 1B testing, a Phase 1B testing protocol should be prepared and submitted to LPC and SHPO for review and concurrence pursuant to the terms of the 2004 PA.

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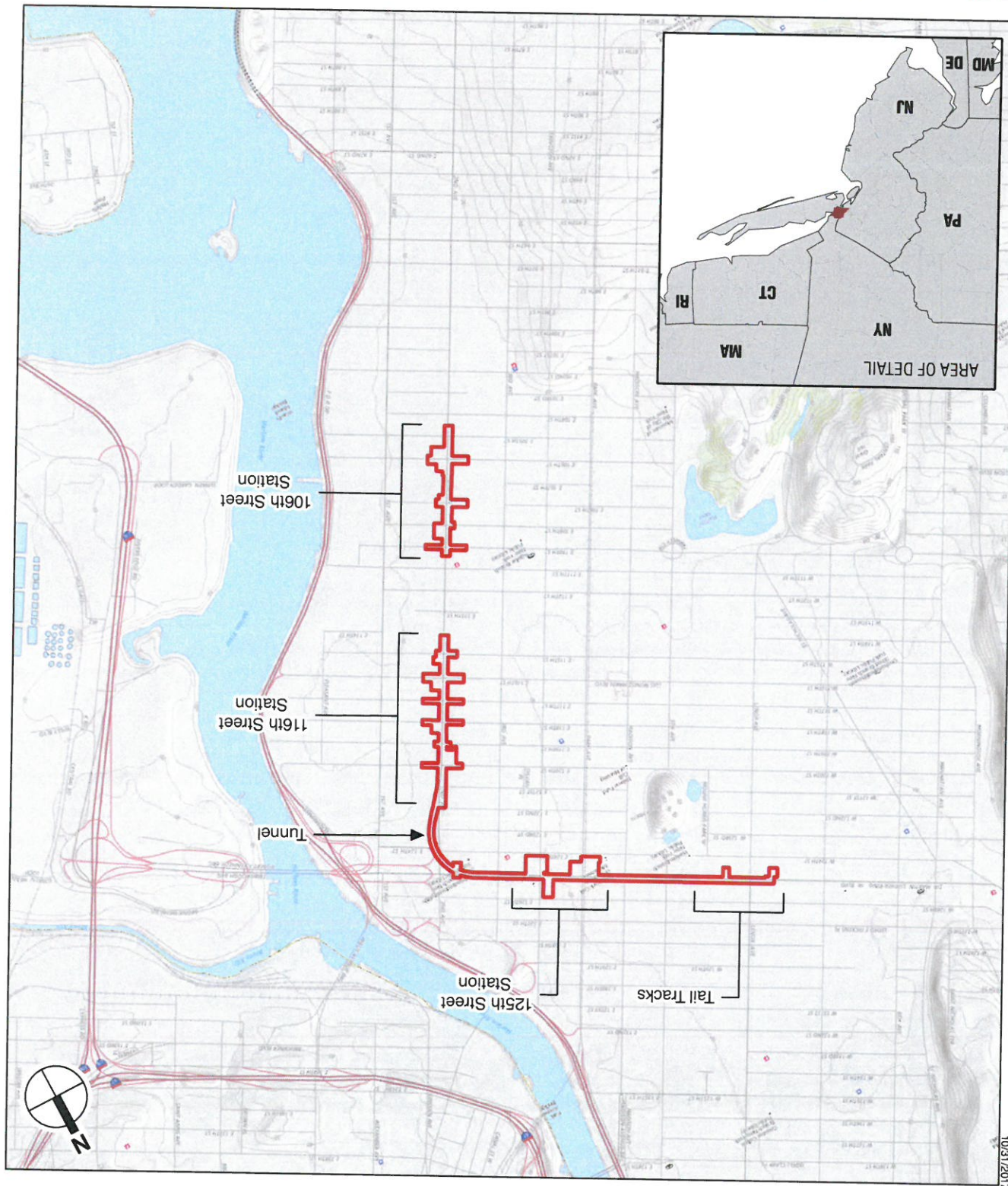
Figures

Source: USGS topo base map service from The National Map

SECOND AVENUE SUBWAY PHASE 2

Approximate coordinates of Project Site:
73°56'31"W 40°47'44"N

2017 Area of Potential Effect

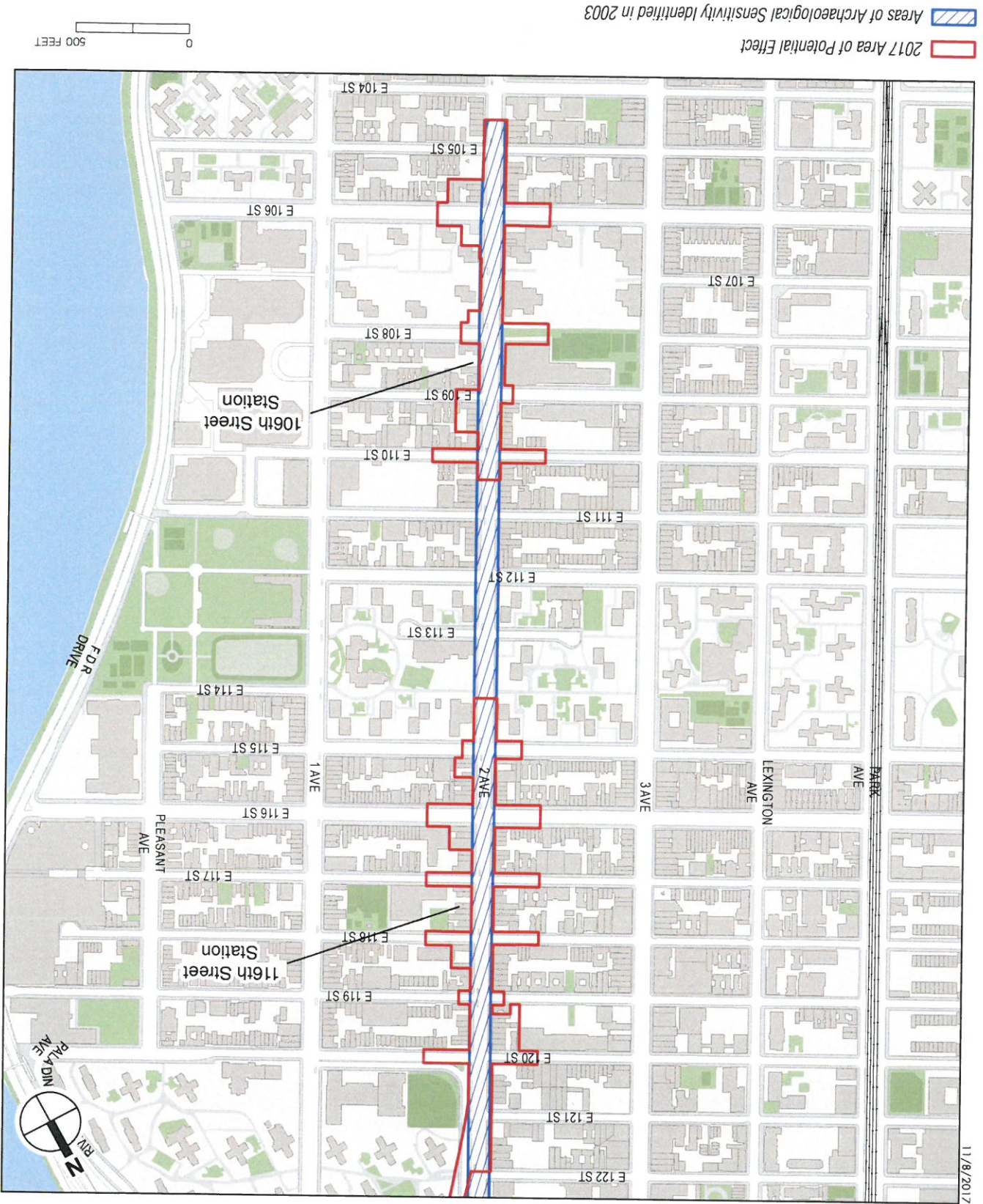


10/31/2017

USGS 7.5 Minute Topographic Map
Central Park Quad
Figure 1

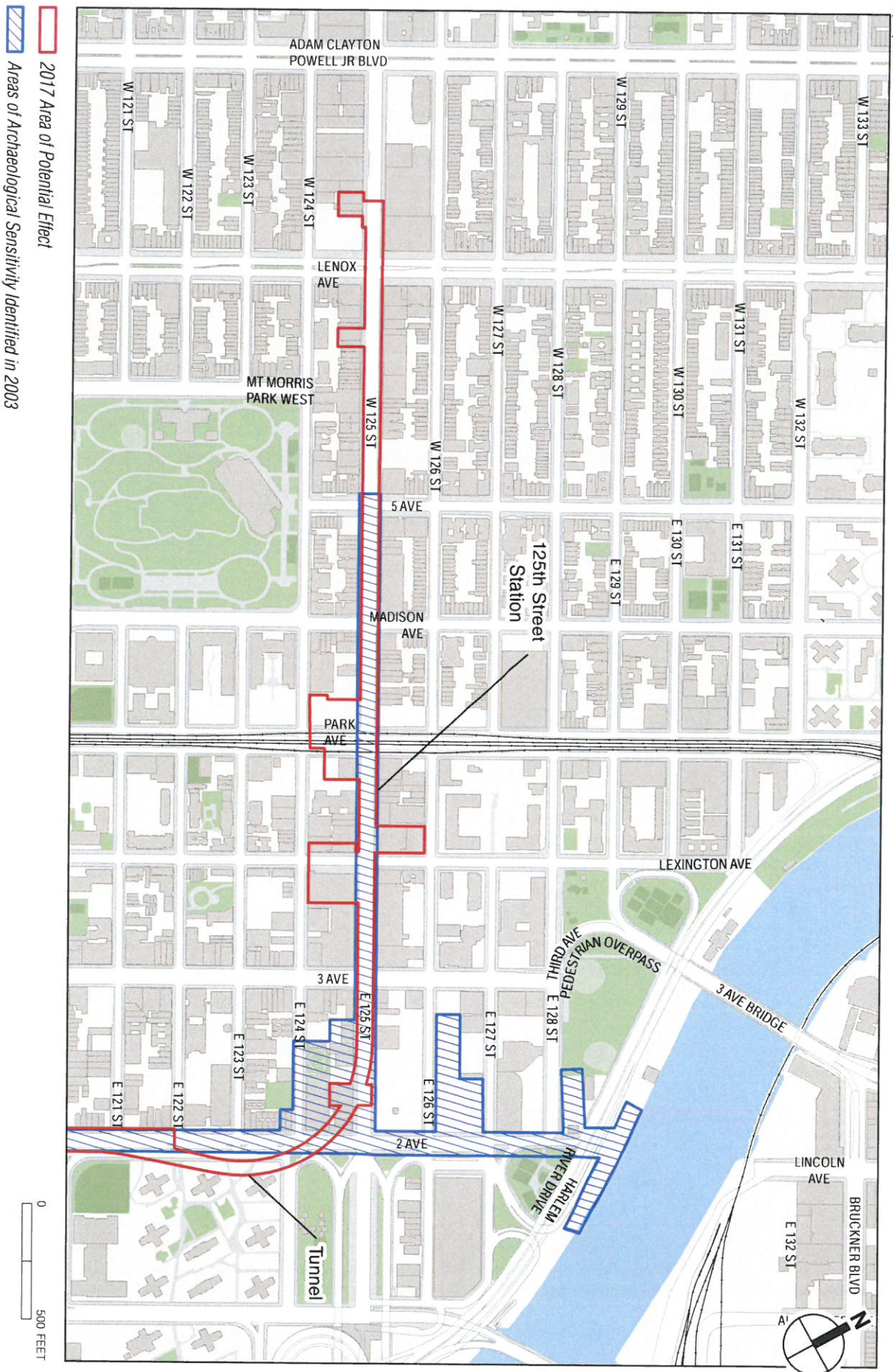
SECOND AVENUE SUBWAY PHASE 2

Project Location:
Second Avenue
Figure 2A



Legend:
[Blue hatched box] Areas of Archaeological Sensitivity Identified in 2003
[Red outline box] 2017 Area of Potential Effect

11/8/2017

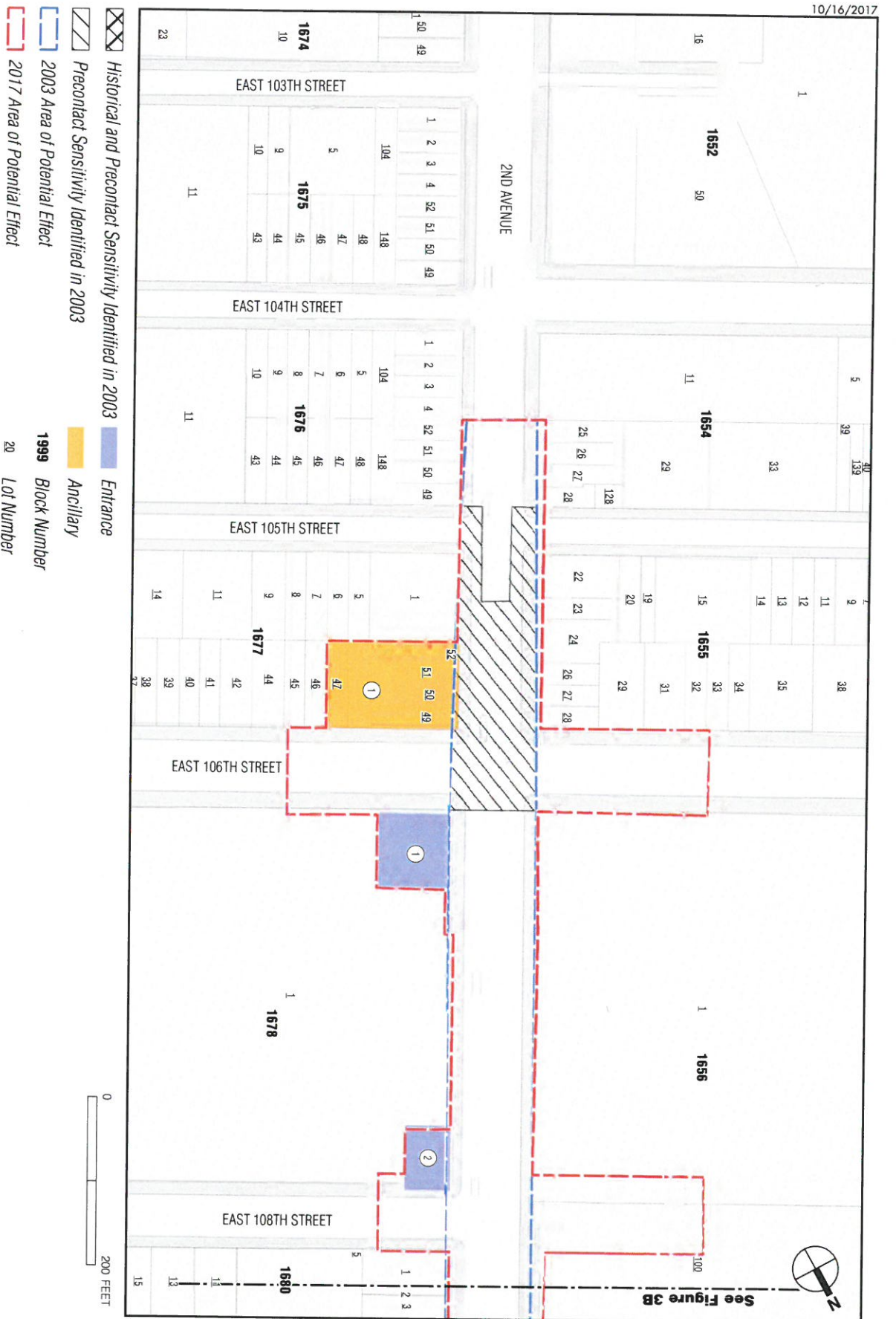


Project Location:

125th Street

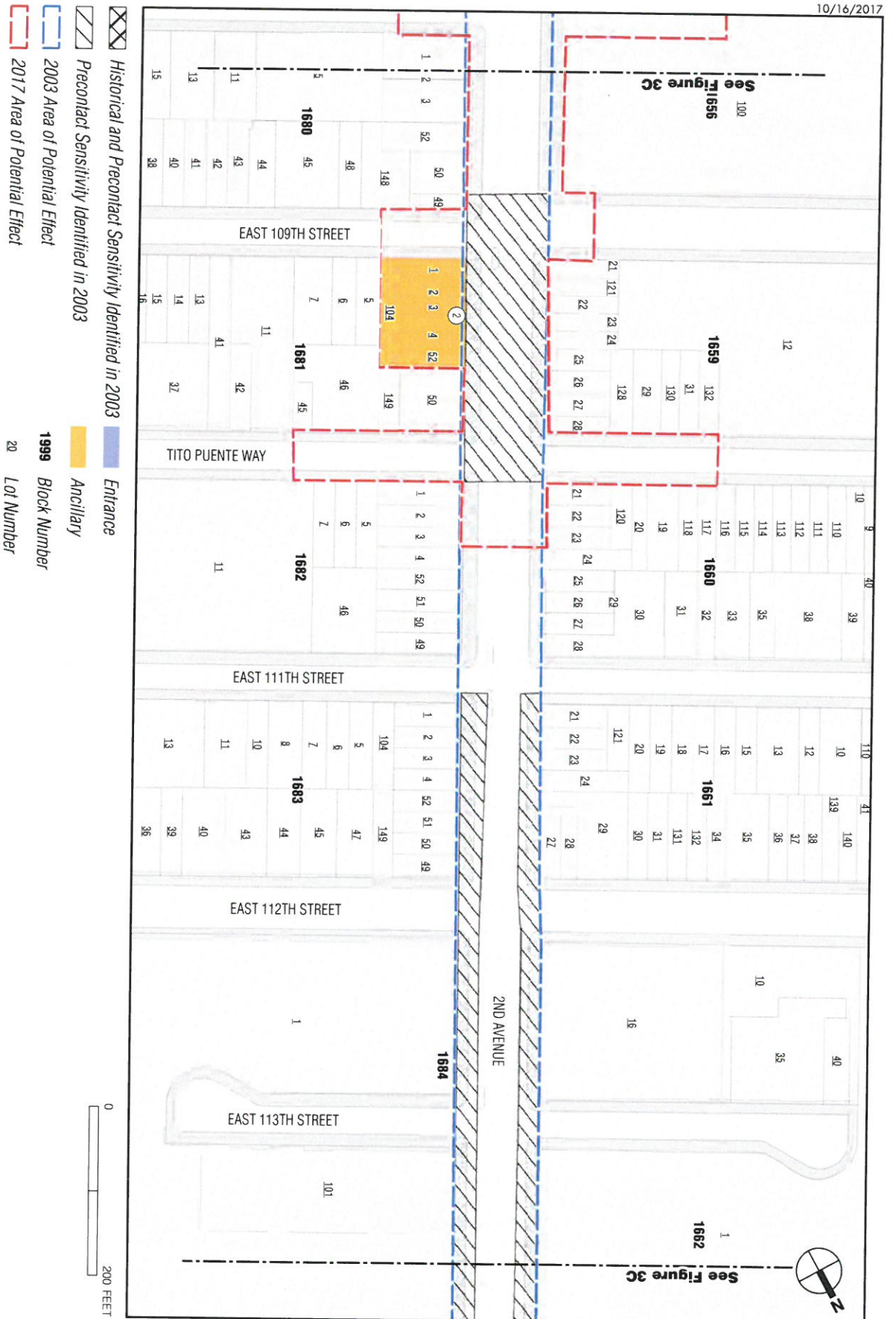
Figure 2B

SECOND AVENUE SUBWAY PHASE 2



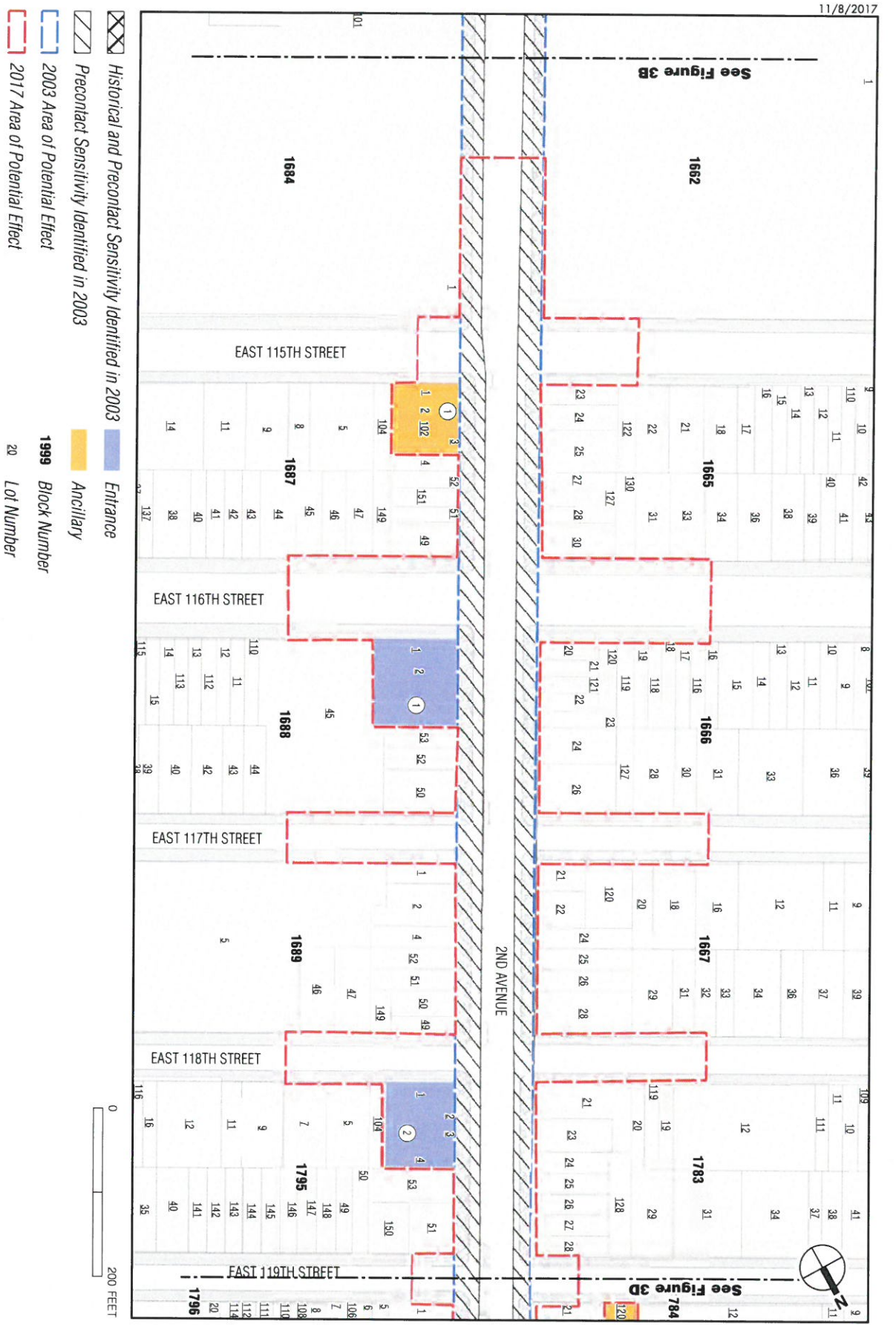
SECOND AVENUE SUBWAY PHASE 2

Archaeological Area of Potential Effect
Figure 3A



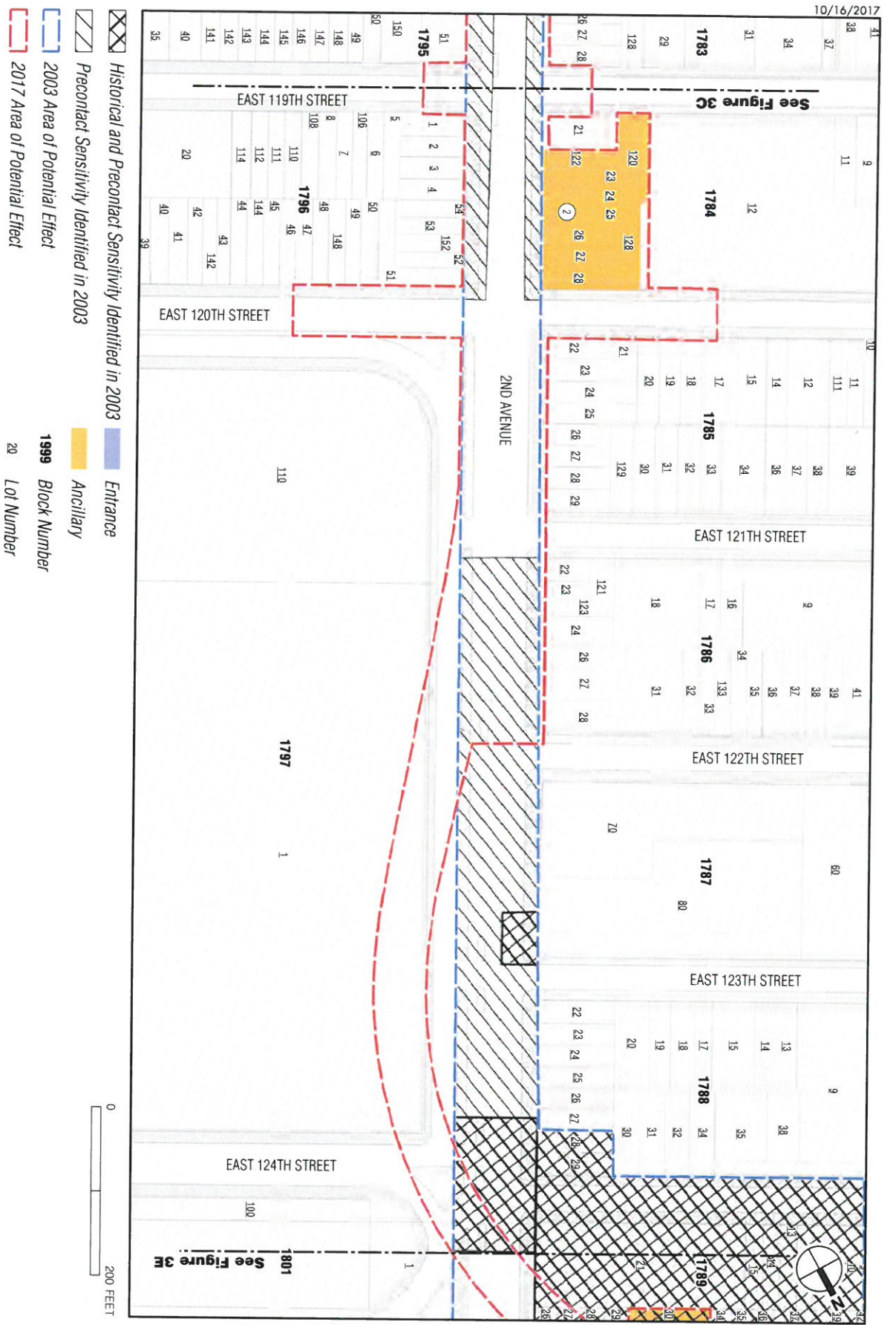
SECOND AVENUE SUBWAY PHASE 2

Archaeological Area of Potential Effect
Figure 3B



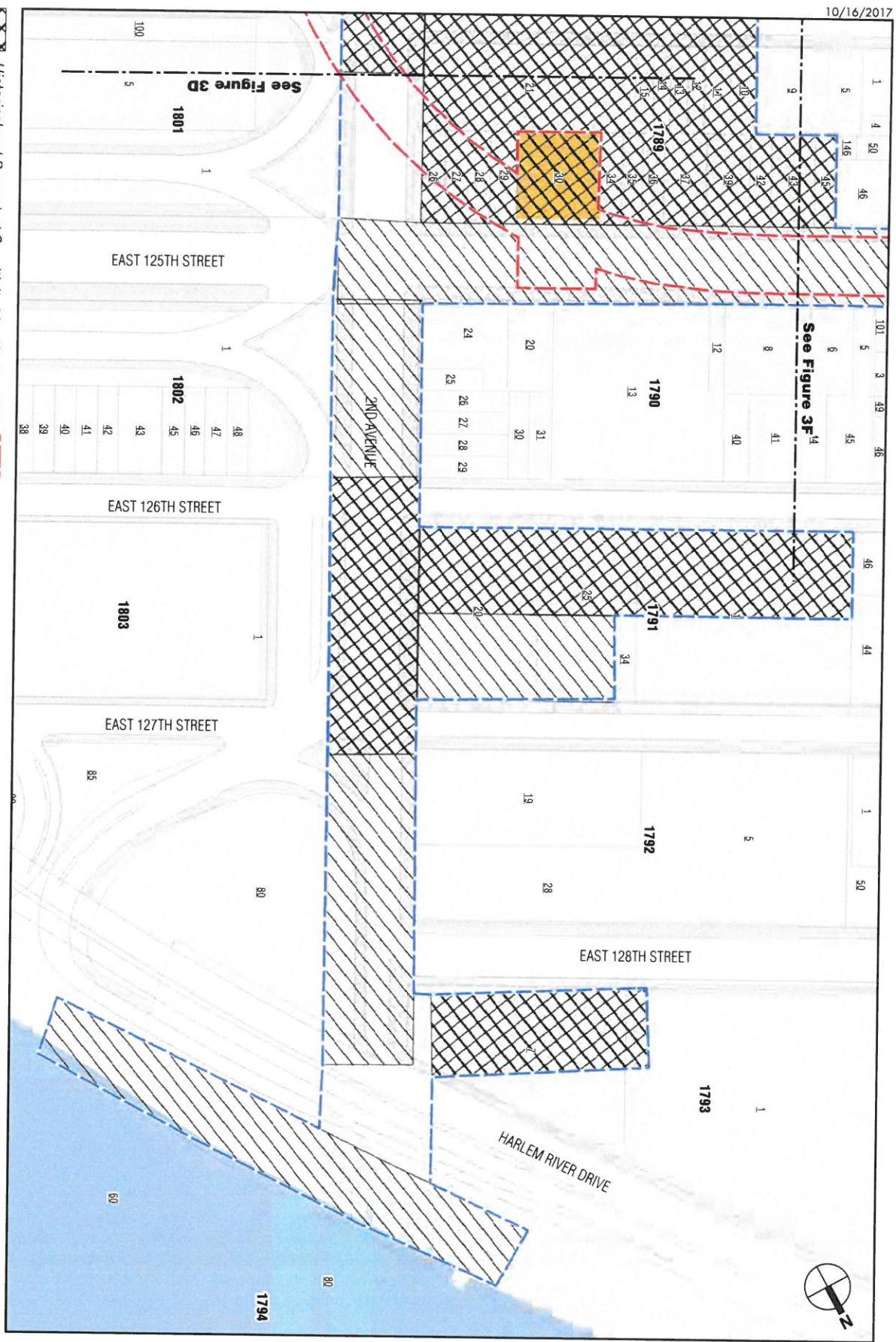
SECOND AVENUE SUBWAY PHASE 2

Archaeological Area of Potential Effect
Figure 3C



SECOND AVENUE SUBWAY PHASE 2

Archaeological Area of Potential Effect
Figure 3D



-  Historical and Precontact Sensitivity Identified in 2003
-  2017 Area of Potential Effect
-  2003 Area of Potential Effect
-  Ancillary
-  Entrance
-  1999 Block Number
-  2003 Lot Number

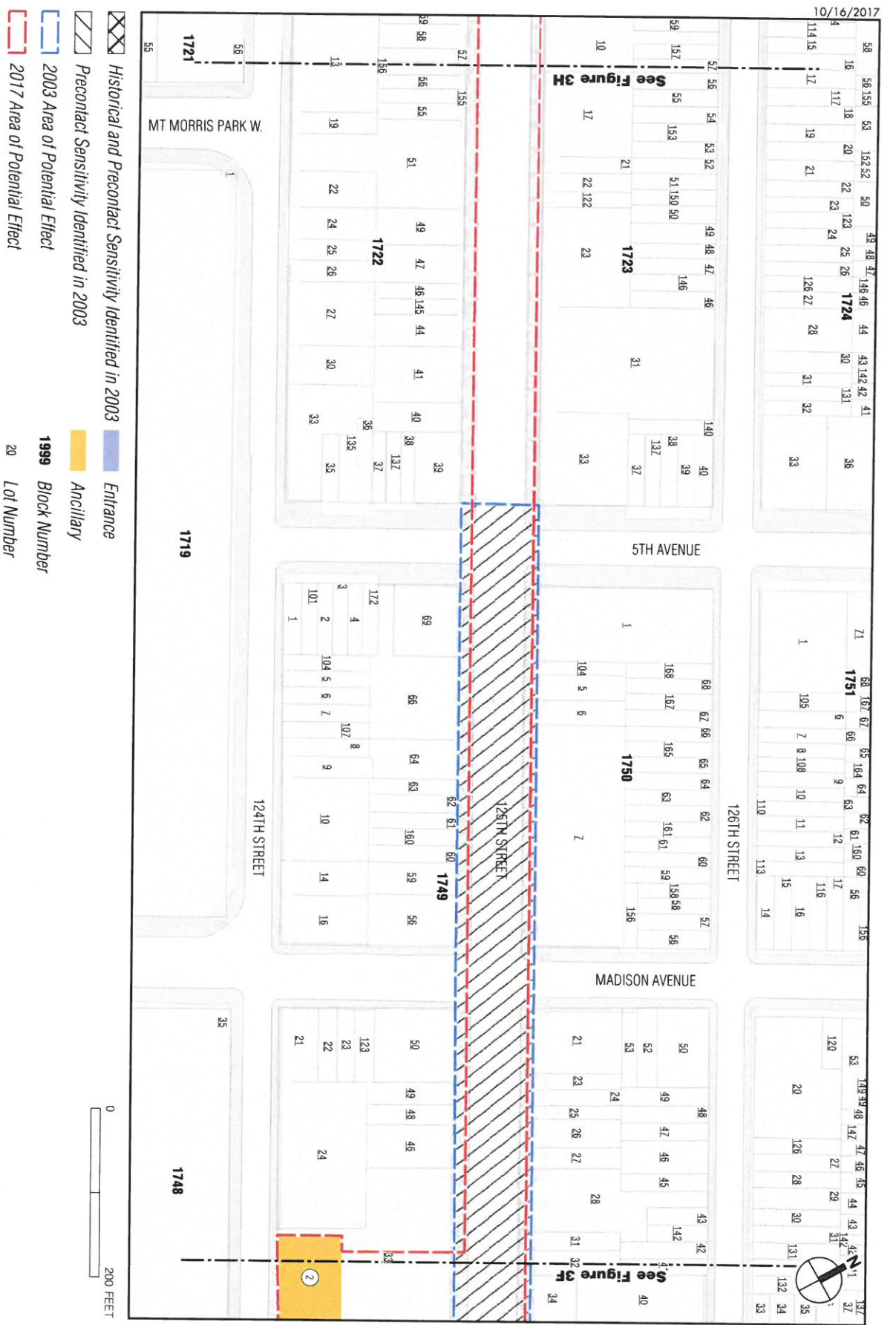


SECOND AVENUE SUBWAY PHASE 2
 Archaeological Area of Potential Effect
Figure 3E



SECOND AVENUE SUBWAY PHASE 2

Archaeological Area of Potential Effect
Figure 3F



SECOND AVENUE SUBWAY PHASE 2

Archaeological Area of Potential Effect
Figure 3G



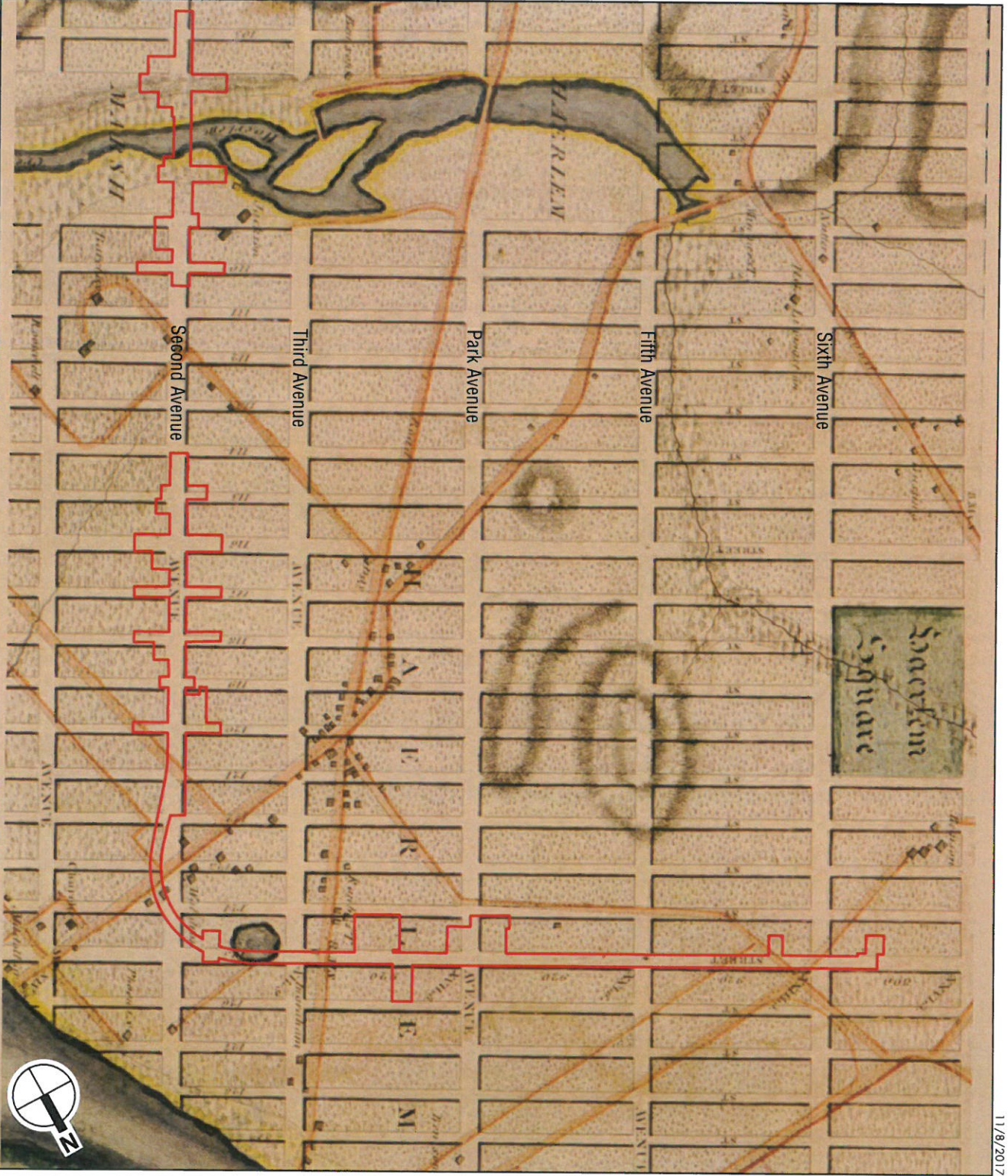
SECOND AVENUE SUBWAY PHASE 2

Archaeological Area of Potential Effect
Figure 3H

SECOND AVENUE SUBWAY PHASE 2

1865 Vieie Map
Figure 4





Approximate Location of 2017 Area of Potential Effect

0 500 FEET

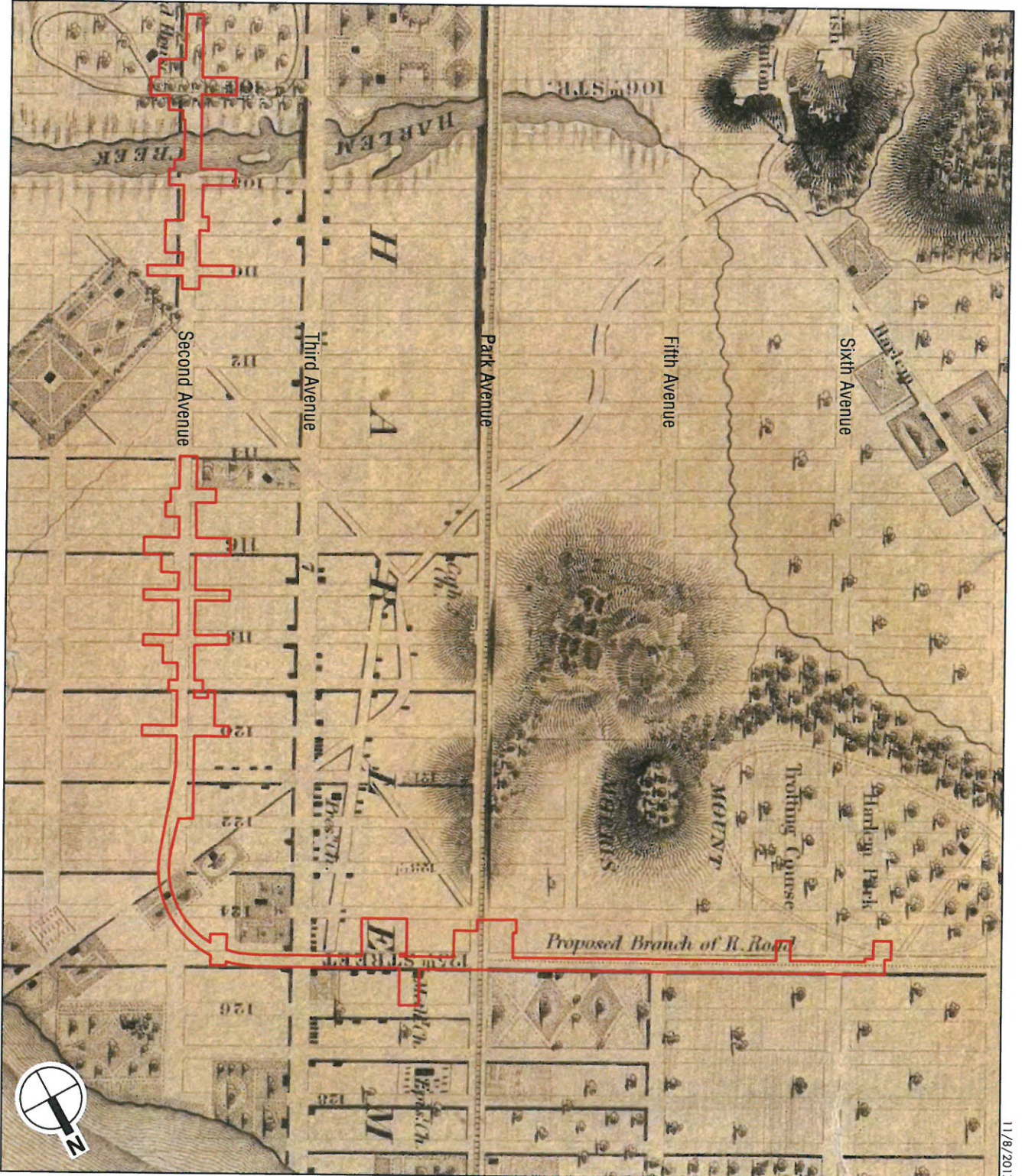
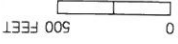
SECOND AVENUE SUBWAY PHASE 2

1811 Bridges Map
Figure 5

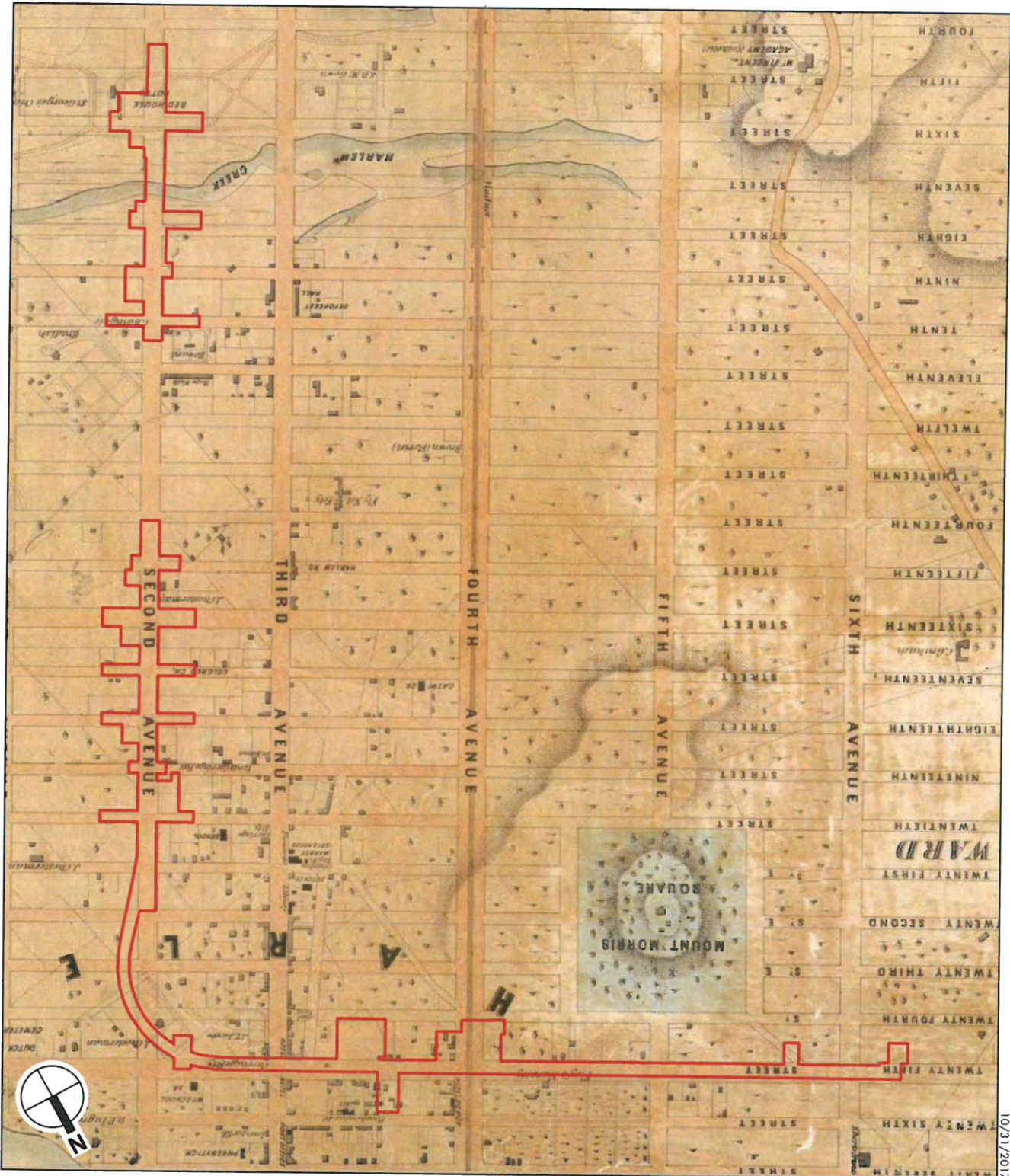
SECOND AVENUE SUBWAY PHASE 2

1836 Colton Map
Figure 6

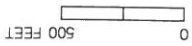
Approximate Location of 2017 Area of Potential Effect



11/8/2017



Approximate Location of 2017 Area of Potential Effect

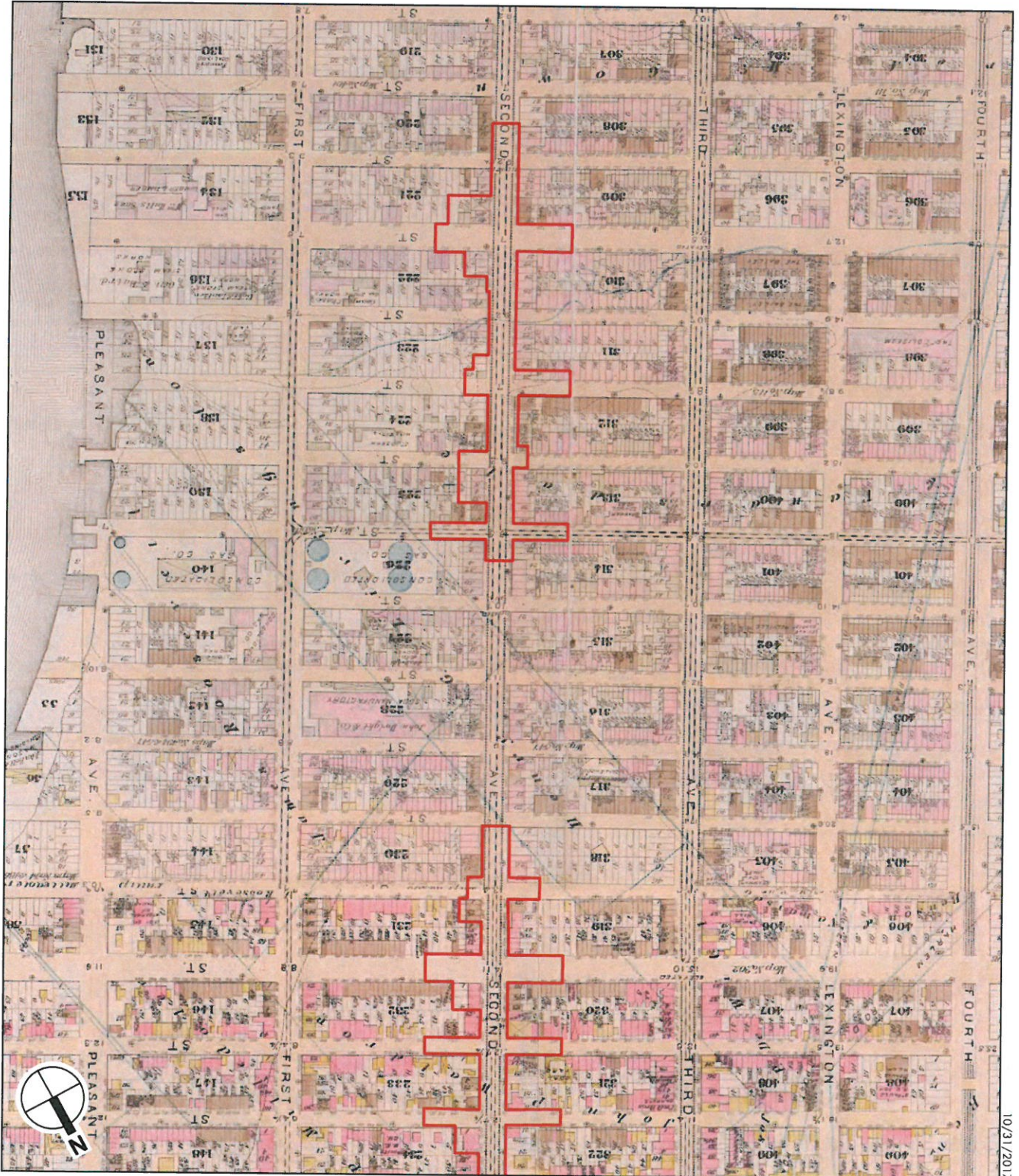


1851 Driggs Map
Figure 7

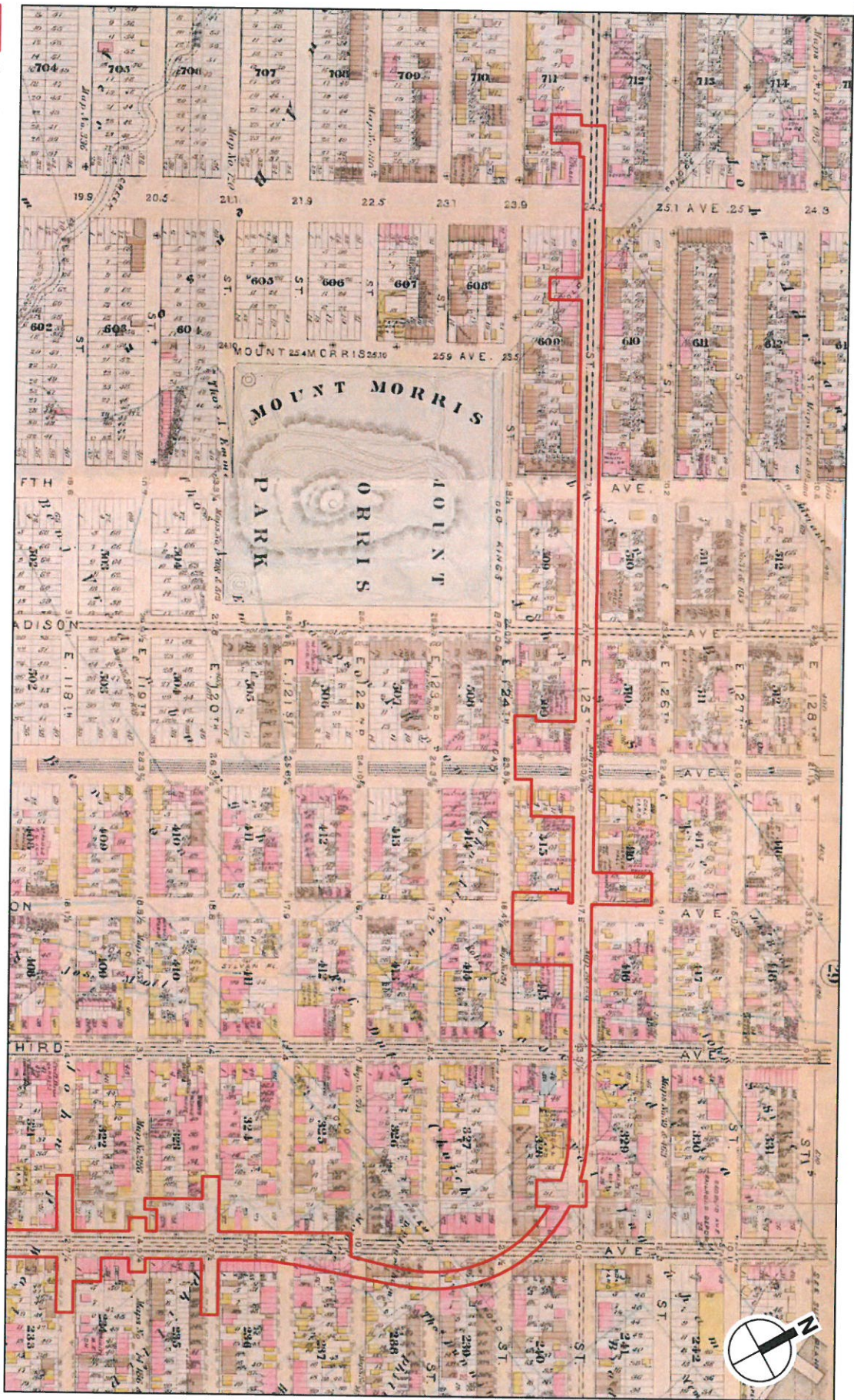
1885 Robinson Atlas
Figure 8A

SECOND AVENUE SUBWAY PHASE 2

Approximate Location of 2017 Area of Potential Effect



10/31/2017



Approximate Location of 2017 Area of Potential Effect

0 500 FEET

SECOND AVENUE SUBWAY PHASE 2

1885 Robinson Atlas
Figure 8B

1896 Sanborn Map
Figure 9A

Approximate Location of 2017 Area of Potential Effect



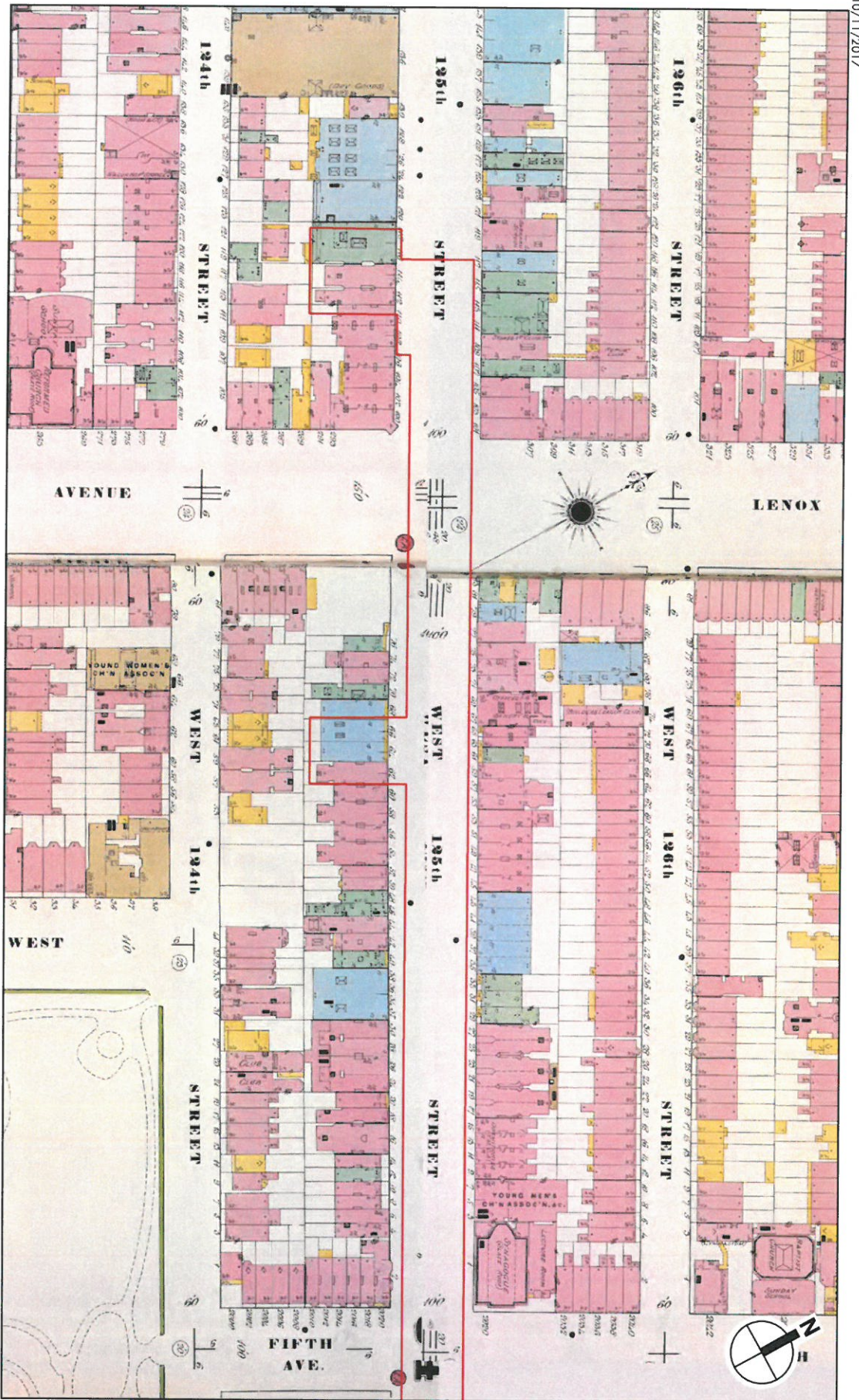


Approximate Location of 2017 Area of Potential Effect

0 500 FEET

SECOND AVENUE SUBWAY PHASE 2

1896 Sanborn Map
Figure 9B

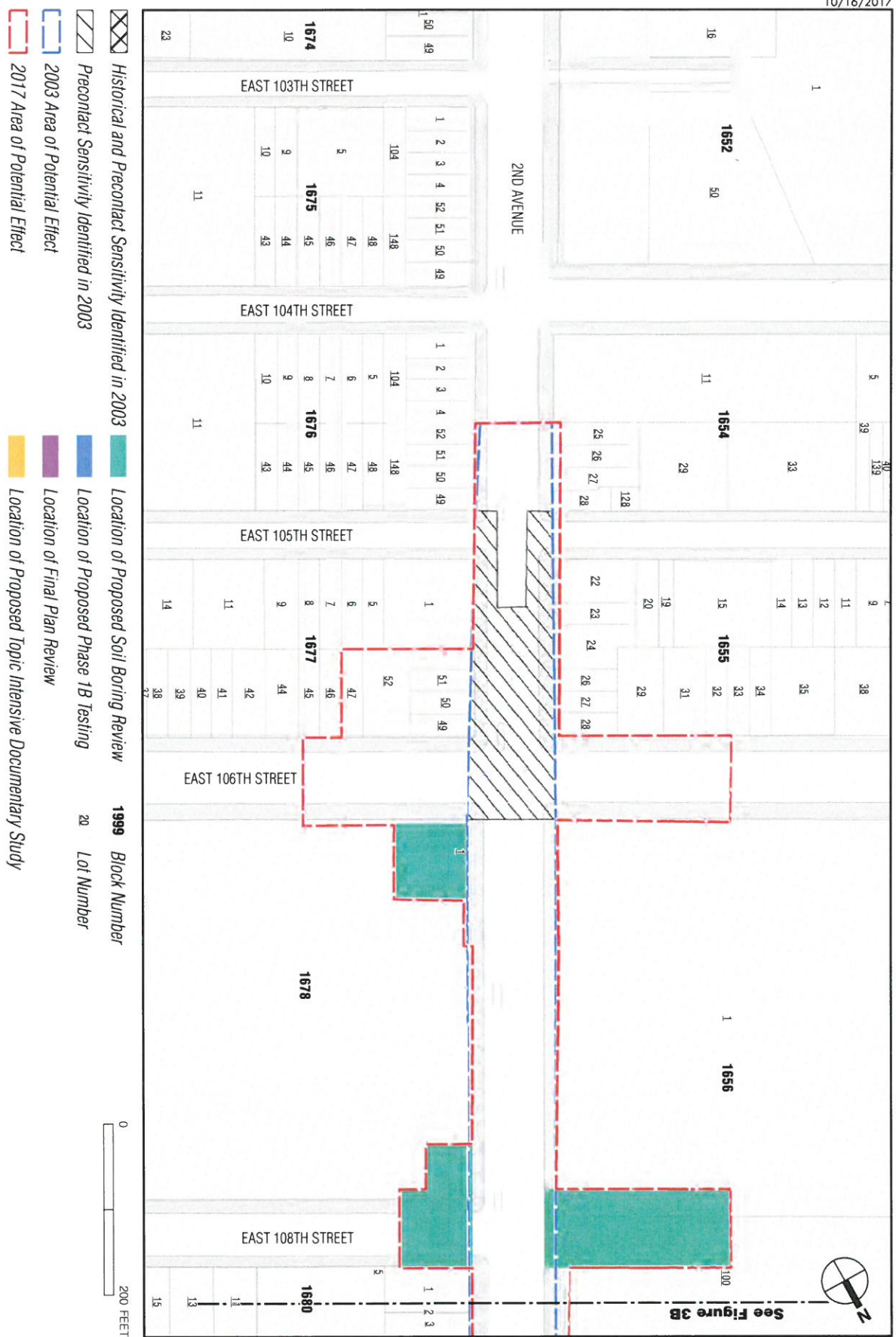


Approximate Location of 2017 Area of Potential Effect

0 200 FEET

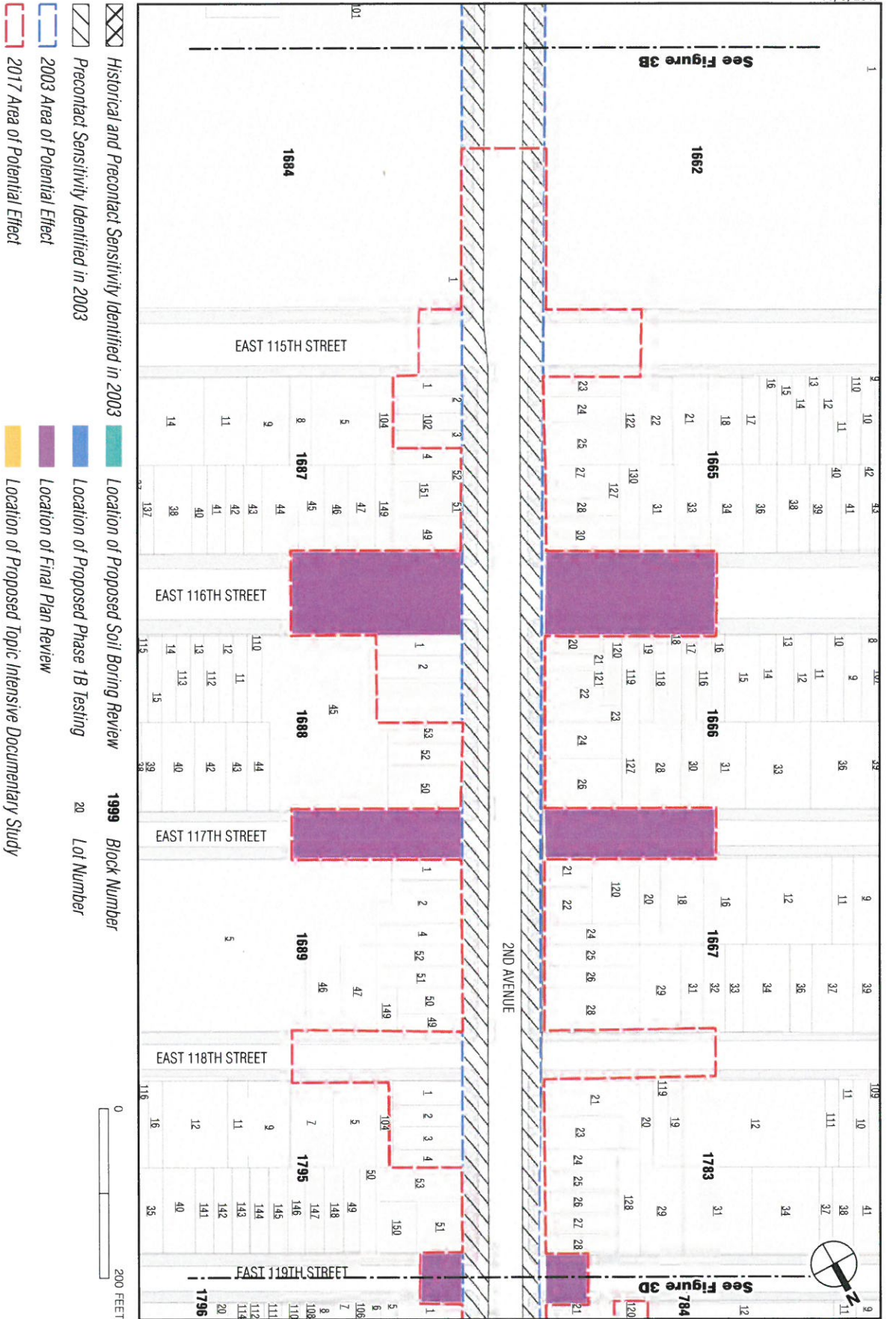
SECOND AVENUE SUBWAY PHASE 2

1902 Sanborn Map
Figure 10



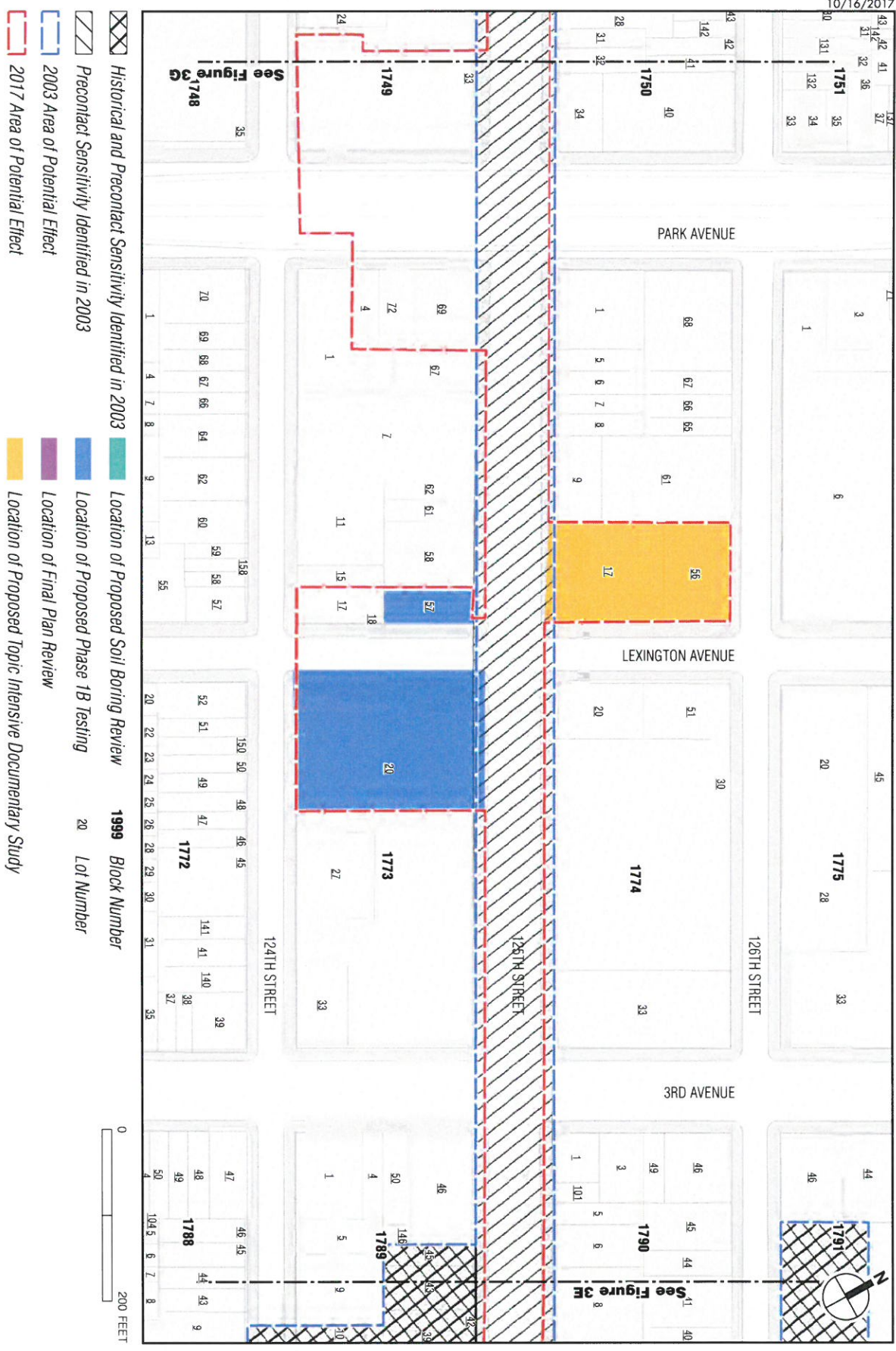
SECOND AVENUE SUBWAY PHASE 2

Areas of Archaeological Sensitivity
Figure 11A



SECOND AVENUE SUBWAY PHASE 2

Areas of Archaeological Sensitivity
Figure 11B



SECOND AVENUE SUBWAY PHASE 2

Areas of Archaeological Sensitivity
Figure 11C

**Appendix A:
Abstracts of Soil Borings from the 1937 Rock Data Map**

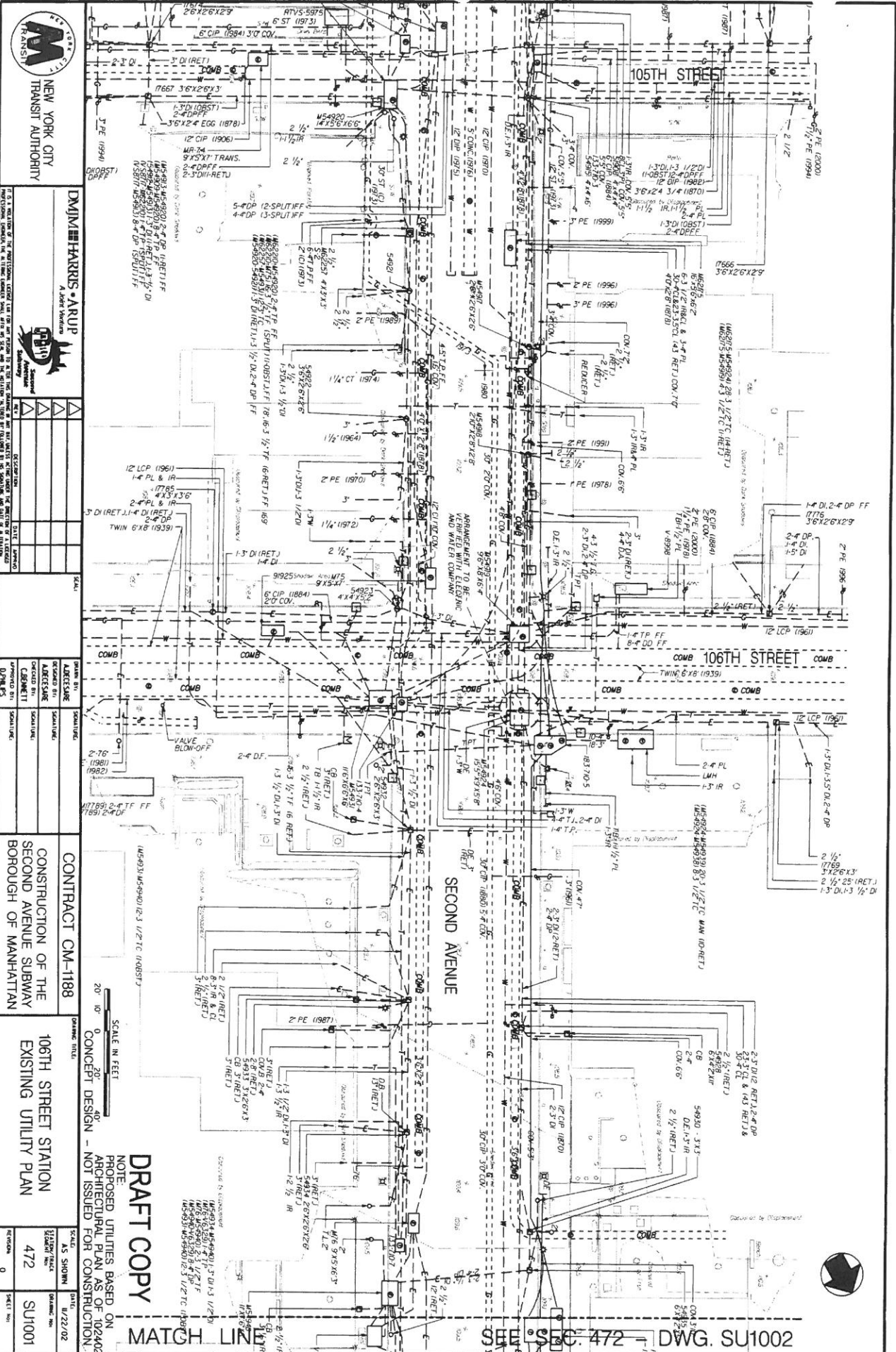
Appendix A: Abstracts of Soil Borings from the 1937 Rock Data Map

Boring Location	Volume	Sheet	Boring	Surface Elevation	Legal Grade of Nearest Intersection	Soil Profile Opening Depth	Soil Profile Closing Depth	Soil Profile Description
West side Second Ave between 105th and 107th	3	18	42	8.4	9.2 at NE corner 2nd and 105th; 7 at NE corner 2nd and 106th	33	33	gray sand, fine gravel
						39.5	39.5	very fine brown sand
						8	19	fine brown sand
						8	19	very fine brown sand
West side Second Ave between 106th and 107th	3	18	43	8.1	7 at NE corner 2nd and 106th; 9.2 at NE corner 2nd and 107th	9	32	gray sand, fine gravel
						9	32	Sand, gravel & boulder fill
						32	32	med. Brown sand
						39	39	sand & little gravel
						32	32	fine gray sand
East side Second between 107th and 108th	3	19	6	8.1	9.2 at NE corner 2nd and 107th; 7 at NE corner 2nd and 108th	16.5	25	Gravel & sand fill
						16.5	25	Blue clay
						25	34	Gravel & clay
						34	34	Fine sand
West side Second and 109th	3	19	7	9.6	9.2 at NE corner 2nd and 108th	15	25	Earth Fill
						15	25	Sand & gravel
						25	36.5	coarse sand
						36.5	43	coarse brown sand
						4	4	mica sand
						4	4	Fill (excavated)
						17	17	Comp. f. brown sand, little silt
						17	23	loose c-f (predominately) m-f brown sand, trace of silt,
						23	32	trace of fine gravel
						32	32	loose brown sand, little silt
						32	43	comp. interbedded layers of f. gray sand & silt
						43	56	moderately comp. interbedded layers of brown sand & silt
						56	85.2	Moderately stiff varved clay, occasional layer of f. brown sand & brown gray silt
South side 109th between First and Second	3	19	92	3.2 (below base-ment)	9.2 at NE corner 2nd and 110th	0	16	Earth Fill
						16	21	coarse sand
						21	26	fine mica sand
						26	43	mica sand, trace of clay
						43	16	earth fill & small stones
						16	20	very coarse sand
						20	35	coarse brown sand
						35	40.6	coarse sand & clay
						40.6	44	clay & little sand
						0	13.5	earth & clay fill
						13.5	21	med. Coarse brown sand
						21	27	fine brown sand
						27	31.3	coarse sand
						31.3	37.3	gnt
						37.3	44	limestone hard
West side Second between 105th and 107th	3	18	42	8.4	9.2 at NE corner 2nd and 105th; 7 at NE corner 2nd and 106th	33	33	gray sand, fine gravel
						39.5	39.5	very fine brown sand
						8	19	fine brown sand
						8	19	very fine brown sand
						19	33	gray sand, fine gravel
						33	39.5	very fine brown sand
						39.5	45	gray sand, fine gravel
						45	45	gray sand, fine gravel
West side Second Ave between 106th and 107th	3	18	43	8.1	7 at NE corner 2nd and 106th; 9.2 at NE corner 2nd and 107th	9	32	Sand, gravel & boulder fill
						9	32	med. Brown sand
						32	32	sand & little gravel
						39	39	fine gray sand
East side Second between 107th and 108th	3	19	6	8.1	9.2 at NE corner 2nd and 107th; 7 at NE corner 2nd and 108th	16.5	25	Gravel & sand fill
						16.5	25	Blue clay
						25	34	Gravel & clay
						34	34	Fine sand
West side Second and 109th	3	19	7	9.6	9.2 at NE corner 2nd and 108th	15	25	Earth Fill
						15	25	Sand & gravel
						25	36.5	coarse sand
						36.5	43	coarse brown sand
						4	4	mica sand
						4	4	Fill (excavated)
						17	17	Comp. f. brown sand, little silt
						17	23	loose c-f (predominately) m-f brown sand, trace of silt,
						23	32	trace of fine gravel
						32	32	loose brown sand, little silt
						32	43	comp. interbedded layers of f. gray sand & silt
						43	56	moderately comp. interbedded layers of brown sand & silt
						56	85.2	Moderately stiff varved clay, occasional layer of f. brown sand & brown gray silt
SE corner 2nd and 110th	3	19	8	9.9	8.4 at NE corner 2nd and 110th	0	16	Earth Fill
						16	21	coarse sand
						21	26	fine mica sand
						26	43	mica sand, trace of clay
						43	16	earth fill & small stones
						16	20	very coarse sand
						20	35	coarse brown sand
						35	40.6	coarse sand & clay
						40.6	44	clay & little sand
						0	13.5	earth & clay fill
						13.5	21	med. Coarse brown sand
						21	27	fine brown sand
						27	31.3	coarse sand
						31.3	37.3	gnt
						37.3	44	limestone hard
SE corner 2nd and 110th	3	19	8	9.9	8.4 at NE corner 2nd and 110th	0	16	Earth Fill
						16	21	coarse sand
						21	26	fine mica sand
						26	43	mica sand, trace of clay
						43	16	earth fill & small stones
						16	20	very coarse sand
						20	35	coarse brown sand
						35	40.6	coarse sand & clay
						40.6	44	clay & little sand
						0	13.5	earth & clay fill
						13.5	21	med. Coarse brown sand
						21	27	fine brown sand
						27	31.3	coarse sand
						31.3	37.3	gnt
						37.3	44	limestone hard

Boring Location	Volume	Sheet	Boring	Surface Elevation	Legal Grade of Nearest Intersection	Soil Profile Opening Depth	Soil Profile Closing Depth	Soil Profile Description
NE corner 2nd and 13th	3	19	11	9.8	9 at NE corner 2nd and 13th	9	26	Earth fill coarse sand brown clay Sand & loam fine sand, clear and sharp fine same with a small portion of coarser sand medium coarse to very fine sand (brownish) fine gray sand & quicksand
Interior of Block 1681 (multiple borings in this location)	3	19	44	10.9	10.8 at NE corner 2nd and 11th	20	30	quicksand
East side of 2nd between 114th and 115th	3	32	21	12.5	11.2 at NE corner 2nd and 114th	0	14	very fine sand & clay medium fin sand & little clay
West side 2nd between 115th and 116th	3	32	22	14.9	13.3 at NE corner 2nd and 115th	0	43	Sand, gravel & boulder fill brown sand gray sand fine gray sand coarse gray sand
East side 2nd between 116th and 117th	3	32	23	14.2	14.9 at NE corner 2nd and 116th	2	42.4	Fill fine brown sand sand & clay sand & gravel limestone (hard) limestone (hard)
West side 2nd between 117th and 118th	3	32	24	14	12.6 at NE corner 2nd and 118th	9	42.4	earth fill clay, sand, gravel limestone (hard)
Center of intersection of 2nd and 121st	3	30	45	12.6	12.6 at NE corner 2nd and 121st	0	17.7	Rock top
SW corner 3rd and 125th	3	30	17	14.7	13.3 at NE corner 3rd and 125th	0	24	sand
SE corner Lexington and 125th	3	30	10	17.8	17.5 at NE corner Lexington and 125th	0	26.5	rock or boulder sand sand & gravel disintegrated rock mica schist rock
East side of center median in Park Avenue south of 125th	3	30	18	22.4	23 at NE corner of Park and East 125th	55	63.8	sand & boulders fill red clay coarse sand & boulders medium coarse sand & boulders mica schist feldspar & spurious marble
NE corner Lexington and 125th	4	4	45	17.4	17.5 at SW corner Lexington and 125th	0	12.1	Clay Coarse sand decayed rock rock or boulder

Source: Rock Data Map, Office of the Manhattan Borough President (1937)

**Appendix B:
Existing Utility Plans**



M HANSHIN
NEW YORK CITY
 TRANSIT AUTHORITY

DMM-HARRIS-ARUP
 A Joint Venture
 ARCHITECTS
ENR
 ENGINEERS

NO.	REVISION	DATE
1	ISSUE FOR PERMITS	11/21/02
2	ISSUE FOR CONSTRUCTION	11/21/02

DESIGNED BY	SPECIALIST
CHECKED BY	SPECIALIST
APPROVED BY	SPECIALIST
DATE	11/21/02

CONTRACT CM-1188
 CONSTRUCTION OF THE
 SECOND AVENUE SUBWAY
 BOROUGH OF MANHATTAN

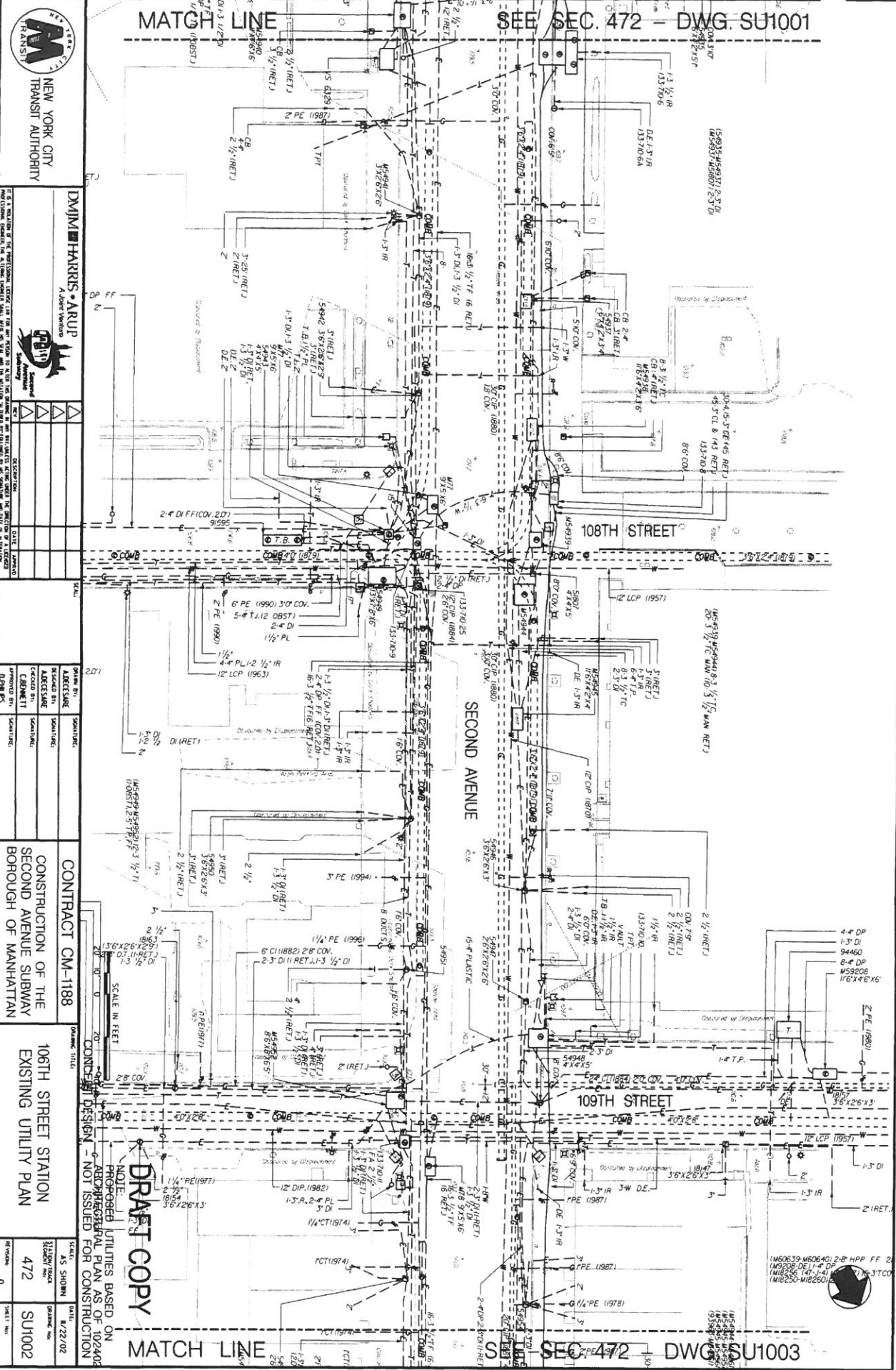
106TH STREET STATION
 EXISTING UTILITY PLAN

SCALE	1/8" = 1'-0"
SHEET NO.	472
TOTAL SHEETS	10
DATE	11/22/02
DRAWING NO.	SU1001

DRAFT COPY
 NOTE:
 PROPOSED UTILITIES BASED ON
 ARCHITECTURAL PLAN AS OF 10/24/02
 NOT ISSUED FOR CONSTRUCTION

MATCH LINE

SEE SEC. 472 - DWG. SU1002



M
 NEW YORK CITY
 TRANSIT AUTHORITY

DMJM HARRIS • ARUP
 A Joint Venture
 Architectural
 Engineering
 Planning

NO.	DESCRIPTION	DATE	BY
1	ISSUED FOR CONSTRUCTION	11/21/02	Tom Stain
2	REVISION		
3	REVISION		
4	REVISION		
5	REVISION		
6	REVISION		
7	REVISION		
8	REVISION		
9	REVISION		
10	REVISION		

CONTRACT CM-1188
 CONSTRUCTION OF THE
 SECOND AVENUE SUBWAY
 BOROUGH OF MANHATTAN

106TH STREET STATION
 EXISTING UTILITY PLAN

SCALE	DATE
AS SHOWN	11/22/02
DATE	
472	SU1002
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DRAFT COPY

NOTE: ALL UTILITIES BASED ON
 ARCHITECTURAL PLANS OF 102402
 DESIGN - NOT ISSUED
 FOR CONSTRUCTION





NEW YORK CITY
TRANSIT AUTHORITY

DMJM HARRIS • ARUP

A Joint Venture



Approved

DATE: 11/21/02

SCALE

CONTRACT CM-1188

CONSTRUCTION OF THE

SECOND AVENUE SUBWAY

BOROUGH OF MANHATTAN

106TH STREET STATION

EXISTING UTILITY PLAN

DATE: 11/21/02

SCALE

CONTRACT CM-1188

CONSTRUCTION OF THE

SECOND AVENUE SUBWAY

BOROUGH OF MANHATTAN

106TH STREET STATION

EXISTING UTILITY PLAN

DATE: 11/21/02

SCALE

CONTRACT CM-1188

CONSTRUCTION OF THE

SECOND AVENUE SUBWAY

BOROUGH OF MANHATTAN

106TH STREET STATION

EXISTING UTILITY PLAN

DATE: 11/21/02

SCALE

CONTRACT CM-1188

CONSTRUCTION OF THE

SECOND AVENUE SUBWAY

BOROUGH OF MANHATTAN

106TH STREET STATION

EXISTING UTILITY PLAN

DATE: 11/21/02

SCALE

CONTRACT CM-1188

CONSTRUCTION OF THE

SECOND AVENUE SUBWAY

BOROUGH OF MANHATTAN

106TH STREET STATION

EXISTING UTILITY PLAN

DATE: 11/21/02

SCALE

CONTRACT CM-1188

CONSTRUCTION OF THE

SECOND AVENUE SUBWAY

BOROUGH OF MANHATTAN

106TH STREET STATION

EXISTING UTILITY PLAN

DATE: 11/21/02

SCALE

CONTRACT CM-1188

CONSTRUCTION OF THE

SECOND AVENUE SUBWAY

BOROUGH OF MANHATTAN

106TH STREET STATION

EXISTING UTILITY PLAN

DATE: 11/21/02

SCALE

CONTRACT CM-1188

CONSTRUCTION OF THE

SECOND AVENUE SUBWAY

BOROUGH OF MANHATTAN

106TH STREET STATION

EXISTING UTILITY PLAN

DATE: 11/21/02

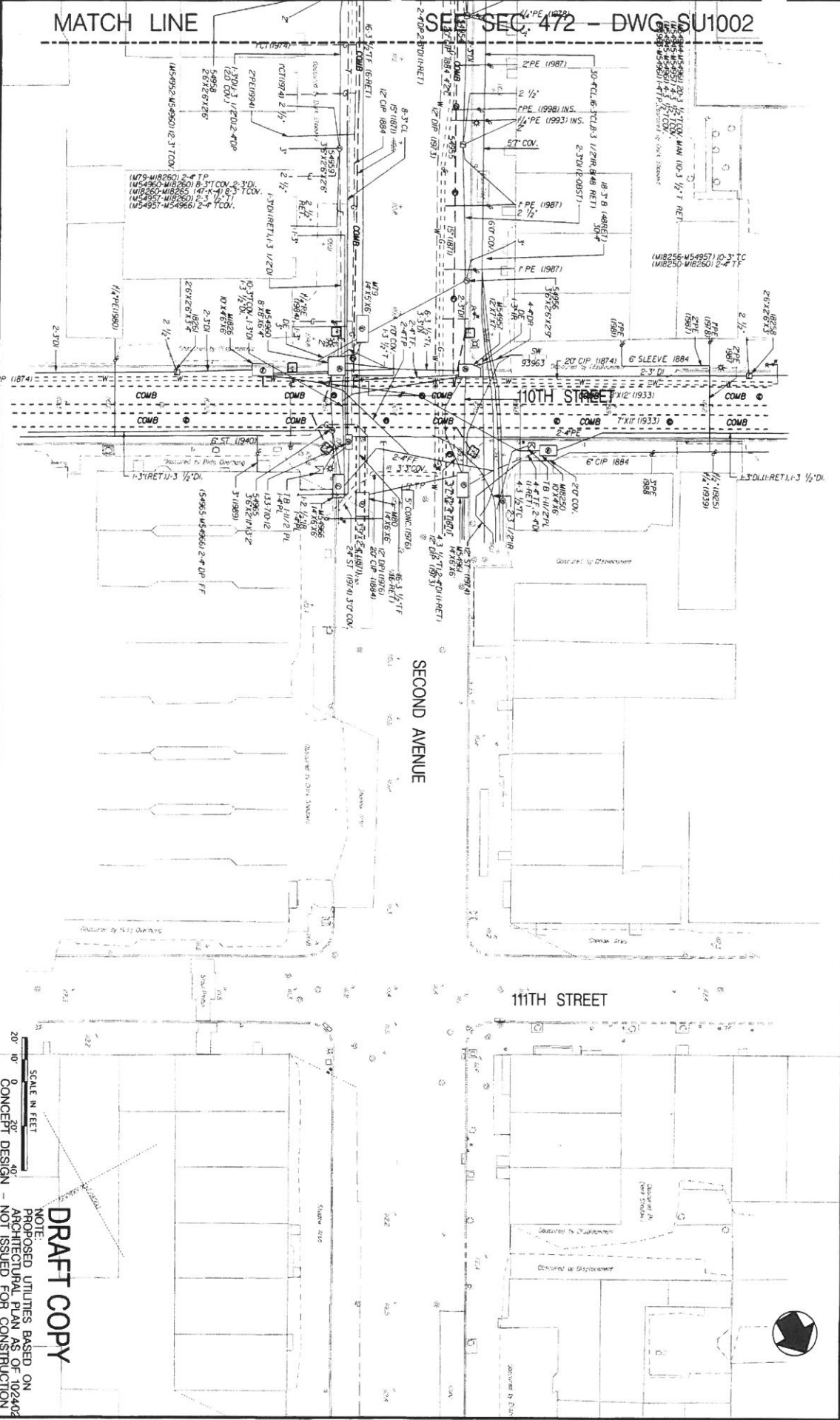
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CONTRACT CM-1188

CONSTRUCTION OF THE

MATCH LINE

SEC. 472 - DWG. SU1002



NOTE:
PROPOSED UTILITIES BASED ON
ARCHITECTURAL PLAN AS OF 10/24/02
CONCEPT DESIGN -
NOT ISSUED FOR CONSTRUCTION

DRAFT COPY

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40' = 1/2" D

DATE	11/21/02
SCALE	AS SHOWN
REVISION	0
DRAWING NO.	SU1003
DATE	11/22/02



DMJM/HARRIS • ARUP
 A Joint Venture
 Design Engineer

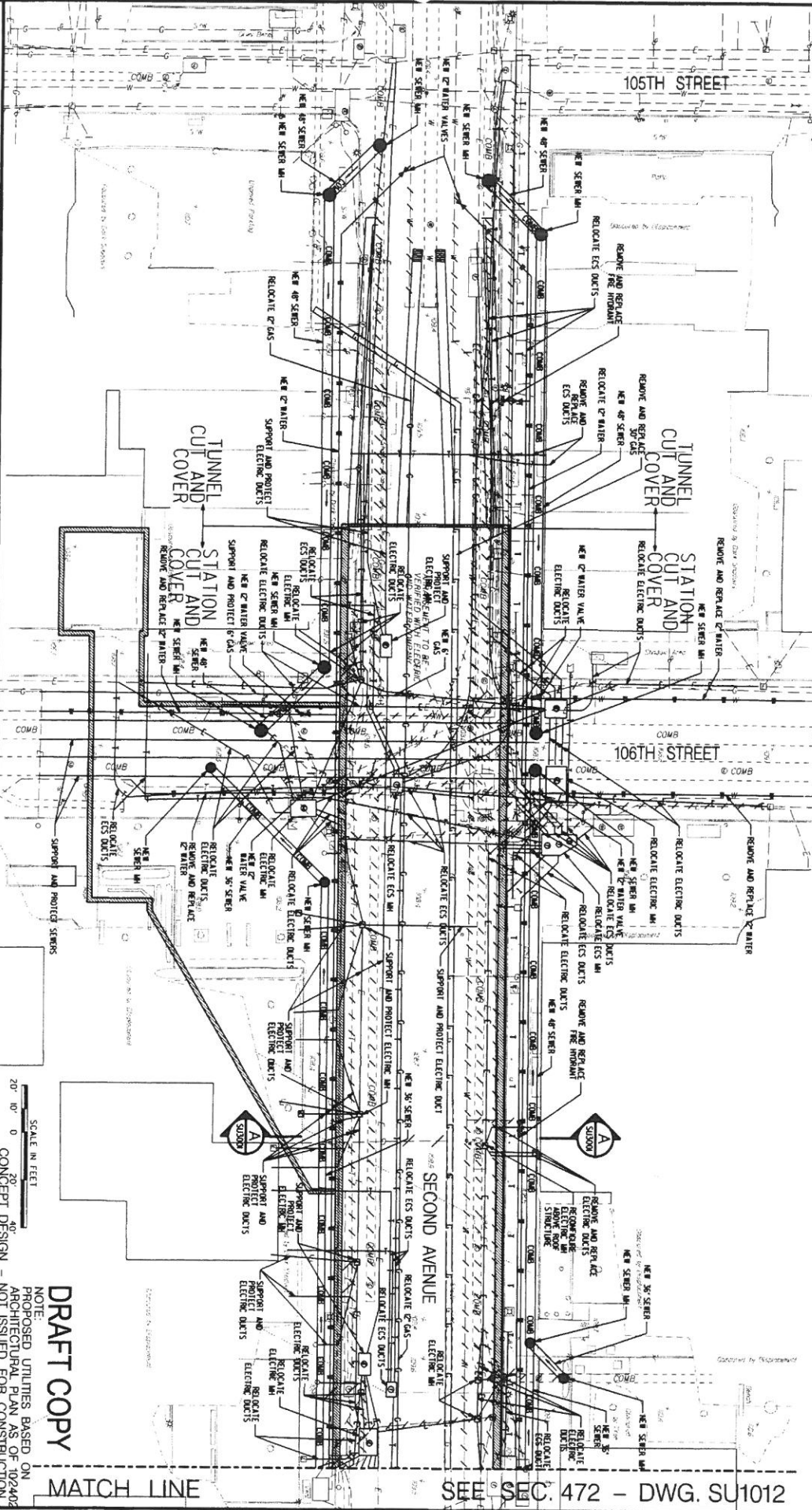
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DATE	DESCRIPTION

CONTRACT CM-1188
 CONSTRUCTION OF THE
 SECOND AVENUE SUBWAY
 BOROUGH OF MANHATTAN

106TH STREET STATION
 COMPOSITE UTILITY PLAN

SCALE	DATE
AS SHOWN	11/22/02
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 NOTE:
 PROPOSED UTILITIES BASED ON
 ARCHITECTURAL PLAN AS OF 10/24/02
 FOR CONSTRUCTION.

MATCH LINE

SEE SEC. 472 - DWG. SU1012





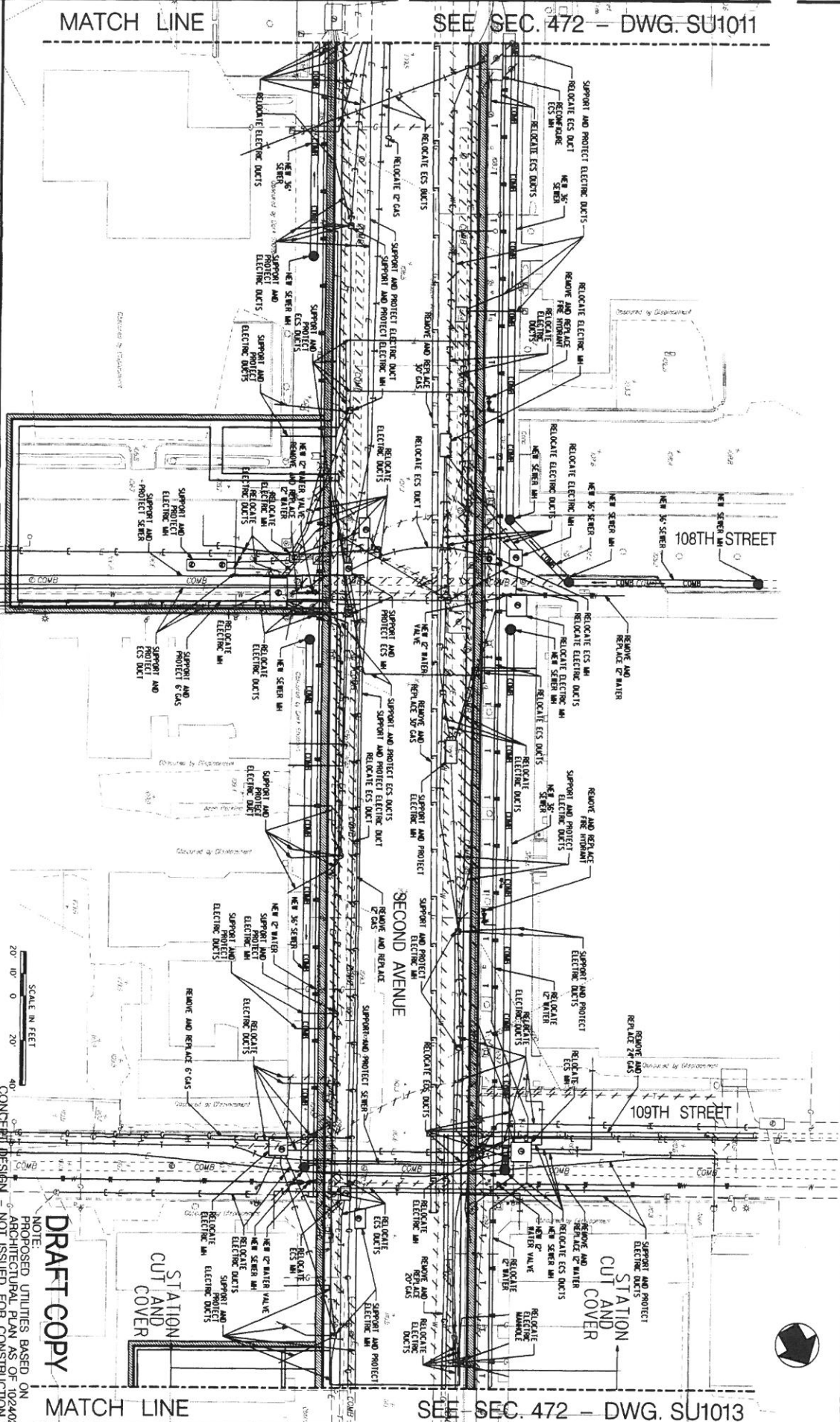
DMJM HARRIS + ARUP
A Joint Venture
ARCHITECTURAL
CONSULTANTS

DATE	DESCRIPTION

APPROVED BY:	DATE:

CONTRACT CM-1188
CONSTRUCTION OF THE
SECOND AVENUE SUBWAY
BOROUGH OF MANHATTAN

SCALE:	DATE:
AS SHOWN	11/22/02
STATION NO:	DWG. NO.:
472	SU1012
REVISION:	SHEET NO.:
0	



MATCH LINE SEE SEC. 472 - DWG. SU1011

MATCH LINE SEE SEC. 472 - DWG. SU1013

DRAFT COPY

NOTE:
PROPOSED UTILITIES BASED ON
ARCHITECTURAL PLAN AS OF
11/22/02.
NOT ISSUED FOR CONSTRUCTION





DMJM/HARRIS • ARUP
 A Joint Venture
 100 West Street
 New York, NY 10038
 212.512.2000

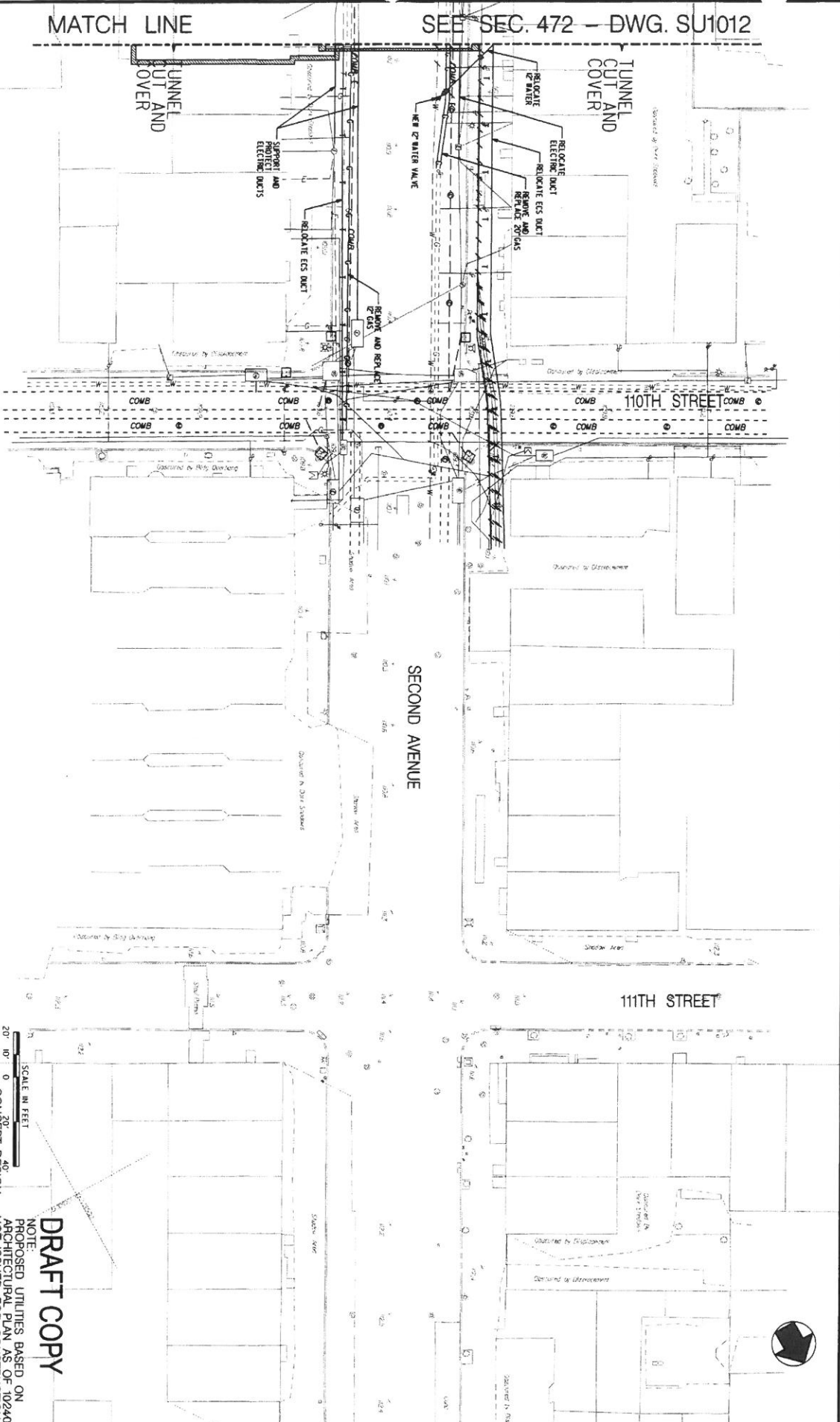
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2	ISSUED FOR CONSTRUCTION	11/21/02

DATE	BY	SCALE
11/21/02	AS SHOWN	AS SHOWN

CONTRACT CM-1188
 CONSTRUCTION OF THE
 SECOND AVENUE SUBWAY
 BOROUGH OF MANHATTAN

106TH STREET STATION
 COMPOSITE UTILITY PLAN

NO.	DATE	BY
472	11/22/02	AS SHOWN



SCALE IN FEET
 20' 10' 0'

DRAFT COPY
 NOTE:
 PROPOSED UTILITIES BASED ON
 ARCHITECTURAL PLAN AS OF 10/24/02
 CONCEPT DESIGN - NOT ISSUED FOR CONSTRUCTION

MATCH LINE

SEE SEC. 472 - DWG. SU1012

TUNNEL
 CUT AND
 COVER

TUNNEL
 CUT AND
 COVER

110TH STREET

SECOND AVENUE

111TH STREET



NEW YORK CITY
 TRANSIT AUTHORITY

DAVID HARRIS • ARUP
 A Joint Venture

REVISION	DATE	DESCRIPTION

DESIGNED BY	SCALE
CHECKED BY	
APPROVED BY	

DESIGNED BY	SCALE
CHECKED BY	
APPROVED BY	

CONTRACT CM-1188
 CONSTRUCTION OF THE
 SECOND AVENUE SUBWAY
 BOROUGH OF MANHATTAN

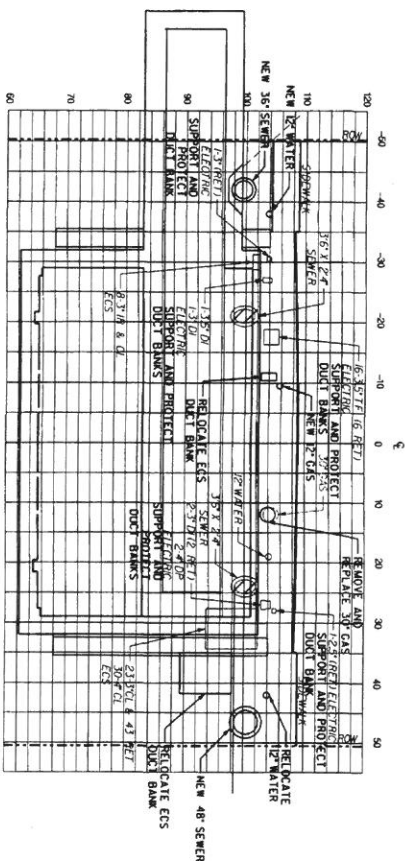
106TH STREET STATION
 UTILITY CROSS SECTIONS

SCALE	DATE
AS SHOWN	8/22/02
472	DLG:BN
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CONCEPT DESIGN - NOT ISSUED FOR CONSTRUCTION

DRAFT COPY

NOTE:
 PROPOSED UTILITIES BASED ON
 ARCHITECTURAL PLAN AS OF 10/24/02
 NOT ISSUED FOR CONSTRUCTION



CROSS SECTION
 SCALE 1" = 10'
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2ND AVENUE
 106TH STREET &
 LOOKING SOUTH

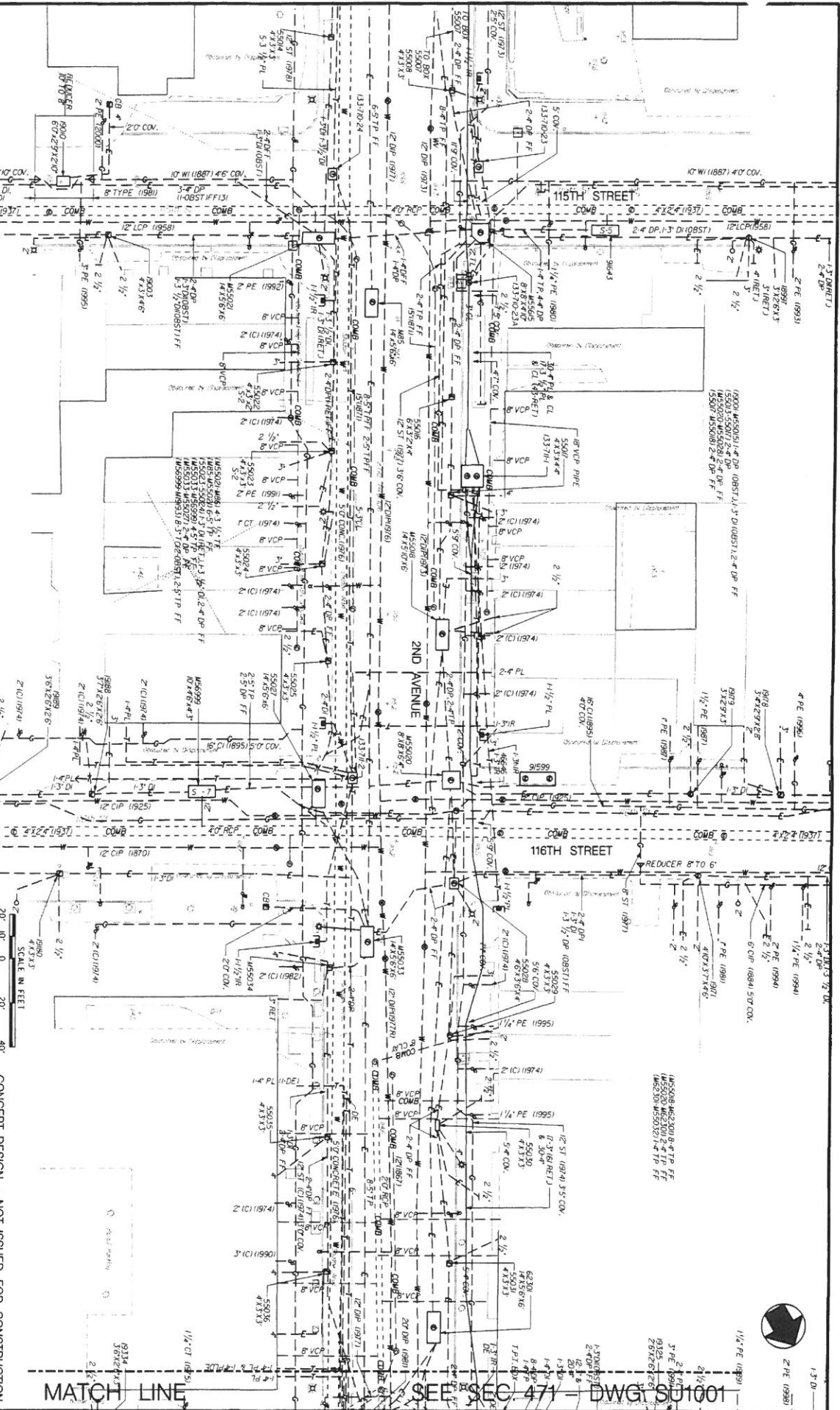


DYNAMIC HARRIS ARUP A Joint Venture 110 West Street New York, NY 10038 Telephone: (212) 512-2000 Fax: (212) 512-2001 E-mail: dharr@arup.com	
PROJECT NO. CONTRACT NO. DRAWING NO.	DATE ISSUED DATE REVISED DATE APPROVED
DESIGNATION DATE APPROVED	DATE APPROVED

DRAWN BY CHECKED BY DATE	SCALE DATE
SCALE DATE	SCALE DATE

CONTRACT CM-1188
 CONSTRUCTION OF THE
 SECOND AVENUE SUBWAY
 BOROUGH OF MANHATTAN

CONCEPT DESIGN - NOT ISSUED FOR CONSTRUCTION
 DRAWING TITLE
 116TH STREET STATION
 EXISTING UTILITY PLAN
 SCALE: AS SHOWN
 DATE: 11/22/02
 SHEET NO. 47
 PROJECT NO. SU1001



MATCH LINE OFF SEC 471 - DWG SU1001

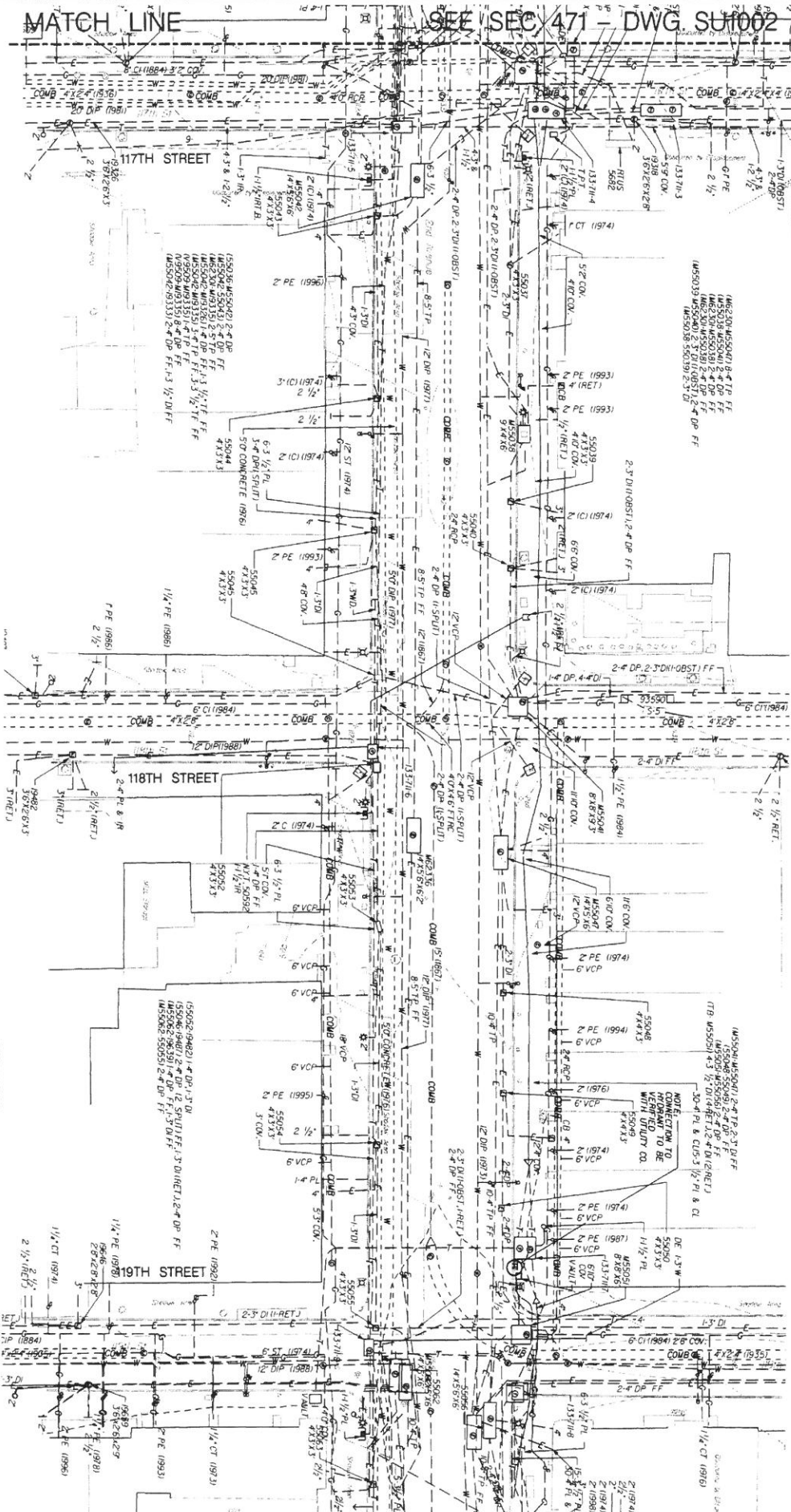


DWYER HARRIS ARUP A Joint Venture 	
PROJECT NO. 116-6 CONTRACT NO. CM-1188 SHEET NO. SU1002	DATE: 8/22/02 DRAWN: AS SHORN CHECKED: M. GARDNER IN CHARGE: J. HARRIS

NO.	DESCRIPTION	DATE	BY	CHECKED

CONTRACT NO. CM-1188 CONSTRUCTION OF THE SECOND AVENUE SUBWAY BOROUGH OF MANHATTAN	DATE: 8/22/02 DRAWN: AS SHORN CHECKED: M. GARDNER IN CHARGE: J. HARRIS
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CONCEPT DESIGN - NOT ISSUED FOR CONSTRUCTION	DATE: 8/22/02 DRAWN: AS SHORN CHECKED: M. GARDNER IN CHARGE: J. HARRIS
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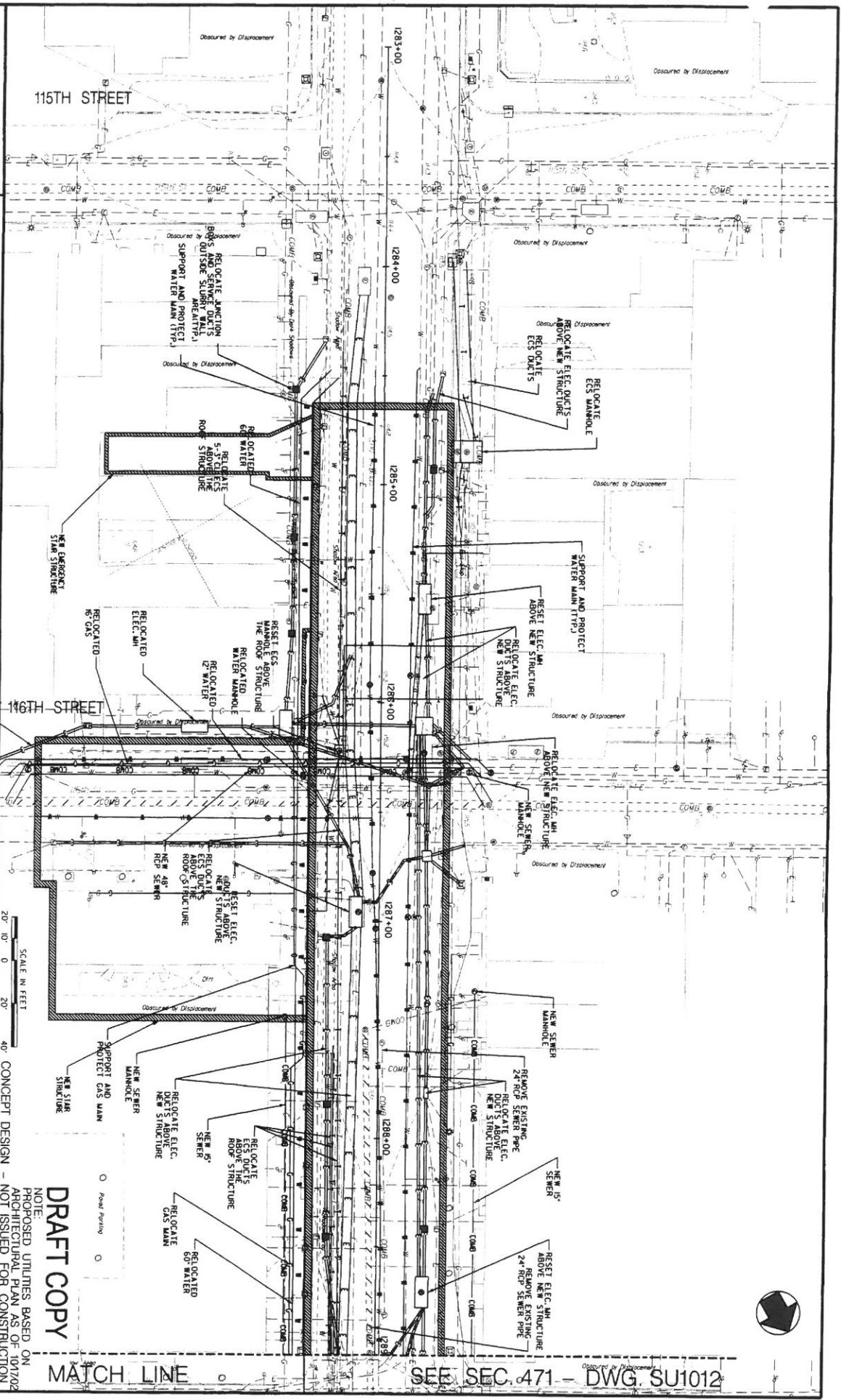


T.S. & M.A. ENGINEER OF RECORD PROFESSIONAL ENGINEER NO. 45689 STATE OF NEW YORK CONTRACT NO. 471-115th STREET SHEET NO. SU1011	
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02/11/2002	CONSTRUCTION
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06/11/2002	CONSTRUCTION
07/11/2002	CONSTRUCTION
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09/11/2002	CONSTRUCTION
10/11/2002	CONSTRUCTION
11/11/2002	CONSTRUCTION
12/11/2002	CONSTRUCTION

SCALE	DATE
AS SHOWN	AS SHOWN
471	SU1011

CONTRACT CM-1188
CONSTRUCTION OF THE SECOND AVENUE SUBWAY BOROUGH OF MANHATTAN

16TH STREET STATION
COMPOSITE UTILITY PLAN



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NOTE:
 PROPOSED UTILITIES BASED ON ARCHITECTURAL PLAN AS OF 10/17/02 FOR CONSTRUCTION

SEE SEC. 471 - DWG. SU1012

M
 NEW YORK CITY
 TRANSIT AUTHORITY

DMM HARRIS & ARUP
 A Joint Venture

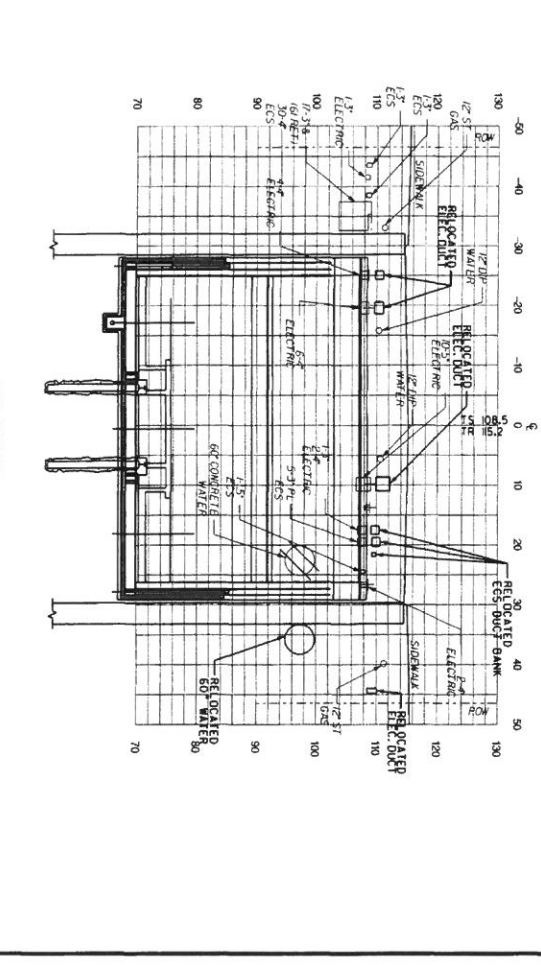
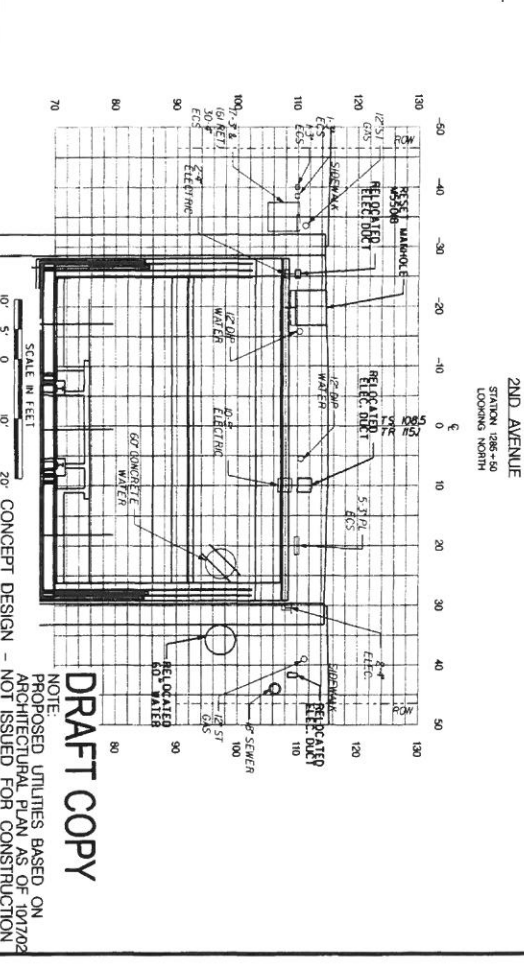
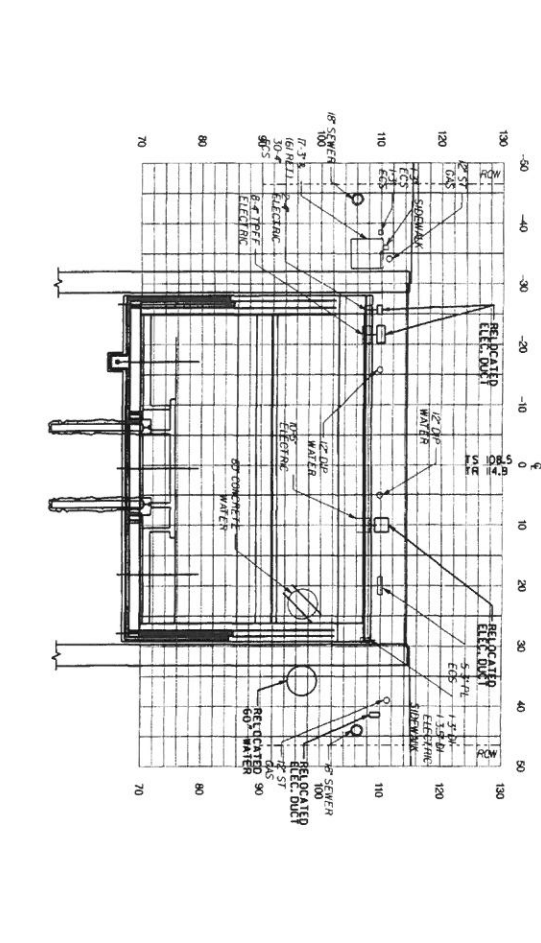
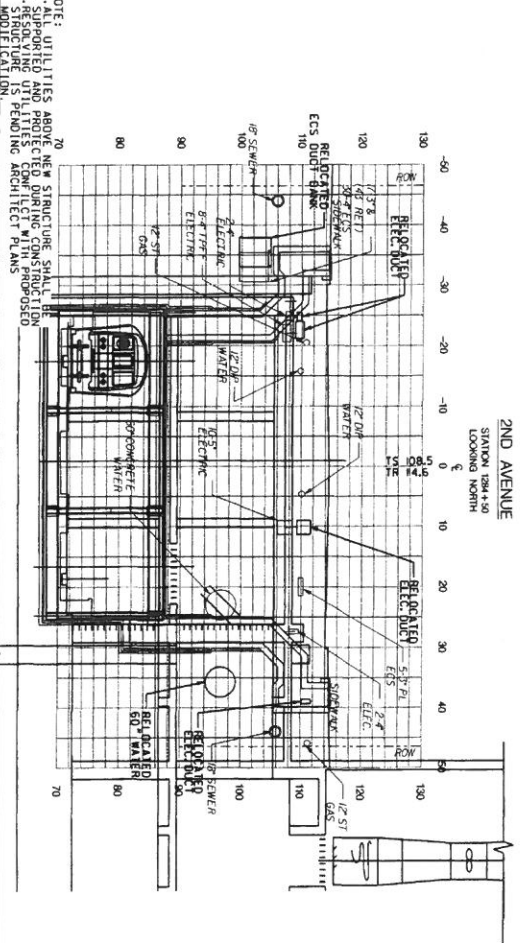
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 11/22/02

DESCRIPTION	DATE

CONTRACT CM-1188
 CONSTRUCTION OF THE
 SECOND AVENUE SUBWAY
 BOROUGH OF MANHATTAN

16TH STREET STATION
 UTILITY CROSS SECTIONS

SCALE:	AS SHOWN	DATE:	11/22/02
REVISION:	0	DRAWING NO.:	SU3001
SHEET NO.:			



DRAFT COPY

NOTE:
 PROPOSED UTILITIES BASED ON
 ARCHITECTURAL PLAN AS OF 10/17/02
 NOT ISSUED FOR CONSTRUCTION

NOTE:
 1. ALL UTILITIES ABOVE ARE PROJECTED DURING CONSTRUCTION.
 2. STRUCTURE IS PENDING ARCHITECT PLANS.
 MODIFICATION.

SCALE: IN FEET
 0' 5' 10' 20'



DMJM HARRIS ARUP
 A Joint Venture
 ARCHITECTS ENGINEERS ARCHITECTS

NO.	DESCRIPTION	DATE	DESIGNED BY	CHECKED BY	APPROVED BY

DATE	BY	DESCRIPTION

DATE	BY	DESCRIPTION

CONTRACT CM-1188
 CONSTRUCTION OF THE
 SECOND AVENUE SUBWAY
 BOROUGH OF MANHATTAN

16TH STREET STATION
 UTILITY CROSS SECTIONS

SCALE: AS SHOWN	DATE: 8/22/02
471	
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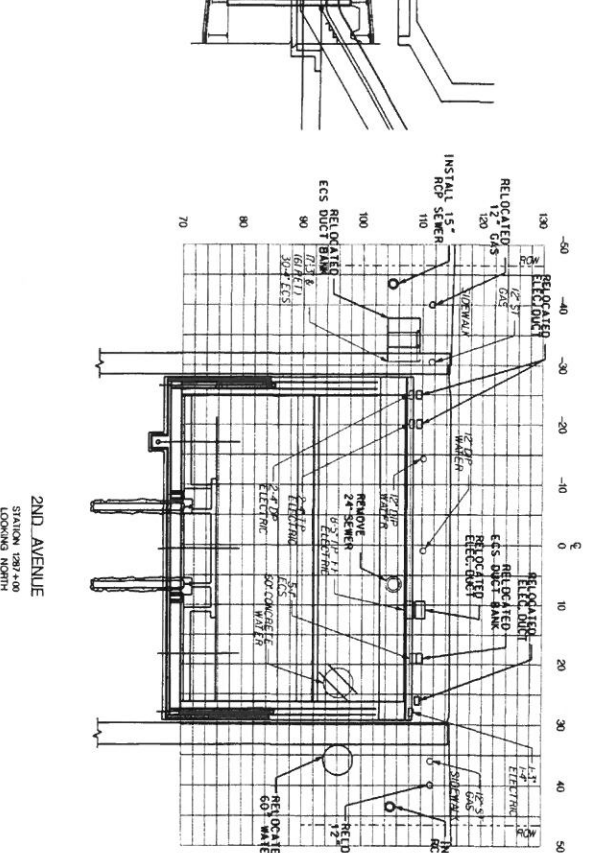
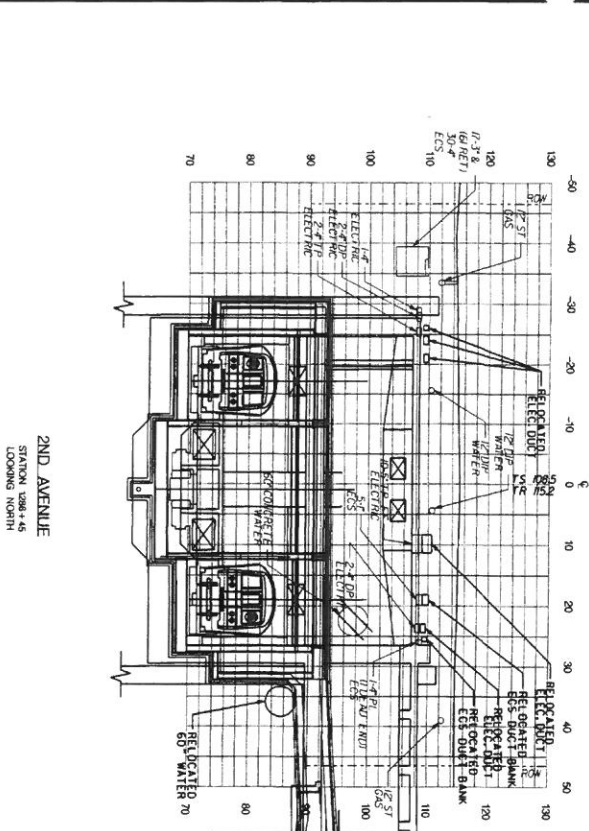
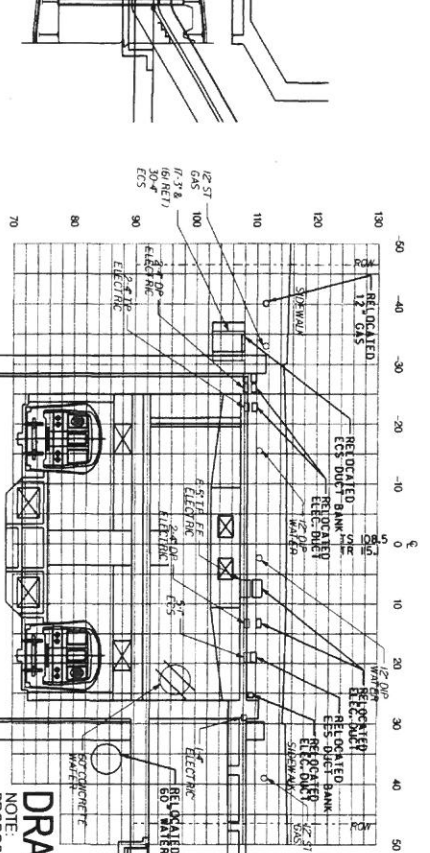
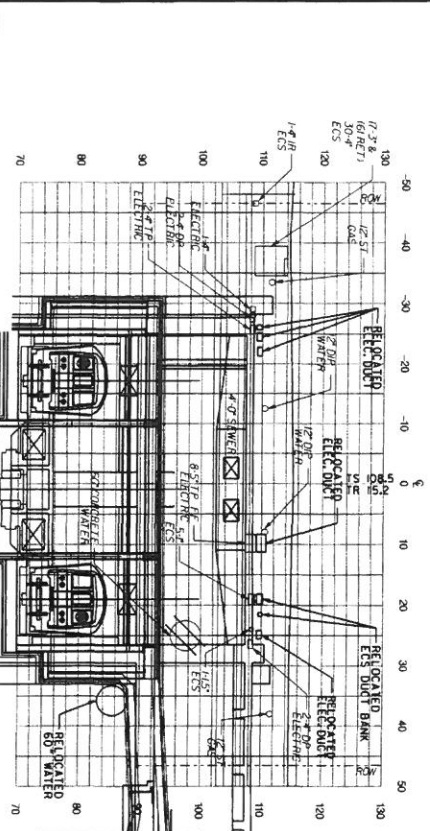
NOTE: UTILITIES ABOVE NEW STRUCTURE SHALL BE SUSPENDED AND PROTECTED DURING CONSTRUCTION

NOTE: UTILITIES ABOVE NEW STRUCTURE SHALL BE SUSPENDED AND PROTECTED DURING CONSTRUCTION

NOTE: UTILITIES ABOVE NEW STRUCTURE SHALL BE SUSPENDED AND PROTECTED DURING CONSTRUCTION

NOTE: PROPOSED UTILITIES BASED ON ARCHITECTURAL PLAN AS OF 10/70/02 NOT ISSUED FOR CONSTRUCTION

DRAFT COPY



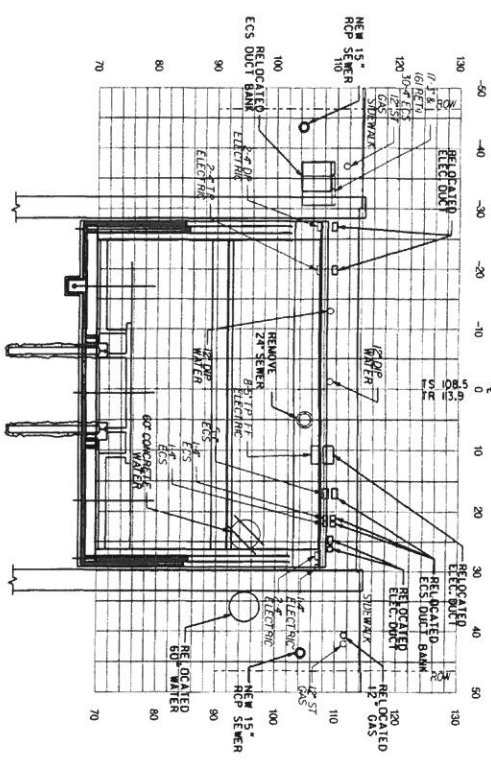
2ND AVENUE
 STATION 1286+46
 LOOKING NORTH

2ND AVENUE
 STATION 1287+00
 LOOKING NORTH

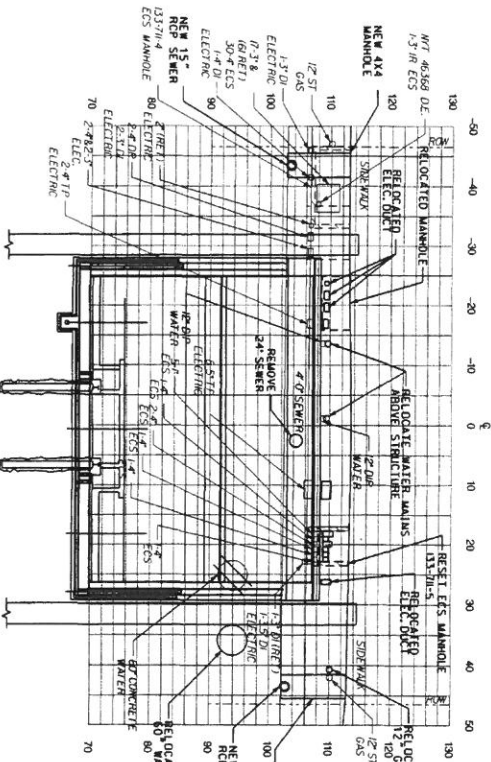
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 STATION 1287+40
 LOOKING NORTH

2ND AVENUE
 STATION 1287+50
 LOOKING NORTH

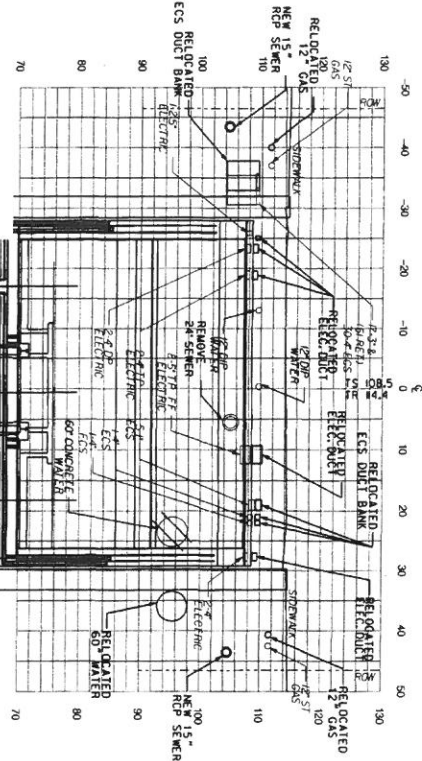
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LOOKING NORTH



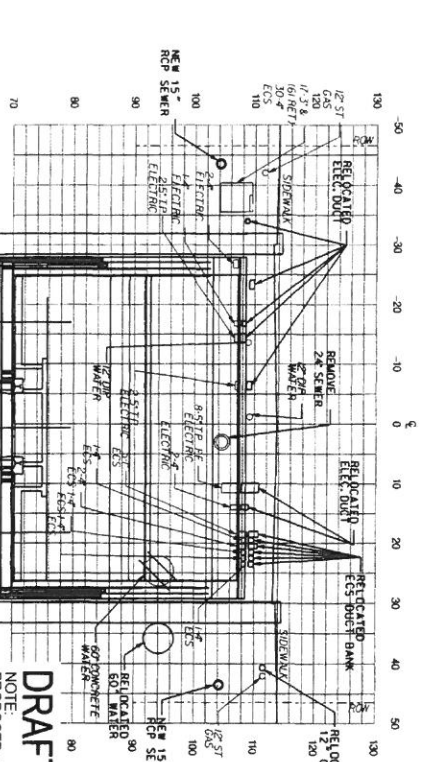
2ND AVENUE
STATION 1288+30
LOOKING NORTH



2ND AVENUE
STATION 1288+10
LOOKING NORTH



2ND AVENUE
STATION 1288+10
LOOKING NORTH



NOTE:
ALL UTILITIES ABOVE NEW STRUCTURE SHALL BE
SUPPORTED AND PROTECTED DURING CONSTRUCTION



DATE	REVISION	BY	CHKD	APP'D

DESIGNED BY	CHECKED BY	DATE
ALICIA CHAN	CHRISTIE	
ALICIA CHAN	CHRISTIE	
ALICIA CHAN	CHRISTIE	

SCALE	DATE
AS SHOWN	1/12/22/02

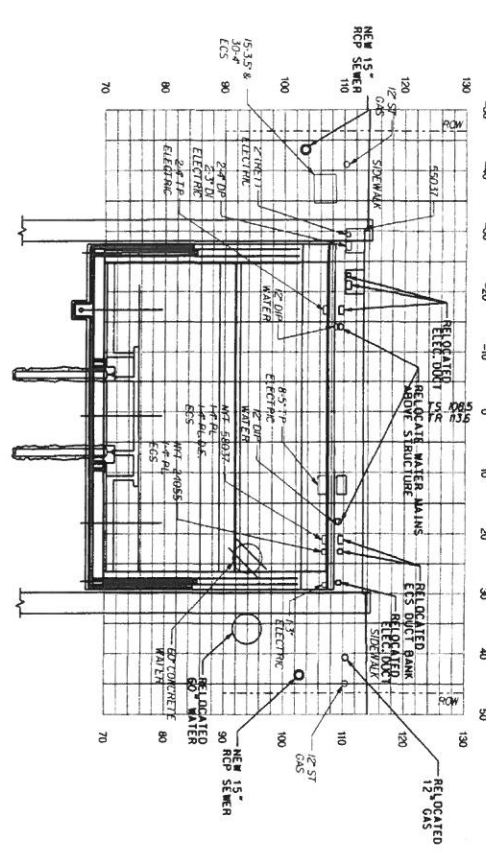
CONTRACT CM-1188
116TH STREET STATION
UTILITY CROSS SECTIONS

471 SU3003
SHEET NO.

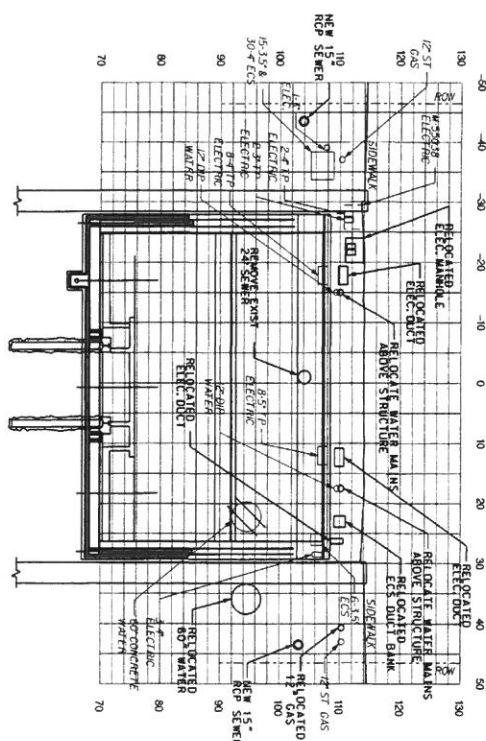
DRAFT COPY

NOTE:
PROPOSED UTILITIES BASED ON
ARCHITECTURAL PLAN AS OF 10/17/02
NOT ISSUED FOR CONSTRUCTION

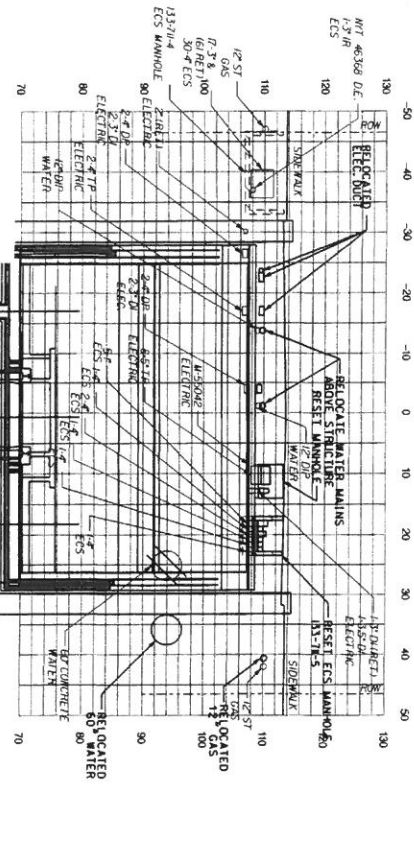
2ND AVENUE
STATION 1289+00
LOOKING NORTH



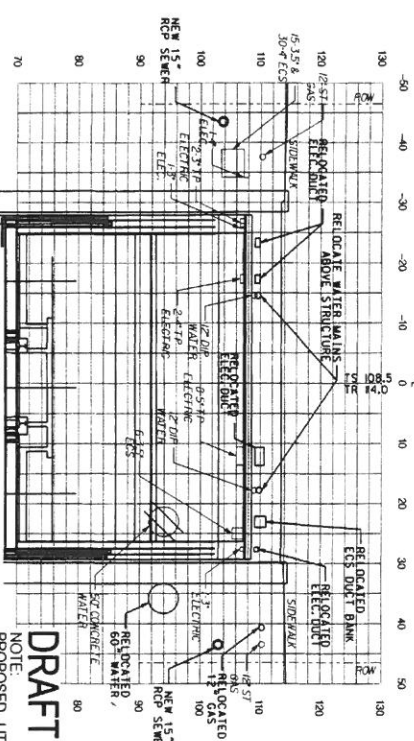
2ND AVENUE
STATION 1291+00
LOOKING NORTH



2ND AVENUE
STATION 1289+50
LOOKING NORTH



2ND AVENUE
STATION 1291+50
LOOKING NORTH



NOTE:
PROPOSED UTILITIES ABOVE NEW STRUCTURE SHALL BE
RELOCATED AND PROTECTED DURING CONSTRUCTION

M NEW YORK CITY
TRANSIT AUTHORITY

DJM HARRIS + ARUP
A Joint Venture

DTDP
Design/Construct

NO. 1	DATE	APPROVED BY

SCALE:	DATE:

CONTRACT CM-1188

CONSTRUCTION OF THE
SECOND AVENUE SUBWAY
BOROUGH OF MANHATTAN

16TH STREET STATION
UTILITY CROSS SECTIONS

SCALE: AS SHOWN

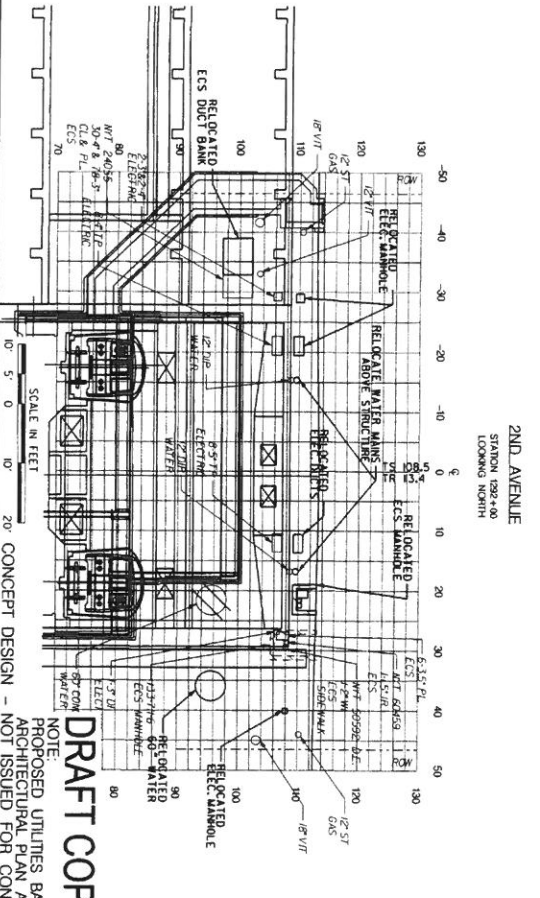
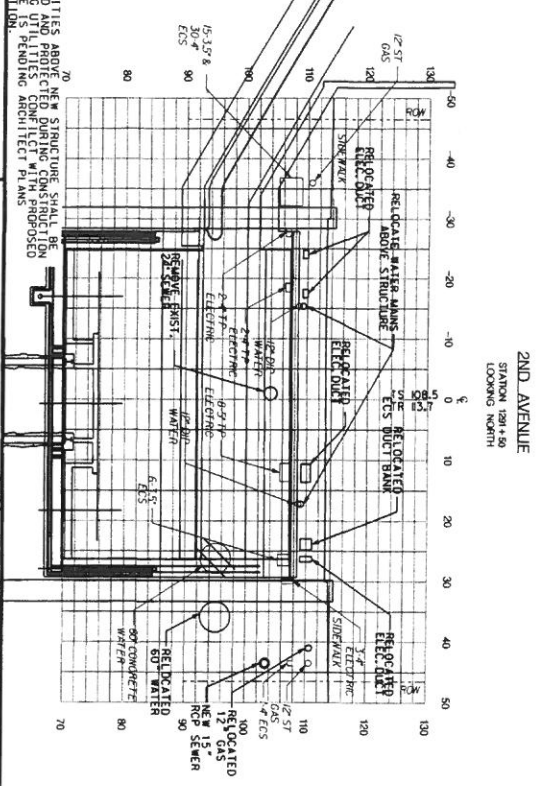
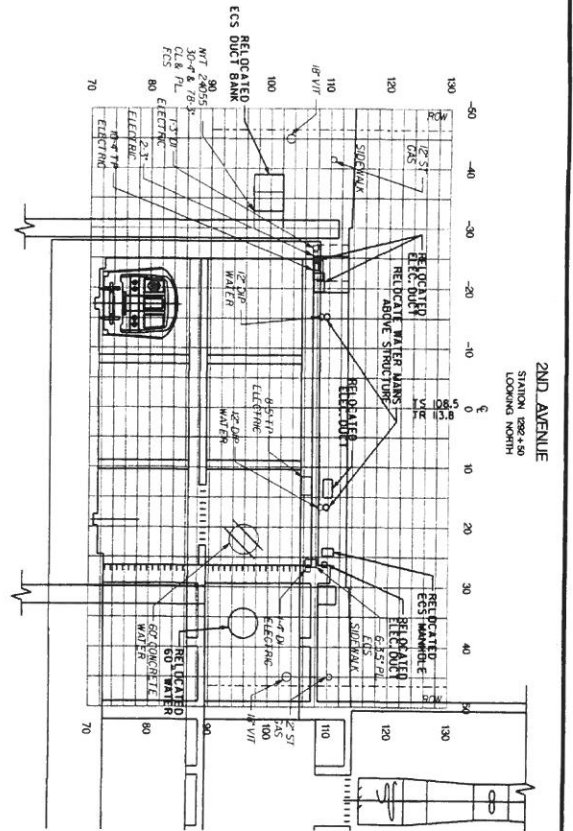
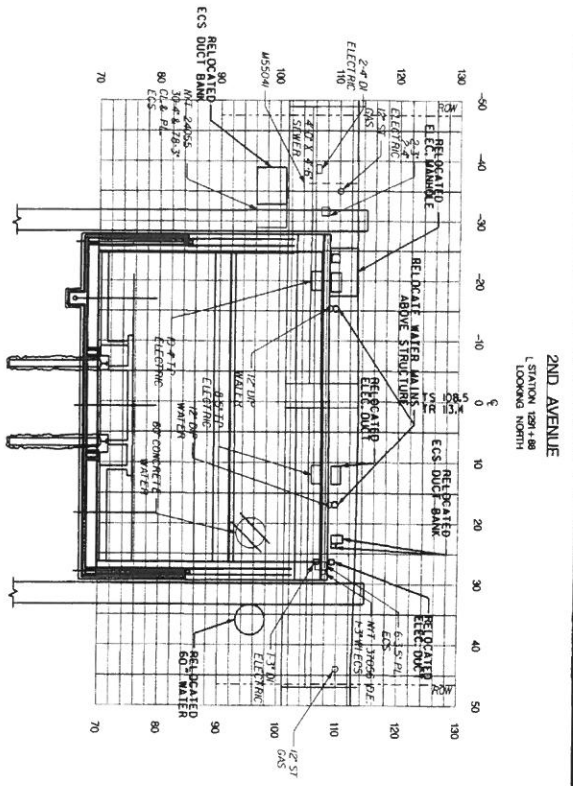
DATE: 11/22/02

PROJECT NO: SU3004

SHEET NO:

DRAFT COPY

NOTE:
PROPOSED UTILITIES BASED ON
ARCHITECTURAL PLAN AS OF 10/17/02
NOT ISSUED FOR CONSTRUCTION



DRAFT COPY

NOTE: PROPOSED UTILITIES BASED ON ANCHITECTURAL PLAN AS OF 10/17/02 NOT ISSUED FOR CONSTRUCTION

166 George's design
1/23/02
1 Base/USBC/PL01/2
20v.101

a:\facilities\471-116h street\utils\SU711883005.dgn
ahmedalgenal



DWIGHT HARRIS • ARUP
A Joint Venture

NO.	DESCRIPTION	DATE	APPROVED BY

FROM:	SCALE:
AS SHOWN	AS SHOWN

DESIGNED BY:	SCALE:
AS SHOWN	AS SHOWN

CONTRACT CM-1188

CONSTRUCTION OF THE SECOND AVENUE SUBWAY BOROUGH OF MANHATTAN

DRAWING TITLE

16TH STREET STATION SECOND AVENUE SUBWAY UTILITY CROSS SECTIONS

SCALE:	DATE:	DRAWING NO.:	SHEET NO.:
AS SHOWN	8/22/02	471	SU3005



DWJMHARRIS • ARUP
A Joint Venture



NO.	DESCRIPTION	DATE	INITIALS

DATE	DESCRIPTION

CONTRACT CM-1188
CONSTRUCTION OF THE
SECOND AVENUE SUBWAY
BOROUGH OF MANHATTAN

125TH STREET STATION
EXISTING UTILITY PLAN

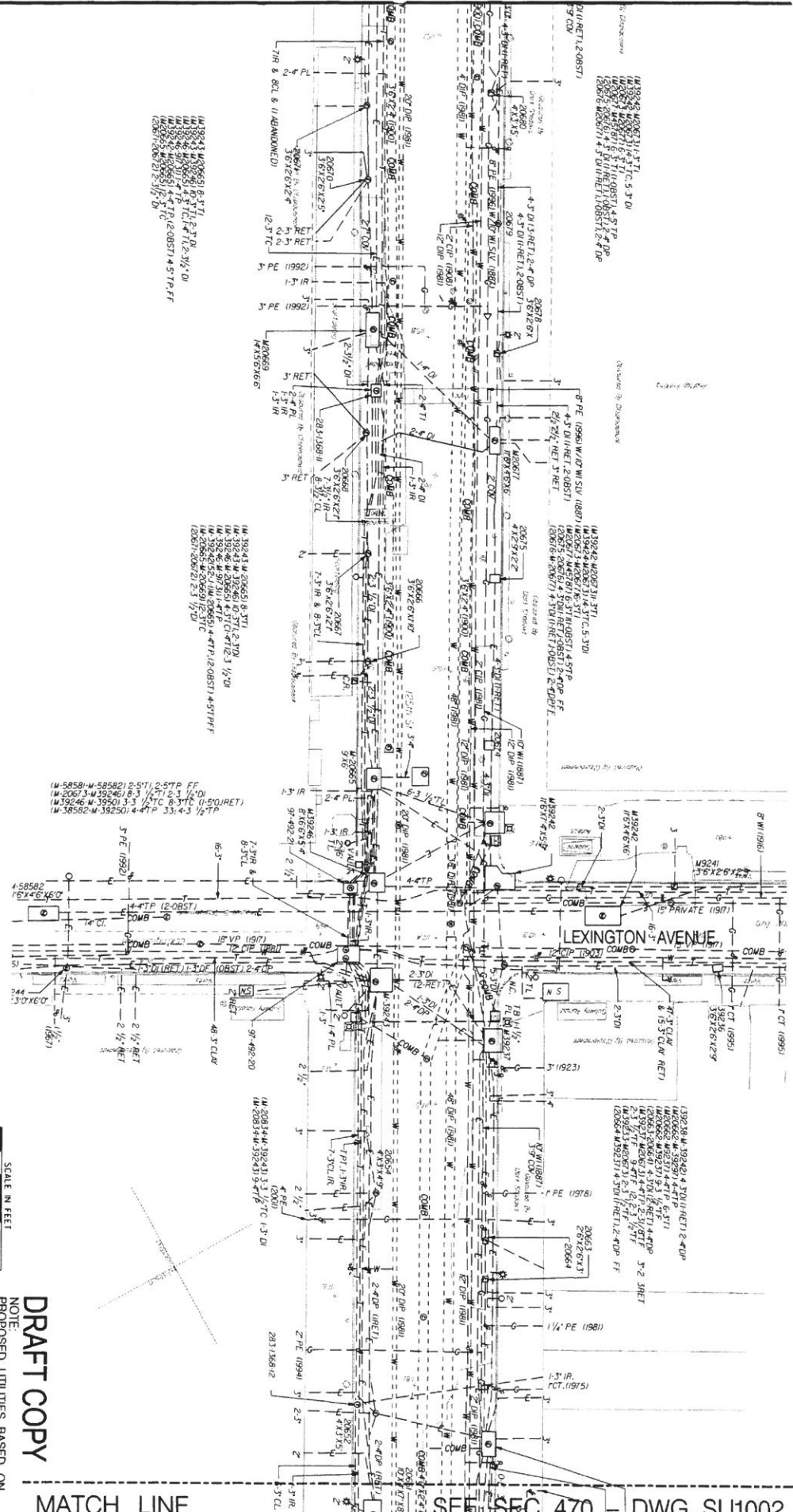
SCALE	DATE	BY	CHKD
AS SHOWN	9/22/02		
470			
0			

SCALE IN FEET
20' = 1" = 0
CONCEPT DESIGN - NOT ISSUED FOR CONSTRUCTION

DRAFT COPY

MATCH LINE

SET SEC. 470 - DWG. SU1002





DMJM HARRIS ARUP
 A Joint Venture
 CONSULTING ENGINEERS

NO.	DESCRIPTION	DATE

SCALE	
DATE	

DESIGNED BY		SCALE	
CHECKED BY		DATE	
APPROVED BY			

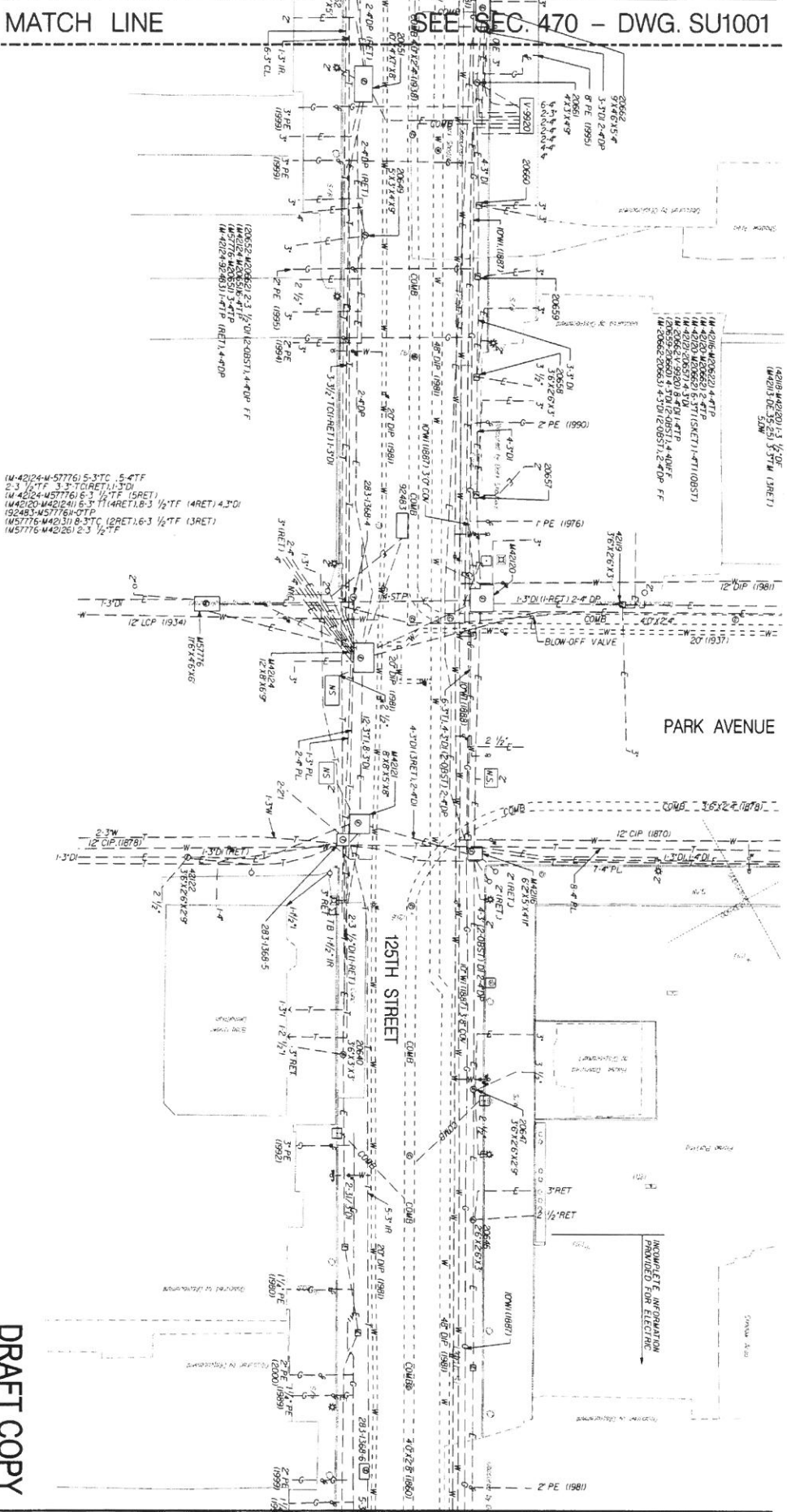
CONTRACT CM-1188
 CONSTRUCTION OF THE
 SECOND AVENUE SUBWAY
 BOROUGH OF MANHATTAN

125TH STREET STATION
 EXISTING UTILITY PLAN

SCALE	AS SHOWN	DATE	11/22/02
SHEET NO.	470	DRAWING NO.	SU1002
TOTAL SHEETS	0		

MATCH LINE SEE SEC. 470 - DWG. SU1001

MATCH LINE SEE SEC. 470 - DWG. SU1003



- (M-42) (24-M-5776) 5-3TC 5-4TF
- 2-3 1/2 TF 3-3 TO (RET) 1-3 TO
- (M-42) (24-M-5776) 6-3 1/2 TF (SRET)
- (M-42) (24-M-5776) 6-3 1/2 TF (SRET) 1-8-3 1/2 TF (SRET) 4-3 TO
- (S2) (45) (M-5776) 6-4 TF
- (M-5776) (M-42) (31) 8-3 TC (2 RET) 1-6-3 1/2 TF (SRET)
- (M-5776) (M-42) (26) 2-3 1/2 TF

DRAFT COPY

NOTE:
 PROPOSED UTILITIES BASED ON
 ARCHITECTURAL PLAN AS OF 9/24/02
 CONCEPT DESIGN - NOT ISSUED
 FOR CONSTRUCTION

INCOMPLETE INFORMATION
 PROVIDED FOR ELECTRIC





DMJM HARRIS • ARUP
 A Joint Venture
 AECOM
 CONSULTANTS

NO.	DESCRIPTION	DATE	BY	CHKD
1	ISSUED FOR CONSTRUCTION	11/22/02		
2	REVISION			
3	REVISION			
4	REVISION			
5	REVISION			

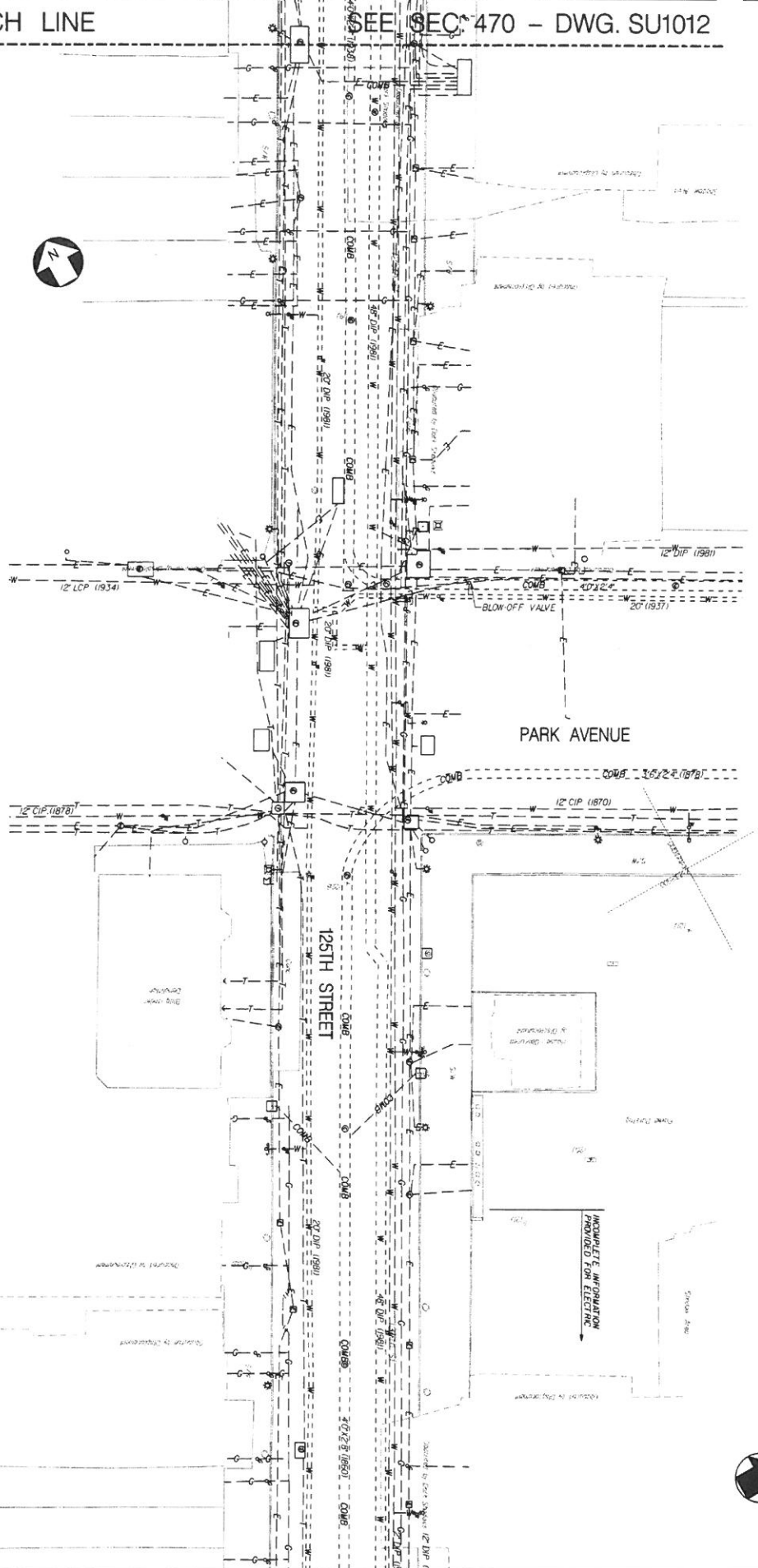
DATE	BY	CHKD
11/22/02		

CONTRACT CM-1188
CONSTRUCTION OF THE
SECOND AVENUE SUBWAY
BOROUGH OF MANHATTAN

125TH STREET STATION
EXISTING UTILITY PLAN

SCALE:	AS SHOWN
STATIONING:	470
DATE:	11/22/02
PROJECT NO.:	SU1003
SHEET NO.:	0

MATCH LINE SEE SEC. 470 - DWG. SU1012



SCALE IN FEET
 20' 0' 20' 40'

DRAFT COPY

NOTE:
 PROPOSED UTILITIES UTILITY
 DESIGN ON HOLD UNTIL
 ARCHITECTURAL DESIGN
 IS FURTHER DEVELOPED
 CONCEPT DESIGN - NOT ISSUED FOR CONSTRUCTION



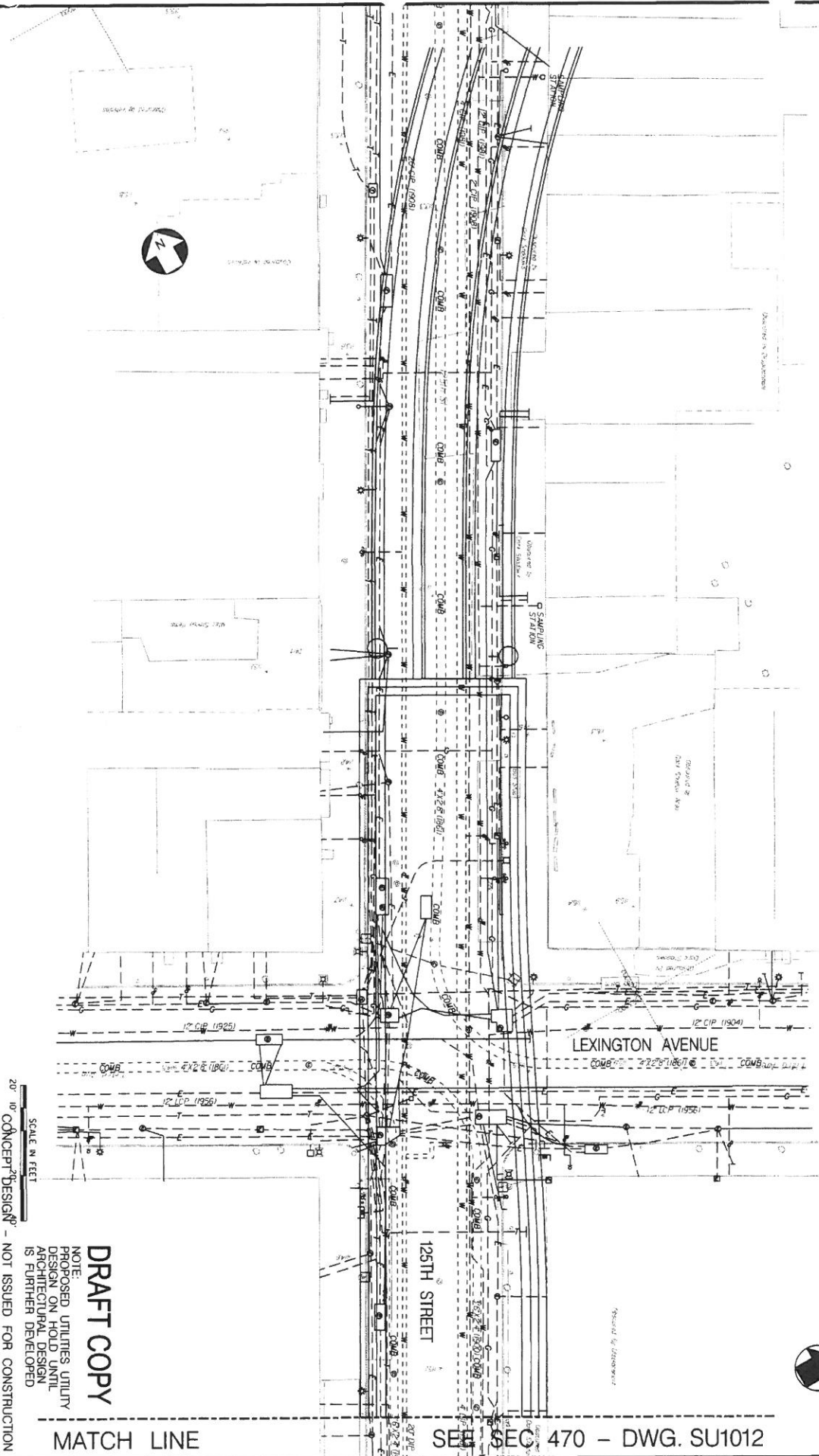
DMJM HARRIS • ARUP
 A Joint Venture
 110 Broadway
 New York, NY 10038
 Tel: 212-512-2000
 Fax: 212-512-2001
 www.dmhj.com

NO.	DESCRIPTION	DATE	BY
1	ISSUED FOR PERMITTING	11/21/02	DMJM
2	ISSUED FOR CONSTRUCTION		
3	ISSUED FOR RECORD		

CONTRACT CM-1188
 CONSTRUCTION OF THE
 SECOND AVENUE SUBWAY
 BOROUGH OF MANHATTAN

125TH STREET STATION
 COMPOSITE UTILITY PLAN

SCALE: AS SHOWN	DATE: 8/22/02
SHEET NO: 470	DRAWING NO: SU1011
SECTION: 0	SHEET NO:



DRAFT COPY

NOTE:
 PROPOSED UTILITIES UTILITY
 DESIGN ON HOLD UNTIL
 ARCHITECTURAL DESIGN
 IS FURTHER DEVELOPED

SCALE IN FEET
 20' = 10'

CONCEPT DESIGN - NOT ISSUED FOR CONSTRUCTION

MATCH LINE

SECTION 470 - DWG. SU1012



DAVID HARRIS ARUP
A Joint Venture
Railroad
Subway

DATE	DESCRIPTION

SCALE	DATE	DESCRIPTION

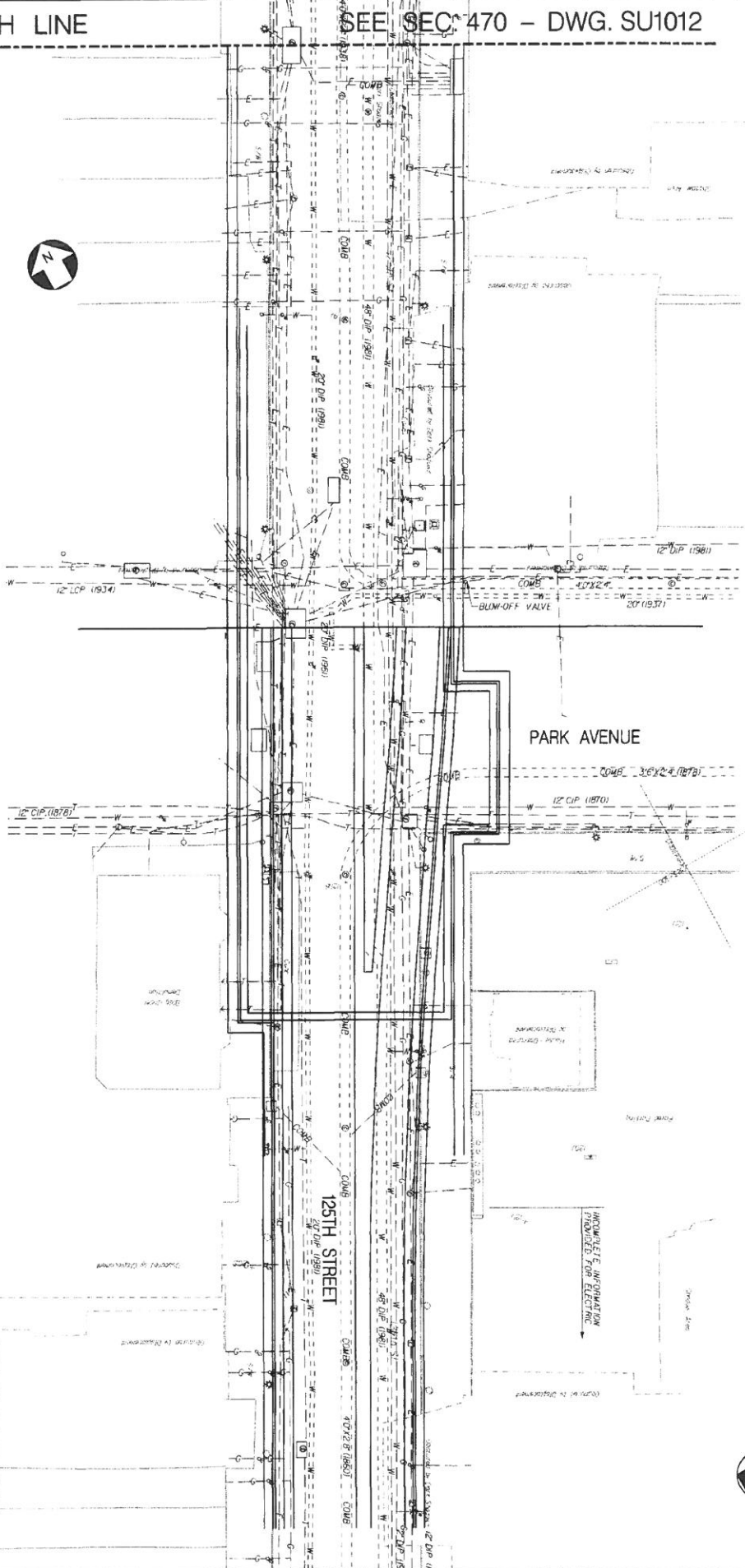
CONTRACT CM-1188
CONSTRUCTION OF THE
SECOND AVENUE SUBWAY
BOROUGH OF MANHATTAN

125TH STREET STATION
COMPOSITE UTILITY PLAN

SCALE	DATE
A5 SHOWN	8/22/02
470	SU1013
0	

MATCH LINE

SEE SEC 470 - DWG. SU1012



SCALE IN FEET
20' 10' 0' 20' 40'

DRAFT COPY
NOTE:
PROPOSED UTILITIES UTILITY
DESIGN ON HOLD UNTIL
ARCHITECTURAL DESIGN
IS FURTHER DEVELOPED
CONCEPT DESIGN - NOT ISSUED FOR CONSTRUCTION